

PHANAGORIA



ИНСТИТУТ АРХЕОЛОГИИ РАН



ФАНАГОРИЙСКАЯ ЭКСПЕДИЦИЯ
ИА РАН



PHANAGORIA

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PHANAGORIA – THE HEART OF TAMAN

Every nation should be aware of its history, traditions, and culture. Not for nothing is there a saying that peoples who forget their past have no future.

With respect to its ancient heritage, the Taman Peninsula is a truly unique area – even among the other Kuban regions, where archaeological sites are also present in great numbers. The soil and sea waters of Taman still withhold a considerable part of its ancient secrets, revealing them very gradually to professional research teams. Taman's past is a story about ancient Phanagoria, one of the leading centres of classical civilization. It is a story about the Cossacks, who were settled in the region by the Russian government to consolidate its position in the North Caucasus. It is also about the Phanagorian Fortress established by the great Russian general Alexander Suvorov.

Current investigations at Phanagoria are a wonderful opportunity to revive an interest in bygone times both among Kuban locals and visitors from other Russian regions. This is also a good chance to make its history part of the world's heritage. The excavations are conducted according to the highest standards of contemporary science, including a multidisciplinary approach to the study of archaeological sites. A wealth of valuable data thus collected allows remarkable new insights into Phanagoria's past and helps to develop its most effective conservation and management strategies.

Of no small importance is that the expedition actively involves students of different Russian universities. Hours of work side by side with some of the country's leading scholars and natural scientists help the young people not only to extend their knowledge of human history but also to pick up certain practical skills. Hopefully, some of them will choose to pursue an academic career in classical studies.

The site of Phanagoria covers a large area that has chanced to escape any modern development. Not only does this fact carry important implications for science, but for the future of the region as well. Phanagoria has all the potential to become both a centre for scientific research and a top tourist attraction. The project involves the creation of a national historical park – with a museum to display spectacular artifacts, trails to take visitors to explore the surrounding landscape, and beautiful sandy beaches to provide recreation by the sea.

I would like to take this opportunity to invite everybody to join us in our effort to preserve and protect Taman, this fascinating land with unique nature and culture. No less than the Greater Sochi area, the Taman Peninsula deserves our attention and development!

Oleg Deripaska



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of this publication would like to express their deepest gratitude to*

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Chairman of the Basic Element Supervisory Board and

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CONTENTS

INTRODUCTION	8
HISTORY OF PHANAGORIA	10
HISTORY OF INVESTIGATIONS AT PHANAGORIA	20
PHANAGORIA NOWADAYS	32
EXCAVATIONS AT THE CITY-SITE	36
UNDERWATER EXPLORATIONS	48
NECROPOLIS	58
<i>CHORA</i> (COUNTRYSIDE)	74
POST-EXCAVATION ANALYSIS	82
ARCHAEOLOGICAL SCIENCE AT PHANAGORIA	102
NUMISMATIC STUDIES	108
ELEMENTAL ANALYSIS OF METALS (X-RAY FLUORESCENCE SPECTROMETRY)	120
CONSERVATION AND RESTORATION AT PHANAGORIA	122
EPIGRAPHIC EVIDENCE (CASUAL INSCRIPTIONS)	128
PEOPLE OF PHANAGORIA (BIOARCHAEOLOGICAL STUDIES)	136
STORIES BEHIND ANIMAL BONES	142
PHANAGORIA CENTRE FOR SCIENCE AND RESEARCH	148
PUBLICATIONS OF THE PHANAGORIAN EXPEDITION	156
PHANAGORIA STATE HISTORICAL AND ARCHAEOLOGICAL MUSEUM-PRESERVE	162
Glossary	167



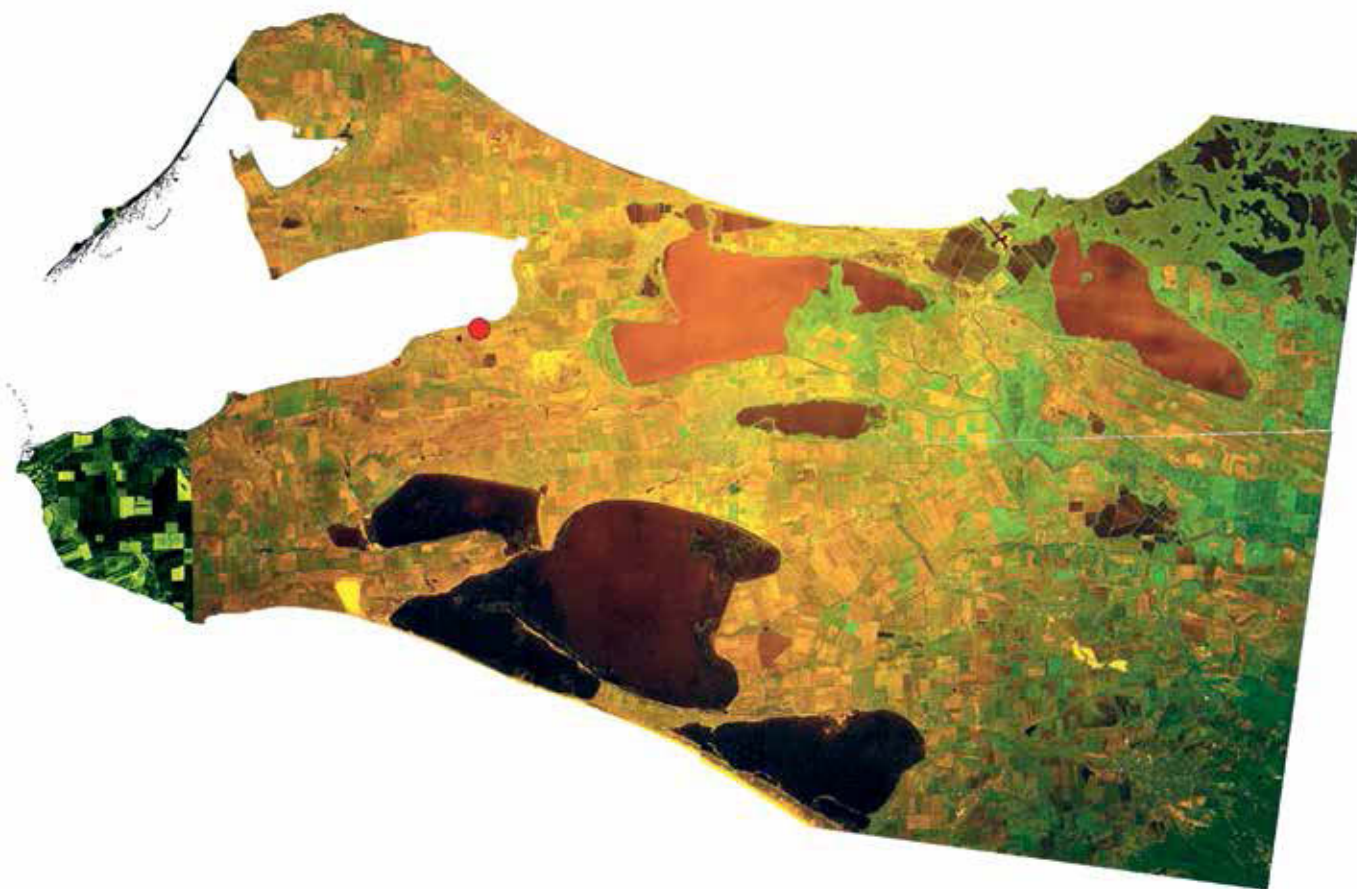
INTRODUCTION

Russia abounds in cultural heritage sites that contain the record of human history from Paleolithic times to the present. Among these, archaeological sites of classical antiquity hold a special place. Without classical civilization there would be no modern Europe, which in fact built upon the main achievements of ancient Greece and Rome in almost all spheres of life (art, science, law, architecture, and others).

Classical civilization is the basis of the European culture. As for Russia, it is part of Europe both geographically and culturally. Classical elements came to our country mainly through the Byzantine Empire. However, much like Italy, Greece, Turkey, and other countries of the Mediterranean, Russia itself is home to a whole host of archaeological sites – vestiges of the ancient Greek *poleis*, independent city-states, which had once flourished in the area and left such a lasting impact on our culture. The remains of ancient civilization are concentrated in Krasnodar Region and the Crimea. A lot of Greek cities and rural settlements appeared in Kuban (particularly on the Taman Peninsula) in the 6th century BC as a consequence of the so-called “Greek colonization movement”.



*V.D. Kuznetsov,
Director of the Phanagoria Museum-
Preserve, during a presentation*



Location of Phanagoria on the Taman Peninsula (satellite image)

Phanagoria, an ancient city on the coast of the modern-day Taman Gulf (between the villages of Sennoi and Primorsky), stands out as the real jewel among other archaeological sites in Kuban, or anywhere in Russia. The city survived for more than 15 centuries. In classical antiquity, it was surrounded by thick defensive walls, and overall looked like a typical Greek *polis* – with its large public buildings, squares with temples and fountains, marble statues, and comfortable sturdy houses.

During its lifetime, from the mid 6th century BC to the early 10th century AD, Phanagoria witnessed a great many historic events, often of supra-regional importance. Its name has not been lost in the mists of time. One may recall the Phanagorian Grenadier Regiment, a distinguished military unit of the Imperial Russian Army, which was raised by the most renowned Russian general A.V. Suvorov. Phanagoria is still remembered in Bulgaria as the first capital of the Bulgars, whence they departed for their new home in the Danube basin.

Despite the past 80 years of systematic research, the site of Phanagoria remains largely underexplored due to its great size and the thickness of its cultural layer.

Phanagoria's brilliant research prospects called for action. Investigations accelerated greatly in 2004, when the Phanagorian Expedition of the Institute of Archaeology at the Russian Academy of Sciences started to receive regular financial support from the *Volnoe Delo* charity foundation established by the Russian businessman and philanthropist Oleg Deripaska.



HISTORY OF PHANAGORIA

lonia, with its vast stretches of fertile land and plenty of other resources, justly enjoyed the reputation of being the richest part of the Greek *oikoumene*. A lot of cities founded on the Aegean coast of Asia Minor naturally became prosperous and hummed with life.

In the 7th century BC, however, troubles began. The danger came from the east, where the kings of Lydia, set on expanding their power, were obviously entertaining aggressive designs against their Hellenic neighbours. In the next century, Lydian attacks were followed by the massive Persian invasion.

Faced with the risk of losing their land and becoming slaves of the barbarians, many of the Ionian Greeks were forced to escape to the newly-founded colonies in the Mediterranean and on the shores of the Black Sea (Pontos).

Central part of Phanagoria viewed from Mount Maiskaya



The *poleis* of Phokaia and Teos were among those who on no account were ready to give up their freedom. Rather than submit to Persian rule, all the inhabitants preferred to abandon their native cities and retrieve overseas. Herodotos reports: “The Teians did the same things as the Phocaeans: when Harpagus had taken their walled city by building an earthwork, they all embarked aboard ship and sailed away for Thrace. There they founded a city,

3D landscape model and the boundaries of the Phanagoria city-site

*Aerial view of Phanagoria
(with two excavation sites in the centre)*





Fragment of a marble relief featuring maenads. Found in the Phanagorian chora. 1st century AD

Rare painted tombstone of the Ionic type placed over a grave of one of the first colonists in Phanagoria. Limestone. Late 6th – early 5th century BC

Abdera (Herod. I. 168. 1, translated by A.D. Godley). For some unknown reason, Herodotos did not mention the second Teian colony, Phanagoria, established at the same time as Abdera – the fact known from other literary sources. Thus, according to Arrian, this colony had an eponymous founder, Phanagoras of Teos, who had fled “the insolent might of the Persians”. Phanagoras was an *oikistes* – a leader of colonists invested with dictatorial powers to guide the fledgling settlement through its hard early years. After death, the *oikistes* would be awarded a hero cult – annual public commemorations through heroic ritual.

Unlike the Mediterranean coast, up to the beginning of the 6th century BC the shores of the Black Sea had remained virtually unsettled by the Greeks. The first Hellenic colonies on the Taman Peninsula appeared only in the 570s BC. It was here, on the small stretch of land between the Black Sea and the Sea of Azov, that the Teians selected the location for their new home, Phanagoria. The event took place circa 540 BC. Fertile Taman soils favoured a varied and productive agriculture, including grain production.





*Bone tessera – a token used as
a theatre ticket.
First centuries AD*

In the 4th century BC the yield of grain crops was such that a large part of it could be exported to Athens, which is attested by Demosthenes and other ancient authors. Apart from its rich soils, the Taman Peninsula welcomed the colonists with plenty of fish (including sturgeons), birds, wild animals, and fresh water supply.

P.S. Pallas, a member of the St. Petersburg Academy of Sciences, putting together his *Travels through the Southern Provinces of the Russian Empire in the Years 1793 and 1794* described the lands on the shores of the Kerch Strait as follows: "In the Bosphorus [the Kerch Strait], and along the whole coast, the fishery is very profitable, particularly for the different species of sturgeon: they are caught in great quantities with nets and lines, as well as by means of a cord to which hooks are attached, so as to float on the water. Such is the principal employment of the [modern] Greeks of Kertsh, who frequently take from three to four hundred thousand ocka, or from twenty four to thirty poods of fish [1 pood = 16,38 kg = 36,11 lb], in one year. The transparent red backs, termed *Balyki*, and the bellies of these fish, called *Töshi*, cut in slices, then sprinkled with a little salt-petre, and dried in the air, are, notwithstanding their difficult digestion, in great request, particularly in Russia and in the Islands of Greece, where they are eaten on fast days. When they have been repeatedly washed and rubbed over with fresh oil, they may be kept in an open shady place for a number of years, and are then held in still greater estimation... The soil, however, is exceedingly fertile, and well adapted to every purpose of husbandry. There is likewise plenty of game; though pheasants, which were formerly numerous, are now become less frequent; but of fish there is great abundance. With better management, the country would afford most excellent pasture for cattle".

The combination of the favourable natural conditions with the achievements of the Greek civilization allowed the colonists to maintain a high standard of living and soon turned Phanagoria into a key cultural and economic centre of the Black Sea Region. The city survived for about 15 hundred years, and perished in the wake of some enemy attack in the 10th century AD.

Throughout its history, Phanagoria knew alternating periods of prosperity and decline, often being involved in the most significant events that unfolded in the region. During the so-called "Greek period" (6th–1st centuries BC), the city thrived on agriculture and craft production, as well as on overseas commerce. Goods were imported to Phanagoria from all the corners of the Mediterranean. The urban area was carefully arranged. There were imposing public buildings, including temples made of marble, and large, comfortable houses. The streets were paved with stones and pottery sherds, and there is also evidence of public water supply and sanitation. Ships from all over the Greek *oikoumene* called at the Phanagorian port built on the coast of what is now the Taman Gulf. In the late 5th century BC, Phanagoria became part of the Bosphoran Kingdom, though it did retain much of its *polis* (state) autonomy.

At the very end of the pre-Christian era the city was sucked into a whirlpool of dramatic events: military conflicts, falls of dynasties, profound changes in the economic structure of ancient society. Thus, in the 1st century BC Phanagoria rose in revolt against Mithradates VI Eupator, the great king of



Jewish tombstone with the images of the menorah (seven-branched candelabrum), shofar (ram's horn) and lulav (palm branch). First centuries AD

Pontos, who was engaged in a continuous struggle with Rome. When he was at last defeated, Mithradates is alleged to have attempted suicide by poison. This attempt failed, however, and so he requested his slave to kill him by the sword. A marble tombstone of Hypsikratia, wife of King Mithradates, found during excavations at Phanagoria is a unique document attesting the authenticity of the story. Hypsikratia died during Phanagoria's revolt against Mithradates in 63 BC. The inhabitants of the city lay siege to the acropolis and took Mithradates' children prisoners (they were handed over to Rome later on). As a reward for loyalty, the renowned Roman general Pompey granted Phanagoria independence.

The beginning of the Common Era was a time of peace and relative prosperity all over the Bosporan Kingdom, including Phanagoria. The stability proved short-lived, however. There is evidence of destruction wrought upon the city by some local tribes in the 3rd century AD. Though the enemy was driven away, yet more troubles were ahead. In the 4th century AD Phanagoria was sacked and completely destroyed by the Huns, who had invaded the Pontic steppes from Northern China. This tragic event marks the end of classical antiquity in the region. During the Middle Ages, Phanagoria (together with well-known Tmutarakan located 25 km away) served as an administrative centre of the Khazar Khaganate – a powerful state that stretched over a vast territory between the Volga and the Dnieper rivers.

Phanagoria was once home to the deposed Byzantine Emperor Justinian II, who reigned in Constantinople from 685 to 695 and again from 705 to 711. Justinian was the first emperor to include the image of Christ on coinage issued in his name. Theophanes the Confessor, a Byzantine chronicler, in his *Chronography* gives the following account of what happened in the year 704 AD: "Justinian, who was in Cherson, declared that he intended to become Emperor again. The property-owners there were afraid of danger from the Empire; they planned to kill him or send him to the Emperor, but he learned of this and was able to escape. He fled to Daras and asked for an interview with the Khazar Khagan. When the Khagan learnt of this he received Justinian with great honor and gave him as a wife his own sister Theodora.

After a short time Justinian went down to Phanagouria to make his home there, as the Khagan had asked of him. When Apsimaros heard about this he sent a message to the Khagan promising to give him many presents if he

*Detail of a marble cornice
that crowned a public building.
4th century BC*





Part of a necklace, an engraved gemstone featuring a goddess with Eros. Carnelian, gold setting. 1st century AD



Gold ring set with a carnelian gemstone from the Phanagorian necropolis. 5th century AD



Gold garment plaque featuring an eagle. 1st century AD



Gold pendant earring with a figure of Eros. 3rd century BC

would send Justinian alive: or if not, his head would do. The Khagan yielded to this request and set guards on Justinian, under the pretext of preventing plots against him by men of his own nation. The Khagan ordered Papatzun (who was going to Phanagouria from his court) and Balgitzin (the governor of Bosporos) to kill Justinian when asked.

One of the Khagan's house-slaves told this to Theodora, and it became known to Justinian. He summoned Papatzun to visit him at his own residence, strangled him with a cord, and dealt with Balgitzin in the same way. Then he immediately sent Theodora back to Khazaria, while he himself secretly fled to Tomi. He found a merchantman which had just been fully loaded, boarded it, and sailing past Assada, came to Symbolon near Cherson... He escaped the heavy sea without harm and entered the Danube River. He sent Stephen to Trevel the lord of Bulgaria to gain his support for Justinian's reconquest of the Empire of his forefathers" (*The Chronicle of Theophanes*. Edited and translated by H. Turtledove). In the following year, with the help of Bulgars and Slavs, Justinian took Constantinople and regained the imperial power.

In the 7th century, Phanagoria served as the capital of Great Bulgaria. It is from here that khan Asparukh set off for the Danube, leading his people to a more secure home in the northeastern Balkans.

We have evidence that Christian and Jewish communities appeared in Phanagoria at a very early date. It is often claimed that Saint Andrew



Cast bronze pendant with a herm in the centre standing on a deer's head, two bulls' heads on the sides, a boar's head and a snake above, and an eagle on top of the whole composition. From a burial of the 1st century AD



*Bronze statuette of a syncretic deity
identified as Zeus-Asklepios.
2nd century AD*

the Apostle (*Protokletos* in the Orthodox tradition) preached as far as the southern borders of modern-day Russia. Whatever the case, when Christianity had been made the state church of the Roman Empire in the 4th century AD, its influence in the Greek colonies on the Black Sea definitely increased, and extended even further, over the peoples of the North Caucasus. Metropolitan Macarius in his voluminous *History of the Russian Orthodox Church* spoke of the existence of the Phanagorian eparchia (diocese), which may well have been established as early as the 4th century AD. The presence of the Christian community in Phanagoria is also attested in the archaeological record. Thus, excavations at the acropolis have yielded ceramic plates featuring the Christian cross.

The traces of the Jewish culture include finds of tombstones with carved images of the menorah, a seven-branched candelabrum, and the evidence from inscriptions with references to the synagogue, which appeared in the city no later than 16 AD.

Phanagoria's long history mirrors many of the events that shaped the development of the region currently known as Southern Russia.



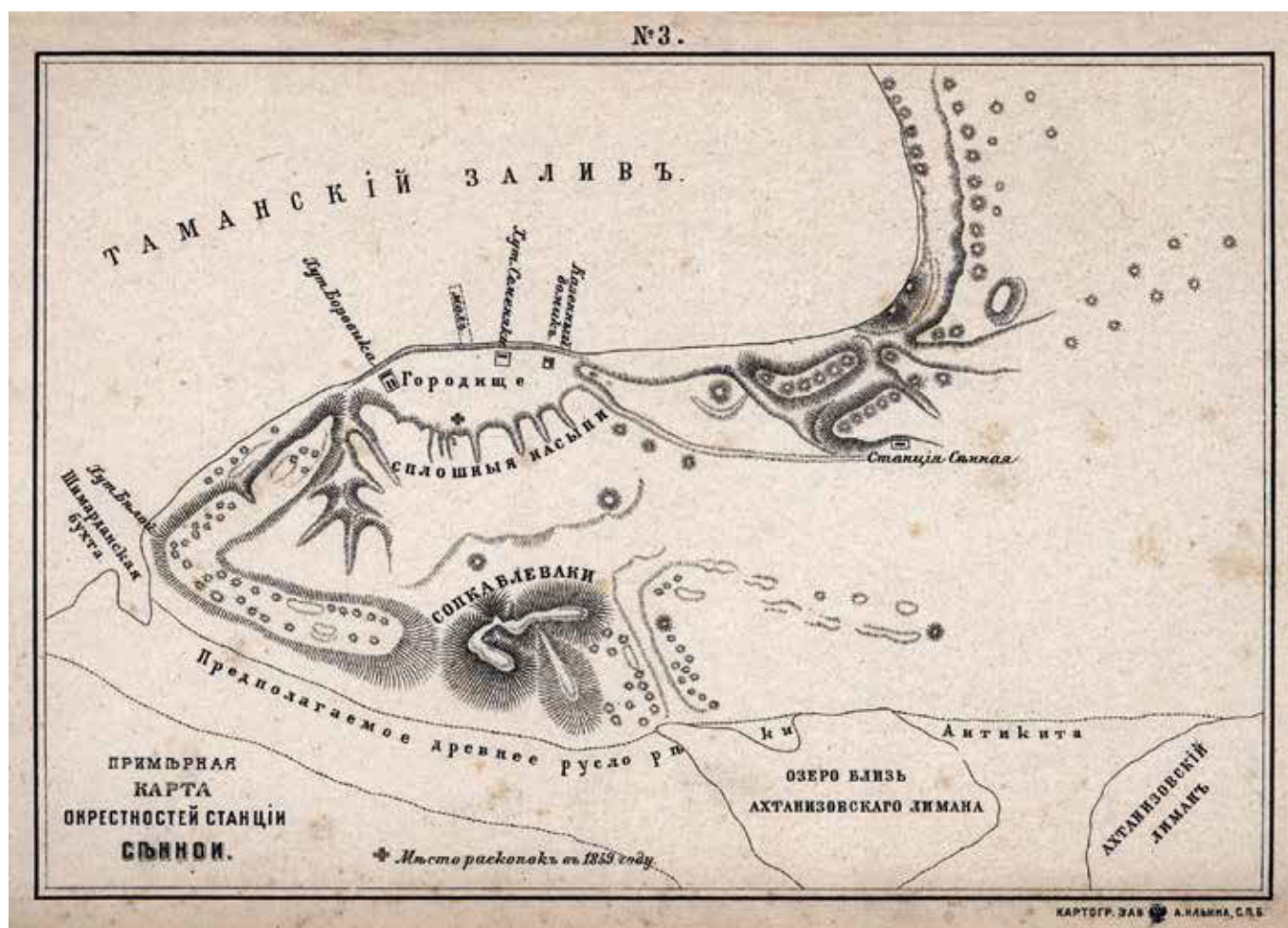


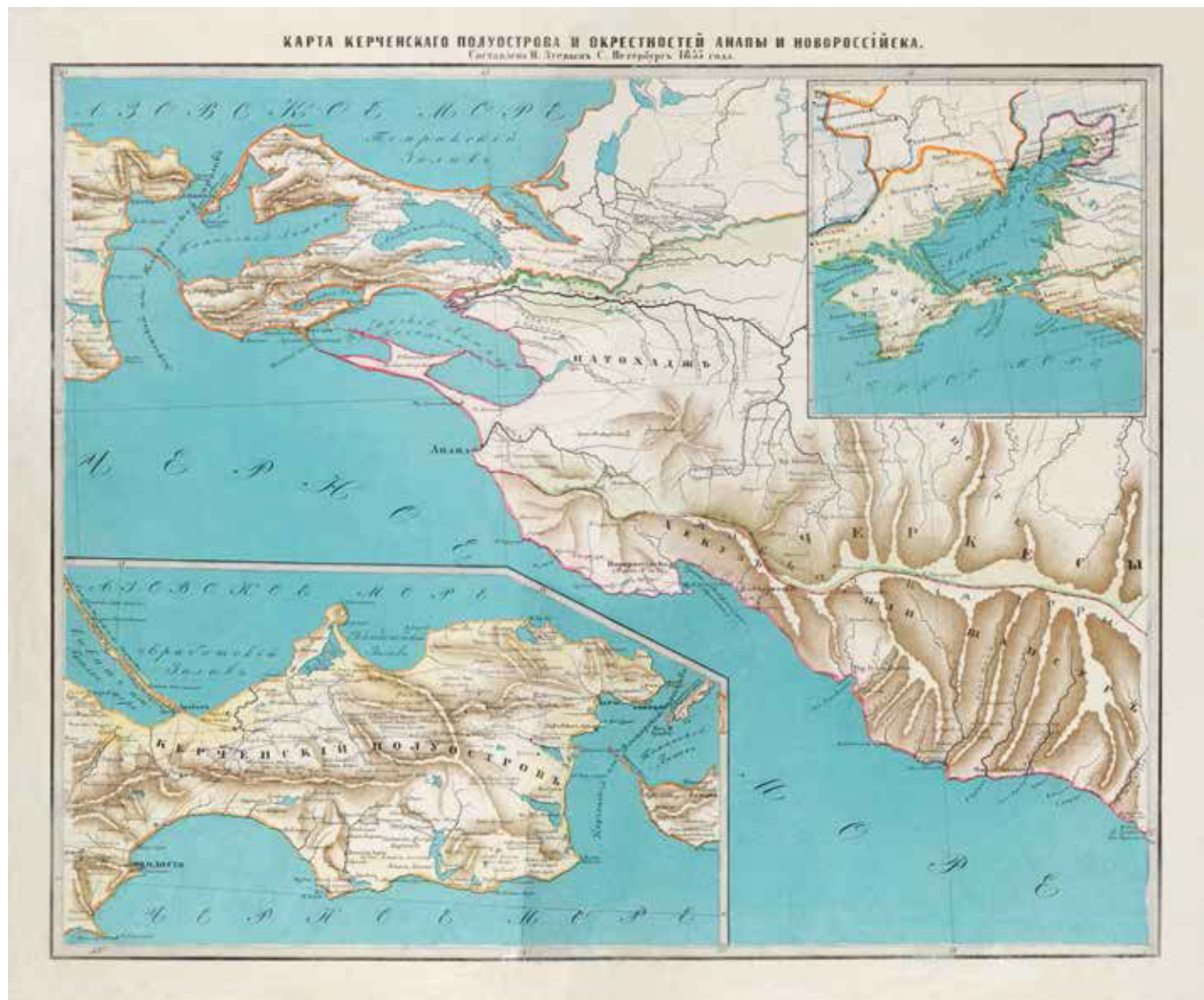
HISTORY OF INVESTIGATIONS AT PHANAGORIA

As early as the 18th century, European visitors to the Taman Peninsula correctly identified the ruins near the post-station of Sennaya as those of ancient Phanagoria. Later on, when the peninsula had become part of the Russian Empire, its plentiful antiquities could not but attract immediate attention of Russian intellectuals. It was General Van der Weide, a military engineer, who became the pioneer explorer of the Phanagorian necropolis. In the late 18th century he investigated one of its largest mounds, where he uncovered a stone burial chamber with two compartments. Unfortunately, most of the grave goods were looted by the soldiers who took part in the excavations.

In 1836, investigations at the Phanagorian necropolis came under the supervision of A.B. Ashik, Director of the Kerch Museum of Antiquities, who

19th-century plan of Phanagoria





was succeeded by D.V. Kareisha in 1839. Both men are ill-famous for their faulty excavation techniques, which later received sharp criticism from K.K. Goertz, the author of the first historiographic essay about archaeological investigations on the Taman Peninsula. Excavations in the region were obviously of secondary importance for them, since their main interests were centered on Kerch. As Goertz has it, Ashik seldom appeared in person at the excavation sites in Taman, having entrusted all the work to “some young Greek”. The excavations were conducted “carelessly and in haste, a mound that failed to yield spectacular finds at once would be left understudied... The work was driven solely by the lust for gold... Ashik made but cursory visits to the sites and disappeared again. It was not infrequent that the artifacts would make their way to foreign museums”.

Kareisha's methods were even worse. “This first period of the government-supervised excavations on the Taman Peninsula is marred by the almost total absence of proper field notes and excavation reports...” Over 30 mounds could be subjected to investigation during one field season.

*Map of the Taman Peninsula,
19th century*



M.M. Kobylina on the excavation site at Phanagoria (1960s)



V.D. Blavatsky handing over the leadership of the Phanagorian Expedition to M.M. Kobylina (1947)

M.M. Kobylina led the Expedition for many years (1920s)

Explorers of Phanagoria: V.D. Blavatsky (in the centre), T.V. Blavatskaya (behind), and M.M. Kobylina (the first person on the left). 1950s?

In the second half of the 19th century, a lot more archaeologists were engaged in excavations of burial mounds in different parts of the Phanagorian necropolis. The work done by K.R. Begichev, K.K. Goertz, A.E. Lyutsenko, V.G. Tiesenhausen, I.E. Zabelin, N.P. Kondakov, S.I. Verebryusov, K.E. Dumberg revealed various types of burial structures. Among the most impressive achievements of that period were the investigations of two large mounds located on top of the dividing range of hills to the south of Phanagoria (the Big and Small Bliznitsa). These sites yielded some truly remarkable pieces of ancient jewellery, currently kept at the State Hermitage.

19th-century excavations at the city-site were not as vigorous and large-scale as those conducted at the necropolis. The work was concentrated mainly on the slope of the upper plateau, where the traces of numerous trenches are still visible today, as well as on the lower plateau. Excavations at the city-site began after 1853, spurred by the discovery of a dedicatory inscription to Aphrodite Ourania. Throughout the second half of the 19th century investigations were carried out by K.R. Begichev, K.K. Goertz, Ya. M. Lazorevsky, A.E. Lyutsenko, V.G. Tiesenhausen, I.E. Zabelin, S.I. Verebryusov.

The focus of the research was on the highest hill in the centre of the upper plateau, and the area nearby. The methods used included digging trenches of varying lengths and widths, running in different directions. As a result, the hill – apparently the acropolis, with the earliest cultural levels dating from the time of the city's foundation – was damaged considerably. Deplorable in itself, this fact is further aggravated by the absence of adequate records of the work performed. For example, excavation practices adopted by I.E. Zabelin, a famous Russian historian, are described as follows: "Mr. Zabelin undertook to examine as much area as possible, both in the upper and lower parts of the city, and to that end he first dug a number of trial trenches 1 sazhen [= 7 ft = 2 m 13 cm] deep, and 1 sazhen wide. Then, having failed to reach the virgin soil, he ordered to dig 3 to 4 arshins deeper [1 arshin = 2 ft 4 in = 0,71 m] ... Sometimes removing up to 7 arshins of cultural deposits was not enough to expose the virgin soil. It was impossible to proceed yet deeper, however, for there was no room for the spoil [excavated soil], or the workers started

*View of the acropolis and the lower plateau of the city-site.
Watercolour by K.K. Goertz. 1859*



to demand a two- to threefold payment increase, which was unthinkable... Such trenches, with a total length of 500 sazhen, revealed building remains only in one place, almost in the centre of the city, on the hill, at a depth of 5 arshins, where parts of ancient foundations and a number of marble blocks were exposed lying above the virgin soil”.

It comes as no surprise, therefore, that V.D. Blavatsky was rather harsh evaluating the work of his 19th-century predecessors. He wrote: “Investigations at Phanagoria... were often large-scale, the emphasis clearly being on mound excavation. Wide areas were also uncovered at the city-site, though due to the unsystematic nature of excavations and the lack of proper records all the efforts virtually came to naught in terms of their historical value. The evidence then obtained is highly fragmentary, for the excavations were aimed not at the scientific study of the site but rather at extracting curios... Fortunately, while excavating the mounds the archaeologists did keep some records, often fairly detailed ones, and even provided some plans and drawings, which can now give us a basic idea about the Phanagorian necropolis, with its numerous burial structures ranging from mud-brick tombs covered with wooden logs to magnificent stone burial chambers... Still, despite the lengthy period of excavation at Phanagoria, there is a whole array of important questions that have yet to be answered. The primary task is to determine the boundaries of the city (and how they were changing over time), examine the cultural layer in different

*Coastal landforms at Phanagoria.
Watercolour by K.K. Goertz. 1859*



parts of the site, and, last but not the least, conduct wide-scale investigations at the necropoleis and the area outside the city limits”.

Scientific archaeological excavations at Phanagoria began in 1936, when a joint expedition was launched by the Pushkin Museum of Fine Arts and the State Historical Museum, in cooperation with the Academy of Architecture, Moscow State University and Moscow Institute of Philosophy, Literature and History. The expedition led by A.P. Smirnov and V.D. Blavatsky carried out extensive pre-planned investigations during two field seasons. In 1938–1940, the work was continued by the Phanagorian Group of the Bosphoran Expedition headed by Blavatsky solely. The archaeologist chose to concentrate his attention on the coastal zone of the city-site and – to a lesser degree – on those parts of the Western and Eastern necropoleis which were nearest to the city. As a result, the western, eastern and southern boundaries of Phanagoria were defined, and the entire sequence of cultural layers was exposed and securely dated. Despite all the difficulties, the expedition managed to examine an area of about 1500 square metres at the city-site, and up to 1000 square metres at the necropoleis. M.M. Kobylina later recounted those times in her memoir: “Given the shortage of funds and the lack of transport, the work done by the expedition was truly heroic”.

After the end of the Second World War responsibility for the excavations at Phanagoria was assumed by the Institute of Archaeology at the Russian Academy of Sciences. In 1947–1975, investigations were conducted

Modern view of the Phanagorian coast



*Mid 19th-century view of Phanagoria
from the Eastern necropolis.
Watercolour by K.K. Goertz. 1859*





St. John's Point 1859.





in cooperation with the Pushkin Museum of Fine Arts under the supervision of M.M. Kobylina. The focus of attention then was on the excavation sites named “Kerameikos” and “Central”. It appeared that a whole specialized district of pottery workshops had existed on the south-eastern outskirts of Phanagoria. Excavations at the “Kerameikos” revealed a number of kilns, where different types of *amphorai*, jugs, oil-lamps, and ceramic weights had been fired in the 3rd–4th centuries AD. Some evidence of ceramic production dating from the earlier periods (remains of kilns, pottery waste, oil-lamp moulds) was also found. Kobylina’s assumption as to the specialization of the district proved correct in the 1980s – early 1990s, when yet more investigations were conducted in the south-eastern part of the city-site. Apart from the traces of pottery production, the expedition uncovered remains of Phanagoria’s fortifications: a stone foundation of a defensive wall and one of the city’s entrance gates.

In addition to the exploration of the city-site, the expedition led by M.M. Kobylina carried out systematic excavations at the Phanagorian burial grounds. The Eastern necropolis received most attention – largely because in the early 1960s it was threatened by the construction of an asphalt road, which called for rescue excavations. A sanctuary of a female deity uncovered at the top of Mount Maiskaya yielded plentiful terracotta figurines – apparently offerings – dating from the 6th–3rd centuries BC.

From 1979 to 1991, large-scale excavations were undertaken on the southern outskirts of Phanagoria, along the planned pipeline route leading to the wastewater treatment plant of the “Fanagoria” wine factory. This arduous work was directed by V.S. Dolgorukov. The trench 570 m long and 5 m wide

Gold kalathos (headdress) decorated with relief figures of barbarians fighting griffins. Mound of Big Bliznitsa (19th-century excavations). 4th century BC

Clay vessel shaped like a sphinx (from 19th-century excavations at the Eastern necropolis). Athens. 4th century BC





*Gold bracelets with figures of lions
on each end. Mound of Big Bliznitsa
(19th-century excavations).
4th century BC*

*Gold torque (neck ring) with the images
of animals. Mound of Big Bliznitsa
(19th-century excavations).
4th century BC*

had a total area of over 3000 square metres and revealed layers dating from the early 5th century BC till the end of antiquity. The archaeological record contained numerous building remains of various epochs, including those of a public building with stuccoed walls, a small temple in antis, a so-called “house of a grain trader”, a winery, mud-brick dwellings of the Hellenistic time, and a multilayered street pavement of the 4th century BC leading out of the city towards Mount Maiskaya. Of special note are several archaic burials (6th century BC), previously unknown at Phanagoria, a 5th-century BC coroplast’s workshop, and some evidence of bronze casting.

At present, the site is under study by the Phanagorian Expedition of the Institute of Archaeology. Investigations under the direction of V.D. Kuznetsov are conducted in the territory of the city-site and its necropolis, as well as in the submerged part of the city and the rural area of the Phanagorian *polis*.



PHANAGORIA NOWADAYS

No visitor to the eastern part of the North Black Sea Region can fail to notice its distinctive character, so different from that of the Mediterranean. Located far from the main centres of classical civilization, the Northern Pontos – with its harsh climate, wide open spaces dotted with *kurgans* (burial mounds) that evoke thoughts of Scythian treasures – clearly stands out from the rest of the Greek world. Hence, many of the scholars and laity alike do not acknowledge the need to view the history and material culture of the Hellenic cities on the North Black Sea coast within the broader context of classical civilization. This approach can hardly be justified, though.



Geographically, the Bosporan Kingdom – a state that emerged on the periphery of the Greek world in the 5th century BC – covered the territories on both the European (the Kerch Peninsula) and the Asiatic (the Taman Peninsula and the vicinity of modern Anapa) sides of the Kimmerian Bosphoros (today the Kerch Strait). According to Strabo, a great ancient geographer, Phanagoria was the most important city in the Asiatic part of the Kingdom (“the *metropolis* of the Asiatic Bosporans”). Once among the largest ancient centres of the North Black Sea Region, Phanagoria is now considered one of Russia’s most notable archaeological sites dating from the period of classical antiquity.

Phanagoria is situated on the southern coast of the Taman Gulf, close to its south-eastern corner. The city-site has a rectangular form and lies on two plateaus. The lower one runs down to the gulf and ends at a small cliff; the upper plateau contains the larger part of the settlement. On the east and west, the site is hemmed in by deep ravines, which were used as natural defences (it was here that the city walls were built). Underwater investigations conducted by V.D. Blavatsky in the late 1950s showed that in antiquity the

*Helicopter view of Phanagoria
and its vicinity from the village of Sennoi*





Panoramic view of Phanagoria

coastline lay some 220–240 m further north. About a third of the city's territory is currently submerged by the sea.

Phanagoria is surrounded on three sides by a necropolis, the largest on the Taman Peninsula. Since ancient times, travellers and scholars have remarked upon its great size. As appears from the contemporary research, the necropolis occupied an area of no less than 850 ha and consisted of many hundreds of burial mounds.

The Eastern necropolis – which stretches from immediately behind the city walls for 2–3 km – contains mounds built partly on the flat plateau, partly on natural hillocks. Many of the tumuli were leveled down in the 19th century, when the large-scale excavations in the area were underway. The mounds are located along the ancient road (its portion is still in use today) that led out of the city's eastern gate and ran parallel to the shoreline.

The Western necropolis, also along the coast, reaches over a distance of about 2 km. The Southern necropolis extends several kilometers southward from the city, beyond Mount Maiskaya. It came to be known as "Kurgan Alley" – a double row of mounds flanking the old road which led to the southern gate of the city.

Phanagoria is different from many other ancient settlements in that it is located some distance away from the modern built-up areas. After life ceased in the city, its territory has escaped any development – the fact that allows all kinds of scientific projects, even the most ambitious ones, to be carried out at this unique archaeological site.

Even today, the boundaries of Phanagoria, including its submerged part, are visible as surface features. There existed at least four city gates (eastern, southern, south-western, and western), and a whole network of streets, the most important of which can be traced through ground irregularities on the territory of the city-site. They also readily reveal themselves on aerial photographs and space images. One of the streets ran north to south, from the shore of the Gulf (presumably, from the port) to the southern gates. Another arterial road crossed the upper plateau in the east-west direction. The centre of the city-site was occupied by the acropolis (citadel). Built at the edge of the upper plateau, it was a true stronghold, naturally protected by the steep slopes on the north and east and encircled by a fortified wall. The acropolis was home to public buildings and temples dedicated to different deities, and served as the centre of political and social activity. Phanagoria may well have had a theatre, since it was an integral element of the Greek lifestyle – not only



a performance venue, but also a meeting place of the *ecclesia*, an assembly of citizens that had final control over the policy of the city-state. Unfortunately, the Phanagorian theatre has not yet been found. This is certainly no accident, given the shortage of building material on the Taman Peninsula: throughout the centuries the ruins of ancient Phanagoria served local inhabitants as a kind of stone quarry.

Panoramic view of Phanagoria

The Phanagorian port welcomed merchant ships both from the Pontic cities and many of the *poleis* in the Mediterranean (Miletos, Athens, Chios, Thasos, Lesbos, Klazomenai, Herakleia, Sinope, and others). As previously mentioned, a part of the city is now covered by the waters of the Taman Gulf. The excavations in the submerged sector have revealed remains of port structures, city walls, and cultural deposits dating from various periods of Phanagoria's history. It has been estimated that the city at its greatest extent occupied a total area of no less than 60–65 ha, about 20–25 ha of which are currently submerged. Phanagoria thus ranks among the largest cities not only in the Pontos, but in the Mediterranean as well; all the more so when taking into account its suburban area located just beyond the southern border. The size of Phanagoria surely can not match that of Athens, Syracuse, Akragas, Alexandria, or other leading centres of classical civilization. There exist different examples, however. Thus, Massalia (modern-day Marseilles), an important city of the Western Mediterranean, is known to have occupied an area of 50 ha.



EXCAVATIONS AT THE CITY-SITE



*V.D. Kuznetsov,
the head of the Phanagorian Expedition*

Investigations are currently conducted on the highest hill of the upper plateau in the central part of ancient Phanagoria. The total area of the “Upper City” excavation site amounts to 2550 square metres. Accumulated cultural deposits, up to 6 metres in depth, have preserved a record of human occupation dating from about the mid 6th century BC to the 9th century AD.

Whether the cultural strata of a given site will survive in a good state of preservation depends on many factors. At Phanagoria, the cultural layer had been strongly disturbed by intensive building activity and urban re-planning aimed, among other things, at remedying the destructions brought about by enemy attacks, fires, and other dramatic events that abounded in the city’s history. Thus, in one of the excavated sectors layers dating from the 1st century BC were found directly overlying 4th-century BC deposits. The immediate conclusion was that layers of the 3rd–2nd centuries BC had, for some reason, been destroyed at a later date. Further excavations revealed



*A.A. Zavoikin,
the deputy head of the Expedition*

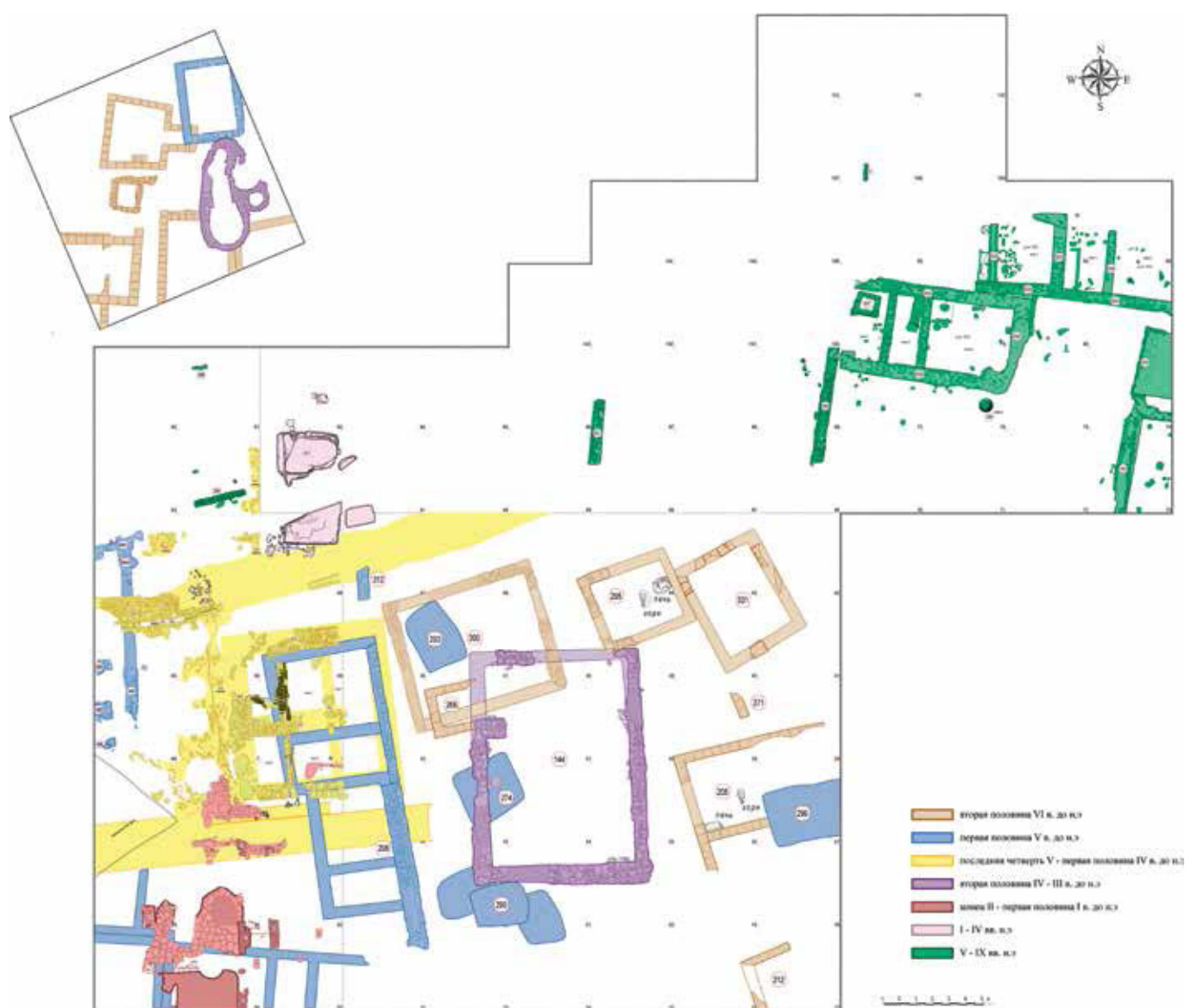


*Photo plan of the “Upper City”
excavation site (2013)*



The "Upper City" excavation site





Plan of building remains dating from different time periods (6th century BC – 8th century AD) at the “Upper City” excavation site

3D reconstruction of a city block (second half of the 6th century BC)

the ruins of a large building – the residence of Mithradates Eupator, ruler of the Pontic Kingdom – gutted by a fire in 63 BC. To all appearance, the layers in question had been dislocated namely through the construction of the royal quarters. As a consequence of the continuous rebuilding, the degree of preservation of Phanagoria's cultural deposits varies greatly from place



House of the Khazar time uncovered at the "Upper City" excavation site. 8th century AD

Winery of the 4th century AD. Lower parts of cisterns used for collecting extracted grape juice



*L.A. Golofast,
a mediaevalist*

to place. For example, layers of the 3rd–2nd centuries BC and the 1st–6th centuries AD are almost totally missing from the archaeological record of the “Upper City” excavation site. To make up for this gap in our knowledge, investigations should be conducted in those parts of Phanagoria where such layers are much better preserved.

The excavations conducted at Phanagoria in recent decades have yielded important evidence on the life in the city in different periods of its history. During the first five hundred years, Phanagoria looked like a typical Hellenic city, not much – if anyhow – different from other ancient Greek *poleis* in the Mediterranean, with many of which it maintained close political, economic, religious, or even family links. Phanagoria had a uniform plan, its streets oriented to the cardinal directions. There were squares with marble temples, porticoes provided shade during the heat of the day, shops and market places bustled with life. The importance of sanitation was clearly understood: the city had well-organized water supply and waste management systems.

Houses in Phanagoria were made of stone and mudbrick. The predominance of mudbrick as a building material in the early days of Phanagoria’s history comes as no surprise, given the lack of good building stone on the Taman Peninsula. All stone blocks discovered in the layers dating from the 6th century BC had been imported from overseas, mainly from Ionia (modern Asia Minor), as ballast in the holds of sailing ships. The shortage of stone did not prove a major setback for the colonists, though, since the ancient Greeks were true masters of producing a building material from clay.

*General view of the “Lower City”
excavation site*





The "Lower City" excavation site viewed from a drone

Mudbrick structures were fairly durable. Finished with several coats of water-proof plaster (its secret is now lost), a mudbrick house could last for decades. The properties of the material enabled it to store heat in winter and keep the living space cool in summer. As follows from the research, the dwellings of the Phanagorians usually consisted of several rooms and a courtyard, the focal point of domestic life during the warm time of year. The courtyards could also be used for craft production. In the houses dating from the 6th–5th centuries BC the number of rooms ranged from one to four, with an area of 10 to 20 square metres per room. Apart from the traces of archaic dwellings, remains of some public buildings were also present in the lowest layers of the "Upper City" excavation site. One of these buildings dating from the 6th century BC had an area of 75 square metres and was tentatively identified as a temple. The layers of the 5th century BC preserved the ruins of another small mudbrick temple on a stone foundation, as well as the remnants of several public buildings made of stone and coated with plaster.

In the 4th century BC, Greek architecture and urbanism reached their zenith. It was this period in Phanagoria's history that saw the construction of large public buildings, temples, and athletic training facilities (*gymnasion*). Houses were now built not only of mudbrick but also of ashlar, which was brought in from the Crimea and the Caucasian foothills on a regular basis. Streets and squares were paved with stones and pottery sherds. Defensive walls supplemented with towers protected Phanagoria from potential aggressors. One of the public buildings that stood on the *acropolis* had two stories, each with an area of 100 square metres. People would get inside through a colonnaded gateway (*propylaea*). In front of the building there was an open space, paved with sherds. This imposing construction was destroyed by a massive fire dated to around 360–350 BC on the evidence of the stamped



*S.N. Ostapenko,
a post-graduate student at the Institute
of Archaeology*

Grinding stone found in one of the houses dating from the Khazar time

Remains of a house dating from the Khazar time uncovered at the "Lower City" excavation site. 8th–9th centuries AD



amphora handles found in the same archaeological context. Yet its exact function remains unknown.

As time went by (towards the turn of the Common Era), Phanagoria, just like the other Bosporan cities, was becoming increasingly heterogeneous with respect to the ethnic composition of its population. This growing influence of the local cultural and demographic elements, traditionally termed as “barbarization”, resulted in a gradual loss of Greek culture. Buildings were no longer being constructed as thoroughly, the ancient Greek language became greatly altered and corrupted, and many of the religious practices and beliefs were also subject to change. Still, there is evidence that a number of traditional Hellenic cultural traits lived on. In particular, this is reflected in a building inscription of 220 AD found underwater, which tells about the restoration of a portico destroyed when Phanagoria had come under some enemy attack.

In 2015, systematic investigations were started at the lower plateau of the city. The total area of the “Lower City” excavation site is 2000 square metres. Its upper cultural layers date back to the 9th–10th centuries AD. In those times Phanagoria was part of the Khazar Khaganate. The archaeological record contains ample evidence for the high living standards in the city. The houses built of stone and mudbrick consisted of two to four rooms (one examined dwelling had as many as five) and an adjacent courtyard with a roofed colonnade. The columns were made of timber and rested on stone foundations. Each house had a cooking area – either a separate room or part of a room partitioned from the rest of the living space. Frequent finds of grinding stones and *pithoi* (large storage vessels) suggest that the households were essentially self-sufficient.

The investigations at Phanagoria have revealed that from the classical period onwards into the Roman and even Khazar times the city blocks were consistently oriented to the cardinal points, the major streets running east-west and north-south (with minor deviations). Phanagoria may well have been laid out according to a uniform plan as early as the time of its foundation, or just a few years/decades later.

A wealth of archaeological material from the city-site attests the typical Hellenic nature of the Phanagorian *polis* throughout antiquity. This finding is of special significance, for there has been a common tendency among the scholars to regard the Bosporan Kingdom as a “Greco-Barbarian” state. However, such an opinion seems to rest primarily on psychological grounds rather than concrete facts. Located at the very edge of the Greek *oikoumene* among numerous barbarian tribes, the Kingdom of Bosporos could not but prompt its researchers to look specifically for the traces of barbarian influence on the life of the Bosporan Greeks.

Thus, V.F. Gaudukevitch, a prominent expert on Bosporan history, once formulated this popular conviction as follows: the Kingdom of Bosporos “quite soon emerged as a mixed Greco-Barbarian state, notable for a particularly high level of interaction between ancient Greek and local components both in socio-economic and cultural spheres” (*The Bosporan Kingdom*, 1949). Yet, this assertion appears largely unsubstantiated, all the more so when viewed in light of the evidence from the Phanagorian city-site. The systematic study



*D. Likhtin,
one of the most experienced field workers
in the Phanagorian team*



*Plan of building remains must be very accurate
(A.A. Zavoikin and A.A. Naumov)*



*A.A. Zavoikin, G. Kamelina
and N. Shuvalova identifying pottery
fragments*



*A.A. Naumov,
the chief architect of the Expedition*



*P.A. Evdokimov,
a historian*



*Excavation of a cellar with amphorai
(V.A. Gorlov)*

*Excavation of an ancient household pit
(N. Kikhaev)*



Training to become an archaeologist

*Fragments of amphorai from the island of Chios
found at the "Upper City" excavation site*



*Students of Kuban State University
near a 9th-century AD pithos*

*V.D. Kuznetsov keeping a record
of building remains*



*Burnt wheat grains from the residence
of Mithradates Eupator (63 BC)*

*Pavement with a drainage pipe.
4th century BC*



of its archaic, classical and hellenistic layers allows us to conclude with reasonable certainty that in the 6th–1st centuries BC the material culture of the city was purely Hellenic. Anyway, a certain number of locals – those indigenous to the North Black Sea area – who might have been present among Phanagoria's population were unlikely to produce any marked effect upon the political structure of the *polis*, or the Bosphoran state in general.



From the time of its founding, Phanagoria maintained regular contacts with the Mediterranean, which is attested by numerous imported artifacts found during excavations. Particularly revealing in this respect are *amphorai*, a key source for studying patterns of trade in the ancient world.

The cities of the Bosporos, including Phanagoria, had strong commercial links with many centres in the Aegean (Chios, Klazomenai, Thasos, Mende and the whole region of North Aegean, Rhodes, Kos, and others), as well as with those on the Black Sea coast (Herakleia, Sinope). As known from classical written sources, in exchange for wine, olive oil, craft products and other goods, the Bosporan cities provided the Mediterranean region mainly with grain. Taking into account the fertility of the local soils, most of the Bosporan grain export must have come from the Taman Peninsula. The Phanagorian rural area (*chora*) was located south of the city, in the valley between two drainage divides. It was surely among the main suppliers of grain to Athens and other Mediterranean cities throughout the 4th–3rd centuries BC and, perhaps, in the subsequent periods.

Jeweller's workshop. A silver melting furnace composed of amphora fragments (6th century BC)

Mortar in a house of the Khazar time

Recovery of coins on the floor of the building identified as the residence of Mithradates Eupator

Coins from the purse lost by the inhabitants of the royal residence (63 BC)

Coins from the purse



UNDERWATER EXPLORATIONS



*S.V. Olkhovsky,
a marine archaeologist*

*Aerial view of the underwater excavation
site*

The submerged part of Phanagoria has intrigued researchers for over a century. Without doubt, the ancient city owed much of its prosperity to its strategic location on the maritime trade route between the Maeotis and the Mediterranean – a fact attested by Strabo in his *Geography*. Intense commercial activity implies the existence of a well-developed infrastructure: a convenient harbour with docks, warehouses, repair yards, and other port facilities. Yet, until recently we were unable to locate the Phanagorian harbour, or even find the northern boundary of the city now hidden under the waters of the Taman Gulf.

The modern coastline of the Taman Peninsula differs greatly from that of the 6th century BC, when the first Greek colonists set foot on this land. As follows from a reliable paleogeographic reconstruction, the Asiatic Bosphoros





then was an archipelago consisting of one big and 2–3 smaller islands in the mouth of the Kuban River. Made up of sand and clay sediments, local soils have always been highly prone to water erosion. Every year the branches of the Kuban wear away their banks and create new alluvial deposits; some have changed the direction of their flow, others have disappeared or become marshy. The river now empties into the sea to the north-east of its ancient delta, and many of the former sea bays and straits have turned into *limans* (enclosed bodies of water) and salt marshes. Thus, fluvial processes combined with constant seismic activity kept shaping the surrounding landscape over the centuries, until the Taman Peninsula emerged in its present shape.

Just like many other Greek *poleis*, Phanagoria – founded on the shore of Lake Korokondamitis (modern Taman Gulf) – was engaged in maritime navigation and commerce. According to several hypotheses, in the 1st millennium BC the level of the Black Sea was 2 to 15 metres lower than today. At the beginning of the Common Era, this drop in sea level (the so-called Phanagorian regression) was followed by a phase of sea level rise, known as the Nymphaean transgression. As a result, a lot of coastal settlements of the Asiatic Bosporos were partially submerged, and Lake Korokondamitis turned into what is now the Taman Gulf.

Our research shows that the sea level at Phanagoria rose by some 2–3 metres at the beginning of the 1st millennium AD. However, the situation in other regions of the Asiatic Bosporos may well have been different. Tectonic shifts in the highly seismic area near the Kerch Strait and major eruptions of mud volcanoes were sure to cause many episodes of localized uplift and subsidence of both the earth's surface and the seabed. Given these circumstances, even submerged ancient wells and wharves can not offer

*A large part of the ancient city
is submerged in the Taman Gulf.
The site of current underwater excavations*



As far back as the 1950s, the Phanagorian underwater team was well-equipped. These historical images captured an underwater camera housing and aqualungs

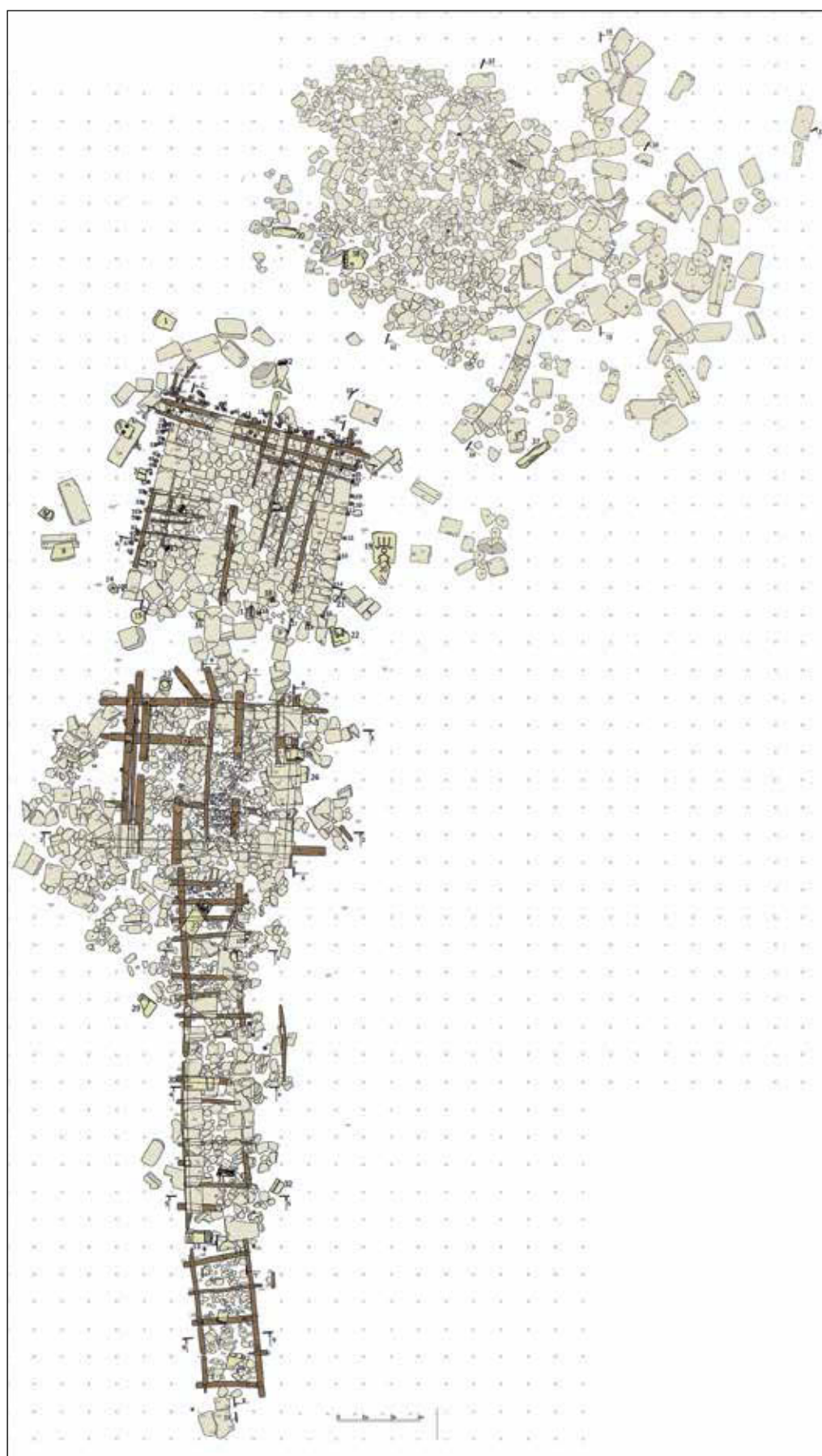
direct evidence about the sea level at the time of their construction: their absolute heights might have changed considerably as a result of these centuries-long neotectonic processes. Anyway, a part of Phanagoria's lower plateau had disappeared under the waters of the Taman Gulf by the 2nd –3rd centuries AD. Since then, the sea level has risen 1–1,5 m more.

To delineate the ancient shoreline at Phanagoria is not an easy task. Due to coastal cliff erosion, large masses of sand get deposited annually on the marine terrace and thus bury yet deeper the submerged cultural remains. The seagrass canopy is so dense that it reflects the signal of an echo-sounder, hindering bathymetric surveys. All these factors make visual detection of underwater features rather complicated, if not impossible.

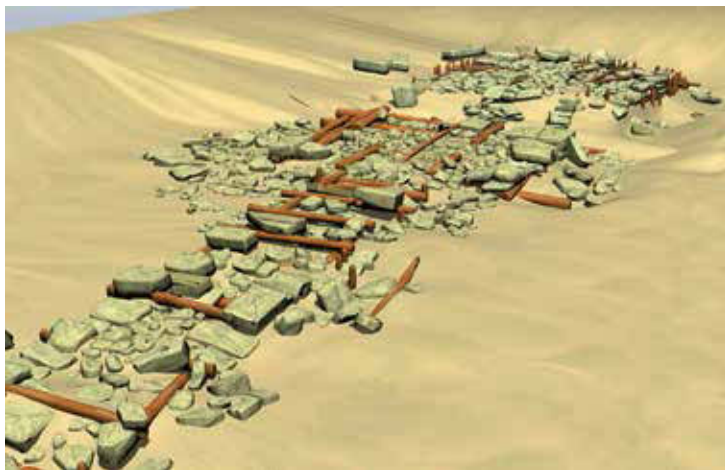
Hence the need for remote sensing – the gathering of data without making actual contact with the objects being studied. The Phanagorian underwater research team currently employs such advanced techniques as high-frequency hydrolocation of the bottom surface, low-frequency profiling of bottom sediments, hydromagnetic survey, and pulsed radar. The acquired data is then analyzed using geographic information system (GIS) technology, which can integrate spatial evidence from a variety of sources within a common reference context. Ultra-high resolution satellite imagery provides the framework dataset that underpins all GIS operations.

Underwater excavation process





*Plan of the underwater
foundation
(numbers refer to the most
important finds)*



3D model of the cribwork used as an underwater foundation for some port structure (supposedly, a pier)



Part of the underwater foundation (3D reconstruction)

Underwater excavations in the submerged part of Phanagoria began in 1999. One of the major results achieved so far is the discovery of a cribwork – a log shell filled with stones and resting of the bottom of the sea. To all appearance, it served as an underwater foundation for some port structure (3rd–4th centuries AD). Various crib-based constructions are known to have been built in many parts of the world from antiquity till modern times. For example, Peter I used cribs for underwater support of the fortifications that surrounded the newly-founded city of St. Petersburg.

Exciting in itself, the discovery of the Phanagorian port structure appeared to be a stepping stone to even more sensational finds. Not only rough, natural rocks filled the space inside the log shell, but there were also reused building blocks, architectural details of different public buildings, as well as funerary *stelai*, fragments of marble statues and their bases, and stones bearing ancient Greek texts. Let us mention just a few of them. For example, one of these inscriptions cut on a large marble building block reads that the Bosporan king Aspourgios dedicated a statue of Eros to Aphrodite Ourania (early 1st century AD). It is not ruled out that this block comes from the



View of the underwater foundation



Upper part of a funerary stele reused for the construction of the cribwork

famous sanctuary of Aphrodite Ourania, the Mistress of Apatouros, mentioned by Strabo. Another interesting find is the marble *stèle* inscribed with an epitaph to Hypsikratia, the wife of the Pontic king Mithradates VI Eupator. Her death was just part of a dramatic story that unfolded in Phanagoria in 63 BC. Appian of Alexandria, a Roman historian of Greek origin, describes these events in his *Mithradatic Wars*. In that year, Phanagoria rose in revolt against Mithradates. The rebellious inhabitants of the city lay siege to the acropolis, where five of the king's children were seeking refuge, protected by the royal garrison. To help the besieged, Mithradates sent his flotilla from Pantikapaion, the capital of the Bosporan Kingdom, but this did not prevent his children from being captured and sent to Rome later on.

In 2008, the excavations in the central part of the acropolis revealed remains of a large building gutted in a huge conflagration. Numerous related finds, including coins from the purses which were either lost or forgotten due to the panic that seized the inhabitants, indicate that the building was destroyed in the middle of the 1st century BC. This means that the uncovered remains belong to the royal residence where Mithradates' family had lived. Thus archaeology has confirmed Appian's account of the Phanagorian revolt. The find of the gravestone bearing Hypsikratia's name leaves no doubt that the brave woman was together with the king's children in that tragic moment. She died during the uprising and was buried in the Phanagorian necropolis. Which is more, one of the warships sent by Mithradates in an attempt to rescue his children has recently been discovered on the bottom of the Taman Gulf (see below).

Such cases when historical accounts of dramatic events come to be supported by a whole body of archaeological evidence are exceedingly rare.

Systematic remote sensing surveys of Phanagoria's submerged part and the adjacent areas began in 2012. The researchers tested the StrataBox sub-bottom profiler (SyQuest Inc., USA) and a marine edition of the ground



Head of a life-size marble statue as found under water



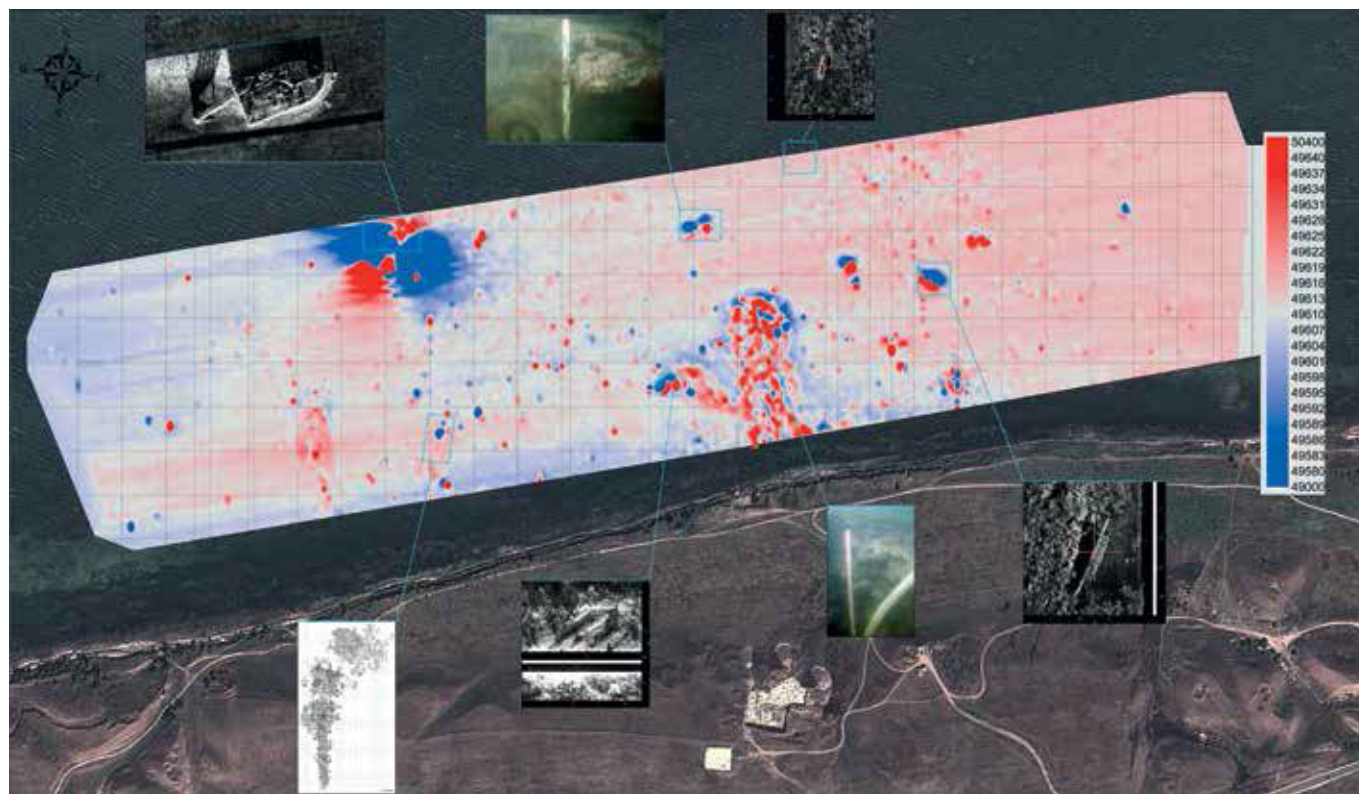
Upper part of a tombstone reused for the construction of the underwater foundation

penetrating radar “Loza” (VNIISMI LLC, Russia), which locates anomalies in bottom sediments by means of radar pulses. Upon the analysis of the survey results, the StrataBox was found capable of creating an adequate profile of upper marine sediment layers (a minimum water depth of 2,5 metres is required). As for the ground penetrating radar – even with new experimental receiving antennae it failed to deliver a high strata resolution.

In the same year, seven underwater test-pits were excavated, one of which – located 120 metres off the modern shoreline – yielded remains of a wooden ship. Further investigations showed that the research team chanced to find not some isolated fragment, but a complete hull of an ancient vessel, measuring 16 metres in length. In very adverse conditions (permanent water turbulence in the Taman Gulf) underwater photogrammetry did help to capture the details of the ship and create a precise virtual 3D replica of this unique find. During the follow-up explorations of 2014, a bronze naval ram was found lying on the seabed 2,5 metres off the ship’s bow. Judging from the star and crescent that appear on this massive artifact (the well-known emblem of Mithradates VI Eupator), the discovered vessel must have been one of the warships sent by the Pontic king from Pantikapaion to quell the Phanagorian revolt of 63 BC.

In 2013, an area of 48 hectares (water depth range 0,7–4,5 m) was subjected to hydromagnetic survey with a line spacing of 5 metres. The equipment consisted of the SeaSPY-1 towed marine magnetometer (MarineMagnetics Corp., Canada) and a variation station based on the MMP-203 proton magnetometer (Geologorazvedka LLC, Russia). The DGPS MAX navigation receiver (CSI Wireless Inc., Canada) allowed a more accurate localization of

Map of anomalous magnetic fields within the submerged territory of Phanagoria





Profiling of bottom sediments (2015)

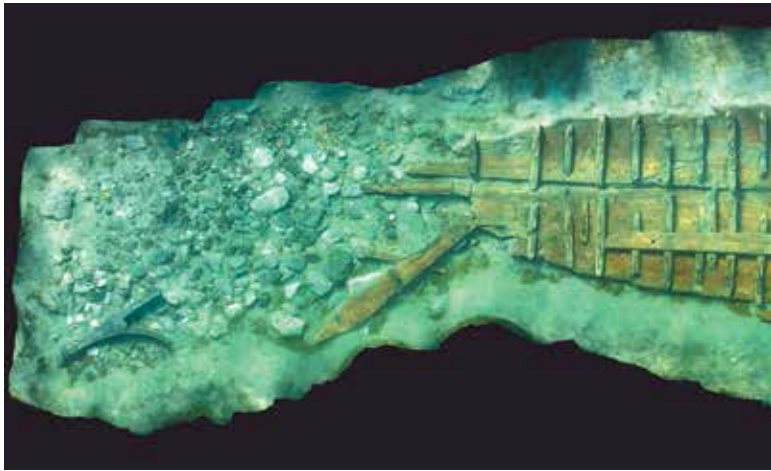


Hydroacoustic survey (2014)

detected anomalies. Eventually, the hydromagnetic survey of the Phanagorian water area revealed numerous local anomalies of varying amplitudes, and 8 anomaly clusters. Some of the large-sized local anomalies detected during the survey appeared to be caused by modern sunken watercrafts, such as a crane vessel, a motorboat, and a steamship. The biggest cluster of magnetic anomalies stretches 170 metres out into the sea at a right angle to the coast. Its area is about 18,000 square metres. Trial excavations in the centre of the northern end of this cluster (a test-pit measuring 2 x 2 m) revealed that a thin layer of sand overlies a structure 2,4–2,5 metres high made of boulders (rounded rock fragments) that vary in diameter from 0,3 to 0,7 m. Several ancient pottery sherds were found among the stones in the



Transducers of the Bathy 2010PC CHIRP sub-bottom profiler



Bronze naval ram, an underwater prolongation of the bow of a warship designed to puncture and sink enemy vessels

Clearing of the ship on the seabed



One of the warships sent by King Mithradates Eupator from Pantikapaion, burnt and sunk during the Phanagorian revolt of 63 BC



upper part of the structure. Its foundation rests on the sterile layer of dense grey silty sand.

The 2015 archaeological season at Phanagoria found the underwater team as busy as usual. Two parametric sub-bottom profilers (SeaKing SBPs from Tritech, UK) were used to conduct yet another remote sensing survey of the Phanagorian water area. The line spacing was now reduced to 2,5 metres. Though the acquired data is still being processed, a number of previously missed anomalies have already been spotted. The excavations of the largest anomaly cluster detected in 2013 revealed the sloping side of the massive stone construction and numerous pottery fragments of the 5th–4th centuries BC, lying both among the stones and underneath, on the ancient bottom surface. At our present state of knowledge, the structure in question can be identified as a long pier or a breakwater. Over time, sea waves must have dragged the stones of its upper part to the east and to the west.

The current tasks of the Phanagorian underwater research team are to draw a comprehensive map of anomalous magnetic fields within the submerged territory of the ancient city and to start their systematic archaeological examination.



NECROPOLIS



*A.N. Voroshilov and O.N. Voroshilova,
archaeologists*

Phanagoria is surrounded on three sides by a necropolis, the largest on the territory of the Asiatic Bosphoros. Based on its location in relation to the city-site, the Phanagorian burial ground is traditionally divided into three parts: the Eastern, Western and Southern necropoleis. The Eastern necropolis stretches from immediately behind the city walls for up to 3 km along the ancient roads and the coast of the Taman Gulf. Many of its mounds – located partly on the flat plateau, partly on natural hillocks – are no longer visible as surface features. A part of the Eastern necropolis lies within the built-up area of the modern-day village of Sennoi. The Western necropolis, also along the coast, reaches over a distance of about 3 km to the village of Primorsky. The Southern necropolis extends several kilometers southward from Phanagoria. It is often referred to as “Kurgan Alley” – a double row of mounds flanking the old road which led to the city’s southern gate. Besides, the majority of natural elevations and the intermound spaces in the necropoleis are occupied by so-called “grave fields”.

The absence of any modern buildings on the greater part of the Phanagorian necropolis facilitates wide-area archaeological investigations. Indeed, the site has been the subject of extensive research for a fairly long time. It is without doubt that a necropolis of this size, containing thousands of burials, can yield plenty of revealing insights into the history of the city and the life of its inhabitants.



*Mounds of the Eastern necropolis
stretching along the Taman Gulf coast
(19th-century drawing)*



Excavations at the necropolis have a history going back many centuries. Both professional archaeologists and amateurs, “lovers of antiquity”, have put in a great deal of their time and effort to explore this unique site. Long ago travellers and scholars noticed its great size – an uncommonly large number of mounds surrounding the ruins of the ancient city. It comes as no surprise, therefore, that the first excavations at Phanagoria were those of its necropolis.

The Genoese were extracting valuable artifacts from the Phanagorian mounds as far back as the 13th–15th centuries. Regular investigations, though in the limited sense of the word, began only in the second half of the 18th century, when the Taman Peninsula had been declared part of the Russian Empire. The ruins near the post-station of Sennaya caught attention of General Van der Weide, a military engineer, who is now considered the first man to have conducted excavations at the Phanagorian necropolis. In the late 18th century he examined one of its largest mounds, where he uncovered a stone burial chamber with two compartments. Unfortunately, most of the grave goods were looted by the soldiers who took part in the excavations. Throughout the 19th century, investigations at the necropolis were carried out by numerous archaeologists (A.B. Ashik, D.V. Kareisha, K.R. Begichev,

*Excavations at the Eastern necropolis
viewed from a drone*

K.K. Goertz, A.E. Lyutsenko, V.G. Tiesenhausen, I.E. Zabelin, N.P. Kondakov, S.I. Verebryusov, K.E. Dumberg), their main goal still being the search for spectacular works of ancient art that could add to the splendor of the Imperial Hermitage.

Starting from 1936, responsibility for the excavations at the necropolis passed on to the expedition led by V.D. Blavatsky. In 1947, the work continued under the direction of M.M. Kobylina (until 1975). From 1979 to 1991, excavations were conducted at the Eastern and Western necropoleis (leader – V.S. Dolgorukov), where the archaeologists happened to find several late archaic burials, previously unknown at Phanagoria.

In the late 1990s, the Southern necropolis again received attention. It was under one of its mounds that a truly fascinating discovery awaited the researchers. In 2003, the excavations revealed a unique stone vault with a corbelled ceiling (4th century BC). The structure had a cylinder-like burial chamber which supported a dome-shaped roof made of six rings of stones. Each horizontal layer of stones extended inward slightly farther than the lower one until they met at the apex of the dome. Thick logs placed above the structure helped it withstand compression from the surrounding earth. A long passage (*dromos*), also covered with logs, entered the burial chamber on the north side. No grave goods were found – the vault most likely had been looted in antiquity. Its interior finish was ideally preserved, though. Unfortunately, the high-quality plaster that covered the walls and the ceiling started



Mounds of the Southern necropolis

Before excavations of the mound begin...





to deteriorate the moment it was exposed through excavations, which is why the archaeologists opted for conservation of the structure.

Over the past decade, investigations at the Phanagorian necropolis have reached a whole new level. The ancient history of the site is now probed using the most modern scientific and technological methods. The excavations of extensive areas help to shed more light on the spatial arrangement of the Phanagorian necropolis and the evolution of its landscape.

Recently the field work has been concentrated on the part of the Eastern necropolis near the village of Sennoi, at the site selected for the construction of an archaeological museum. Dozens of burials dating to the period from the late Hellenistic time (2nd century BC) to late antiquity (4th–5th centuries AD) are excavated here every year.

The uncovered burial structures belong to different types. Simple pit graves are rare. A lot more graves are those with a side niche – a special recess in one of the walls to hold the body of the dead. Some graves were found to be covered with wooden planks or mud bricks. Chamber tombs – often considered as family burial grounds – are also numerous. They vary in size as well as structure and date from the Hellenistic, Roman, and Late Antique periods.

Corbelled ceiling of a stone chamber tomb. 4th century BC



*Excavations of Boyur-Gora.
Drone view*



*Tunnels dug inside the tumulus
of Boyur-Gora in the 19th century.
Without heavy machines, it was
impossible to excavate a 'royal kurgan'
of this size, which is why 19th-century
archaeologists hired markscheiders
(mining survey engineers) to help them
find burial chambers.*

Among the most interesting finds of the Hellenistic time are so-called 'cist-tombs' – coffin-like boxes faced with limestone slabs. Such burial structures are usually known to have been robbed and destroyed before archaeologists were able to examine them, for the practice of grave looting reaches across the centuries. However, our recent excavations revealed a number of cist-tombs that had chanced to remain intact. Their top stone slabs lay at a depth of just 50 cm below the modern ground surface. The tombs contained single and double burials – all of adult individuals – and plentiful grave goods. Some of the cists had evidently been reused in the Roman time. Of interest here is a large tomb lined with massive blocks and slabs of elaborately dressed limestone. Its interior space must have held a sarcophagus with the body of a wealthy Phanagorian man. Unfortunately, the contents of the tomb did not survive. It was cut through by a side-niche grave of the Roman time.

Another feature worthy of note looked like a rectangular pit lined with mud bricks. It had a shallow ditch running along its long axis, and holes in the opposite short walls – evidently, to allow oxygen to pass through. The construction, dating from the Hellenistic period, was identified as a furnace for burning a dead body – a crematorium in a sense – the first ever discovered



Excavation technique used at Boyur-Gora



*Balks (strips of unexcavated earth)
left between the trenches for the purpose
of revealing stratigraphy of the mound*

at Phanagoria. To all appearance, it was used only once and was backfilled shortly after the cremation had been complete.

Interesting evidence comes from the family chamber tombs of the Roman time. Apart from numerous and diverse grave goods, some of them were found to contain funerary *stelai* dating from the earlier periods. In antiquity, such stone slabs were often reused to seal the end of the *dromos* and prevent access to the burial chamber. A number of the *stelai* from the Phanagorian necropolis are perceived as true works of art. For example, a relief on a gravestone found in 2010 in a chamber tomb dating from the first half of the 2nd century AD features a battle between two horsemen. The central figure on horseback is charging from the left, his cloak flying behind him. His right



Tombstones of the earlier times were often reused to seal the end of the dromos (entrance passageway) and prevent access to the burial chamber

hand holds aloft a long spear aimed at his fallen opponent. The horse is shown rearing up on its hind legs and pushing with its front hooves the fallen opponent on the right, whose horse is running loose in the background. The rider's henchman stands by at the left. The overall picture is that of a battle captured at its most dramatic moment. In 2015, two more funerary *stelai* were discovered blocking the entrance to a chamber tomb of the same time. One is a large slab carved in deep relief featuring a banquet in the afterlife; the other bears a seven-line inscription.

The systematic wide-area excavations at the Eastern necropolis have proved invaluable in the study of its spatial arrangement. Thus, stone chamber tombs of the Roman time were all found to occupy the central position in a mound (the tumuli had not been preserved). Numerous earthen tombs, their chambers oriented to the centre of the mound, surrounded the main burial. One such structure of a particularly large size had been destroyed almost



Earth chamber tomb – a family burial ground of the Roman time (first centuries AD)

A person does not need much...

completely by local inhabitants searching for building stone. Only a portion of its floor and one of the stones that had blocked the entrance passageway survived. Nevertheless, dozens of artifacts, including golden pieces, were recovered from the fill of the chamber. The tomb contained skeletal remains of over 70 individuals, most of them young males. To all appearance, the site served as a long-term burial ground of some ancient Phanagorian community.



Taking photographs at the excavation site

A number of burials in the Phanagorian necropolis have yielded relief appliquéés – peculiar pieces of Bosporan plastic art that once adorned the panels of wood sarcophagi. The majority of these gypsum and terracotta decorations come from chamber tombs. They exhibit a wide diversity of forms – featuring *akroteria*, columns and capitals, floral motifs, gods, heroes, mythic scenes, animals associated with the funerary cult and the afterlife. The most numerous (over 30 specimens), however, are those representing the head of Medusa. This is no surprise given the fact that the image of the Gorgon (the *Gorgoneion*) was widely believed to have the apotropaic powers. Placed on the sarcophagus, it was apparently intended to protect the soul of the dead and avert all evil influences.

Among the thousands of finds from the Phanagorian necropolis, some artifacts definitely stand out because of their unique character. Take, for instance, weapons. Most of the swords and daggers found at Phanagoria come from the burials which had been robbed in antiquity. With a few exceptions, these artifacts are very poorly preserved (sometimes only small fragments of a weapon are recovered), which does not allow any meaningful interpretations. This is an unfortunate fact, since weapons are an important indicator of the cultural interaction between the Hellenic and Barbarian worlds. The Greeks in the Bosporos are known to have been using some barbarian types of weapons from the Archaic period (the Scythian *akinakes*, the bow and arrow) till the end of antiquity.



In this connection, a number of artifacts discovered during the 2010 field season have special significance. In particular, the weapons and parts of equestrian equipment, including a rare horsewhip, found in two warrior burials of the first centuries AD allowed the attribution of the sites to the Bosporan horsemen. It is perhaps no accident that one of the burials was located close to the chamber tomb that yielded the abovementioned *stèle* with the battle scene.

Weapons are also frequent finds in the burials dating from the Late Antique period. One of the most remarkable discoveries to date has been that of a large sword with a long hilt decorated with a drop-like garnet in a golden

This tombstone had been placed over the grave of a very respectable member of the Phanagorian community

setting. The weapon was unearthed in 2010 from a chamber tomb that had been looted in antiquity. The sword, however, happened to survive *in situ*. It had been placed across the entrance to the chamber, its blade drawn a few inches from the sheath as if to guard the burial and ward off potential robbers.

A few chamber tombs of the 4th–5th centuries AD were reported to contain pieces of belt sets made of golden and silver foil. All these artifacts were decorated with stamped or embossed relief ornaments. In two cases, the imitations of belt pieces were found in association with blade weapons and parts of the horse bridle, which suggests a unified funerary ritual used for the bodies of warriors. Logic would dictate that some of the Phanagorian craftsmen and traders produced and sold items designed specifically for burial.

Spearhead dating from the 6th century BC. The weapon belonged to one of the first Greek colonists in Phanagoria



The sword was found lying across the entrance to the burial chamber, its blade drawn a few inches from the sheath to ward off potential robbers

The mounds of the Phanagorian necropoleis show a clear spatial pattern. They are usually located either along both sides of ancient roads – and thus look like ‘alleys’ – or on natural elevations readily visible from the city, the roads, and the sea. At times, a mound would be raised above a small tumulus dating from the Bronze Age. Several distinct mound clusters may well have belonged to family groups or the residents of country estates. Almost all





Relief gypsum appliqué representing the head of Medusa the Gorgon had been placed on the sarcophagus to avert all evil influences

the mounds were either robbed in antiquity or partially excavated in the 19th century, as may be deduced from the traces of test pits and trenches on their modern-day surface.

This was also the case with Boyur-Gora (“mountain”, “hill”), the largest surviving mound on the Taman Peninsula. Given its huge size and the dominant position in the surrounding landscape, the site was identified as a ‘royal *kurgan*’ – one of those imposing burial structures that are known to have been raised over the North Black Sea Region mainly in the Classical period. Indeed, the person buried under Boyur-Gora in the 4th century BC must have come from the upper class of Phanagorian society. Such conclusion is fairly reasonable, for the mound is not only located near the city (at a straight line distance of about 6 km), but it is also relatively close to the famous sites of Big and Small Bliznitsa, two large *kurgans* that had been excavated in the 19th century and yielded plenty of fascinating artifacts. Boyur-Gora – its tumulus measuring about 10 m in height and over 100 m in diameter – was investigated by the Phanagorian Expedition in 2011. This was the most remarkable and large-scale research effort to have been conducted on the Taman Peninsula in over a century. The last excavations of similar *kurgans* were carried out before the Russian Revolution of 1917.

In the second half of the 19th century, Boyur-Gora was examined by I.E. Zabelin and N.P. Kondakov, who managed to uncover two stone-built chambers: in the centre and in the marginal portion of the mound. The central tomb appeared to have been looted, while the other one contained a warrior burial of the 3rd century BC accompanied by numerous grave goods and weapons. The excavations of 2011, conducted on an unprecedented scale, enabled the archaeologists to examine all parts of the tumulus and reveal its highly complex structure. The core of the mound was covered with sod interlaid with dried seaweed. Numerous tunnels dug by the 19th-century archaeologists ran everywhere through the tumulus. One of them was found to have reached the central tomb – lined with stones and mud bricks



Burial in a 'cist-tomb'

and designed for a single burial. Unfortunately, ancient robbers had been particularly thorough in their work of destruction. Next to nothing had been left in place, not even the sarcophagus with the body of the dead. What the archaeologists managed to recover were just a few fragments of its decorative appliqué. The central tomb was built in a pit dug into the centre of a small (about 1 m high) Bronze Age mound of the 2nd millennium BC. It was then covered with a huge pile of earth, which preserved altar stones and other evidence of funerary rituals. The mound of Boyur-Gora is different from other 'royal *kurgans*' of the North Black Sea Region in that hardly any chamber tombs were constructed in its tumulus at later dates.



*Gold coin of the Bosphoran king
Sauromates II and its impressions
(‘ghost coins’).
2nd century AD*



Excavations of a 4th-century BC mound in the Southern necropolis

Exposure of the chamber tomb floor dating from the first centuries AD



*Gold belt buckle imitations.
4th–5th centuries AD*

To sum up, over 15 hundred burials have been uncovered at the Phanagorian necropolis since 1936, the majority dating from the Roman and late Hellenistic periods. In contrast with the necropoleis of many other ancient Bosporan cities, Phanagoria's burial ground is still the subject of intensive and large-scale research. New evidence, plentiful and diverse, comes to light every year, thus adding greatly to our understanding of the life and death in ancient Phanagoria.



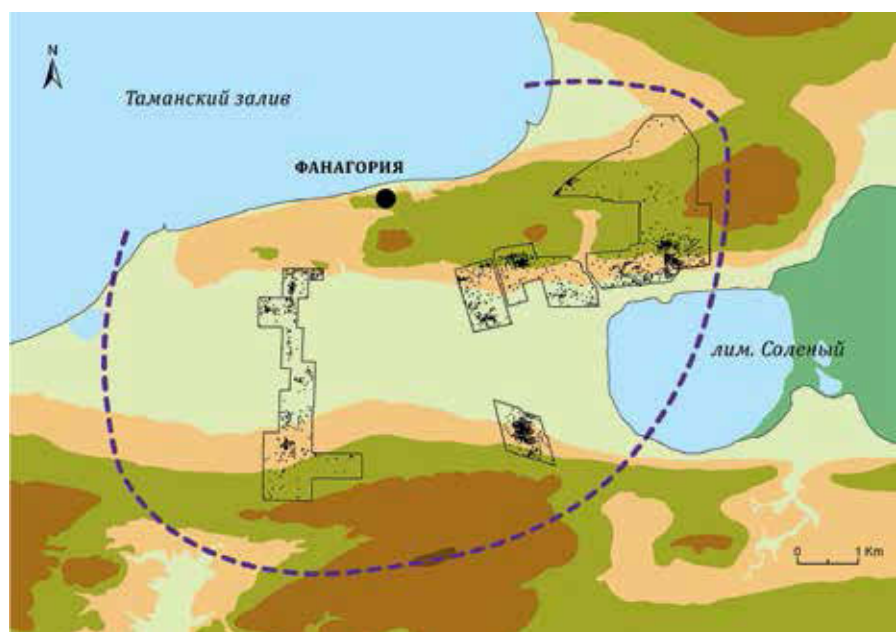
CHORA (COUNTRYSIDE)



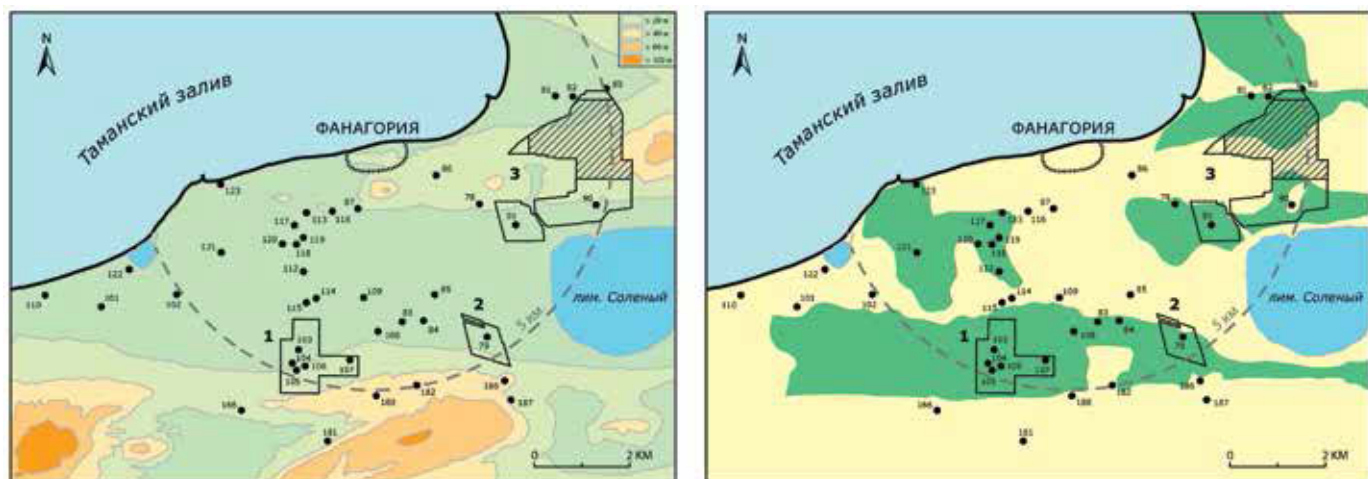
G.P. Garbuzov,
a GIS technology specialist

From its very foundation in the middle of the 6th century BC, Phanagoria had the characteristics typical of a Greek *polis*, including its inherent institutions and the way of life. As is well known, agriculture formed the basis of the ancient Greek economy. Nearly all the citizens were involved in this activity, with their land plots (*kleroi*) located in the *chora* (the rural territory that belonged to the *polis*). The people of Phanagoria were surely no exception. Undoubtedly, the *chora* of any ancient *polis* did not consist only of individual land plots. Rather, it was fairly complex in structure. Much of its original territory could be considered as common property or held in reserve for future allocation, should the need arise (for example, to assign land plots to newly arrived colonists). Public lands, most likely, encompassed pastures and areas unsuitable for agriculture. Large sanctuaries that were often located at the edges of the *polis* territory each had their own piece of land cut off from common uses (*temenos*). Among other things, such extra-urban sanctuaries served as signposts to mark the city's territorial domain. Sacred places (grooves, streams, tombs, etc.) could be situated all over the *chora*. At Phanagoria, remains of a sanctuary were uncovered on top of a mud volcano (Mount Maiskaya) to the south of the city-site.

During Phanagoria's long lifetime – first as an independent *polis* and then as part of the Bosporan Kingdom – its *chora* was constantly subject to change, with a clear tendency towards increasing sophistication of the cultural



Parts of the Phanagorian chora subjected
to large-scale archaeological surveys
(black dots show surface pottery
find-spots)



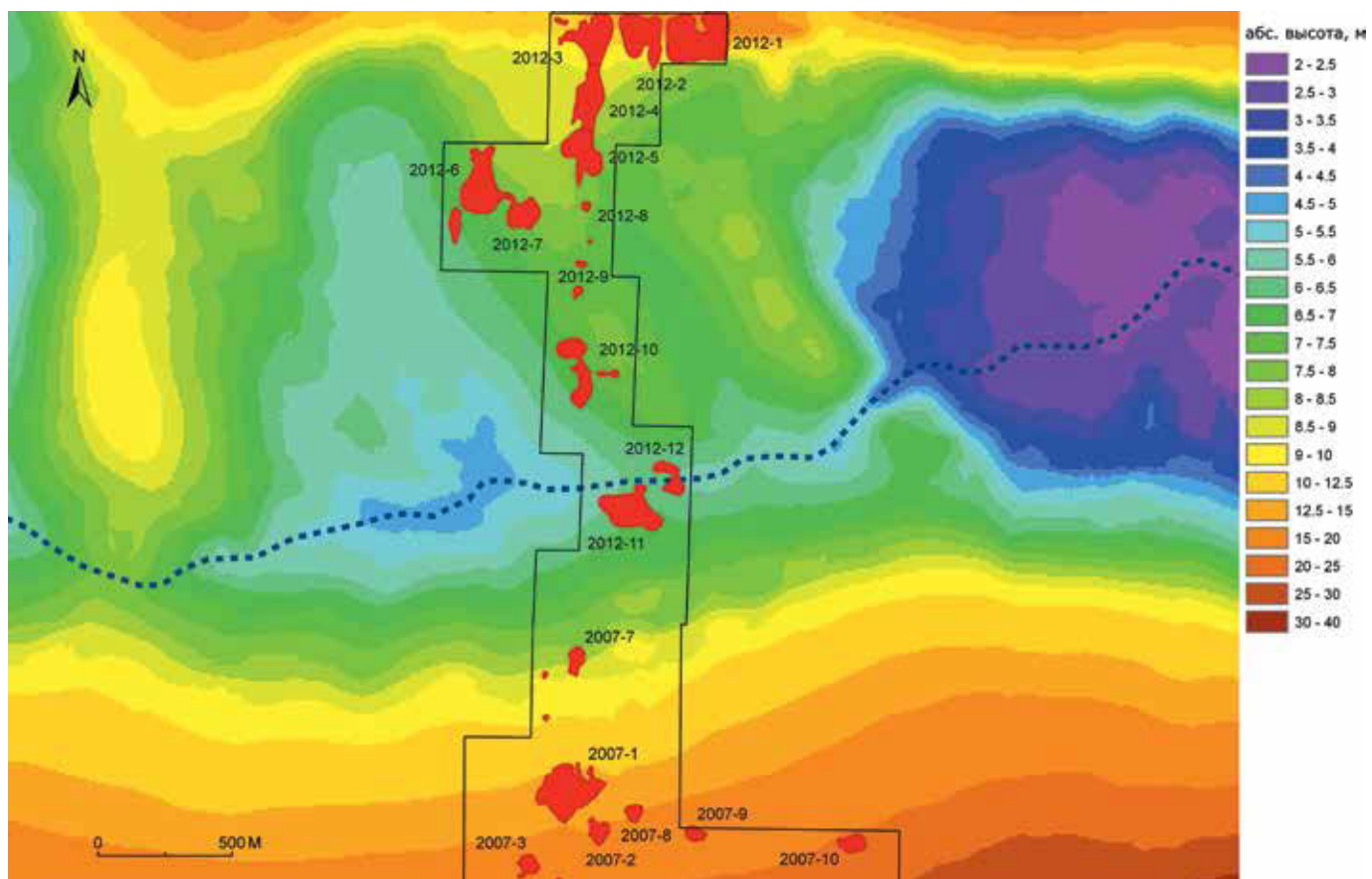
landscape. As early as the second half of the 6th century BC, the system of rural settlements around the city began to take shape. There appeared large permanent villages, small farms or groups of farms, and other agriculture-related buildings designed, perhaps, only for seasonal habitation. Over time, the settlements themselves underwent considerable change. A whole network of roads varying in quality and capacity connected the farms and villages with the city. Besides, the vicinity of Phanagoria, just as almost the whole Taman Peninsula, bears evidence of ancient land division. Its traces are plainly visible on aerial photographs and space images.

All changes in the arrangement of the rural space took place in connection with the new developments in the life of ancient society. The *chora* is therefore an object for research no less promising than the urban centre of the *polis*. An in-depth study of its cultural landscape, its structural elements and evolving relationship with the natural world can greatly enhance our understanding of the social and economic history of the region. Unfortunately, the *chora* of Phanagoria remains largely underexplored. Due to lack of systematic research, we still have but a vague idea not only about its structure and stages of development, but about its outer limits as well. In the last few years, however, the situation has definitely started to change for the better.

Throughout the 19th century, the only sites in the area that received scholarly attention were burial mounds (*kurgans*), especially the large ones located on the highest natural elevations surrounding the Phanagorian *chora*. The excavations were haphazard, with the mounds being picked at random; still some of them did yield spectacular results. Particularly renowned are the sites of Big and Small Bliznitsa ("twins") situated on the top of the drainage divide to the south of Phanagoria, and the *kurgans* on Mount Vasyurinskaya to the south-west of the city. Rural settlements were totally neglected, though.

In the 1920s, S.F. Voitzekhovsky was the first to mark several (5 or 6) settlements on the archaeological map of Phanagoria and its vicinity. At the beginning of the 1930s, the area was investigated through field survey by A.A. Miller, who managed to detect ten more rural sites. One of them – located at the western edge of the Phanagorian *chora* – was later subjected to

The Phanagorian chora (rural area) and plenty of newly detected settlements



Remains of ancient country estates found instead of a supposed Kuban river bed in the south-western part of the Phanagorian chora

small-scale excavations under the direction of V.D. Blavatsky (1950s). In the following two decades, a number of small settlements in the southern and south-western parts of the *chora* were partially investigated through rescue excavations.

During the 1980s, archaeological surveys of the Taman Peninsula, including the Phanagorian rural area, were conducted by Ya.M. Paromov. Despite their unsystematic nature, these investigations helped to discover and record a multitude of new archaeological sites. Such a result was largely due to the wide use of aerial photography, which permitted a better appreciation of even the most subtle elements of ancient cultural landscapes (old roads and traces of land division). The archaeological map drawn after the completion of the survey shows as many as 47 settlements within the limits of the Phanagorian *chora*. Based on the evidence from casual surface pottery finds, 42 of them were dated to the period of classical antiquity.

Only a small number of these sites (no more than 8 ancient settlements altogether) have been subjected to excavation so far. At all times, the research was small-scale, with only minor parts of the settlements examined by means of test pits or rescue excavation techniques. The data thus collected did shed some light on the chronology of the sites, as well as on the economy and everyday life of their inhabitants. Being fragmentary, however, this evidence does not allow any definite conclusions as to the development of the Phanagorian *chora* in general. To provide for better understanding of its



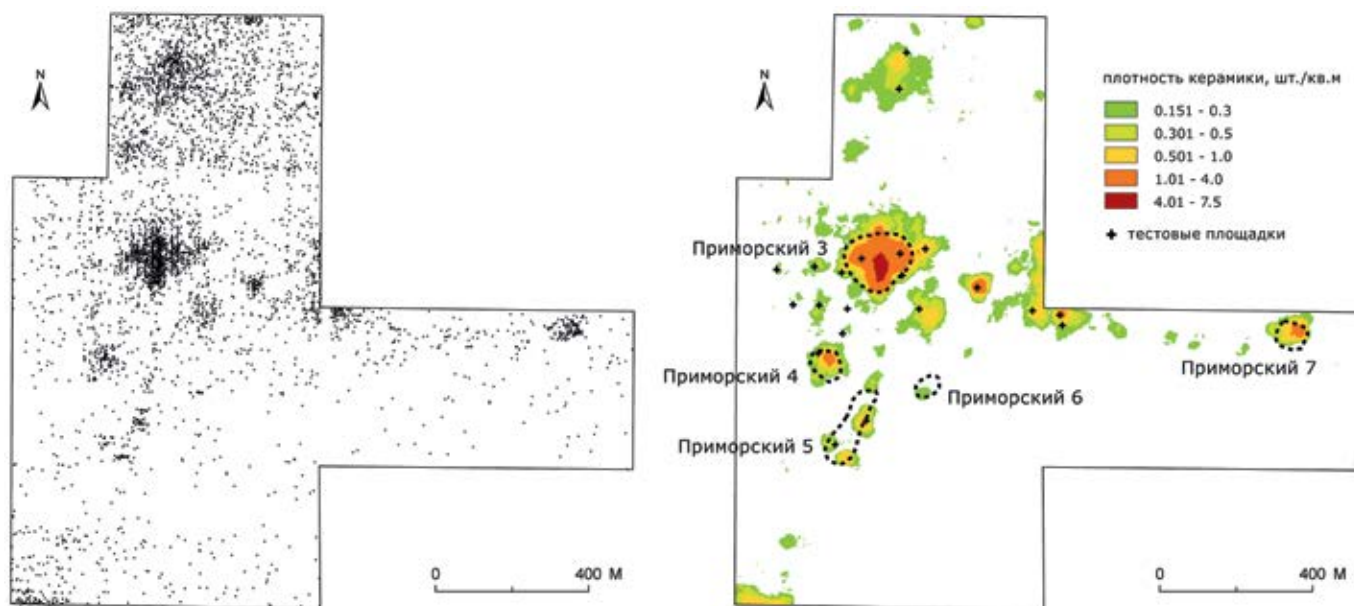
*Modern landscape
of the Phanagorian chora*



*Collecting surface material
from the area once occupied
by an ancient rural settlement*



*Surface pottery assemblage
and a satellite-based navigation device
(GPS receiver) used for recording
the find-spots of the artifacts*



history and evolution, a special research initiative was set up by the Phanagorian Expedition in 2005.

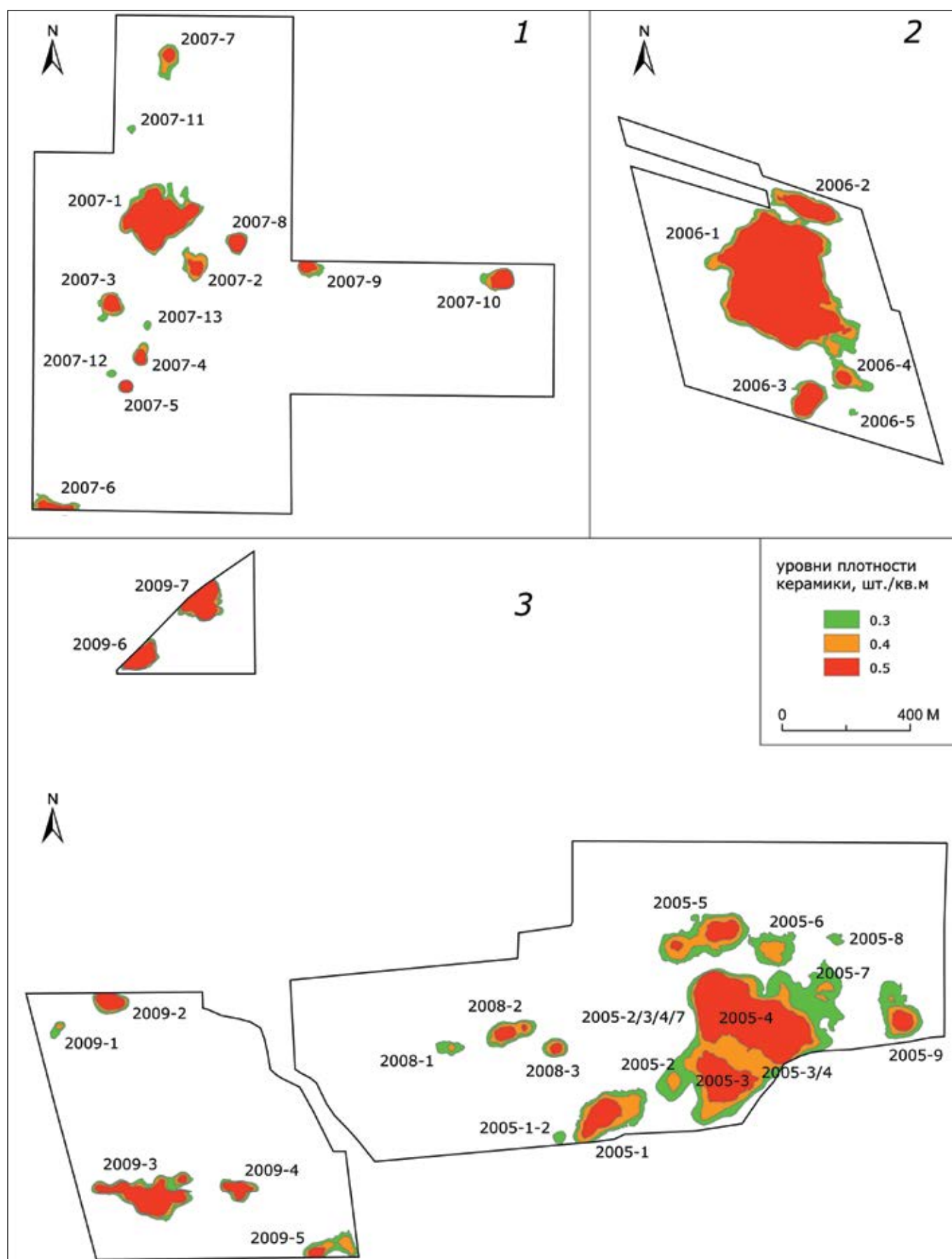
Under this project, archaeological investigations are to be conducted on the entire rural territory of the *polis*. The find-spots of all artifacts are recorded with the help of modern satellite-based navigation devices (GPS receivers). As the next step, the acquired data is analyzed using geographic information system (GIS) technology, which can relate spatial evidence from a variety of sources, including aerial photographs, satellite images, thematic maps (soil maps, geological maps, etc.). What finally emerges from the research is an accurate picture of the territory showing the spatial distribution of artifacts and the exact limits of the ancient sites. It adds to our understanding of the overall settlement pattern and suggests the direction of further investigations.

The examined portions of Phanagoria's rural domain have an aggregate area of about 10 square km, which makes up 13 to 20 percent of the total *chora* area (estimated at between 50 and 75 square km). The results of the research can be reasonably generalized to the other parts of the Phanagorian rural territory.

No fewer than 32 settlements of classical antiquity have been recorded on the examined territory so far, their areas measuring up to 10–15 hectares. The associated surface assemblages collected during field surveys include pottery types common to many other rural sites (fragments of *amphorai*, tableware and cooking pots, tiles), as well as some specific elements (ash-laden soil, animal bone remains, stones).

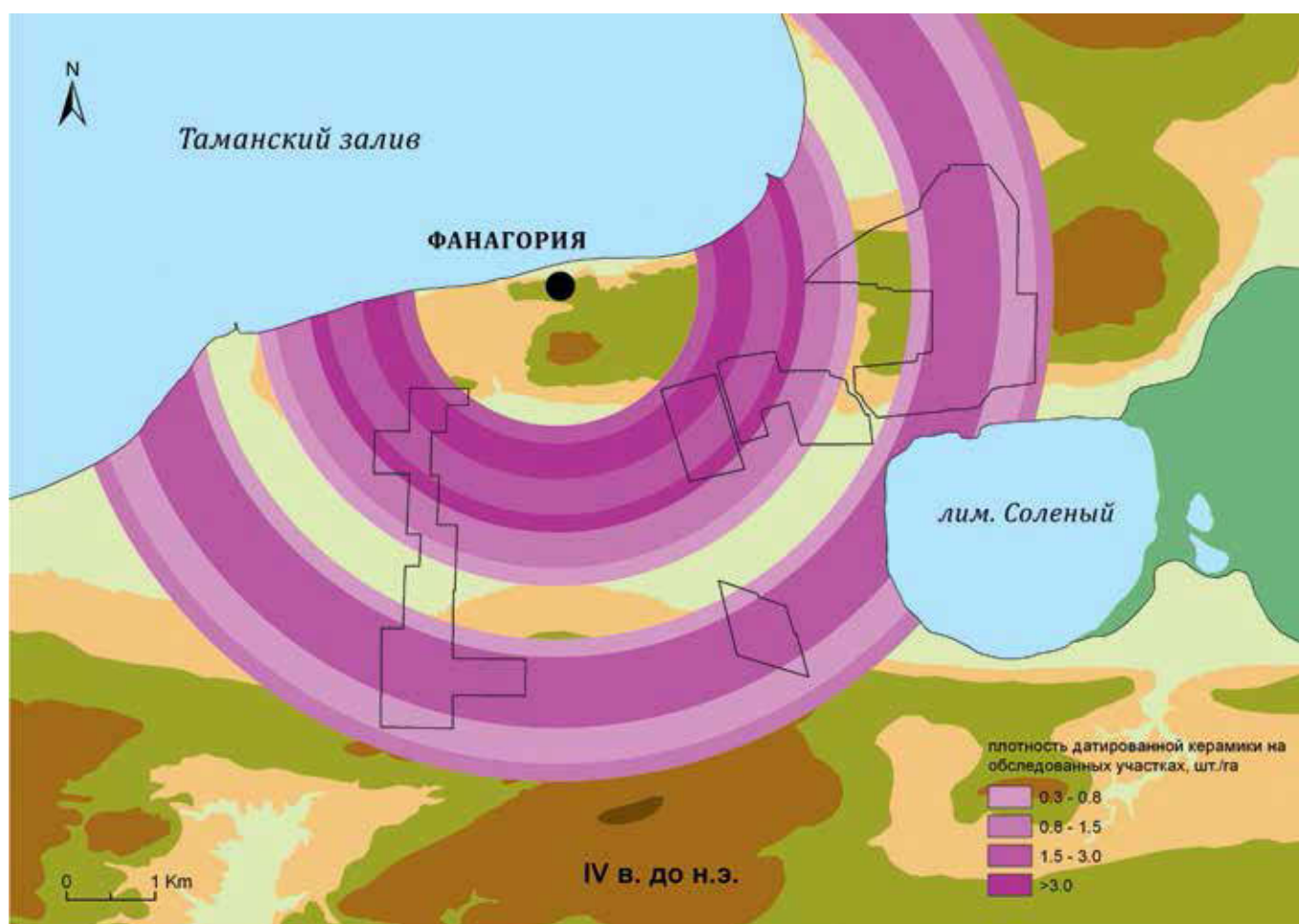
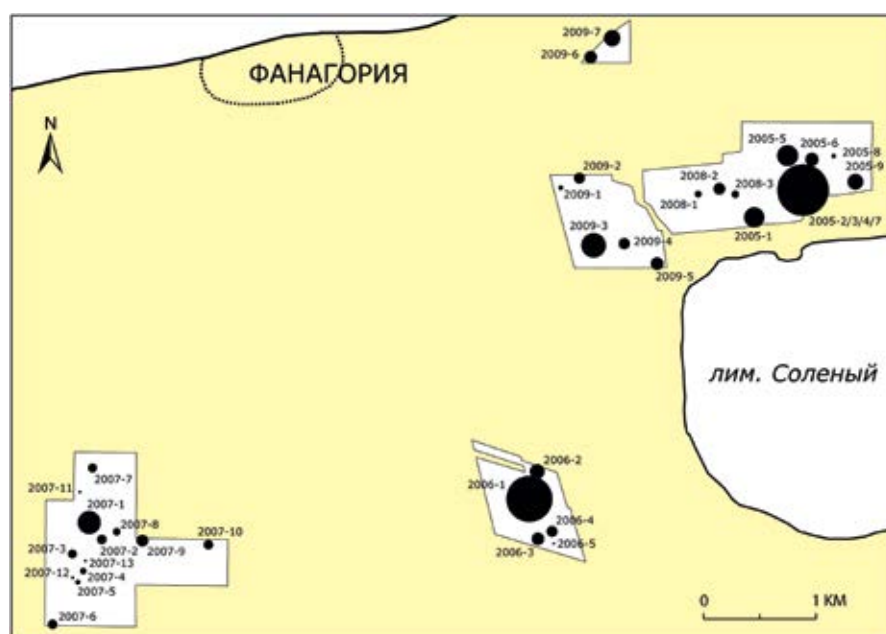
Of all the detected settlements, 15 had previously been unknown. Regarding the other 17 sites, their limits as revealed by the GIS-based analysis differ considerably from those marked on the existing archaeological maps. The wide-area investigations of the Phanagorian *chora* have therefore shown

*Spatial distribution ('density')
of the finds reveals the boundaries
of the settlements and their inner structure*



Ancient rural settlements varied in size and status

Spatial distribution of the settlements over the Phanagorian rural area helps to understand the patterns of land use in different periods of time



the actual number of the settlements to be twice as large as previously believed.

Establishing the chronology of the sites is another major research priority. To that end, fragments of pottery from each area with a high density of surface finds (sometimes as many as 900 amphora sherds from a single settlement) are picked out for the chronological analysis. Over 3500 pottery samples have so far been collected and securely dated, which gives us a fairly good idea of how the settlement pattern of the Phanagorian *chora* changed through time.

Efforts have also been made to reveal the interaction between Phanagoria's rural sites and their environment, in particular – their dependence on the distribution of natural resources and the location of transportation routes. For example, the investigations helped to resolve the issue whether in antiquity one of the branches of the Hypanis (the modern-day Kuban River) had actually flowed through the valley to the south of Phanagoria and emptied into the Taman Gulf. Instead of a supposed river bed a chain of rural sites stretching along an ancient road was discovered. The sites were in existence from as far back as the 5th century BC. Thus, the hypothesis that the branch of Kuban once ran through this area has been completely refuted by the archaeological evidence.

Undoubtedly, the results obtained heretofore are just the first steps towards comprehensive reconstruction of the ancient cultural landscape and the evolution of the Phanagorian *chora*. Yet more important findings on the history of Phanagoria are sure to emerge from future wide-area archaeological field surveys combined with prospective paleogeographic, paleobotanic and geophysical investigations.



POST-EXCAVATION ANALYSIS

Post-excavation work ('post-ex') is an important part of any archaeological investigation. All the artifacts recovered from the site need to be cleaned, sorted, labelled and identified so that the researchers could extract as much information from them as possible. This is especially true for sherds of ancient pottery, multitudes of which are found at Phanagoria every year. The analysis of pottery enables archaeologists to determine the age and function of each excavated feature, and to address a variety of other research issues, such as the provenance of imports, ancient trading patterns, etc.

Since the Centre for Science and Research was opened at Phanagoria, the specialists of the Phanagorian Expedition have got the opportunity (not that widely available in Russia so far) to conduct careful investigations all year round. The Centre has everything one may need for efficient work: a spacious depository for archaeological finds and well-equipped laboratories, including the most up-to-date restoration facilities.

The sherds of pottery unearthed at the city-site are first part-processed in the field. To that end, two specially chosen areas of flat ground beside the excavation sites are divided into small squares so as to look like the reduced copies of the site grids. Each square is then assigned a code number corresponding to that of a particular feature or a 5 x 5 m square of the actual grid. It is to these places that the material is delivered directly after excavation.



Yu.N. Kuzmina (Shorunova) showing the finds to N.A. Makarov, a member of the Russian Academy of Sciences, Director of the Institute of Archaeology



On arrival, the artifacts are cleaned, roughly sorted, amphora body sherds are counted and then discarded, whereas all diagnostic fragments are prepared for the transportation to the central find processing area near the building of the Centre. This is where the actual analysis begins. The artifacts are classified into categories by material and typology: from tiles, thick-walled vessels and numerous rims, bases and handles of *amphorai*, jugs and other tableware to the tiniest fragments of glass and metal items. Then a standard report is produced by the Expedition specialists, who determine the dates and the origin of the artifacts, and select the most distinctive samples to undergo further study and be assigned a place in the collection storage array.

Once identified and categorized, the material is recorded through photography and drawing. In some cases (for example, to capture the finest details of painted pottery sherds), scanning may also be employed. The final stage involves several lab-based processes, such as reconstruction of the artifacts (when needed) and making a record of additions to the museum collection.

During the 2015 field season, the specialists of the Phanagorian Expedition concentrated their efforts on the material from the two excavation sites known as the “Upper City” and the “Lower City”. Many thousand fragments of pottery and other finds (items made of various metals, clay, bone and glass) dating to the period from the third quarter of the 6th century BC to the

Central artifact processing area with the most important finds of the 2015 field season



Herm with a head of Mithradates Eupator from the royal residence burnt down during the revolt of 63 BC. Clay

Portrait of King Mithradates Eupator from the herm, 63 BC



10th century AD were all washed, counted and identified by the dedicated research team.

From the time of its founding, Phanagoria maintained regular contacts with the Mediterranean, as is evident from numerous imported artifacts found during excavations.

Particularly revealing in this respect are *amphorai*, a key source for studying patterns of trade in the ancient world. The earliest cultural layers of the city-site (second half of the 6th – first quarter of the 5th centuries BC) have yielded amphora types common to the other Bosphoran settlements of that period. These large clay containers would have been used to supply the inhabitants of Phanagoria mainly with wine and olive oil. Most of the imports came from the North Aegean islands of Chios, Samos, and Lesbos, as well as from the Ionian cities on the coast of Asia Minor (Klazomenai, Miletos) and some uncertain centres. The overall conclusion is that for a time after its foundation Phanagoria traded almost exclusively with the cities of the

Mediterranean. In the first quarter of the 5th century BC, however, changes started to take place. More and more goods produced in Northern Greece (Thasos, Mende) and – from the 4th century BC onwards – in the Black Sea Region (Herakleia, Sinope) were gradually making their way into the Bosporan markets.

The ships from Ionia (modern Asia Minor) – those which kept coming into the Phanagorian port during the first period of the city's history – were carrying not just agricultural produce in conventional *amphorai*. They also brought in a variety of fine painted pottery vessels: table *amphorai*, *oinochoai* (wine jugs), *krateres*, *kotylai*, bowls, *kylikes*, cups, plates, *lekanai*. In the summer of 2015, the excavations of a pit yielded fragments of at least two painted table *amphorai* produced in Klazomenai around the 540s–530s BC. The first vessel features dancing *komastai* (revellers); the other one depicts a man on horseback, with a dog at his feet. Fairly unusual is the colour of the horseman's skin. For some reason, the ancient master had chosen to paint it white, which at that time was used in vase painting to indicate the bodies of women, while those of men were left in the colour of clay.

Starting from the middle of the 6th century BC, Attic painted vases – a major source of information on political, commercial and cultural contacts in antiquity – became remarkably widespread. Their finds are frequent not only in mainland Greece and the Western Mediterranean, but also in the cities of the North Black Sea Region, Phanagoria being no exception. The fragments of Attic painted pottery recovered from the city-site far outnumber those of Ionian origin.

Black-figure pottery sherds dating from the second half of the 6th – second quarter of the 5th centuries BC are the most numerous artifacts in this category. The earliest fragments belong to the so-called 'band-cup' type. The majority of the recovered vessels were produced in the late 6th – early 5th centuries BC, that is, during the late period of the black-figure style, when more and more masters were switching to the new red-figure technique.



Amphora from an uncertain Mediterranean centre with a red letter "H" painted on the neck. 4th century BC

Cellar with amphorai from the island of Chios (the Aegean Sea). 5th century BC

Jug as uncovered at the excavation site





*Skyphos (wine-cup).
Ionia (modern Asia Minor).
Clay. 6th century BC*



*Fragment of a wine-cup featuring
a female profile.
Ionia. 6th century BC*



Lekane lid with the images of a sphinx and a lion. 6th century BC



Body sherd of a painted table amphora from Klazomenai (modern Asia Minor). 6th century BC



Painted table amphora from Klazomenai featuring a horseman and a dog. 6th century BC



Fragment of a painted pottery vessel from Klazomenai. 6th century BC



*Rim of a black-figure kylix.
A dancing satyr. Early 5th century BC*



*Lekane lid fragment.
A male figure.
Third quarter of the 6th century BC*



*Rim of a black-figure pottery vessel
with the image of a siren. Ca. 500 BC*



*Rim of a band cup.
A warrior. 520s BC*



*Body sherd of a black-figure pottery vessel
with the images of a horse rider
and a man walking in the opposite
direction.
Late 6th – early 5th century BC*



*Red-figure lekane lid fragment
with a wedding scene.
Second half of the 5th century BC*



*Fragments of a fish plate.
A slight hollow in the centre of the plate
designed to hold sauce and collect juices
from the fish has not been preserved.
Athens. 4th century BC*



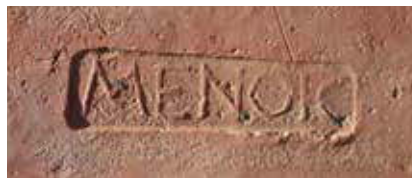
*Red-figure krater.
A young man with a spear,
leading a horse. 4th century BC*



Unearthing a black-figure kylix and oil-lamps at the excavation site



Stamp on a measuring vessel with the image of a satyr and the first letters of the city's name – ΦΑ. Such vessels were used by agoranomoi – public officials (magistrates) responsible for supervising market transactions in Greek cities, including the control of dry and liquid measures. 4th century BC



Stamp on a roof tile with the name of the craftsman. Such stamps were used so that the customer would know who had produced the tiles. 4th century BC

Stamped amphora handle from the island of Thasos (the Aegean Sea). 4th century BC



Closed black-glazed vessel with a relief decoration featuring the head of a Negroid man. 4th century BC

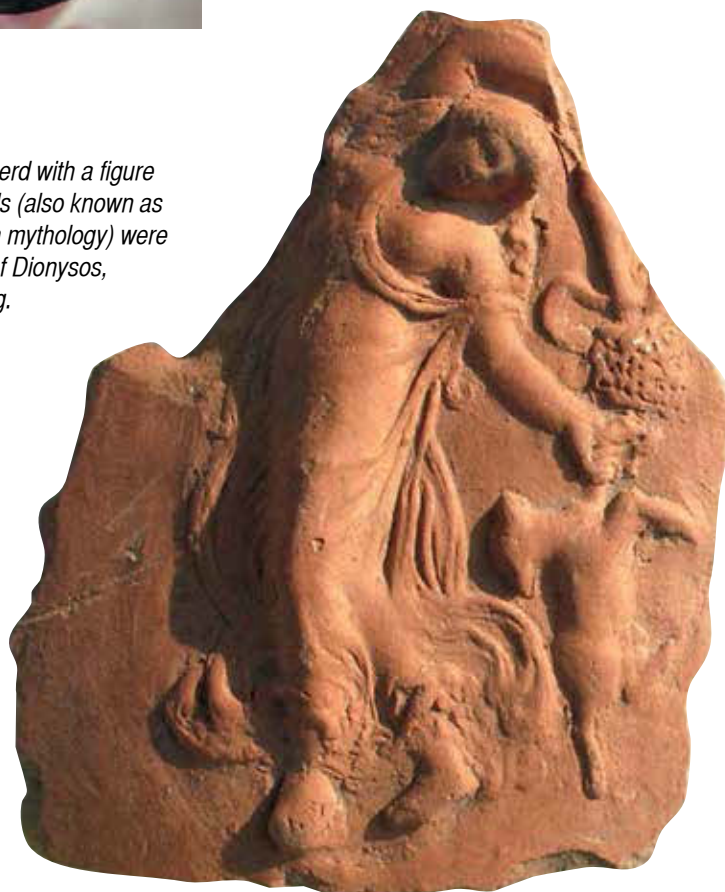


Miniature vessel of unknown (supposedly ritual) function with traces of soot. 2nd–1st centuries BC



Terracotta figurine. Eros on rooster's back. 1st century BC – 1st century AD

Relief pottery body sherd with a figure of a maenad. Maenads (also known as Bacchantes in Roman mythology) were the female followers of Dionysos, the god of winemaking. 3rd–2nd centuries BC



Stamp in the shape of a cross on a red-glazed plate. 7th century AD?



Christian symbols on a plate that has just been unearthed at the excavation site. 7th century AD?



Terracotta figurine. A seated woman, supposedly a female deity. 6th century BC



Two clothing clasps with a figure of Eros.
Gold. 1st century AD

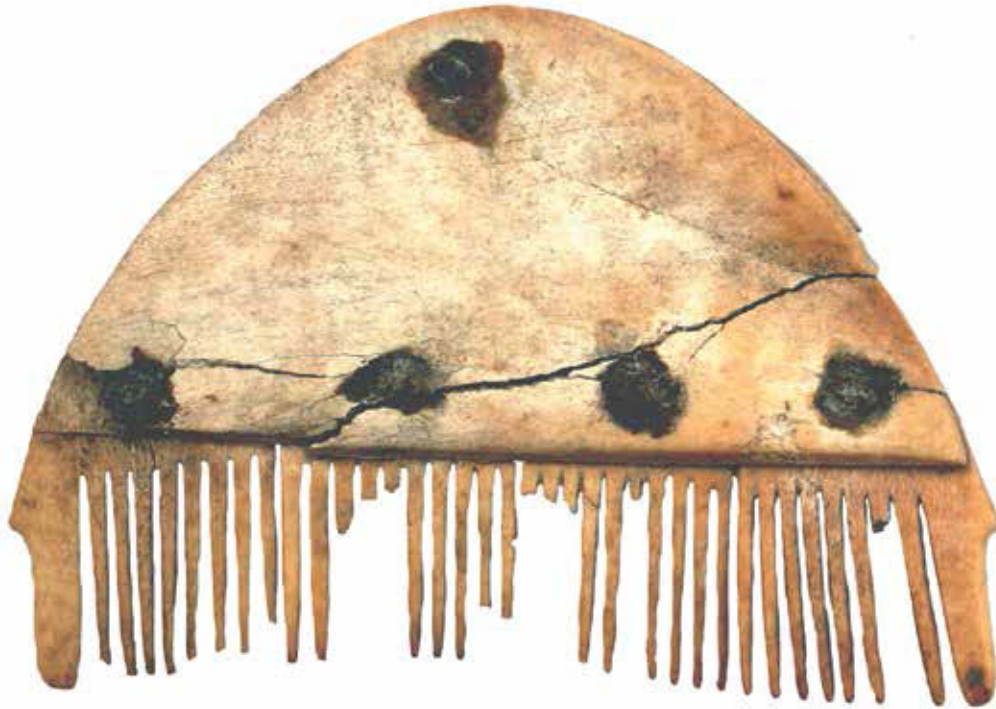


Gold ring from a burial in the Phanagorian
necropolis bearing a Greek inscription
XAPA ("joy"). 1st century AD

The end of the 6th century BC was the time when the black-figure style went into gradual decline, with the quality of painting progressively decreasing. Mythological themes, typical of the previous period, gave way to scenes of daily life; initially quite static, figures now held more dynamic poses, but the drawing itself became rather careless. On the other hand, declining artistry allowed a dramatic increase in production. Indeed, being much cheaper than similar metal vases, black-figure 'pots' must have enjoyed high demand. (As estimated by the British scholar M. Vickers, the prices of ceramic, bronze, silver and gold vessels were in the ratio of 1 : 10 : 100 : 1000, respectively).

The red-figure technique was developed in the late 6th – early 5th centuries BC, in line with the growing tendency towards realism in Greek art. This innovative style, which reached its pinnacle in the 5th–4th centuries BC, allowed a more naturalistic and aesthetically appealing treatment of human figures. They could now overlap, and generally conveyed a greater impression of motion. Apart from mythological episodes, painters more frequently depicted scenes of everyday life, such as wedding preparations and celebrations of the bride. For example, a fragment of such scene is preserved on a *lekane* lid that was found at the "Upper City" excavation site in 2014. The artifact dating from the second half of the 5th century BC features Eros offering a wreath to the woman on his right, with another woman standing behind him. Overall, the fragments of red-figure vessels (*amphorai*, jugs, *krateres*, *kylikes*, bowl-like *skyphoi*, fish plates, *askoi*, *lekythoi*) are no less numerous than their black-figure predecessors, and constitute a fairly large proportion of the artifact assemblages dating from the 5th–4th centuries BC.

Painted vases are almost the only surviving remains of Greek visual art. Unlike literary sources, they often provide information on the day-to-day life of the Hellenes, and can add greatly to our knowledge of Greek mythology, architecture, sculpture, and economics. Painted pottery vessels were not merely everyday objects but could be used in a variety of contexts, for example, on ritual occasions – as grave goods to accompany the dead person to the afterlife.



Bone comb. First centuries AD



*Bead necklaces
from burials
of the first centuries AD*



*Bone spindle.
First centuries AD*



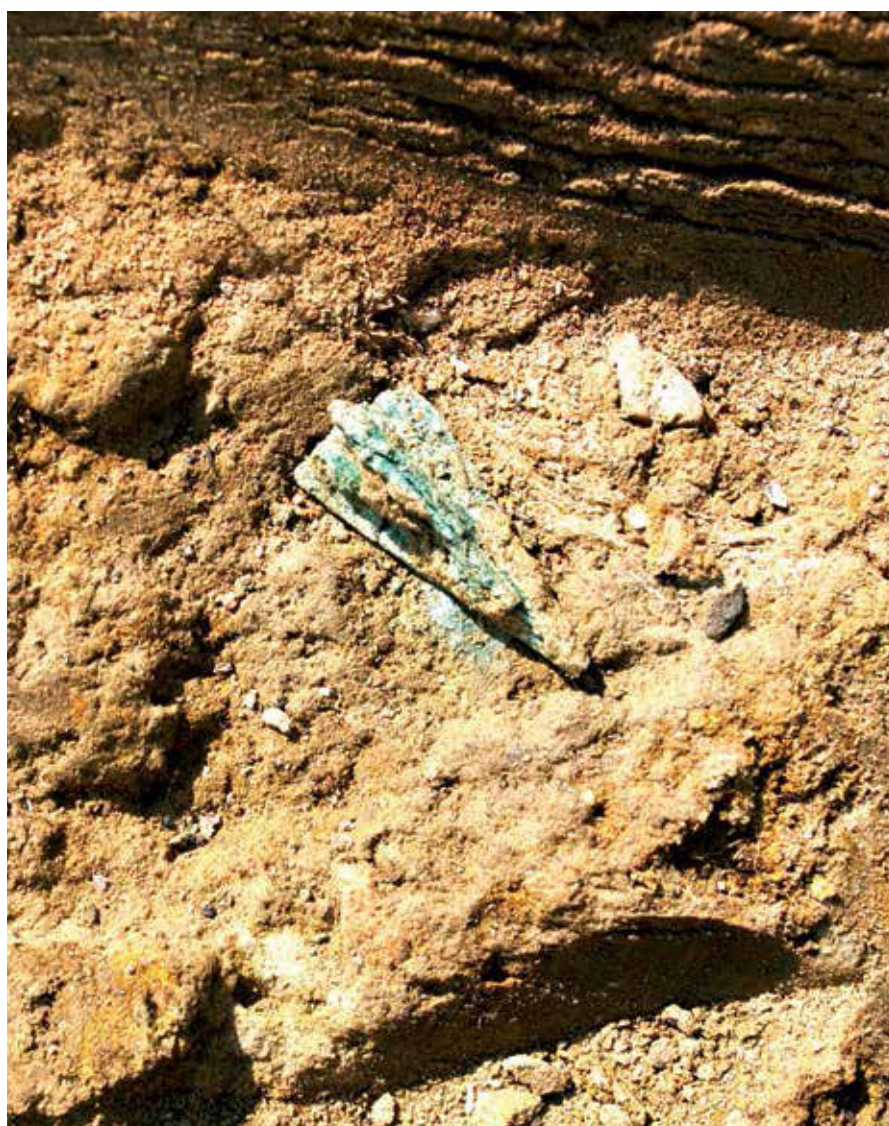
Fragment (lock of hair)
of a bronze statue.
5th–4th centuries BC

In addition to the painted pottery, the excavations at Phanagoria have brought to light a lot of fragments of Attic black-glazed ware – vessels entirely covered with a shiny black slip (its secret is now lost). These were the imitations of precious metal pieces made of silver and gold. One of the most peculiar black-glazed artifacts unearthed so far has been a closed vessel of the 4th century BC with a relief decoration featuring the head of a Negroid man (found in the summer of 2015). Because of its low price, Attic black-glazed ware could not be an important export item and was usually shipped by traders of various origins rather than by the Athenians themselves, which is why the presence of numerous black-glazed sherds in the cultural layers dating from the second half of the 6th – 4th centuries BC is not necessarily indicative of direct trade links between Phanagoria and Athens.

In Phanagoria, just like in other Greek *poleis*, both public places (temples, streets, squares, etc.) and private houses were decorated with statues. Yet, the finds of monumental sculpture, even of dispersed body fragments, are extremely rare. This is partly due to the fact that throughout so many centuries the ruins of the ancient city served as a kind of quarry from which local inhabitants obtained building material. Thus, for a long time wonderful marble pieces were simply being burnt into lime. As a result, thousands of sculptures, reliefs, inscriptions, and other architectural details perished without trace. In the case of bronze statuary, chances of survival were even lower, since the artworks were commonly melted for reuse. Nevertheless, the site of Phanagoria did yield fragments of various sculptures and some evidence for the local production of bronze statues. The latter was a fragment of a casting mould for a life-size human figure, recovered from the context dating to the second quarter of the 6th – early 5th centuries BC. The casting technique was that of the 'lost-wax', when the wax inside a clay mould was made to melt and run out, being replaced with liquid bronze. The owner of this workshop, whose name has remained unknown, apparently belonged to the very first generation of Greek colonists in Phanagoria.

The 2006 excavations at the "Upper City" revealed a peculiar bronze statuette of a male deity, identified as Zeus-Asklepios. The artifact dates back to the first centuries AD. Another find which deserves special attention is a marble head that once belonged to an over life-size statue of a man in the prime of life. Judging by its size and fine workmanship, this sculpture may have stood in one of Phanagoria's temples.

Terracotta (made of low-fired clay) figurines are also fairly common in the artifact assemblages recovered from Phanagoria. These earthenware statuettes could be brought to temples and sanctuaries as offerings to the gods, or serve as cult images in small house shrines. Some have been interpreted as dolls and other children's toys. The investigations on the southern outskirts of Phanagoria exposed remains of a coroplast's (figurine maker's) workshop dating from the first half of the 5th century BC. The refuse from a 2nd-century BC workshop uncovered in the south-eastern part of the city-site was found to contain about 90 figurines made of local clay. In 2008, while excavating the burnt residence of Mithradates VI Eupator, the archaeologists unearthed a unique *herm*: its head is most probably a portrait of the great Pontic king.



*Bronze arrowhead found
in a building gutted by a fire.
5th century BC*



*Bronze oil-lamp burnt in a fire.
4th century BC*



Inscription on a marble slab which tells about the restoration of a stoa (portico) destroyed when Phanagoria had come under some enemy attack (220 AD)



*Tombstone inscribed with an epitaph to Hypsikratia, the wife of Mithradates Eupator:
"Hypsikrates, wife of King Mithradates Eupator Dionysos, farewell".
As is known from the account provided by the ancient biographer Plutarch,
Mithradates called his wife by the masculine version of the name Hypsikratia
because she always followed him in his military campaigns,
and on all occasions showed the spirit of a man and desperate courage*



*"Sindian" tombstone.
This name is usually applied
to anthropomorphic sculptures placed
over graves. Due to their non-Greek
appearance, they are believed to have
been produced by local tribes.
First centuries AD*

*Sima – a lion-head downspout to divert
rainwater away from the roof edge.
Limestone. 4th century BC*



*Eagle's head
(fragment of a sculptural composition).
Marble, paint. 4th century BC*



*Architectural detail that once decorated
a private house. Clay. 4th century BC*

Fragment of a large marble relief showing a griffin attacking a bull. 4th century BC



Fragment of a limestone metope depicting a deer. A metope is a large slab between two triglyphs in a frieze of a Greek building, often bearing sculptural decoration. Hellenistic period.



Marble slab with a tamga – the personal mark of the Bosphoran king Sauromates II. 2nd century AD. Supposedly, the slab was embedded in a defensive tower reconstructed by this king

The arts of jewellery and toreutics were also widely practised in Phanagoria, as attested by the presence of specialist workshops (the earliest evidence for local metalworking dates from the third quarter of the 6th century BC). Apparently, the city was among the leading suppliers of jewellery and precious metal items to the Bosphoran markets.

The finds of exquisite architectural details, fragments of columns and marble tiles point to the wealth and prosperity of ancient Phanagoria. The roofs of both public and domestic buildings were covered with tiles and decorated with architectural terracotta. The interior walls of private houses were coated with painted stucco, while in public buildings and rich men's quarters they were lined with marble slabs.



ARCHAEOLOGICAL SCIENCE AT PHANAGORIA



*M.O. Zhukovsky,
a historian and archaeologist*

Unlike their 19th-century counterparts, who were driven mainly by the pursuit of art collecting, present-day archaeologists strive to understand the culture and reconstruct the lifeways of ancient people as objectively as they can. To move toward that end, scrupulous attention to detail is indispensable, which calls for the application of the most advanced scientific methods and precision techniques. Though nothing can replace the shovel and the brush as primary excavation tools, emerging 21st-century technologies can offer archaeologists a wide range of new, previously unavailable opportunities.

The Phanagorian Expedition of the Institute of Archaeology conducts investigations according to the highest standards of contemporary science, which involves the development and wide use of innovative archaeological field techniques and computer-assisted data analyses. Together, these methods enhance the effectiveness of the research and allow the archaeologists to approach the tasks that were once deemed unsolvable.

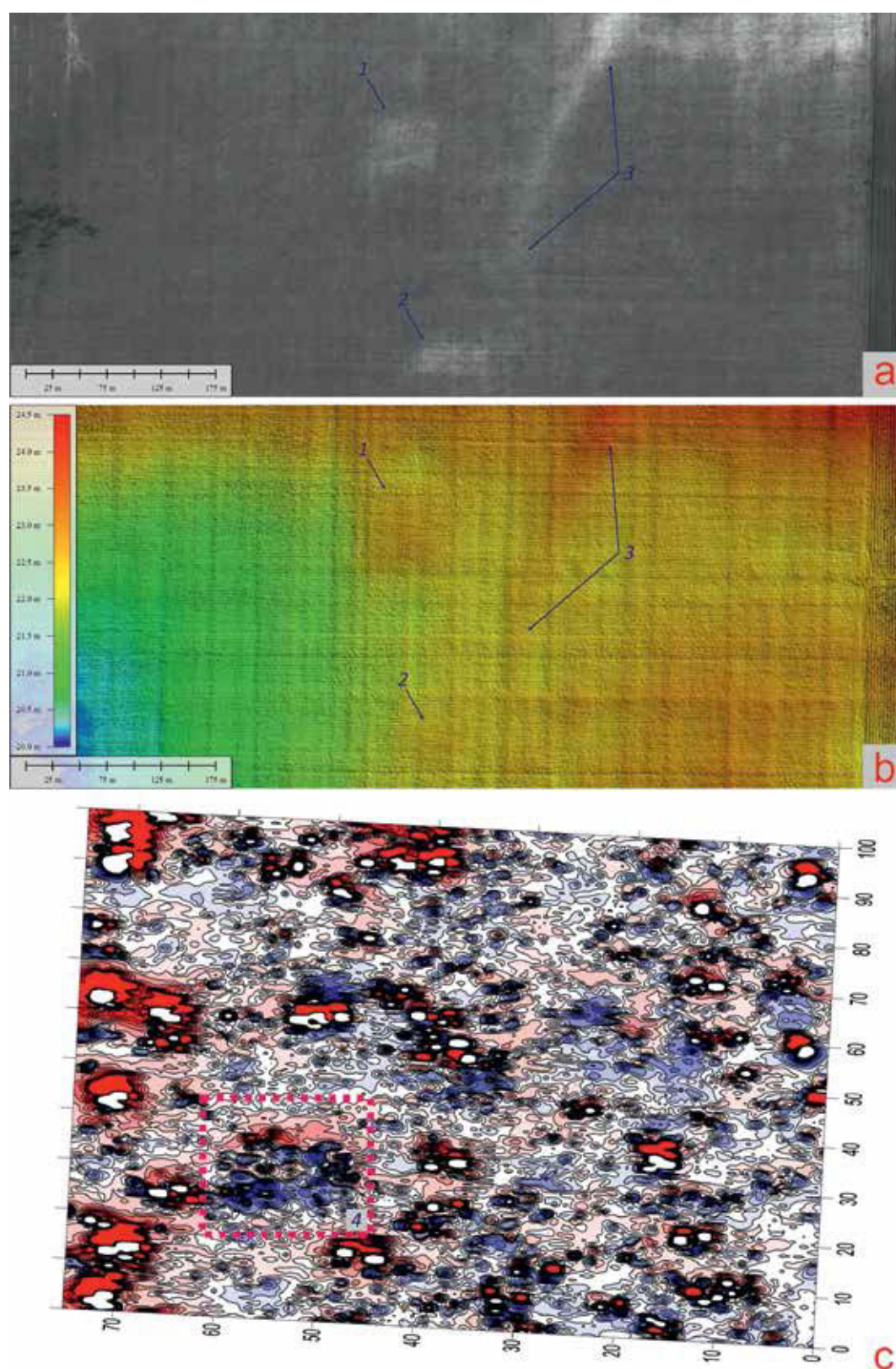
Cutting-edge technologies now help to detect and accurately map a variety of archaeological sites otherwise invisible to the naked eye, and often provide crucial evidence on their original appearance.

Some archaeological features – such as burial mounds, fortifications, old roads – consist mainly of earth. Others, like ruins of stone buildings, are usually buried under the surface of the ground. The presence of ancient remains, just as any long-term human activity in the area, is known to have an effect on the structure and composition of the soil. Various organic residues, debris and artifacts become mixed with soil components and thus produce a

*Burial mounds along an old road leading
to Phanagoria. WV-2 space multispectral
image (a) and its interpretation (b)*

*Mounds of the Phanagorian necropolis
on the territory of Sennoi Village:
Luftwaffe aerial reconnaissance
photograph of 1943 (a) and contemporary
space image (b)*





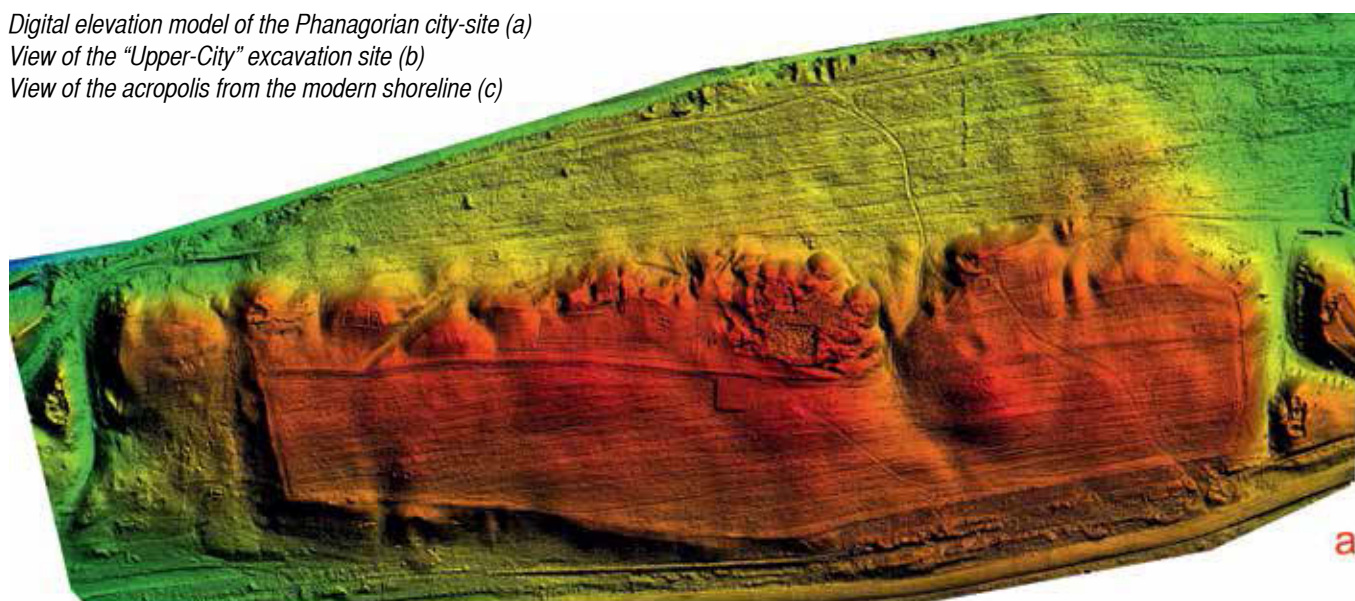
Complex survey of the Phanagorian rural area. WV-1 space image (a) and digital landscape model (b) showing two ancient country estates (1 and 2) and an old road (3).

Magnetic survey conducted on the territory of the estate (c) revealed the outline of the main building (marked with a crimson rectangle)

Digital elevation model of the Phanagorian city-site (a)

View of the "Upper-City" excavation site (b)

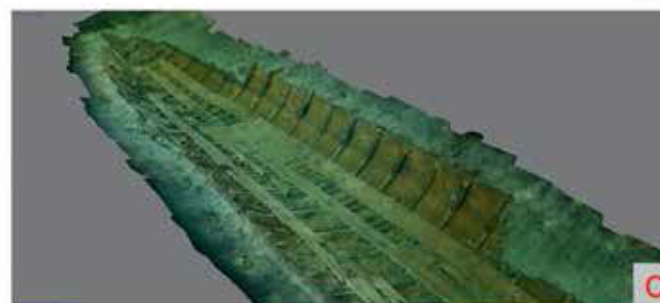
View of the acropolis from the modern shoreline (c)



3D model of the ancient warship found in the submerged area of the city:

a – photo plan (view from above);

b, c – views of the frames (transverse ribs) and planking of the hull





*Low altitude aerial photographs of the excavation sites at Phanagoria:
a – “Lower City”, vertical shot,
b – “Upper City”, oblique shot*

specific ‘signature’ – a set of characteristics unique to each particular feature type. Once established, it helps to identify ancient man-made structures even when they have become almost completely indiscernible due to intensive land development, or simply because of their great age. This very principle forms the foundation for many modern remote sensing techniques that are used to locate the elements of old cultural landscapes.

The scientific study of Phanagoria draws on data from a variety of sources, including geophysical surveys, aerial photographs and space imagery. Thus, the analysis of satellite images revealed several hundreds of burial mounds in the Phanagorian necropolis – most of them small or heavily damaged ones – which the researchers had missed for decades. The same approach is employed to reconstruct the network of roads that once connected Phanagoria with the rural settlements in its *chora*, and those which led out of the city towards other centres of the ancient Bosporos.



*3D model of the "Lower City"
excavation site created from laser scans*

Aerial photographs are greatly valued for the wealth of historical information they provide. Nowadays, with the increased human ability to alter the landscape, it can take just a few years, sometimes – hours, for all visible features of an archaeological site to be totally destroyed. As a result of intensive ploughing and land development, a lot of ancient sites can no longer be seen on the ground surface. However, the very cultural deposits and different buried features – ruins of buildings, grave structures – remain intact. Historic aerial imagery can help the researchers to locate the sites that are currently obscured from view, and thus allow their scientific examination.

Subtle differences in ground levels, such as shallow depressions or slight elevations, may also suggest the presence of buried archaeological remains. Sometimes a height difference of just a few centimetres can be produced by a feature located several metres beneath the surface. When viewed from the air, emphasized by the play of shadow and light, such landscape irregularities make it possible to detect numerous traces of past human activity invisible from the ground. Of much help here are drones – unmanned aerial vehicles (UAVs) that carry lightweight digital cameras to capture images of the surrounding landscape. The data from dozens, hundreds, at times even thousands of photos are then integrated to produce a detailed, three-dimensional computer model of the area under study. At Phanagoria, the investigations aided by the use of a drone have revealed dozens of previously unrecorded burial mounds, country estates, and old roads. Which is more, the level of detail achieved by drone photography has allowed an amazing visualization of the Phanagorian city-site: for the first time the researchers were able to see so clearly its outline, the distribution of the cultural deposits, and all major structural elements, such as gates with flanking towers, main streets running across the city, and areas once occupied by massive buildings.



*M.O. Zhukovsky
during drone-based surveying*

Technological achievements also enable higher accuracies in the documentation process. Terrestrial (ground-based) laser scanners are now used in archaeology to capture three-dimensional information of real world objects – from small artifacts to entire sites. At Phanagoria, this technology was first applied in the summer of 2015. Multiple 3D scans were taken to carefully record each archaeological phase at the city-site. The data acquired through laser scanning are then processed to create precise 3D models of the objects and environments, which offers plenty of opportunities for analysis and heritage preservation. The potential of the new technology is such that in a short while it may well become possible to synthesize identical copies of unique artifacts using 3D printing.

Evidently, these are still early days for archaeological science at Phanagoria, especially since newer and better techniques continue to emerge.



NUMISMATIC STUDIES



M.G. Abramzon,
a numismatist

Ancient coins have long been valued by researchers as vital chronological indicators. Their evidence often proves crucial when it comes to dating related archaeological contexts, such as building remains, hoards, human burials, traces of fire and destruction wrought by enemy attacks, etc. Moreover, numismatic data, when viewed as a corpus, can afford invaluable insights with regard to coin circulation in a given city and therefore shed some light on its political, economic and cultural history.

Foreign coins discovered at Phanagoria attest to its trade and political links with the cities of the Aegean, North Black Sea Region, Kolkhis, Asia Minor, as well as with the kingdoms of Macedonia and Bithynia, with the states ruled by the Ptolemaic and Seleukid dynasties, and – later – with the Roman and Byzantine Empires. Disregarding the numismatic material from Phanagoria, it seems impossible to arrive at any adequate understanding of the economic relations that existed in the Bosporan Kingdom (and even in the whole North Black Sea Region) during classical antiquity and the Byzantine epoch.

The first record of coins found at Phanagoria dates to around the middle of the 19th century. Thus, gold imitations of the *stater* of Lysimachos ('ghost money') and some Pantikapaion coins were mentioned by A.B. Ashik and D.V. Kareisha in their 1838–1847 field reports. A lot of numismatic finds came from the excavations carried out by K.K. Goertz, V.G. Tiesenhausen, I.E. Zabelin, A.E. Lyutsenko.

The coins from Phanagoria were under study by some of the leading numismatists both in Russia and abroad, such as L.P. Kharko, A.N. Zograf, E.A. Pakhomov, D.B. Shelov, N.A. Frolova, V.V. Kropotkin, R. Ashton. However, the investigations conducted at Phanagoria in the past two decades have yielded a mass of fresh numismatic data (over 13,000 coins). Their detailed analysis can help to refine our knowledge of the economic and political history of the Bosporan Kingdom.

Phanagoria started its own coinage in the late 5th century BC. These early small-denomination silver coins – *drachmai*, *diobols*, and *hemiobols* – were struck on the Aeginetan weight standard. Their obverse always featured a bearded or beardless head with long hair, wearing a *pilos* (a conical felt cap), sometimes laureate; the reverse depicted a butting bull and a barley-corn, a bull forepart, or just a single corn. The images of the bull and the barley-corn were there to symbolize Phanagoria's main riches, and could also be linked with agricultural cults. The early silver coinage was short-lived, however, and ceased at the very end of the 5th or in the early 4th century BC.

Inactive for almost two hundred years, Phanagoria revived its own coinage at the very beginning of the 2nd century BC. Small bronze coins with the



1



2



3



4



'bearded head of Pan / bow and arrow, ΦΑ' soon came to be minted on a vast scale and continued in that fashion till the fall of the Spartokid dynasty (ca. 110/109 BC). In 120–110 BC Phanagoria struck silver *tetrobols* with the head of Artemis on the obverse, a rose and the legend ΦΑΝΑΓΟΡΙΤΩΝ ("of the Phanagorians", the city-ethnic in the genitive plural) on the reverse. This reverse type is due to the close commercial and political links between Phanagoria and the island of Rhodes. Starting from the time of Mithradates VI Eupator (1st century BC), the city was producing bronze and silver coins.

Silver coinage of Phanagoria as an independent polis. Late 5th century BC.
(1 – drachma;
2–3 – diobols;
3 – hemiobol)







*Coins issued by Phanagoria while part
of the Bosporan Kingdom.*

2nd–1st centuries BC

(1–2 – bronze, ca. 200–110 BC;

3 – bronze, ca. 200–150 BC;

4 – tetrobol, silver, ca. 120–110 BC;

5–9 – bronze, ca. 100–75 BC;

10–12 – silver, ca. 90–75 BC;

13–14 – bronze from the time

of King Asandros;

15 – Agrippia, bronze of 13–12 BC)



Later, Phanagoria's mint confined itself exclusively to bronze. Large coins with the legend ΑΓΡΙΠΠΕΩΝ were struck after the city had been renamed to Agrippia.

Prior to the introduction of their own coinage in the late 5th century BC, the Phanagorians had been using coins issued from other cities. Among the most numerous of these types are early small-denomination silver coins of Pantikapaion, evidently struck to meet the demands of the local market. Their obverse depicts a facing lion's head; the reverse – *quadratum incusum* (a large incuse square). There have also been finds of early silver coins minted in the Bosphoran city of Nymphaion, and of so-called "Sindian" coins. Yet another category of coins recovered from Phanagoria's archaic cultural layers comprises electrum *staters* of Kyzikos. They circulated widely beyond their *polis* and were used as a privileged means of payment, especially when dealing with foreign merchants.

The influx of imports that came with the establishment of Ionian colonies in the North Black Sea Region gave a major boost to the Bosphoran economy. During the 6th–5th centuries BC, a large variety of goods from the *metropolis* (wine, olive oil, some kinds of building and raw materials, textiles, carpets, different manufactured products) regularly made their way to the local markets, spurring the monetization of economic exchanges and the spread of coinage.

Gold *staters* of Pantikapaion and electrum *kyzikenoi* (= *cyzicenes*, "coins of Kyzikos") served the Bosphorans as coins of high value till the last third of the 4th century BC, when they were replaced in circulation by more light-weight Macedonian gold issues. This resulted in their deposition in the 330s or early 320s BC. *Staters* of Alexander the Great are rare finds in the Bosphoros, unlike *staters* of Philip III Arridaios, Alexander's half-brother (323–317 BC). The latter are known to have been in circulation all over the North Black Sea Region, including Phanagoria. In turn, Macedonian gold coins gave way to *staters* of Lysimachos and those of the Alexander and Lysimachos types.

The image of a facing lion's head on Bosphoran coins traces its origin to Ionia. Quadratum incusum (a large incuse square) is often seen on the reverse of early coins

Stater from the city of Kyzikos – a coin type made of a naturally occurring alloy of gold and silver; was widely used for large-scale trade and when dealing with foreign merchants. Found at Phanagoria. 460–400 BC



They are frequently found in tombs on both sides of the Kimmerian Bosphoros (currently known as the Kerch Strait). Several such coins come from the excavations of burial mounds in the Phanagorian necropolis.

Phanagoria's cultural layers abound with coins minted in Pantikapaion in the 3rd century BC; particularly with the issues dating from the period of the monetary crisis that arose in the Bosporan Kingdom in the first half of the century. The most numerous in this category are degraded versions of the 'head of Pan / bow and arrow, ΠΙΑΝ' type, which were struck in large numbers till the middle of the 3rd century BC. A lot of finds belong to Leukon II (ca. 240–225 BC), the first ruler of the Bosporos to issue royal coinage, evidently in an attempt to deal with the declining value of money in his crisis-hit domain.



Ionian jar with early silver coins unearthed at the "Upper City" excavation site. Late 6th – early 5th century BC



Stater of Philip III Arridaios, the king of Macedonia, struck in the city of Abydos (?). Found on the southern outskirts of Phanagoria. 323–317 BC

The majority of coins that circulated in Phanagoria in the 2nd century BC were minted either in Pantikapaion or in Phanagoria itself, which had resumed striking coins (only bronze ones) at the turn of the 2nd century BC. The archaeological record from Phanagoria contains quite a few silver coins of Pantikapaion and multitudes of various bronze types.

In the 1st century BC, the Bosphoran money market was flooded with bronze coins issued in Paphlagonia and Pontos (modern Asia Minor) during the time of Mithradates VI. They are found in plenty both at the Phanagorian city-site and in its vicinity, for example, among the remains of a sanctuary on top of Mount Maiskaya beyond the southern outskirts of Phanagoria. Its cultural layers dating from the second half of the 1st century BC yielded coins of the Bosphoran king Asandros, including a gold *stater*, as well as 13–12 BC issues by the cities of Kaisareia and Agrippia (the new names of Pantikapaion and Phanagoria).

Of special note is the 1947 discovery of a unique Bosphoran gold *stater*. The coin, which survived in an excellent state of preservation, bears the precise date of issue – 3/2 BC, and the monogram, often interpreted as standing for the name of Queen Dynamis.

After Aspourgios (14–37 AD) had come to the Bosphoran throne, the new ruling dynasty continued to strike their own coinage – bronze issues being the most numerous – to meet the needs of the domestic market. 1st-century AD royal Bosphoran coin types found at Phanagoria are all fairly common and thus call only for brief remark.

The excavations at the Phanagorian city-site and the necropolis have yielded plenty of coins issued by King Aspourgios, his wife Gepaepyris, and their son Mithradates VIII (39–45 AD), whose defiant policy led to the armed clash with Rome and the transfer of power to his brother Kotys I (45–68 AD), supported by the Romans. Coins of King Rhescuporis II (69–93 AD) are uncommon at Phanagoria; a lot more frequent are those issued by his son Saurromates I (93–123 AD), while coins of King Kotys II (123–132 AD) also fall into the category of rare occurrences. In the period that followed, the coinage of the Bosphoros went into gradual decline, as is clear from the decreasing number of coin finds associated with the next successive Bosphoran kings, from Rhoimetalkes (131–154 AD) to Ininthimaios (234–238 AD). Whereas



Bosphoran and Pontic coins from a purse before cleaning (burnt royal residence, 63 BC)



Coins from the purse during the cleaning process



*Gold staters of the Bosphoran king
Sauromates II from Phanagoria
(late 2nd century AD)*

bronze coins of this period have survived in Phanagoria's archaeological record in fair numbers, gold coins are extremely rare. The excavations at the city-site also yielded several electrum *staters* of Sauromates II (174–211 AD).

As suggested by the numismatic evidence from Phanagoria, throughout the 1st – early 3rd centuries AD gold and bronze coins served different purposes on the Bosphoran markets: gold was used mainly for large-scale trade, while abundant bronze issues were intended for everyday transactions. In the second quarter of the 3rd century AD, however, the situation began to change. More and more *staters* were being struck in billon; at the end of the century they came to be made of bronze plated with silver.

The reign of Rhescuporis V (242–276 AD) marks the beginning of the most difficult period in the history of the Bosphoran Kingdom. Coins minted during that time do not just shed light on the history of money circulation in the Bosphoros, but also help to reconstruct the chronology of the Bosphoran kings. The numismatic material from Phanagoria indicates that in the Roman period foreign coins could circulate in the city along with Bosphoran issues. However, the small quantity of Roman coins discovered to date is clear evidence that the Imperial currency played but a minor role in local economic transactions.

Byzantine coins from Phanagoria, though few in number, can provide important information on the history of the Bosphoros in the early Middle Ages. In particular, they can tell us a lot about its place in the system of political and economic relations among the early Byzantine Empire, the Khazar Khaganate, and the world of the "barbarians".

In the 6th century AD, the rulers of the Byzantine Empire tried hard to bring the Bosporos and the surrounding territories under their control. The first attempt to subdue the region was made by Justin I (518–527), but it was his nephew Justinian I (527–565) who managed to realize the ambition and reduce the Bosporos to a vassal of the Empire. Starting from the second half of the 7th century, Phanagoria served as one of the administrative centres of the Khazar Khaganate. In the year 704 AD the city became home to the deposed Emperor Justinian II (685–695 and 705–711) and his wife Theodora, Khagan's sister. Two gold *solidi* of Justinian I and Constantine V are among the most remarkable coins of the Byzantine period found at Phanagoria so far.

Though the multitudes of individual coins that come from Phanagoria are by themselves quite impressive, there have been yet more sensational finds. Several coin hoards and purses discovered in Phanagoria and its vicinity are truly invaluable as tools of historical reconstruction, for they allow the researchers to obtain “a vivid picture of coin circulation in the Bosporos in the classical age” (D.B. Shelov).

A unique hoard of early Pantikapaion silver coins unearthed at Phanagoria's acropolis still stands out as one of the most important discoveries made by the Phanagorian Expedition. This is the earliest hoard of archaic silver coins ever found in the North Black Sea Region. Its sheer size and the presence of large-denomination coins imply that nascent Phanagoria already

*Professor M.G. Abramzon
studying the 2007 coin hoard*





Silver coin of Mithradates Eupator



Gold solidus of the Byzantine Emperor Justinian I as unearthed at the excavation site

was a highly monetized economy. Besides, the hoard can provide an intent researcher with plenty of other insights regarding the economy and early coinage of the Bosphoros.

A number of hoards found in Phanagoria and its vicinity date to the Hellenistic period (3rd–1st centuries BC). In 1985, investigations at the small rural settlement in the north-western part of the Phanagorian *chora* (near the village of Primorsky) yielded a massive hoard of about 5000 Pantikapaion coins dating from the 4th – early 3rd centuries BC. For a long time it was considered the largest coin assemblage on the territory of the ancient Bosphoros.

Later, two yet bigger caches of ancient coins were discovered in the south-eastern part of the *chora*: the 2003 hoard from the settlement of Soleny 3 consisted of 15,000 coins, while the 2007 find from an ancient country estate detected on the territory currently owned by a local winery comprised about 8000 specimens. Both these hoards appear to have been connected with the chain of stormy and dramatic events that – as is known from the accounts by Appian, Strabo and Orosius – unfolded in the region in the times of Mithradates VI. By a twist of history, it was Phanagoria, the most important Mithradates' outpost in the Asiatic Bosphoros, which led the revolt against the Pontic king in 63 BC.

The hoards had been buried in the Phanagorian *chora* about a quarter of a century before the uprising – most likely, as far back as the First Mithradatic War (88–85 BC). Literary sources inform us of political instability in the Bosphoros during that period and the heavy royal taxation that caused a rising

wave of popular discontent. Facing utter devastation, the Phanagorians evidently chose to hide their treasures and finally rose in revolt.

A unique coin assemblage from the burnt royal residence on Phanagoria's acropolis has also been associated with the Phanagorian revolt of 63 BC. The excavations of the building which had once been home to Mithradates' family yielded seven purses with bronze and silver coins minted by the Bosporan cities (Phanagoria and Pantikapaion) and some centres in Asia Minor (Amisos, Amastris, Pharnakia, Gazioura, Taulara). The coins were evidently not buried but either lost or forgotten due to the panic that seized the inhabitants when their residence had been set on fire.

To sum up, the hoards and purses found at Phanagoria make it possible to actually 'feel' the historical context of the bygone epoch. Each being a witness of human tragedies, they shed new light on the life in the Bosporan state. The numismatic evidence also helps us better understand Phanagoria's foreign trade on the eve of the Mithradatic Wars and that negative impact the military and political turmoil had on the rural area of the city.

An interesting insight into the economic and political situation that existed in the Bosporos in the 3rd – early 4th centuries AD was offered by a large hoard of late Bosporan *staters* found in the Eastern Phanagorian necropolis in 2011. The owner of the treasure, apparently a wealthy Phanagorian man, had been saving money till 308 AD, when some turbulent events that took place in the late reign of the Bosporan king Thothorses (285–308 AD) urged him to hide the jar with the coins away from his place – in the grave of his relative or friend. For some reason, the owner failed to retrieve his treasure.



ELEMENTAL ANALYSIS OF METALS (X-RAY FLUORESCENCE SPECTROMETRY)

Identifying the precise chemical composition of metal artifacts is a promising line of archaeological research, as it may reveal the provenance of the raw materials used to make a particular object, the centre of production, and the very manufacturing process. Knowing this, one can ascend to more general conclusions regarding the technological developments in ancient cultures and the established patterns of trade. The pioneering work in the application of chemical analysis to archaeology was done by Martin Klaproth, a famous German chemist, who is known to have been identifying the composition of various ancient artifacts, including Greek and Roman coins, as far back as the second half of the 18th century. From its very beginning, the technique attracted particular attention. Suffice it to say, the leading scientists of their time, such as Jöns Jacob Berzelius and Michael Faraday, were apparently fascinated with the chemical examination of ancient metals, as attested by their numerous publications in highly ranked scientific journals. Nowadays, such investigations have become mandatory routine analyses to be carried out during post-excavation work.

Starting from 2015, the elemental analyses of non-ferrous and precious metals from Phanagoria – previously outsourced to other laboratories – have been conducted in the Expedition Research Centre with the help of the M1 MISTRAL X-ray fluorescence (XRF) spectrometer from Bruker (Germany). The innovation has definitely proved to be advantageous for the research process. Unlike many other competitive techniques, XRF permits non-destructive quantitative analysis without the need for sample preparation, which leaves the artifacts and museum items intact and unaltered in any way. Apart from the Phanagorian Expedition, only a few major Russian museums (in Moscow and St. Petersburg) currently utilize similar XRF devices. This is an unfortunate fact, since the elemental analysis of artifacts performed with state-of-the-art instruments has now become standard practice in the world's leading restoration laboratories, museums, and centres for scientific research.

The XRF spectrometer M1 MISTRAL is a compact tabletop instrument with a computer-controlled motorized sample stage and a radiation-shielded sample chamber. The measurement takes only 60 seconds, provided that dirt and corrosion have been cleaned from the sample surface prior to the analysis. The advantages of the M1 include high measurement precision (error less than 3–5 %), a wide range of measurable elements, large penetration depth, enhanced sensitivity (element concentrations as low as 0.001 % can be detected), and user-friendly operating software, which can also offer the possibility of predefined automated measuring and thus facilitate the analysis of multiple uniform samples. Moreover, the acquired XRF spectra are all stored and can be organized into a large, easily accessible database. Last but not the least, the instrument allows multilayer analysis to determine the

*I.A. Saprykina,
an archaeometrist*



composition of the plating and the bulk metal of a particular artifact.

To date, the XRF spectrometer M1 has helped to identify the elemental composition of the non-ferrous metal which had been used to produce the naval ram discovered by the underwater research team of the Phanagorian Expedition in 2014. This massive artifact, which in the 1st century BC was evidently carried by one of Mithradates Eupator's warships, appeared to have been cast from high tin bronze. Apart from this, the element contents of the coins from the underwater excavation site at the bottom of the Taman Gulf have also been determined.

Samples currently under study include gold and non-ferrous grave goods recovered from Phanagoria's Eastern necropolis during the 2015 archaeological field season. However, these are the multitudes of coins from the Phanagorian hoards (6th–1st centuries BC) that attract the most attention. The application of elemental analysis to Greek and Roman coins has a history going back well over two hundred years, though the bulk of the data now available emerged in the 1960s–1980s, when the numismatic collections in the world's biggest depositories of antiquities, such as the Ashmolean, the Louvre, and the British Museum, were subjected to large-scale XRF investigations. This arduous work yielded a mass of evidence regarding the correlation between the metal composition of a coin and its denomination, time and place of issue. Some light was also shed on ancient counterfeiting methods (for example, the techniques used to make *foutrées* – coins with a base metal core and a precious metal exterior), as well as on the distribution of particular metals and alloys across different territories in different periods of time. However, up to now there have been virtually no attempts to put together a piece of research on ancient money circulation based on the systematic elemental analysis of coin assemblages that reflect different stages in the history of a single archaeological site. The study into the metal composition of the coins from the Phanagorian hoards is about to challenge this lack of knowledge.

Even though the data acquired through elemental analysis is plentiful, its application is still limited to a rather narrow range of archaeological issues, such as relating metal artifacts to specific ore deposits. This is one of the primary questions to be answered when analyzing the composition of the archaic silver coins from the excavations at the Phanagorian city-site. The investigations are complicated by the fact that ancient craftsmen struck coins from refined (free from impurities) silver. Luckily, despite the advanced refining process used in antiquity, the metal was found to contain some minor and trace elements, such as gold (Au) and bismuth (Bi). Their concentrations remained stable from the moment the metal was extracted from its ore by smelting till the time the ingot was heated to be processed into coins. Once measured, these specific geochemical 'fingerprints' can help to determine where the Phanagorian silver had come from – either as raw materials, semifinished products, or finished artifacts (coins).

It has already become clear that the Phanagorian hoards contain coins which, though being of the same denomination, differ with regard to the composition of the metal or alloy used for their production. The element contents of the imported coins also vary considerably. Further investigations are sure to reveal the coin types which were struck at Phanagoria's own mint. Hopefully, the elemental analysis of metals will allow a lot more useful insights into the history of the ancient city.



M1 MISTRAL X-ray fluorescence (XRF) spectrometer



CONSERVATION AND RESTORATION AT PHANAGORIA

Archaeological conservation is concerned with the overall preservation of cultural heritage objects collected through excavations both on land and under water. Humid maritime climate and saline soils are ill-famous for the adverse effect they produce on archaeological materials. A lot of unique finds are unearthed in a very poor state of preservation and may appear totally unintelligible. To make matters worse, once removed from their environments and exposed to air and light, the artifacts start to deteriorate at a rapid rate. Conservation is therefore an important aspect of archaeological investigations, since very often nothing but careful specialist treatment can reveal valuable data embodied in a particular object, and at times simply save a fragile artifact.

A well-equipped modern laboratory for scientific conservation and restoration was opened at the Phanagorian Research Centre in 2013. Located within immediate reach of the archaeologists excavating the site, this facility can ensure that all the artifacts in need of conservation are treated in a timely manner, which makes it possible to preserve the finest, otherwise perishable details – from a colorful fresco painting to the traces of a wooden sheath that remain in corrosion products on the sword blade. The skilled and knowledgeable conservator-restorer will help to identify the type of a coin or read a letter written on a thin sheet of lead. In order to choose the most appropriate



*O.L. Gunchina,
a conservator-restorer*



Laboratory for conservation and restoration at the Phanagoria Centre for Science and Research has everything necessary to perform different kinds of conservation work

conservation treatment to be provided to the object, the specialist first needs to determine its composition, the technology involved in its fabricating, and the extent of deterioration. Of much help here are various scientific tools such as microscopic, chemical, and energy-dispersive X-ray fluorescence analyses.

The Phanagorian laboratory has everything necessary to carry out investigation, conservation and restoration of ceramic, stone, glass, bone and metal artifacts. Following their arrival from the excavation site, the archaeological materials first undergo preventive conservation, and then can be subjected to emergency conservation and restoration treatment depending of the degree of damage and the informative value of the object.

Coins, as vital chronological indicators and historical sources, are chosen for interventive conservation on a first-priority basis. The underlying principle here is respect for the integrity of the object, both historical and physical. The first step to be taken is that of stabilizing the coin to stop the corrosion process. At the time of their discovery, coins made of cupreous metals (copper alloys) usually look like flat round objects covered with a thick layer of oxidizing products, soil, dirt, and other surface contaminations, which can totally obscure details of the legend and type. Low-grade silver coins with a high percentage of copper will also appear covered with copper corrosion products. Hence, before competent conservation technique can be applied to a metal artifact it is essential to become aware of its elemental composition and the degree of mineralization.

Early Bosphoran silver coins are among the rarest objects to have been treated in the laboratory so far. One such coin – a *tetartemorion* featuring an ant on the obverse – was found in the summer of 2015. The artifact has a diameter of only 5 mm, and is less than 1 mm thick. Preliminary lab-based tests showed that the metal core of the coin had been completely mineralized



Bronze naval ram, once carried by Mithradates Eupator's warship, during the cleaning process

and was therefore extremely brittle. The relief image was totally hidden from view by a layer of silver corrosion products mixed with sand and soil accretions. Given the small size of the coin and the hardness of the encrustation, the cleaning of the artifact was a very challenging task. Fortunately, careful pre-treatment analyses and the most up-to-date laboratory equipment helped to reveal the original surface and preserve the rare coin.

Another interesting category of finds to undergo conservation comprises works of ancient decorative art, including jewellery. Combining non-destructive analytical techniques and advanced methods of restoration, we strive to preserve the authenticity of the object and reveal not only its aesthetic value but also the technological procedures used by jewellery makers two thousand years ago.

Iron artifacts pose additional conservation challenges. As is known, about half of the objects made from ferrous metals will convert to rust and



Fragment of polychrome plaster that used to cover interior walls of a house. Before and after restoration

disintegrate within a century, hence the small number of ancient iron artifacts in museum collections. Those which chanced to survive usually have the metallic core that is either partially or completely mineralized. The corrosion process not only distorts the original shape of the object but also makes it very brittle and weak in tension. To ensure preservation of ferrous metals it is therefore necessary to follow strictly all the guidelines set up for handling fragile artifacts: remove them from the ground with maximum care, pack with appropriate materials to reduce external stress, and transport to the conservation laboratory at the soonest possible time.

In 2014, the excavations at the Phanagorian necropolis yielded the iron sword with traces of wood on its blade and hilt. The object had evidently lost so much of its cohesiveness that it could not be lifted from the ground safely. Hence, preliminary on-site conservation was undertaken. The sword was strengthened with a consolidant (polymer solution) *in situ*, after which it was placed on a specially prepared supporting plate and delivered to the laboratory for further treatment.

Conservation of archaeological objects recovered from the sea is an issue that has recently been given much attention both in Russia and abroad. Indeed, the impact produced on ancient artifacts by the chemical, physical and biological aspects of the marine environment calls for the application of special conservation materials, methods and techniques. First, there is aqueous corrosion, an electrochemical reaction that occurs quite readily in solutions of high ionic conductivity. Seawater, by virtue of its chemical content, is a very effective electrolyte. Its major constituents include chloride, sodium, magnesium, sulphate, calcium, and potassium. The presence of dissolved atmospheric oxygen (about 8 mg/l) increases the aggressiveness of salt attack. Apart from the gradual deterioration of metal, aqueous corrosion can result in pitting – the creation of small holes, or cavities, on the surface of the artifact.

Regional variations in seawater composition are not to be discounted. The bottom water of the Black Sea is known to contain large amounts of hydrogen sulphide – more than anywhere else in the World Ocean. Dissolved in water, this gas forms hydrosulphuric acid, which can aggravate corrosion. Besides, bromide and iodide ions, even if present in small quantities, also catalyze the reactions associated with the corrosion process. Finally, seawater,



Bronze coin before and after restoration



*Silver ring from the lower plateau
of the city-site.
Before and after restoration*



if not destructive enough on its own, has several powerful allies assisting the breakdown of archaeological objects. Marine biota (microbiological organisms, algae, limpets, and so on) that abound in the coastal zone can attach themselves to the surface of the artifact and thus accelerate its deterioration.

The conservation and restoration of the naval ram discovered by the Phanagorian underwater research team in 2014 stands out as one of the most painstaking, absorbing efforts undertaken by our laboratory so far. Upon arrival, the ram was subjected to visual examination, which revealed a thick uneven layer of blue and black corrosion products, with rust in the cracks; sand, and plenty of marine life – mussels, moss animals (*ectoprocta*), etc. – that covered the entire surface of the artifact.

After being rinsed in a bath of filtered tap water, the ram underwent a series of lab-based analyses, which showed that the encrustation consisted of two different layers. The one immediately overlying the metal was mainly composed of copper sulphide (82,6%) and lead sulphide (14,4%). The outer layer was found to contain copper sulphide with inclusions of sand and mussel shells. Both layers varied in thickness between 1 and 6 mm. The rust filling the cracks in the surface layer was most likely due to the presence of some iron artifacts that had been lying alongside the ram on the sea bed.

The metal core of the ram appeared to be fairly sound, but the exterior had suffered considerable damage. The original smooth polished surface of the artifact was preserved in the inner layer of the corrosion products.

The main task for the conservator-restorer was to mechanically remove the outer layer of corrosion and to preserve the inner one so as to maintain the integrity of the unique artifact. Due to the high scratch resistance of the superficial crust, the large number of hard inclusions and the indistinct border between the layers, it took up to 8 months to complete the work.

The letter written on a thin sheet of lead (the 'lead tablet') is another marine archaeological object worthy of note. Its surface was found to be covered with blue-grey and light grey lead salts. The laboratory analyses revealed that the metal core of the artifact was completely mineralized, which meant that stripping the corrosion layer down to the metal would have destroyed the inscription. For this reason, the cleaning process was constantly controlled. Some of the corrosion products had to be left *in situ* to prevent decomposition of the artifact and the loss of important historical data.

Lead tablets are usually discovered tightly folded up, the letter from Phanagoria being no exception. Therefore, the next step in the conservation treatment was to carefully unfold the artifact. This is a very complicated process. In such cases, the weakened metal at the point of the fold undergoes localized electrochemical restoration, during which the utmost caution should be exercised to ensure that the restored lead does not obscure the ancient text. Then the tablet is rinsed and covered with a sealant (special protective coating). The find from Phanagoria was treated by vacuum impregnation with microcrystalline wax.

Classical fresco paintings – with their high historical value and aesthetic appeal – enjoy particular attention from scholars and laity alike. Fragments of frescoes found at Phanagoria are typical examples of the ancient painting technique in which polychrome pigments were applied to a surface covered with several layers of lime plaster. Such artifacts are usually unearthed at archaeological sites in the same state of preservation: fragile, crumbling pieces of lime plaster support and a layer of paint with faded colours. It therefore becomes crucial for their successful conservation and restoration that all fresco fragments be given maximum care while in the field, that is, carefully lifted from the ground and properly packed. Specialist conservation treatment can then proceed in the laboratory, where the artwork will be consolidated, slowly dried, and cleaned.

The state-of-the-art conservation and restoration facility at the Phanagorian Research Centre constantly strives to provide the highest quality care of archaeological objects. To that end, we readily embrace the most advanced conservation methods and analytical techniques. Our immediate plans include the purchase of specialized equipment for microbiological investigation of excavated artifacts, which will allow more effective conservation of organic materials, particularly of those recovered from the marine environment.



EPIGRAPHIC EVIDENCE (CASUAL INSCRIPTIONS)

The excavations at Phanagoria, both at the city-site and on the territory of its necropoleis, have yielded more than 700 examples of ancient graffiti – writings and drawings of various kinds incised with a sharp tool (for example, a knife or a nail) on ceramic storage containers (*amphorai*, *pithoi*), cooking pots and tableware. At times, graffiti were found on roof tiles and pieces of plaster that covered the walls and columns of the buildings, yet those scratched on potsherds (*ostraka*) and complete vessels make up the great majority. It is not a surprise, since in antiquity pottery was a cheap and easily available writing material. These casual inscriptions (most of which are just marks, abbreviated words, or very short phrases) provide a diverse wealth of information on the life in the Phanagorian *polis*. Brief as they are, the graffiti can tell us a lot about the nature of trade, prices, religious beliefs and practices, public and private life of the Phanagorians. The inscriptions which consist of several lines are definitely the ones that attract the most attention.

The graffito with the name of Phanagoras, third quarter of the 6th century BC. The person mentioned in this text may be identical with Phanagoras of Teos (the city on the west coast of Asia Minor), who is believed to have founded Phanagoria (ca. 540 BC).



*N.V. Zavoikina,
an epigraphist*



Another 'long' inscription worthy of note is of a commercial character. This is **the record of debts** owed by four Phanagorians for the goods which had been delivered to them (second half of the 4th century BC).

Graffito with the name of Phanagoras, third quarter of the 6th century BC

As is widely known, the worship of the gods and accurate observance of religious rituals were important parts of life in the ancient Greek world, Phanagoria being no exception. Its patron gods were Aphrodite Ourania ("heavenly"), the Mistress of Apatouros, and Apollo. The temples dedicated to these deities were located somewhere in the central part of the city. A number of votive graffiti from Phanagoria shed some light on the religious practices of the city's inhabitants.

The neck of a black-glazed jar with the formula "so-and-so (the name is not preserved) dedicated". Most of such offerings feature the name of the dedicator, usually abbreviated to 2–5 letters. (The name of the deity receiving the offering was usually left out, since the dedicator knew perfectly well who the gift was intended for).

Two vessels with the proper names shortened to Koty[s?] (Koty[tis?]) and Hephais[tion?]. Such abbreviated forms of names were often incised on



Neck of a black-glazed jar with the formula "so-and-so (the name is not preserved) dedicated"

the undersides of various drinking vessels (black-glazed *kylikes*, *skyphoi*, *kantharoi*) which were to be used as votive offerings to the temples.

Which is more, the graffiti from Phanagoria allow some interesting insights into the private life of its inhabitants. In ancient Greece, the word *symposion* was applied to all kinds of drinking parties: from informal gatherings for purposes of revelry and entertainment to official receptions that



Two vessels with the proper names shortened to Koty[s?] (Koty[tis?]) and Hephais[tion?]. Such abbreviated forms of names were often incised on the undersides of various drinking vessels (kylikes, skyphoi, kantharoi) which made up a large part of votive offerings to the temples

took place in public buildings (*prytaneia*). The *symposion*, an integral element of ancient Greek lifestyle, was usually held after dinner (*deipnon*), the largest meal of the day. Large public banquets would be overseen by a *symposiarchos*, “the master of a feast”. Small friendly gatherings were of informal and, perhaps, intimate nature. Each guest was supposed to contribute something to the feast, and would arrive with a drinking vessel inscribed with his personal name. The Phanagorian graffito collection includes several inscriptions on the wine cups that once belonged to *symposiastai* (participants of a *symposion*).

The inscription of Sonados under the foot of an Attic *kylix* (late 6th – early 5th century BC) informs that it is he, Sonados, who owns the cup.

The inscription “Arpatris” on an Attic black-glazed *kylix* (first quarter of the 5th century BC) is also a mark of ownership.

Entertainment during *symposia* could be provided by specially invited *hetairai*, flute-girls and dancing girls.

The gift inscription addressed to a *hetaira* under the foot of a *kylix* (late 6th – early 5th century BC) reads: “Simon, dear! I am myself beautiful,



N.A. Pavlichenko,
an epigraphist



The inscription of Sonados
under the foot of an Attic *kylix*:
“I am Sonados’ *kylix* indeed”
(late 6th – early 5th century BC)



The inscription “Arpatris” on an Attic
black-glazed *kylix* informs who this
drinking cup belongs to
(first quarter of the 5th century BC)



*The inscription under the foot of a kylix:
"Simon, dear! I am myself beautiful,
kind and moderate".*

*The second phrase refers
to the wine cup which was presented
to Simon by her admirer.*

First quarter of the 5th century BC

kind and moderate". The second phrase refers to the black-glazed wine cup which was presented to Simon by her admirer.

In antiquity, potsherds could also be used as practice material for children learning to write, or as handy support for drawing. These types of graffiti help us assess the level of literacy attained by the inhabitants of Phanagoria at a certain period of time and gain a better understanding of the city's education system. **The ostrakon inscribed with the first letters of the Greek alphabet** is one such student exercise (an *abecedarium*) undertaken in the last quarter of the 6th century BC.

A large part of the Phanagorian graffiti is made up of various commercial notations. Ancient merchants would often mark the necks or bodies of transport *amphorai* with the number of the *pithos* where the wine had been fermented and aged. Other important information, such as the capacity and weight of the vessel, the origin of the content, etc., could also be provided.

The neck of an amphora with the "Chi[an]" graffito dating from the second half of the 4th century BC. As follows from the trademark, the amphora was filled with wine from Chios. This island, famous for its art of vine cultivation all over the classical world and beyond, supplied Phanagoria with large quantities of its highly prized product throughout the 6th – early 3rd centuries BC.

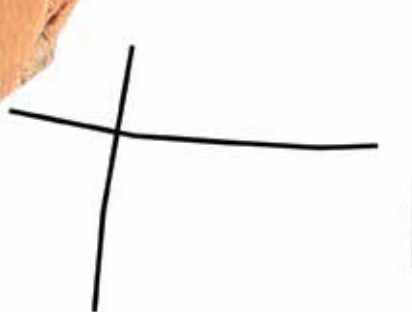
Indications of price and other numerical notations also fall into the category of commercial graffiti. Such marks usually appear under the base of a vessel.



Ostrakon inscribed with the first letters of the Greek alphabet (an abecedarium). 525–500 BC



Neck of a 4th-century BC amphora with the "Chi[an]" graffito





*The record of debts owed
by the inhabitants of Phanagoria.
Second half of the 4th century BC*

*The letter written on a lead tablet: "This slave was exported for sale
from Borysthenes, his name is Phaulles. We wish all [debts?] to be paid".
Last quarter of the 6th century BC*



Lead was another widespread kind of writing material in antiquity. However, the finds of inscribed lead tablets are extremely rare, as the metal was commonly melted for reuse. While these small plates of lead were used primarily to put curses on one's enemies (if that was the case, a tablet inscribed with some gruesome message would be buried in the necropolis), they could also serve as a medium for business correspondence – between merchants, slave dealers and their trade partners in other cities, the owners of country estates and their managers. One such **business letter written on a thin sheet of lead** was found at Phanagoria. It reads: "This slave was exported for sale from Borysthenes, his name is Phaulles. We wish all [debts?] to be paid". This remarkable document reveals the nature of the long-distance slave trade between Phanagoria and Borysthenes (Olbia, in modern-day Ukraine) in the last quarter of the 6th century BC.



PEOPLE OF PHANAGORIA (BIOARCHAEOLOGICAL STUDIES)



*M.V. Dobrovolskaya,
a bioarchaeologist*

The city was surrounded by a vast necropolis. Noteworthy, the first archaeological excavations at Phanagoria, conducted as far back as the 18th century, were those of the burial mounds, though what did interest the explorers then were spectacular artifacts rather than crumbling human bones. Today, bioarchaeology (a research area at the intersection of ecology and physical anthropology) is a well-established discipline that contributes greatly to our understanding of the human past. Skeletal remains from the burials are an important historical source, but with a difference. They bear traces of diseases, traumas and injuries, specific physical activity patterns and dietary habits. Unlike man-made documents, this source can not lie and distort the reality, which is why the data collected through the scientific study of human remains is of such great value.

The necropoleis of Phanagoria have preserved a mass of unbiased evidence on the life of the city's inhabitants during classical antiquity and the Middle Ages. Now it can be used to track changes in human physical traits over the centuries.

Of all the skeletal remains that have been collected during the past 10 years, the earliest material comes from the burials of the Hellenistic period (3rd–2nd centuries BC). In those times, the average life span of a city dweller was about 39 years. Unlike today, women lived shorter than men. On average, female life expectancy did not exceed 32 years, the primary reason having been stresses associated with pregnancy and childbirth. About a third of women lived less than 25 years, and the under-three mortality rate (the number of children who died by the age of three) was also high.

The average age at death for the Phanagorian men was about 45, which is not so bad given that the majority of males in those times died before they turned 40. The outward appearance of these people – first of all, their stature – would also surprise a modern observer. Thus, if the Russian man today is, on average, about 177 cm tall, the Phanagorian of the Hellenistic period was more than 15 cm shorter! The average height then was about 160 cm for men and only 155 cm for women.

As for the health of these people, they definitely suffered from frequent toothache: caries was not uncommon in their population. This would have been especially true for the urban elite, who could afford to treat themselves to desserts and other carbohydrate-rich foods.

Moreover, modern research techniques allow us to have a look at the childhood of those people who died being fully grown up. The fact is that during the time when the enamel of the tooth crown is just being formed (from about 6 months up to 12 years), any considerable stressor, such as



Linear enamel hypoplasia on the tooth crowns – a marker of stress experienced in childhood



The skull of a young man with traces of an injury caused by a spear

disease, poor nutrition, or depression, results in linear enamel hypoplasia – characteristic transverse furrows clearly visible on the surface of teeth. Our study demonstrates that up to 40% of the women and only 29% of the men who lived in Phanagoria during the Hellenistic period had this type of enamel defect. Though both figures are quite impressive and indicate repeated stress events experienced by the Phanagorians while still very young, it is clear that the girls grew up in less favourable conditions. This is yet another explanation



The skull of an adult man bearing traces of a healed wound inflicted by a sword



False joint that formed in the forearm as a result of inadequate healing after the fracture

Humerus (the bone of the upper arm) with evidence of achondroplasia



for the shorter female life span: starting from birth, the quality of their life was lower than that of the men.

Traces of healed and unhealed injuries are seen as indicative of a certain level of violence in society. Overall, warfare-related wounds were uncommon among the Phanagorians in the 3rd–1st centuries BC. However, we did find some unambiguous evidence that the people had been engaged in hand-to-hand fighting. Thus, the frontal bone of a man 30–39 years of age bore signs of a healed trauma. Its shape suggested that the injury had been caused by a spear. The man's opponent was most likely on horseback since the spear thrust was directed downwards. The wound turned out to be non-penetrating (perhaps, a helmet or any other headdress had stopped the otherwise mortal blow) and healed without complications.

In the Roman period, some characteristics of Phanagoria's population changed considerably. While the average life span was still about 38–39 years, women now lived longer (up to 36 years) but men died before they turned 42. A large part of the excavated male burials are those of young men (under 25). The risk of death was highest after the third decade of life, perhaps due to the increased number of military conflicts. Unfortunately, the remains are often so poorly preserved that it appears impossible to detect any signs of wounds. However, the overall demographic picture indicates that the majority of men died in the prime of life; they just did not have a chance to live long enough to succumb to any age-related diseases. Some of the skeletons showed evidence of head and limb injuries. For example, one of them bore traces of a healed double fracture at the base of the skull. The blow, apparently not lethal, was also directed downwards. The injuries healed, and the lucky survivor lived for many years more.

Another peculiar case was that of a false joint that formed in the forearm as a result of inadequate healing after the fracture (insufficient immobilization – no orthopedic cast!). Many skeletons (all of them male) were found to have an additional facet – a distinctive morphological feature of the anterior aspect of the femoral head-neck junction associated with habitual horseback riding from an early age.

Also of interest are a few instances of achondroplasia (literally meaning “without cartilage formation”), a genetic disorder that affects bone development and is known as a common cause of dwarfism. It occurs as a sporadic mutation in most cases, but may also be inherited as an autosomal dominant genetic disease. At least two male skeletons from Phanagoria exhibited evidence of this pathological condition. On a side note, it is well known that dwarfs attracted the attention of the ruling elites from the earliest historical times. The tradition to keep dwarfs at court, going back to the pharaohs of ancient Egypt, was eagerly embraced both by the European monarchs and the Russian tzars.

The overall frequency of enamel hypoplasia in the population of the Roman time goes down (approximately by a factor of 2!). For the most part, this marker of physiological stress was detected on female teeth. As a matter of interest, the frequency of enamel hypoplasia among the children who had died prematurely was found to be twice as high as that in the adult population,



The skull of a man with evidence of artificial cranial deformation



Rare genetic anomaly – a wormian bone (extra bone piece within a suture of the skull)

which suggests that the major reason behind the early child deaths was poor health status due to systemic stress.

Chamber tombs of the Roman time yielded skeletal materials that attract particular attention. These large tombs located in the central part of the Eastern Phanagorian necropolis contain physical remains of up to several dozen individuals! Most of them (80%) are males, young and middle-aged being equally numerous. More than 32% of the men buried in the chamber tombs died when they were over 45 years of age, which points to the high quality of life they had enjoyed. Marked morphological similarities among the men from each multiple burial place imply kinship, yet the small proportion of women and children clearly indicates that blood connection was not the only factor which determined who would be buried in a particular tomb.

The patterns of interaction between classical civilization and the realm of barbarians – these two worlds apart – have long been a matter of keen scholarly interest. Revealing in this respect can be the study of artificial cranial deformation – the barbarian practice of reshaping a child's skull by applying prolonged external force. This tradition, which has been known since the writings of Herodotos, was widely spread among the Sarmatian tribes that came into contact with the ancient cities in the North Black Sea Region during the Roman period. The excavations at Phanagoria yielded a number of skeletons with intentionally deformed skulls. Interestingly, the rest of their features were fairly similar to those of the other skeletal remains dating from the same period. This may well be the evidence for acculturation.

To sum up, the scientific study of the human remains recovered from the Phanagorian necropoleis sheds additional light on the everyday life in the ancient city. Thanks to the advances in bioarchaeology, we now can view the inhabitants of Phanagoria not just as legendary builders of majestic temples and burial mounds, but also as real people, whose lives made one and a half millennia of Phanagoria's history like brief lines make up a long, fascinating book.



M.V. Dobrovolskaya



STORIES BEHIND ANIMAL BONES



*E.V. Dobrovolskaya,
an archaeozoologist*

The 21st century has seen rapid progress in scientific fields that cross traditional boundaries and use methods and insights of several established disciplines. One such example is archaeozoology, an interdisciplinary field that draws upon both the natural sciences and the humanities in an attempt to shed more light on the life of our ancestors and their relationship with the environment. Evidence obtained through the study of animal bones excavated from archaeological sites helps us better understand the origins of our civilization. The role of hunting and animal husbandry in the development of a certain society is one of the primary topics to be addressed by an archaeozoologist.

The osteological assemblage from Phanagoria, which currently contains over 120,000 specimens, is the largest and the most representative of all animal bone assemblages that have been collected from the other sites of classical antiquity located in modern-day Russia.

Domestic animals. Skeletal remains of domestic mammals make up the overwhelming majority (91,3%) of all the specimens which have been identified. The bulk of the bones belong to cattle (cows, bulls, and oxen), small ruminants (sheep and goats), pigs, horses, and dogs. A few fragmentary bones of donkeys and cats have also been found. The most numerous skeletal remains are those of cattle; the bones of sheep and goats take second place. The proportion of pig bones is also fairly large (16–18%). The data on these animals is as yet insufficient; however, it seems likely that the number of pigs raised in different ancient centres on the Taman Peninsula varied depending on the ethnic composition of each particular city. Apropos, pigs are known to have been of much importance to the Greeks themselves, especially in the areas where the cult of Demeter was widely practiced: the pig was considered one of Demeter's symbols and often served as a sacrificial animal.

To make inferences about the herd that actually existed in the past, the knowledge of its age structure is essential. To that end, diagnostic bones of all four groups of ungulates (hoofed animals) that were raised in ancient Phanagoria have been carefully analyzed.

Cattle are known to have low fertility rates and long generation intervals (1 calf every 1–2 years, starting from the third or fourth year of life). Our research shows that cows and bulls slaughtered during their reproductive years (between the ages of 2 and 6) made up no more than 40 % of the Phanagorian cattle herd. This kill-off pattern indicates that beef rather than milk was the desired product in ancient Phanagoria, and the reproduction of the herd was stable. Judging from the large number of bones with pathological changes, some significant inbreeding must have taken place. The high proportion of



skeletal remains that belong to adult and old animals attests that cattle were also used for traction (pulling ploughs and vehicles).

Animal bones from the excavations studied by the archaeozoologist

The study of the cattle skulls has revealed the existence of three types of animals: the species with long horns and big skulls; those with short horns and relatively small skulls; and polled (hornless) animals with small skulls. Such diagnostic elements as limb bones and mandibles (lower jaws) with complete tooth rows have also been examined.



Length distribution of alveolar tooth rows of cattle mandibles (lower jaws)



Length distribution of cattle radial bones

As follows from the research, there existed two groups of cattle, the animals with longer tooth rows forming the clear majority. It stands to reason, since the milk yield and the overall physical strength of cattle depends on the amount of food consumed every day, and the powerful chewing apparatus is a key factor here. The situation is the same with regard to the lengths of radial bones: two distinct groups of animals with longer and shorter radii have been identified. To all appearance, the inhabitants of Phanagoria preferred to raise smaller cattle with relatively strong jaws. Most of the Phanagorian cows, bulls, and oxen were horned.

The number of sheep and goats in a herd usually differs according to particular production goals. In our case, the people obviously wanted not only meat, but also milk and wool, as indicated by the proportions of faunal remains that belong to young animals (41%) and those who lived in adulthood (59%).

Pigs are the only species raised exclusively for their meat. Their high fertility rate and short generation interval, combined with almost no demand for the investment of human labour, made them ideal animals to be raised on the Taman Peninsula. Provided with just a minimum of care, pigs could thrive there all year round. These are perhaps the factors that determined the age structure of the faunal remains we are now left with: over 60% of the animals were slaughtered while young. The remaining 40% were more than enough to guarantee stable reproduction of the herd.

Horses, just like cattle, are known for their low fertility rate and long generation interval. The bones of animals in their prime reproductive years make up almost 60 % of all horse skeletal remains found in Phanagoria, which suggests that horses also served the city's inhabitants as an important source of meat. Since the remaining animal population could not ensure stable reproduction, horses must have been constantly supplied to the city from elsewhere.

To sum up, the herd of ancient Phanagoria appears to have consisted mainly of cattle, raised for their meat and – to a lesser degree – milk. These animals could also be used for traction; and their dung was utilized as organic fertilizer. The second place belonged to sheep and goats, whose actual population must have been 5–6 times bigger than the number of animals killed by the Phanagorians for food. The herd of pigs was stable and provided a steady meat supply, while the constant population of horses was evidently not so large and could not satisfy all the needs of the city's inhabitants.

Wild animals. The osteological assemblage includes 412 fragments of wild animal bones, of which 198 specimens belong to mice, rats, blind mole rats, dolphins (both bottlenose and short-beaked common dolphins), shrews, and hedgehogs. Except for dolphins, the other species are common to the Taman Peninsula and therefore can not add to our knowledge about the life of people in Phanagoria.

Bones that represent other animals are very few in number. Sorted in a descending order, the finds make the following row: hare – fox – wolf – roe deer – wild boar – deer – leopard.

Thus, fur-bearing animals appear more numerous than those whose meat can be eaten (with the only exception of the hare, which is both). Hunting,

*Bones of birds*

therefore, can not have been of much importance to the Phanagorians. Two bones of a leopard cub (a skull and a phalanx bone) found in one of the pits at the city-site do not necessarily indicate that the animal was a local hunter's catch. It may well have been a present brought from the Caucasian mountains to some wealthy Phanagorian man. In antiquity, wild cats served as important symbols of prestige, and only a few rich people could afford to keep them as pets in their households.

Evolution of animal husbandry and hunting. The composition of the herd and the role of hunting could not stay the same over one and a half millennia of Phanagoria's history. Since no direct inferences regarding the life of a particular society can be made based on the patterning revealed by the excavated faunal material, these were the ratios among the skeletal remains of different animals that attracted most of our attention. The number of the bones that have been analyzed is huge, which can ensure the credibility of the obtained results. The provided line graph illustrates quantitative relationships among the remains of the animal species as preserved in Phanagoria's archaeological record dating to the period from the 6th century BC to the 9th century AD. It offers a fairly good insight into the structure and dynamics of meat consumption and the other forms of animal use over a long period of time.

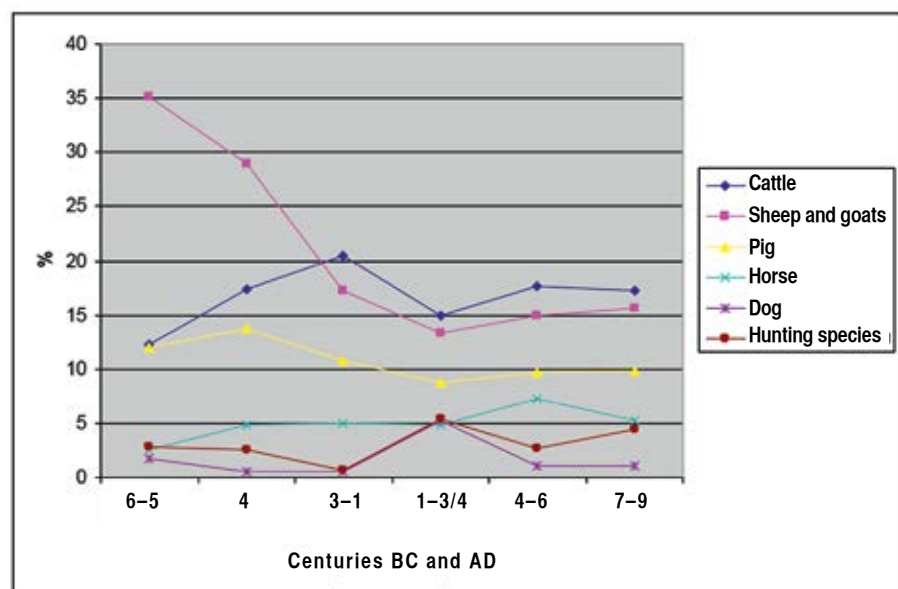
The predominance of sheep and goats in the 6th–4th centuries BC is perfectly understandable. Initially, when the colonists were adjusting themselves to the new conditions and economic realities of the Taman Peninsula,

it would have been hard to maintain a large cattle herd. Sheep and goats generally place much fewer demands on the investment of human labour than do cattle, and thus offer a number of economic advantages. However, as time went by, the number of small livestock kept decreasing, while cows and bulls, on the contrary, were gaining in popularity – until at the beginning of the Hellenistic period cattle and sheep came to be raised in almost equal proportions (about 20%). In the 6th-4th centuries BC, the percentages of pigs and horses were also rising, though not as steeply as that of cattle. Let us emphasize once again that the line graph shows not the overall increase in the number of particular animals, but the changes in the structure of the herd. The bigger the proportion of cattle, pigs and horses, the lower was the percentage of sheep and goats. Several reasons may lie behind this fact.

Between the 6th and the 1st centuries BC, the pattern of meat consumption in Phanagoria changed due to the progress in agriculture and the alterations in the social structure of the city. The growing proportion of cattle suggests increasing prosperity of Phanagoria's inhabitants: beef was a meat for the rich. Besides, this can also be linked with the development of cereal cultivation. Phanagoria is known to have exported a lot of grain, and bulls must have been in high demand for ploughing.

The gradual increase in the proportion of horses not only indicates that Phanagoria was turning into a well-established, thriving colony, but may also reflect the influx of non-Greek population to the city: local tribes are known to have used horses for food. In the subsequent periods, the percentage of horses remained stable, which implies that the newcomers eventually assimilated into the Greek culture and abandoned their traditional diet.

For some reason, around the turn of the Common Era the proportions of all groups of animals raised for their meat (cattle, sheep and goats, pigs) went down. At the same time, the percentage of bones that belong to wild animals and birds increased – the Phanagorians must have turned to hunting to ease the shortage of domestic meat. However, the marked growth in the number



The change in ratios (%) among bone remains of various animals throughout classical antiquity and the Middle Ages

of dog remains may be due to another reason. To all appearance, during that period the area of the city under study served as a dumping ground for waste, and also for dead dogs, hence the large number of their bones found by the researchers. The tendency reversed in the Byzantine period: the proportions of livestock went up while those of dogs and wild animals decreased, with the percentage of horses being the highest ever.

Thus, the study of animal bones collected during the many years of archaeological research supplies us with a wealth of valuable information about the evolution of the Phanagorian society. Archaeozoological analyses reveal changes not only in the animal husbandry but in the whole system of agriculture as well, and help us understand the patterns of food consumption and the role played by hunting in different periods of the city's history.



PHANAGORIA CENTRE FOR SCIENCE AND RESEARCH

Today, thanks to the joint efforts of so many concerned individuals, the site of ancient Phanagoria has been turned into a scientific and cultural complex which includes the State Historical and Archaeological Museum-Preserve and the Centre for Science and Research built to facilitate the work of the Phanagorian Expedition.

The building of the Centre is located on the western outskirts of Sennoi Village. Its construction, started in March 2011, was financed by the *Volnoe Delo* charity foundation set up by Oleg Deripaska (part of the money was donated by Konstantin Nikolaev, General Director of N-Trans Group). The grand opening ceremony was held on October 3, 2012 – and on the very next day the Centre welcomed the participants in the International Archaeological Conference on Ancient Heritage of Kuban.

The building houses a library, a conference room, laboratories, comfortable living quarters, and everything else necessary to ensure efficient work of the multidisciplinary research team. The specialists of the Phanagorian Expedition thus have the opportunity to carry out fieldwork and post-excavation

The Phanagoria Centre for Science and Research built on the high Tuman Gulf coast near the village of Sennoi. Drone view





analyses all year round. Besides, the Centre provides the perfect venue for various scientific conferences and roundtable discussions devoted to the investigation and preservation of cultural heritage sites in Krasnodar Region.

Library and Conference Room. The heart of the Centre is the library, which is to hold a comprehensive collection of books on the ancient history and archaeology of Greece, Rome and the Byzantine Empire, as well as on the origins and spread of Christianity in Russia. Books come from different sources: some are bought in Russia or abroad with the money allocated by the *Volnoe Delo* Foundation; others are acquired through donation or exchange. The largest acquisition so far has been the personal library of the late Russian scholar G.A. Koshelenko (1935–2015), bequeathed by him to the Centre. A special project has also been undertaken to convert the printed materials into digital media and thus make them available to a large number of researchers.

The library's collection is stored in specially designed bookcases located along the walls of the conference room, fully equipped with state-of-the-art technology to make it a professional meeting space. It is here that once in

The grand opening of the Phanagoria Centre for Science and Research on October 3, 2012.

O.V. Deripaska has handed a symbolic key to V.D. Kuznetsov



*The Phanagoria Centre for Science
and Research viewed from the west*

*Cozy inner yard with a colonnaded
walkway. Living quarters on the left,
laboratories on the right, Library
and Conference Room upstairs*





Library and Conference Room regularly become the venue for scientific conferences and roundtable discussions

One of the laboratory rooms to conduct post-excavation analyses

Temporary storage facilities for archaeological finds in the basement of the Centre, also used for some kinds of conservation work

Well-equipped photo laboratory





*T.D. Rumyantseva,
Chief Executive Officer of the Volnoe Delo Foundation*



*R.M. Munchaev,
a corresponding member of the Russian Academy
of Sciences, and D.L. Sergeev (Ministry of Culture
of the Russian Federation)*



*K.Yu. Nikolaev, General Director of N-Trans Group,
N.A. Makarov, a member of the Russian Academy
of Sciences, and V.D. Kuznetsov (from right to left)*

*Students of Kuban State University at a conference
in the Centre*





every two years, in October, specialists from many countries (Russia, Ukraine, Germany, France, Great Britain, Denmark, etc.) get together to discuss various issues in the ancient and mediaeval history of Kuban and the Crimea. Apart from international conferences, each February the Centre opens its doors to the participants in round tables – joint annual meetings of the Department of Classical Archaeology at the Institute of Archaeology (Moscow) and leading experts on North Pontic archaeology and history from other Russian research institutes and museums. These discussions also involve students of Kuban State University – those who got a chance to specialize in archaeology and pick up practical skills at Phanagoria thanks to the support from the *Volnoe Delo* Foundation.

Laboratories. These modern, well-equipped facilities allow a wide range of post-excavation analyses to be conducted at the Centre. There is also a specialized laboratory for conservation and restoration of archaeological objects, which provides professional treatment of recovered artifacts so that they could be fully examined and passed on to posterity in the best condition possible.

Small exhibition of the finds from Phanagoria organized specially for the guests of the Centre



*A. Baralis (Louvre, Paris),
P. Dupont (University of Lyon)
and V.D. Kuznetsov
(Institute of Archaeology, Moscow)
exploring the excavation site*

Living quarters. Comfortable and homely living conditions often become a key to effective work. Today, both the specialists of the Phanagorian Expedition and the guests of the Centre – participants in scientific conferences and other events – are provided with well-furnished accommodation units, a self-catering kitchen, and a spacious dining-room, which can also be used for informal gatherings. The cozy inner yard with a colonnaded walkway along two sides and the roof terrace open to the sky are perfect places to have a rest after a busy day.

Now that the Centre for Science and Research with all the necessary infrastructure has been created, the Phanagoria project team is better equipped to carry out its main mission: to study, preserve and promote Kuban historical and cultural heritage by:

- conducting year-round multidisciplinary investigations at the archaeological sites on the Taman Peninsula;
- providing students and faculty members of Kuban universities with specialist training in archaeological field and lab, numismatics, epigraphy, historical geography, and other related disciplines;
- inviting both Russian and foreign experts to deliver series of lectures on a wide range of historical and archaeological issues;

- assembling a collection of artifacts to be on permanent display at the Phanagoria Museum (which is also to present temporary exhibitions of cultural heritage objects found in the Kuban region and currently held by other museums, primarily in Moscow, St. Petersburg and Krasnodar);
- communicating its ideals, aspirations and research results to a wide audience (publishing booklets and exhibition catalogues, making documentary films, giving public readings);
- raising public awareness about Kuban's past and the need to treat it with care and respect.

The website of the Kuban Historical and Cultural Heritage Research Association (www.gipanis.ru) posts regular updates on the main achievements of the Phanagorian Expedition and the events held at the Centre for Science and Research. Since its creation, the website has been visited by over 360,000 users from 144 countries.



PUBLICATIONS OF THE PHANAGORIAN EXPEDITION

With generous financial support from Oleg Deripaska, it has become possible not only to conduct intensive archaeological investigations at Phanagoria but also to publish the obtained results – systematically and in a timely manner.

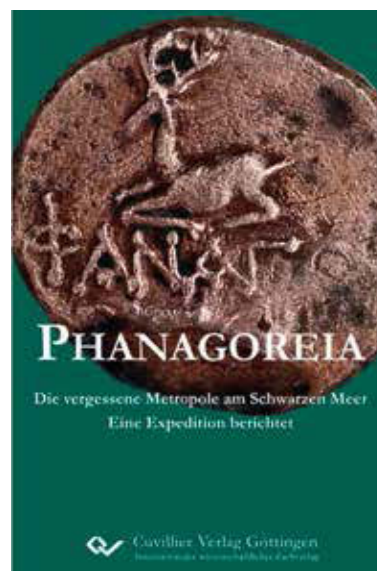
The illustrated album *Phanagoria* (2008) was the first record of the main achievements made by the Phanagorian Expedition. Its German version *Phanagoreia: Die vergessene Metropole am Schwarzen Meer* was published in 2009. The album consisted of several sections, each devoted to a particular area of study: history, archaeology, anthropology, archaeozoology, paleobotany, geophysics, paleogeography, etc. As a result, for the first time some light was shed on Phanagoria's cultural landscape and the relationship between the ancient *polis* and the natural environment. The second edition of the album (in Russian) appeared in 2012.

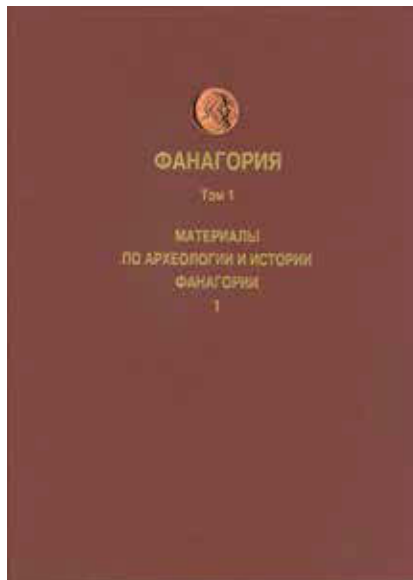
Three massive volumes of *Ancient Heritage of Kuban* (edited by M.G. Bongard-Levin and V.D. Kuznetsov) came out in 2010 and immediately attracted much attention in the scholarly community. This monumental publication, the first of its kind, offers a comprehensive account of Kuban's distant past. Its chapters, many of which were written by the specialists of the Phanagorian Expedition, contain a wealth of historical detail about different peoples that once inhabited the region, economic and political relations, religion and culture.

Volume I includes an essay summarizing over two hundred years of research into ancient Kuban's history; a number of articles on the earliest



Phanagoria albums





human cultures in the region; a chapter devoted to the Greek colonization of the Taman Peninsula; and the descriptions of the major cities in the Asiatic Bosphoros – Phanagoria, Gorgippia, Hermonassa, Patraios, Kepoi – based on recent archaeological discoveries. Volume II deals with the political history of the Asiatic Bosphoros from the times when the first Greek *poleis* appeared in the area till the Middle Ages; as well as with the issues related to its economic development, religious beliefs and practices of its population, art and warfare. Volume III informs the readers about the most significant collections of Kuban antiquities currently held by various museums in Russia and abroad (in Ukraine, Germany, England, France, and the USA). The publication of *Ancient Heritage of Kuban* became a milestone in the study of the Asiatic Bosphoros: never before had these extensive archaeological and historical data been organized in such a clear, logical way, not to mention the fact that much of the material had simply been unavailable to a large number of researchers. However, the books were intended not only for scholars, but for the general public as well. Indeed, all lovers of antiquities got a chance to appreciate remarkable artifacts that had been produced in the Kuban region many hundred, sometimes thousand, years ago.

A series of collected articles entitled *Altertümer Phanagoreias* ("Antiquities of Phanagoria") is published under the agreement with Göttingen University. Respected scholars from different countries, primarily European ones, have submitted their contributions to the series. Its publication is partly financed by the *Volnoe Delo* Foundation.

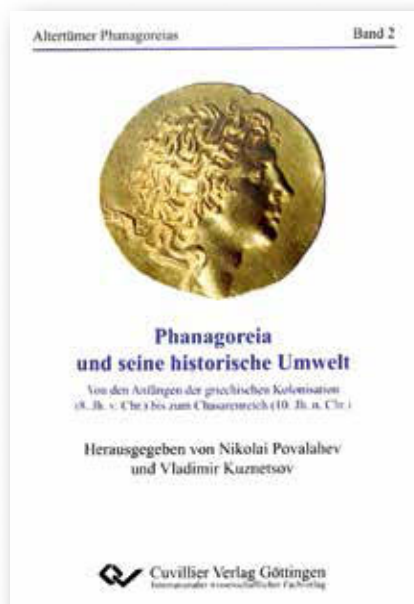
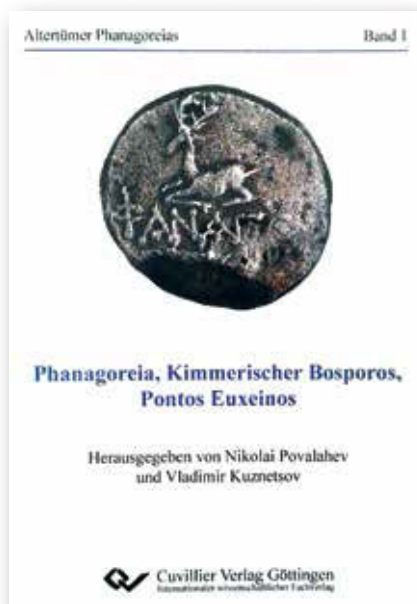
The first volume of the series called *Phanagoreia, Kimmerisher Bosphoros, Pontos Euxeinos* ("Phanagoria, Kimmerian Bosphoros, Pontos Euxeinos") is concerned with the issues related not only to Phanagoria, but to the history of the Bosporan Kingdom in general. Some of the articles are devoted to the so-called 'large' and 'small' towns of the Bosporan state and the cults of the gods worshipped in the Bosphoros (Kybele, Artemis Ephesia).

Phanagoria: Results of Archaeological Investigations



*Three-volumed Ancient Heritage of Kuban
(edited by M.G. Bongard-Levin and V.D. Kuznetsov)*





Much attention is given to the analysis of the latest finds: Roman and Byzantine coins and funerary inscriptions found at Phanagoria.

Most of the authors who contributed their papers to the second volume *Phanagoreia und seine historische Umwelt* ("Phanagoria and its Historical Milieu") chose to address fundamental topics in the history of the Bosporan Kingdom, Phanagoria being the centre of attention. The articles deal with the role of North Ionian colonists in the foundation of Phanagoria, the military and political crisis that arose in the Bosphoros in the first quarter of the 5th century BC, the relations between Herakleia Pontike and the state of the Seleukid dynasty, the Phanagorian revolt of 63 BC, etc.

The third volume *Phanagoreia und darüber hinaus...* ("Phanagoria and Beyond...") features articles that cover a wide range of subjects: from the archaeological topography of Phanagoria and the numismatic analysis of the fourth to first century BC coin hoard found in the Phanagorian *chora* to the localization of particular sites (for example, it has been suggested that Apatouros, the elusive sanctuary of Aphrodite Ourania, should be looked for in the vicinity of Phanagoria).

In 2013, the Phanagorian Expedition launched a series of monographs and collected papers entitled *Phanagoria: Results of Archaeological Investigations*. The idea is to alternate books on particular topics and collections of articles under the generic title *Studies in the History and Archaeology of Phanagoria*. This sequence of publications – presenting the results of investigations conducted by a single expedition at a single archaeological site – is almost unprecedented in Russia and ranks among such world-famous series as *The Athenian Agora*, *Corinth*, *Samos*, *Excavations at Olynthos*, *Forschungen in Ephesos*, etc. For the first time Russian researchers got a chance to publish the whole body of archaeological material that has been collected during many years of arduous work at one of the country's largest sites of classical antiquity. Along with the discoveries made in the previous

Studies in the history and archaeology of Phanagoria published in Germany (Göttingen University)

decades, the series features analytical essays and reports on the most recent excavations.

The first volume in the *Phanagoria* series (*Studies in the History and Archaeology of Phanagoria. Issue 1*) presents the results of the investigations conducted at the capital of the Asiatic Bosporos in the second half of the 20th – early 21st centuries. Several articles deal with the excavations at the Phanagorian necropoleis and the 10-year surveys carried out in the Phanagorian countryside. There are also publications devoted to the analysis of numismatic materials and particular artifacts.

The second volume is a collective monograph called *Gold of Phanagoria* (2015). This publication is truly unique: a multidisciplinary team of 17 specialists from Moscow, Berlin, St. Petersburg, Krasnodar, Simferopol, Magnitogorsk, and Miass put in a great deal of their time and effort to analyze various technological, numismatic and epigraphic issues related to the production and the use of gold pieces in Phanagorian society.

The artifacts under study were collected over several decades. Recovered from Phanagoria, they are now held by the Pushkin State Museum of Fine Arts (Moscow) and the museums of Krasnodar and Taman. The research spans the period of almost eight centuries: from the second half of the 4th century BC till the first half of the 5th century AD.

Many of these wonderful pieces of jewellery and toreutics, along with some fascinating ancient coins, had never been published before. However, the monograph contains a lot more information apart from the stylistic and typological analyses of the artifacts. The authors went to great lengths to examine ancient technological procedures and the elemental composition of the precious metal. Particular attention was given to the study of the objects using modern non-destructive scientific techniques, such as X-ray fluorescence (XRF) spectrometry, super-resolution microscopy, and X-ray spectroscopy.

The artifacts were found to contain a number of geochemical tracers, which allowed some conclusions as to the provenance of the metal. Besides, the study revealed how the purity and the elemental composition of gold used for the production of certain objects, as well as the very manufacturing processes, changed over time. Judging from these data, the researchers made an attempt to identify locally produced items among a mass of imports and attest the existence of artistic metalworking in Phanagoria in different periods of time.

The third volume in the series – *Coin Hoards of the Mithradatic Time from the Phanagorian Chora* – is a monograph written by M.G. Abramzon and V.D. Kuznetsov. This publication presents the contents of three Bosporan coin hoards dating from the 4th–1st centuries BC. Two of them are the largest coin assemblages ever found not only in the Bosporos but also in the entire North Black Sea Region: a huge hoard discovered in 2003 at the ancient settlement known as Soleny 3 includes up to 15,000 coins, while the 2007 hoard from an ancient country estate in the south-eastern part of the *chora* contains around 8,000 specimens. Foreign coins found in these assemblages attest that Phanagoria maintained trade and political links with the cities of the Aegean and Asia Minor, as well as with the Bithynian Kingdom

and the states ruled by the Ptolemaic and Seleukid dynasties. The published numismatic materials are truly invaluable as tool of historical reconstruction: they shed new light on the Bosporan economy and help us better understand Phanagoria's foreign trade on the eve of the Mithradatic Wars and that negative impact the military and political turmoil had on the rural area of the city.

The fourth volume *Studies in the History and Archaeology of Phanagoria. Issue 2* is scheduled for publication in 2016. It consists of 17 articles written by the members of the Phanagoria project team. The topics are diverse, ranging from the analysis of archaic burials and the Mound of Boyur-Gora to the recent findings from the Phanagorian rural area or the problem of "Sindian" coins. The results of the epigraphic, bioarchaeological, archaeozoological and ichthyological studies are also presented in this collective work.

*On Phanagoria's acropolis.
From right to left:
V.D. Kuznetsov,
O.V. Deripaska, G.V. Kokunko*



*At the Eastern necropolis.
From right to left:
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Conversation at the excavation site



In the laboratory of the Centre for Science and Research



PHANAGORIA STATE HISTORICAL AND ARCHAEOLOGICAL MUSEUM-PRESERVE

In the spring of 2014, ancient Phanagoria got a new, long-awaited status. The State Historical and Archaeological Museum-Preserve, established here by a directive from the Russian Government, has a threefold task: to create an exhibition of spectacular artifacts from Phanagoria and its vicinity; to organize systematic investigations at the archaeological site, and to preserve Phanagoria's cultural heritage and natural environment.

The creation of the State Museum-Preserve at Phanagoria emphasizes the size and the significance of this unique archaeological complex. In the future, the territory of the ancient city, including its submerged part, and the surrounding area are to be turned into an archaeological park where different types of cultural heritage – artifacts, building remains, landscapes – will be presented to visitors both in traditional and innovative ways.

As yet, not so many museums and research centres in Russia are built immediately near excavation sites, which is a pity because the idea has a lot of advantages. Visitors thus get a chance not just to see old artifacts arranged behind a wall of glass in a museum showcase but to observe the very process of discovery. At Phanagoria, we now have this rare opportunity to offer our guests a deeper and more vivid understanding of the ancient city, the culture of its inhabitants, and the work of archaeologists and other researchers.

The museum will include a complex of buildings housing a permanent exhibition space, a collection storage area, and laboratories for conservation and restoration. Besides, the project involves the creation of several open-air grounds where visitors will be able to see different stages of the excavation process, explore the ruins of buildings and other structures preserved *in situ*, and enjoy panoramic views of Phanagoria and its necropoleis. A number of outdoor exhibition spaces are to feature architectural reconstructions of craftsman workshops offering accurate interpretations of ancient technologies: from pottery making to metalworking and bronze casting.

Which is more, Phanagoria is about to become that unique place where visitors to an archaeological museum can also see excavation sites both on land and under water. As is known, a third of the city is covered with the waters of the Taman Gulf. Though it hinders the exploration of the site, this very fact opens up the marvelous opportunity to take our guests on glass-bottom boat tours which will allow a close look at the submerged cultural remains.

A special emphasis will be placed on a wide use of modern mixed reality technologies both in the indoor and open-air museum settings in order to enhance visitors' perception of the life in one of the largest ancient settlements on Russian soil.

THE PHANAGORIA ARCHAEOLOGICAL COMPLEX – A NATIONAL HERITAGE SITE



However, it is the preservation function of the museum that takes first priority. Phanagoria is different from many other sites of classical antiquity in that since the last inhabitants left the city a thousand years ago the area has remained almost untouched by modern forces of change. The city-site, the shoreline of the Taman Gulf, the ancient necropoleis, the mud volcano (Mount Maiskaya) overlooking the surrounding landscape – all the main parts of the archaeological complex – have not been built over in more recent times and stand today as living witnesses of a bygone age.

Yet, the present is actively encroaching upon the remnants of the past. Nowadays the site of Phanagoria is facing accelerating development pressures. The growing villages are pushing from the east and the west, and various barbaric attempts at destroying archaeological features and deposits happen almost every day. To prevent further damage to the unique cultural heritage and safeguard it for future generations it is essential that Phanagoria and its vicinity be declared a protected area and all potentially destructive forms of economic activity be forbidden within its boundaries. This large-scale conservation project got underway in 2012, when special efforts were launched to delineate the limits of the territory that should be 'designated' (recognized as a protected area), and to develop its coherent management strategy.

A detailed archaeological map of the Phanagorian *polis* derived from multiple data sources is what now lies at the core of the most crucial decisions about the project. Many years of painstaking fieldwork combined with the latest achievements of archaeological science allowed the researchers to

reconstruct the features of the ancient cultural landscape over an area of about 60 square km. As a result, a whole archaeological complex – consisting of the urban centre and rural settlements, burial mounds and grave fields, sanctuaries and old roads – has been revealed underlying modern vegetation cover and various man-made structures. The city-site with the adjacent necropoleis alone occupies an area of more than 850 ha, and the burial mounds detected to date are over 650 in number. Phanagoria has thus become the largest archaeological site recorded in Russia, its total area exceeding 55 square km.

Needless to say, to ban all kinds of economic activity on such a vast territory is unthinkable, which is why enforcing conservation measures brings up a case-specific set of challenges. A great deal of wisdom coupled with some degree of flexibility are necessary to draw up reasonable, realistic land management guidelines that will both provide for maximum protection of the most valuable parts of the Phanagoria archaeological complex and allow the development of modern infrastructure – so that it can be mutually beneficial for the maintenance of the cultural heritage site and the well-being of the local community.

The solution is to divide the area into zones, each with its own conservation status, and apply the appropriate management categories. Thus, the unbuilt, open landscapes of Phanagoria have been assigned to the first category due to their exceptional historical, cultural, aesthetic and exhibition values. These lands are to be set aside and handed over to the Phanagoria Museum-Preserve in order to ensure that they stay as undisturbed by recent human activity as possible. Only carefully planned scientific research, conservation, and exhibiting will be allowed on this territory. The second category comprises those parts of the site that are currently used for agriculture (grain fields, vineyards, fruit and vegetable gardens). The existing forms of land use will be permitted; however, a total ban is to be imposed on any new construction that can disturb the cultural layer. Finally, the built-up areas of the site fall into the third management category. Though the landscape here has been altered greatly and surface archaeological features are no longer visible, the soil still contains much information about the life in the ancient times. Modern land development, including building construction, will be possible in this zone, provided that archaeological excavations have been carried out in advance. All new buildings will be subject to controls with respect to their size, façade design, and function so as to create the environment aesthetically compatible with the archaeological site.

Though the conservation, management and enhancement of ancient sites have long been important themes in the world, the creation of an archaeological museum-preserve is still very much a novelty in Russia. When the Phanagoria Museum Plan is put into action, this will not only save the country's major archaeological site from destruction and allow it to be handed on to the following generations in the full richness of its authenticity. Hopefully, it will also set an important precedent for future land management decisions by showing how the need for conservation of invaluable historical and cultural heritage can be reconciled with the demands of modern life.

GLOSSARY

- Amphora* – an ancient clay container used for storing and transporting wine and olive oil
- Askos* – a small pottery vessel with a spout at one end and an over-arching handle, supposedly used for storing oil and refilling oil-lamps
- Hemiobol* – an ancient Greek coin denomination with a value of ½ obol
- Heroes* – „demi-gods”; characters of classical mythology (from the Greek *heros* meaning “warrior”, “man who exhibits great bravery”). A hero is often understood as an offspring of a god and a human. Unlike gods, heroes were mortal
- Gymnasion* – a public institution where young noble men 16–18 years of age received training in physical exercises, socialized, and engaged themselves in intellectual pursuits
- Diobol* – an ancient Greek coin worth two obols
- Drachma* – an ancient Greek coin, and also a unit of weight
- Kylix* – one of the most popular ancient Greek pottery forms, a wine-drinking cup
- Komastai* – participants in a ritualistic drunken procession in ancient Greece
- Kotyle* – a type of ancient Greek wine-drinking cup
- Krater* – a large vessel used to mix water and wine
- Lekane* – a shallow vessel, often with a lid, used for storage of small articles (especially for women)
- Lekythos* – an ancient vessel used to store fine oils and perfumes. *Lekythoi* often served as funerary offerings
- Oikistes* – an expedition leader appointed by the *metropolis* to lead the colonists to new lands
- Oikoumene* – an ancient Greek term for the inhabited world
- Oinochoe* – an ancient Greek wine jug with one handle and a round or trefoil pouring spout
- Olpe* – a miniature ancient Greek jug used to store perfumes and wine
- Pilos* – a brimless conical felt cap worn in ancient Greece
- Pithos* – a large egg-shaped container used for bulk storage of foodstuffs such as grain, wine, olive oil, and salted fish
- Polis* – the typical structure of a community in ancient Greece, a city-state. *Polis* can also mean the entire body of citizens. The territory of a *polis* consisted of an urban centre and a surrounding rural area (*chora*)
- Prytaneion* – a public building or hall in an ancient Greek city containing the common altar or hearth of the community and serving as the meeting place for the *prytaneis* (executives of the *boule*, the council of citizens)
- Propylaia* – a monumental gateway to a public area composed of porticoes and colonnades
- Protome* – a representation of the foremost or upper part of an animal, a human, or a mythological creature, common in ancient Greek terracotta art
- Symposion* – a ritualized drinking party in ancient Greece, a social institution for men of status to meet, converse, or simply revel with others
- Symposiarchos* – the master of a *symposion*. It was his duty to decide how much water would be mixed with wine and make sure that the *symposiastai* adhere to certain rules. The *symposiarchos* would also arrange the entertainment and fix penalties for those who failed to distinguish themselves in the games and competitions
- Skyphos* – a two-handled deep wine cup
- Stater* – a double drachma
- Tetartemorion* – an ancient Greek coin valued at ¼ of an obol

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