



ANODOS

STUDIES OF THE ANCIENT WORLD

10/2010

Trnavská univerzita v Trnave Filozofická fakulta

Universitas Tyrnaviensis Facultas Philosophica



ANODOS

Studies of the Ancient World

10/2010

TRNAVA 2011

A N O D O S

Studies of the Ancient World

10/2010

Redakčná rada/Editors:

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Publikované s finančnou podporou Ministerstva školstva SR (Projekt VEGA č. 1/0408/09) a Pro Archaeologia Classica.

Published with financial support of the Ministry of Education of the Slovak Republic (Project VEGA No. 1/0408/09) and the Pro Archaeologia Classica.

Za znenie a obsah príspevkov zodpovedajú autori.

The authors are responsible for their contributions.

Tlač/Printed by: ForPress, s.r.o., Kmeľkova 1, 949 01 Nitra
z tlačových podkladov Filozofickej fakulty Trnavskej univerzity v Trnave

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ISBN 978-80-8082-500-3

ISSN 1338-5410

Obálka/Cover:

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Motif of the „Miracle rain“ from the column of Marcus Aurelius in Rome. In the window: Detail of the osthotech from Kesecik, Turkey (Photo: A. Baldiran).

Grafické spracovanie/Graphic elaboration: Mgr. Pavol Šima-Juríček

Počítačové spracovanie/Computer elaboration: PhDr. Ivan Kuzma

Proceedings of the International Conference

**THE PHENOMENA OF CULTURAL BORDERS
AND BORDER CULTURES ACROSS THE PASSAGE
OF TIME**

(From the Bronze Age to Late Antiquity)

Dedicated to the 375th anniversary of Universitas Tyrnaviensis

Trnava, 22 - 24 October 2010

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Preface

The publication of ANODOS 10/2010 contains 27 articles in English and German which were presented in the form of papers and posters at the international conference “The Phenomena of Cultural Borders and Border Cultures Across the Passage of Time (From the Bronze Age to Late Antiquity)” which was held in Trnava on the 22th - 24th of October 2010. The participants consisted of scholars from eleven countries (Turkey, Greece, Bulgaria, Serbia, Slovenia, Hungary, Austria, Germany, the Czech Republic, the USA and the Slovak Republic). Graduate and post-graduate students from Trnava participated in both the organization of the conference and the actual programme. The conference was organized on the occasion of the 375th anniversary of Universitas Tyrnaviensis (1635-1777), the first university in the territory of the Kingdom of Hungary, which then included the historical town of Trnava. The current renewed Trnava University in Trnava (1992), situated in the Slovak Republic, follows the ideas and academic identity of the original university.

At the same time, in 2010 it had been ten years since the Department of Classical Archaeology at Trnava University had established the tradition of organizing international scientific conferences on specific themes in chronological sequence – from the Late Bronze Age to Late Antiquity. The idea came from Prof. Dr. Mária Novotná, the founder of the Department and of the Classical Archaeology study programme in Slovakia. The conferences have been held every two-three years so far (in 2000, 2003, 2005 and 2007) and they have had the following themes: Contacts between Middle Europe and the Mediterranean, Jewellery and Costume, Arms and Armour, and Cult and Sanctuary through the Ages. Contributions have been published in four volumes of Anodos - Studies of the Ancient World (1/2001, 3/2003, 4-5/2004-2005 and 6-7/2006-2007). Another conference of this kind was organized under the title “Trade and Production through the Ages” at Selcuk University in Konya (Turkey) in 2008, in co-operation with Selcuk University (our partner institution).

The conference in 2010 and the publication of its proceedings have been financially supported by the Ministry of Education of the Slovak Republic (Project VEGA No. 1/0408/09) and by the voluntary association Pro Archaeologia Classica.

Editors

Trnava, 25 November 2011

At the Northern Borders of the Mycenaean World: Thracian Gold Mining From the Late Bronze and the Early Iron Age at Ada Tepe in the Eastern Rhodopes

Hristo Popov and Albrecht Jockenhövel

Keywords: Late Bronze Age, Early Iron Age, Gold Mining, Ada Tepe

Abstract: *A number of sites and finds in the territories of modern-day Bulgaria indicate that gold began very early to play an important role in the development of local communities. One of the most important archaeological sites is Ada Tepe near the city of Krumovgrad, Southern Bulgaria. During 2005, the first targeted mountain archaeological investigations were conducted, the aim of which was to study the remains of ancient mining activity on Ada Tepe. So far, several sections of Ada Tepe have been differentiated according to mining and other human activity. They are: 1) Waste heaps distributed in the eastern, western and parts of the northern slopes; 2) remains of open cast mining; 3) remains of subterranean mines; 4) work platforms and terraces connected to mining and the preliminary processing of ore; 5) the remains of places showing signs of longer habitation (settlement), situated on the peak and on some of the higher western slopes.*

In recent years, the number of finds from southern Thrace which testify to the enduring contacts of this part of the Balkans to the Aegean Late Bronze Age is gradually increasing. Gold finds from the necropolis near Devin, as well as the finds of Mycenaean pottery from Drama, Koprivlen and Dragoina give an indication of connections with Mycenaean cultural circle. Although in a very poor condition, ceramic fragments from wheel-thrown pots which are identifiably imports, were discovered in Late Bronze Age contexts on Ada Tepe. So the Rhodopa Mountains and Southern Thrace could be a periphery or even a part of ancient Mycenaean and Trojan regions with their infrastructures and trade connections. In view of the fact that Ada Tepe is near Maroneia / Ismaros and Troy, it could be suggested that the mine was one of the sources for precious metals in the ancient Aegean world.

The study of the early history of ore mining and metallurgy in the Balkans poses enticing challenges as well as interesting and important scientific questions to the contemporary researcher. During the second half of the last century, studies in various modern Balkan nations gradually revealed a picture which showed that the earliest copper metallurgy was spread into Europe from precisely the south-eastern regions. In addition, a number of sites and finds in the territories of modern-day Bulgaria and Romania indicate that it was not only copper, but gold as well which began very early to play an important role in the development of local communities. It's first appearance is dated to the middle of the fifth millennium B.C. The discovery of the gold-rich graveyard of Varna and of other early gold finds from the same cultural horizon are important examples for understanding early European metallurgy and its social and religious contexts.

Evidently, during the following historical periods, ore mining and metallurgy, in particular those activities aimed at the extraction of precious metals, continued to play a leading role in the life and livelihood of the population in this part of Europe.

Over the past few decades, besides finds which have long been known to archaeology, the number of newly discovered objects made from precious metals dating to various periods of the Bronze Age has sharply increased. Together with the treasure objects from Pershinari¹, Valchitran²,

¹ Vulpe 1995.

² Venedikov 1988; Gergova 1994; Sotirov and Ilieva 2002; Bonev 2003, 25-9 (with references).

Radeni³ and the new treasure from Svishtov⁴ other finds should be mentioned, such as the numerous miniature gold objects (over 21 000 in number) discovered in the ritual structures dating to the end of the third millennium B.C. in the region of the village of Dabene, Karlovo district, Bulgaria⁵, or the burial mound dating to the first half of the second millennium B.C. from the village of Izvorovo, Harmanli district, Bulgaria with the numerous gold beads, placed as burial gifts, closely paralleling gold finds from Troy⁶. Unfortunately, we must also mention the sharp increase in the number of precious-metal objects which have been looted from sites, a small percentage of which end up in museums or appear officially in private collections⁷. Some of these unprovenanced finds have strong parallels with known treasures such as the Valchitrun and the Radeni treasures⁸. Taking into account the famous objects from Kazichene and Belene and the recently-appeared gold vessels which are similar in date, it can be said that the original sources of gold objects dating to the period of the Early Iron Age has significantly increased.

It has been observed that there is a concentration of gold objects dating to the Late Bronze, Early Iron Ages in two main regions of the eastern parts of the Balkans – the Danube-Carpathian basin and the region of Southern Thrace and the Rhodopes. The period is seen as a time when the Thracian culture is being formed and a large Thracian tribal society is established within the borders known to us from Classical and Hellenistic sources. This is the time of the ancient Thracian tribes, as we know from the ancient sources of Homer or Herodotus. Above all, the wealth in gold and other precious metals of the region and its people were noticed by these Greek writers. Herodotus and Thucydides mentioned explicitly various Thracian tribes, which operated mining industries of gold and other metals in the south Rhodopi region. Thus it was not missing that also the ancient Greek poleis reached for these rich deposits.

Rich gold finds are also present from earlier periods in the Thracian cultural environment. Besides the finds of complete end products made from precious metals, as well as their analysis, questions about their origins, sources of raw materials, the location of the ore-mining and metallurgy in the old Thracian society and their role in its internal organization, economic prosperity and the appearance of evidently long-distance trade contacts are all questions which confront archaeologists today.

The wealth of the Thracian tribes and rulers, particularly along the northern Aegean and in southern Thrace in the valleys of the Maritsa and Tundzha rivers made an impression which long persisted in ancient written traditions⁹. Despite this, it is rare to find mention of specific locations, such as mount Pangea, where the extraction of precious metals was developed.

The first attempts to clarify the history of ore-mining and metallurgy in the northern Aegean region were made during the 1980s. The continental possessions of the Greek colony Thasos, the Thasian Peraia, were primarily established for this aspect. The antique precious metals mining on Thasos is best known from Greek-German investigations made by the Deutsches Bergbaumuseum Bochum¹⁰. Here must also be mentioned some additional scientific studies conducted by the Greeks¹¹. However, Thracian and pre-Thracian mining and metalworking technologies is still virtually unknown. Its products we have seen here, but the technical and economical operational sequence, which filled a princely grave or a hoard finally, still remains in the dark¹².

³ Vupe and Mihailescu-Birliba 1985.

⁴ <http://www.trud.bg/Article.asp?ArticleId=1042438>.

⁵ Hristov 2005, 127-33; Hristov 2011, 139-41.

⁶ Borislavov and Ivanova 2009, 132-3.

⁷ Marazov 2011, 20-1; Lönnberg 2000, 95; Leshtakov 2008, 73-4, fig. 9.

⁸ Marazov 2011, 22-3.

⁹ Detailed study of available information from the Graeco-Latin writing tradition are made by Velkov (1972), Panajotov and Jordanov (1976).

¹⁰ Wagner and Weisgerber 1988.

¹¹ Photos et al 1989.

¹² Popov 2004, 33-5.

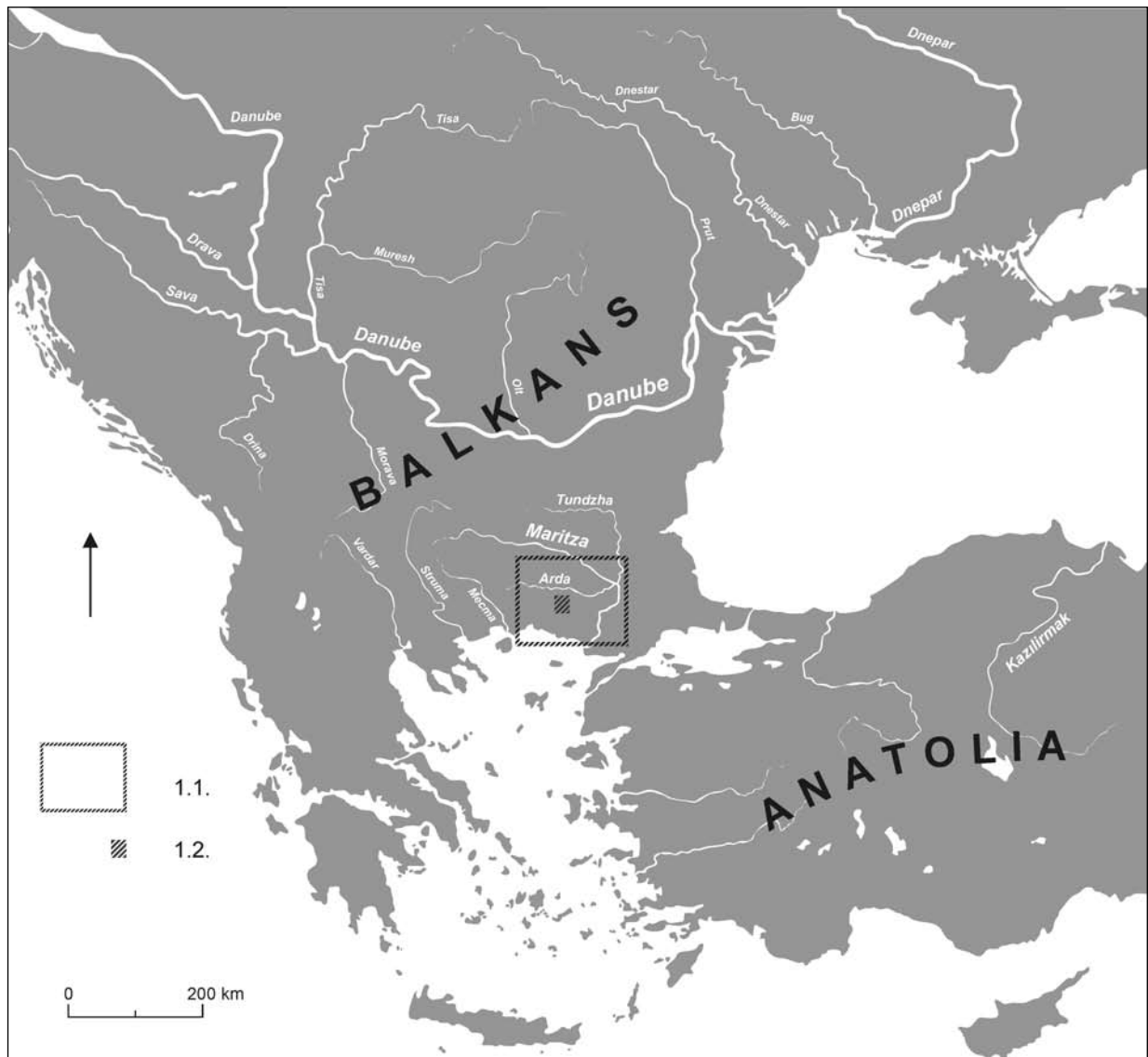


Fig. 1. Research area. 1 - Eastern Rhodopes; 2 - Microregion of Krumovgrad.

Therefore, in 2008 the National Archaeological Institute of the Bulgarian Academy of Sciences and the Department for Pre- and Protohistoric Archaeology of the University of Münster (Westphalia) commenced an international project on Gold mining and iron production in the South East of Bulgaria in the Eastern Rhodopes. One of the most important archaeological sites is Ada Tepe near the town of Krumovgrad, which has been excavated by Bulgarian-German expedition (Fig. 1)¹³.

Krumovgrad itself is situated in the valley of the river Krumoviza, the largest river in this region (Fig. 2). At its eastern periphery the Rhodopes are not very high, even Ada Tepe reaches hardly 495 m above sea level. The hill stands approximately 3 km to the southwest of the edge of modern Krumovgrad (Fig. 3).

Archaeological excavations at Ada Tepe go up to the year 2001, and were facilitated by modern geological prospections in the periphery of the town of Krumovgrad in the Eastern Rhodopes. It was the desire of an international enterprise - 'Balkans mineral and Mining'

¹³ Jockenhövel and Popov 2008, 251-9; Popov et al. 2011, 253-8; Fig. 1.

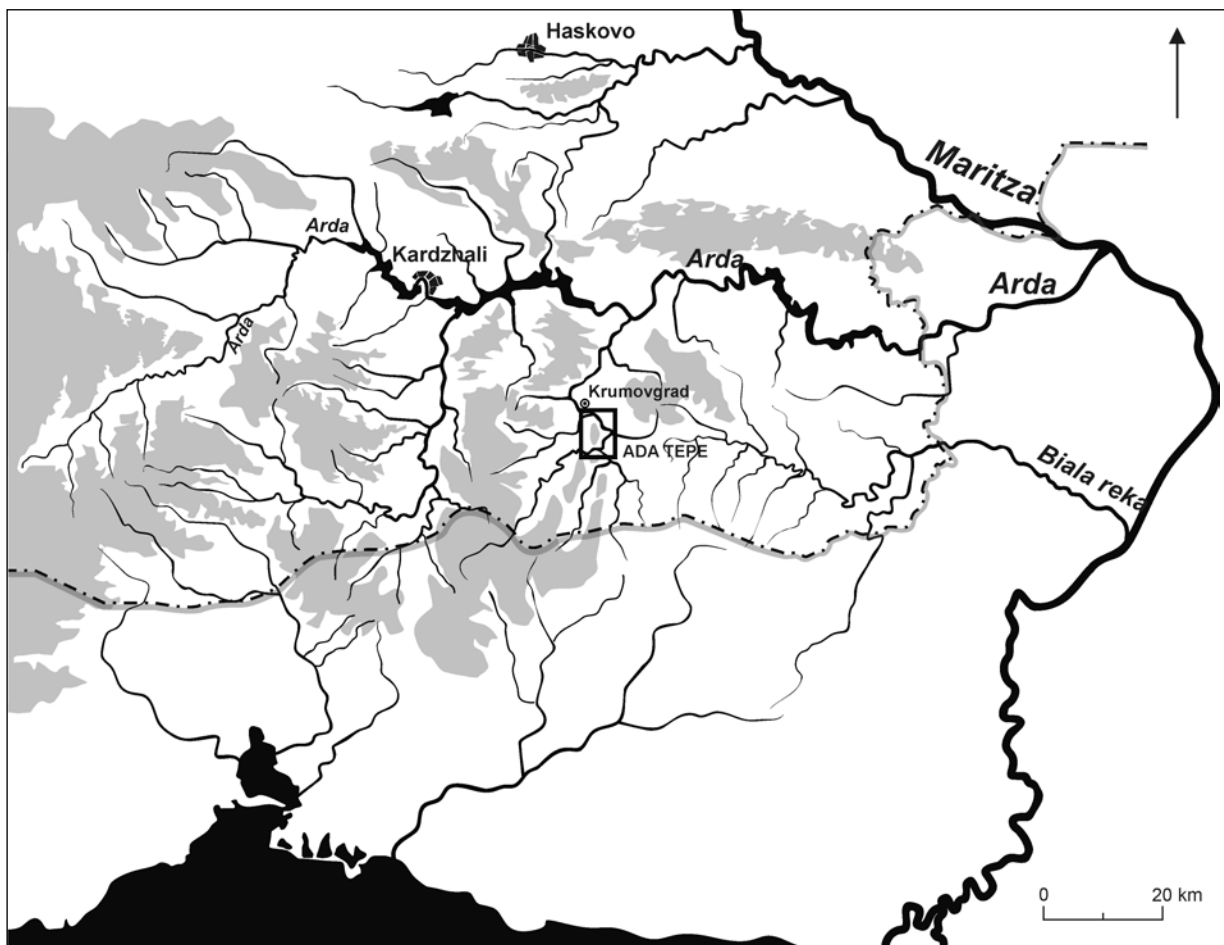


Fig. 2. Eastern Rhodopes and localization of Ada tepe.



Fig. 3. View to the hill of Ada tepe from northwest.

(a subsidiary of the Canadian 'Dundee Precious Metals') - which recently discovered abundant gold veins on Ada Tepe in order to exploit the deposit with a concession. Up to the middle of the 1990s there were no data concerning gold mineralisation in the Bulgarian geological literature within the range of Krumovgrad. Astonishingly, the ore fields to which Ada Tepe belonged showed maximum gold values of up to 18 grams per ton of rock. On Ada Tepe, the most important role for the gold mineralisation is the contact zone between the down-lying metamorphic rocks and the upper-resting paläogenic gold-rich sediments, starting on a high about 400 m above sea level. This zone was named 'The Wall' by the geological research staff, an ore body of up to 17 m thickness, which contains average gold parts of 7.3 g per ton, and the richest samples reach values of 138 g per ton¹⁴.

During the geological prospection, traces of old human activity were discovered. In 2001 rescue excavations started on the top of Ada Tepe under the direction of Dr. Georgi Nehrizov¹⁵. During the period 2001-2009, the archaeological study of Ada Tepe was resumed several times. A small sanctuary was discovered on the peak. On the basis of the results gained by studying this feature, the hypothesis was suggested that the site had been functioning during the Late Bronze Age, and had continued to exist right up to the late Hellenistic period – to the first century B.C., during the arrival of the Romans in these areas of the Balkans.

The archaeological research confirmed the existence of traces of human activities on the top, with a duration of approximately 1500 years, and these traces were soon suspected to be part of a sanctuary. The first phases date to around the middle of 2nd millennium BC, the beginning of the Late Bronze Age in Bulgaria. Several artefacts were discovered, possibly deposited as votive gifts: spindle whorls, ceramic vessels, tools of stone and bronze. The most important chronological reference is a pommel of marble from a Mycenaean horn-shaped sword, a bronze Double axe and a lance point - finds which show connections with the Aegean Bronze Age. The most important cultural layers of this sanctuary belong to the Earlier Iron Age. In this period a wall was established, which limited the area to the north- and the west end of the hilltop. Around the beginning of the 4th century B.C. a powerful stone wall was built at the highest point, which protected a circular area resembling a temenos¹⁶. It is interesting to note, most tools from the excavated area were grinding and mortar stones in addition to pestles and pebbles, finds which usually occur in connection with prehistoric mining traces. Even during the initial archaeological campaigns, despite the absence of field experience in the area of archaeo-metallurgy, it became clear that some of the structures which were discovered could be interpreted as the remains of old ore extraction activities.

During 2005, the first targeted mountain archaeological investigations were conducted, the aim of which was to study the remains of ancient mining activity on the western slopes of Ada Tepe¹⁷. In this campaign, several structures of old mining works were discovered. Among them was also a small gallery, which was excavated by small archaeological team from the National Archaeological Institute and the Regional Historical Museum Haskovo. The very first excavations in the gallery and in the section around it, showed that the site was exploited at an early date. Some pottery sherds were found in the deepest ranges of the gallery which are handmade and dated to the time of Late Bronze Age.

Further observations in the surrounding area revealed several areas covered with broken rock debris, obviously dumps from the old mining sites. Again, mortar and pebble stones and ceramics from Late Bronze Age or the Early Iron Age were found.

During 2008 and 2009, the study of Ada Tepe continued within the framework of the Bulgarian-German project, financed by the Alexander von Humboldt foundation. The active

¹⁴ Želez 2006, 27-9; 2007, 104-10.

¹⁵ Nekhrzov and Mikov 2002, 42-3; Nekhrzov 2006, 140-2, Nekhrzov and Zvetkova (forthcoming).

¹⁶ Nekhrzov and Zvetkova (forthcoming); Dimitrova 2011.

¹⁷ Popov and Iliev 2006, 154-6.

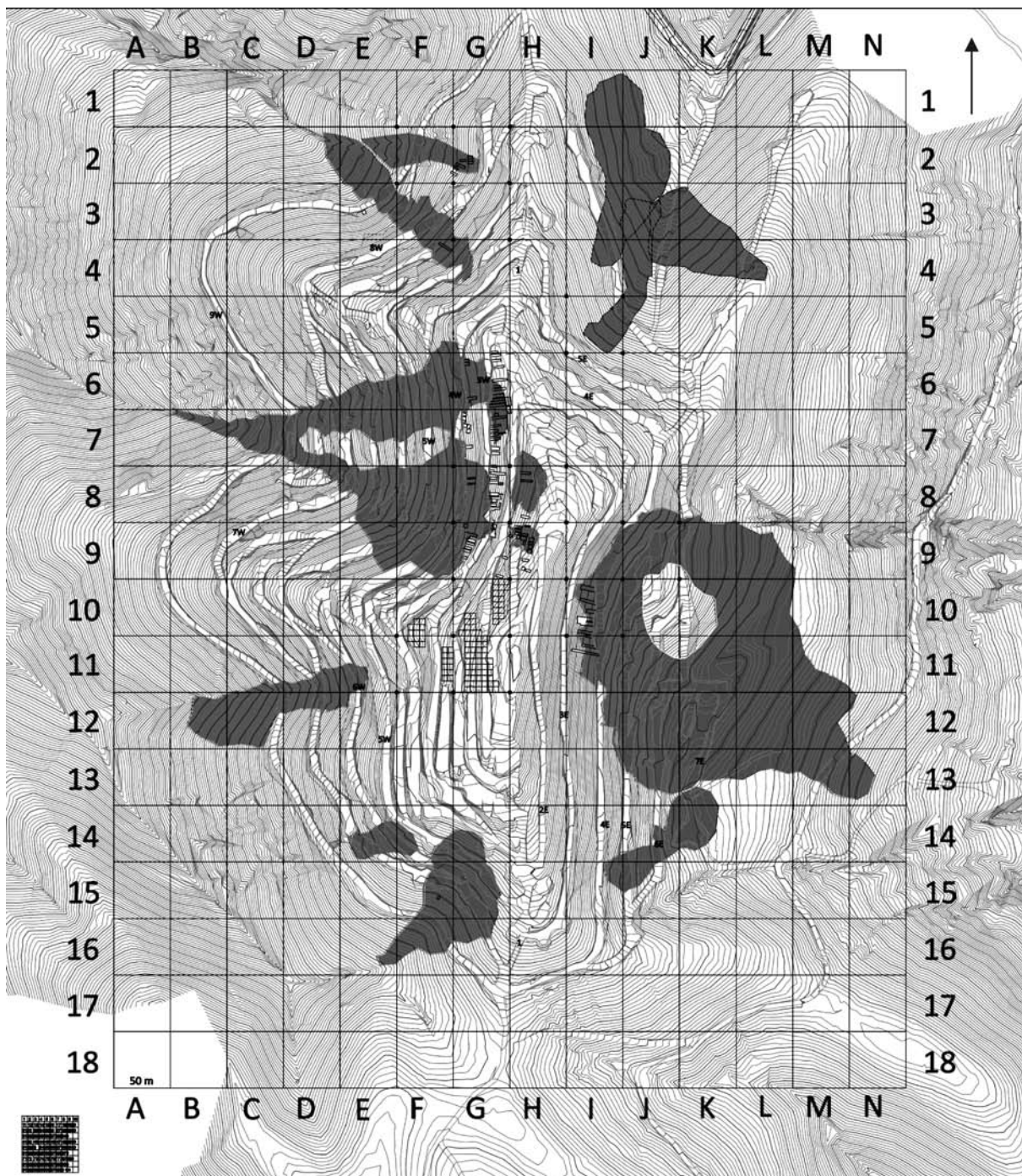


Fig. 4. Tachymetric map of Ada Tepe and main geodetic grid of rescue excavations of 2010-2011 campaigns. The area of the dumps of ancient mining activity is marked in dark color.

prospection of the terrain of the entire hill (over 600 000 square meters) revealed much wider borders to the old gold extraction which had taken place on Ada Tepe than was first imagined. It had also become clear, that there were signs on the higher parts of the peak of human activity, unevenly covering an area of more than 170 000 m². This evidence provided the basis for the renewal of archaeological investigations on Ada Tepe, but now on a much larger scale.

In the meantime, the Bulgarian government was moving towards a decision to grant the firm BMM permission to gain the concession, because of the large-scale geological studies undertaken by them. As part of this project, the old gold-extraction mine and the structures

connected to it were to be thoroughly studied as part of a complete rescue excavation. The first step was undertaken in 2010.

Gradually, a complete GPS mapping of all the basic structures connected to the ancient gold-mining activities on the peak was undertaken (Fig. 4). Together with the completed LiDAR scanning (Fig. 5)¹⁸ of the micro-region and the geophysical study, a database was created, which allowed the effective study of the large, and at time, inaccessible territory, where different sectors of the site revealed specific and varying functional characteristics connected to the different kinds of human activity of ore-extraction and habitation which had taken place at some point in time.

So far, several sections of Ada Tepe have been differentiated according to mining and other human activity. They are:

1. waste heaps distributed in the eastern, western and parts of the northern slopes
2. remains of open cast mining
3. remains of subterranean mines
4. work platforms and terraces connected to mining and the preliminary processing of ore
5. the remains of places showing signs of longer habitation (settlements), situated on the peak and on some of the higher western slopes.

Studies during the most recent campaigns in 2010 and 2011 allowed us to take a much broader view of the general characteristics of ancient gold extraction mine. In order to take a large representative sample of the distribution of ancient mining activity, and to obtain more detailed information on the chronology of gold extraction of Ada Tepe, the archaeological team focused its efforts on the study of the waste dumps on the high western, eastern and northern slopes. Another important site for archaeological survey was the high terraces in the western and northern base of the top. Their significance lies in the importance of determining whether traces of human presence are also associated with habitation, not just with mining activities.

Dumps of worked and discarded rocks are the main anthropogenic signs of ancient gold mining on Ada Tepe. At present we can say that the dumps cover an area of around 120 000 m² (Fig. 4).

The eastern slopes are most affected by ancient mining activity. At this place, the waste material is characterized by numerous, thick stratigraphic layers, connected to several different periods of ore mining activity. In the layers of the accumulated, broken rock material, both identifiable ceramic material (Fig. 6) and stone tools separately broken during the process of exploitation (quern stones and hammers). The different sizes of the rock fragments and the accumulation of layers with different morphological characteristics indicate that the dumps can be connected not only to the process of the initial ore extraction, but also with subsequent technological processes of crushing and grinding of small pieces of the extracted rock face, after which the ore was sorted and the sterile or poor (in terms of ore content) rocks were dumped.

As noted above, the stratigraphy of this area shows that on the eastern slopes of Ada Tepe, there are considerable stratifications connected with different periods of mining activity (Fig. 7), and it is possible that between some layers, there was a hiatus. The upper layers reveal the presence of large quantities of materials dating to the Early Iron Age, mixed with finds from the Late Bronze Age. At a certain depth, the materials from the Early Iron Age disappear. Since the upper layer dates to at least the Early Iron Age, the layers beneath are older. Furthermore, there is reason to believe that there were multiple phases of mining activity. Additionally, it can be said that the material from the Late Bronze Age covers a much wider area than that of the Iron Age. From the point of view of technology, the study of the eastern slopes show that at this place, ancient mining was carried out in an open pit. The ore was extracted via a series of steps cut into the rock (Fig. 8, 9).

A different picture is painted by the results of the fieldwork conducted on the dumps located on the high western slopes of Ada Tepe. Here, parts of the terrain are close to the sanctuary and

¹⁸ Fig. 5.; Processing of LiDAR scanning data is performed by Dr. Emilia Cherkezova, Institute of Geophysics, Geodesy and Geography – BAS.

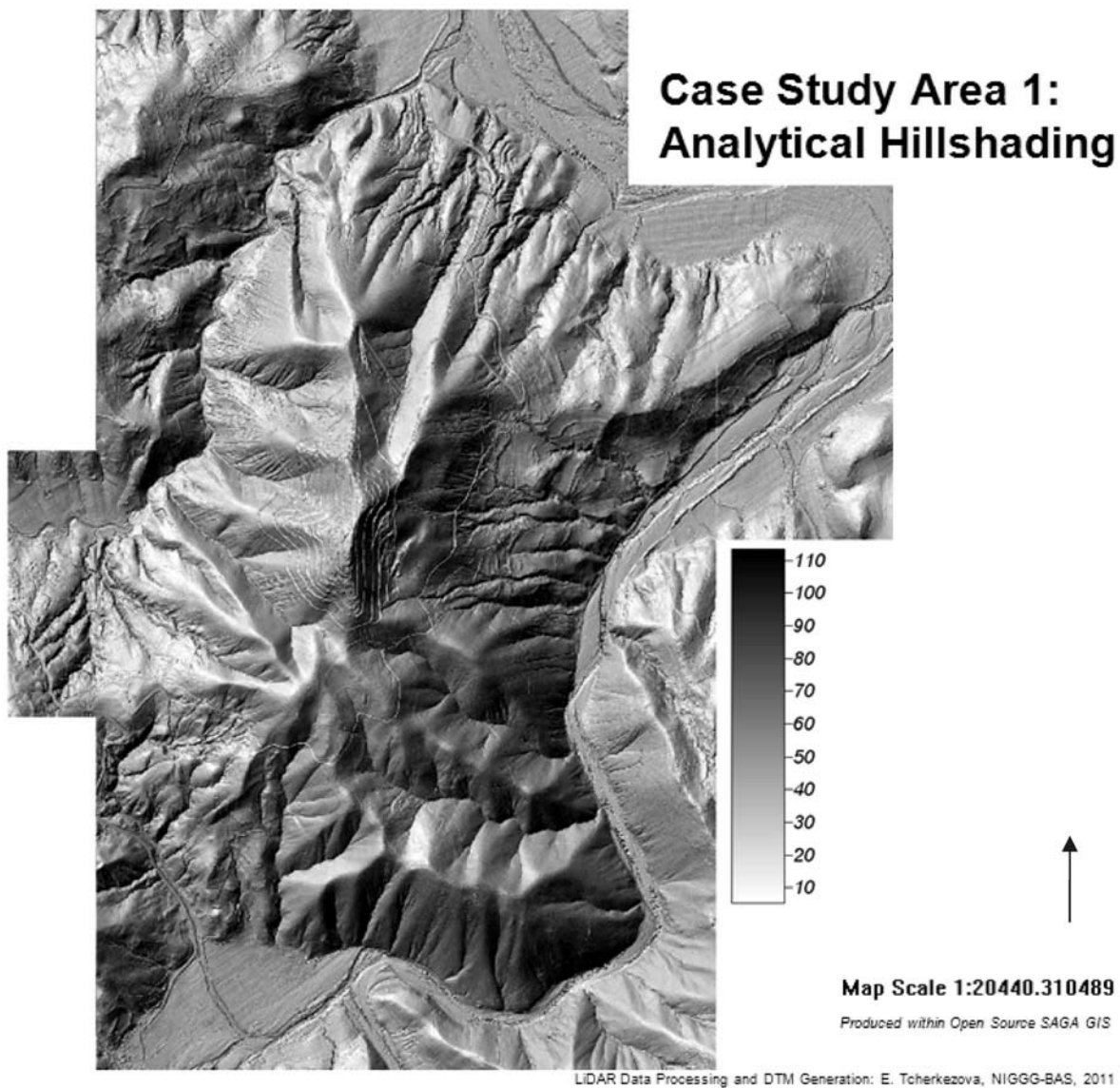


Fig. 5. Relief of Ada Tepe. Preliminary results of LiDAR scanning of the hill and the area around it. Processing of data by Dr. E. Tcherkezova.

to the settlement located on the top of the hill. The upper parts of the dumps often are covered with soil as the result of natural weathering so we have a discreet feature where the materials of this structures are not mixed with later finds. The dumps are not as large as those on the eastern slopes, and are associated with homogenous stratigraphic layers. In most cases they are thin-layered, and the material is connected to just a single chronological period. They are dated to the earliest stage of human presence on Ada Tepe – to the Late Bronze Age. The most recent excavation results show that in the higher parts of western slopes of the peak there was some open cast mining. There were run out the oxidizing parts of quartz veins, which were carriers of gold ore. The remains of insubstantial structures are found near to where the ore had been extracted.

A good example of the characteristics of the archaeological structures investigated on the high western slopes is found in one of the sectors studied during 2009 and 2010¹⁹. A small

¹⁹ S1/2009; H9/S1/A-D.



Fig. 6. Little jug from the Late Bronze Age (13-12 c. BC), found in the layers of Great eastern dump. Trench S-3/2009.

shallow mining dump underneath the hilltop was extremely rich in finds. The dump filled a hollow, in which a rich gold-ore carrying quartz veins was exhausted close to the surface (Fig. 10). The rock was cut into a saddle-like shape. Later, this cut in the slope was leveled and used as a shelter or hut. At this location, a hearth, various ceramic vessels and fragmented stones and flint tools were discovered (Fig. 11). Later, the place was abandoned and covered with the debris from mining activity from the neighbouring areas.

In this sector, the discoveries of chronological material point solely to the time of the Late Bronze Age. The most interesting find is part of a mold for a Late Bronze Age double axe, which belongs to the “Begunci” type



Fig. 7. Part of eastern dump with characteristic accumulation of multiple layers of waste rock material associated with various periods of the mine operation.



Fig. 8. Vertical cut of the rock by open cast mining.

(Fig. 12). Although one quite typical for the Balkan and Rhodopi regions, it is the first mold which comes directly from a stratified excavation, lying inside the mining debris of S1. We see here the double axe of Kirkovo, which lies only 40 km to the west of Ada Tepe, showing the same form of socket, perhaps a special local variant. These axes date to a relatively small time span, limited to the 14th and 13th centuries BC.

Ultimately, the most recent results from studies of the high western slopes allow us to conclude that much of human activity on the Ada Tepe in the past was concentrated here, not only in places where mining was carried out. In close proximity to the areas where open-caste



Fig. 9. Vertical cut of the rock and the beginning of dump immediately below the open cast mining area.

mining has been carried out, terracing and linear structures composed of large stone blocks which strengthen and level-out the terrain are often found. And here it comprises the majority of material that we find. Taking in to account that at this place, the waste heap commences in part, falling down to the west slopes, and in areas of this feature, stone tools such as millstones and pestles were found, it is possible to suggest that work stations were situated here, connected with the breaking up and grinding of the ore.

This high concentration of traces of human activity related to the primary mining and ore-processing technology poses another important question – that of the permanent or temporary settlement of the peak by the population who carried out the gold mining on Ada Tepe in the past.

Exceptionally high concentrations of archaeological material and structures located on some parts of the higher western slopes and not only on Ada Tepe cannot be taken into account. This is because in these places, archaeological excavations are still in the working phase. Nonetheless, some general conclusions can still be drawn, and some of the results obtained from the 2001-2006 campaigns when the sanctuary on the peak was studied can now be revised.

The results of rescue excavations from the end of 2010 and the first half of 2011 show that in these places there were remains of settlement contemporary with the ancient ore extraction. The depth of cultural layers is 0.50-0.80 m. The destructions of buildings and probably a small fortification wall have been discovered (Fig. 13). In particular sectors the foundations of walls from buildings could be clearly identified. Although the excavations at that place are in the primary stages, it is clear that the settlement located in this place was spread over than 11-12 000 m².



10.1

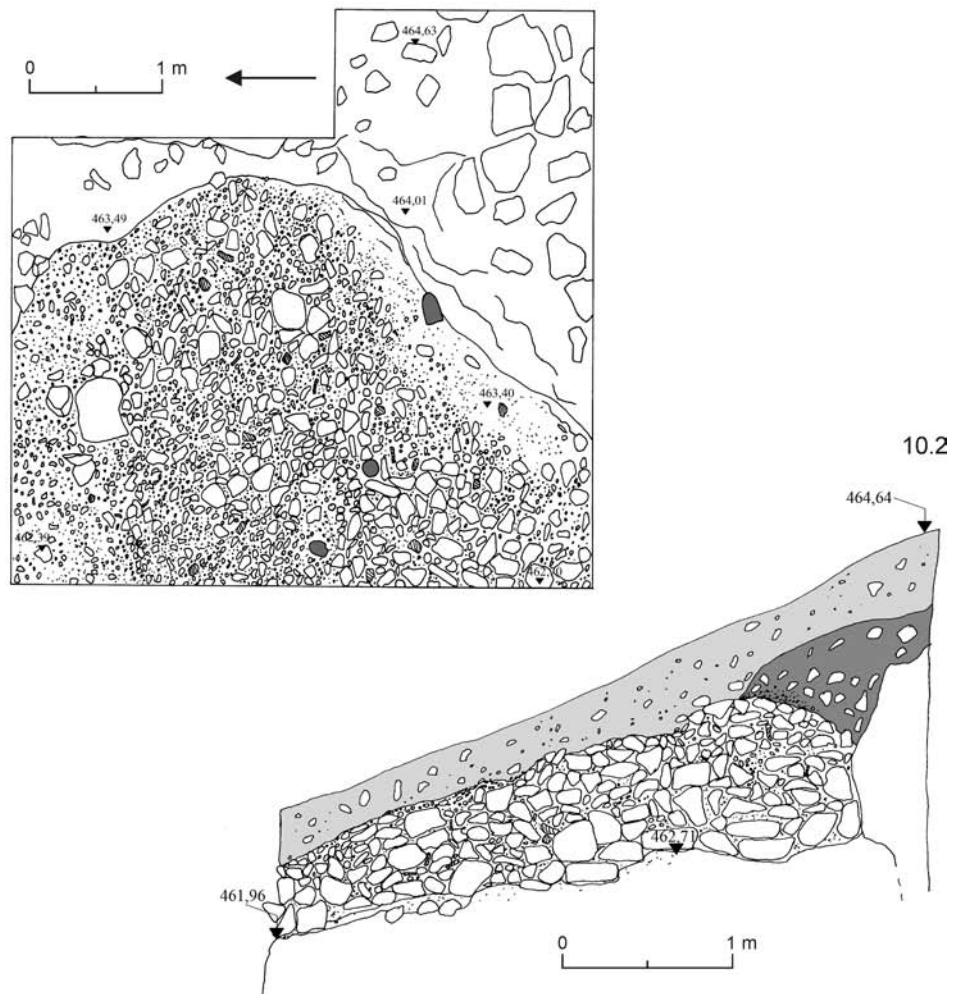


Fig. 10. 1 - Section of the dump in trench S-1/2009. The dump is sealed under a layer of forest soil; 2 - Plan and stratigraphic section of the dump with the area in which the rock is cut by small open cast mining.

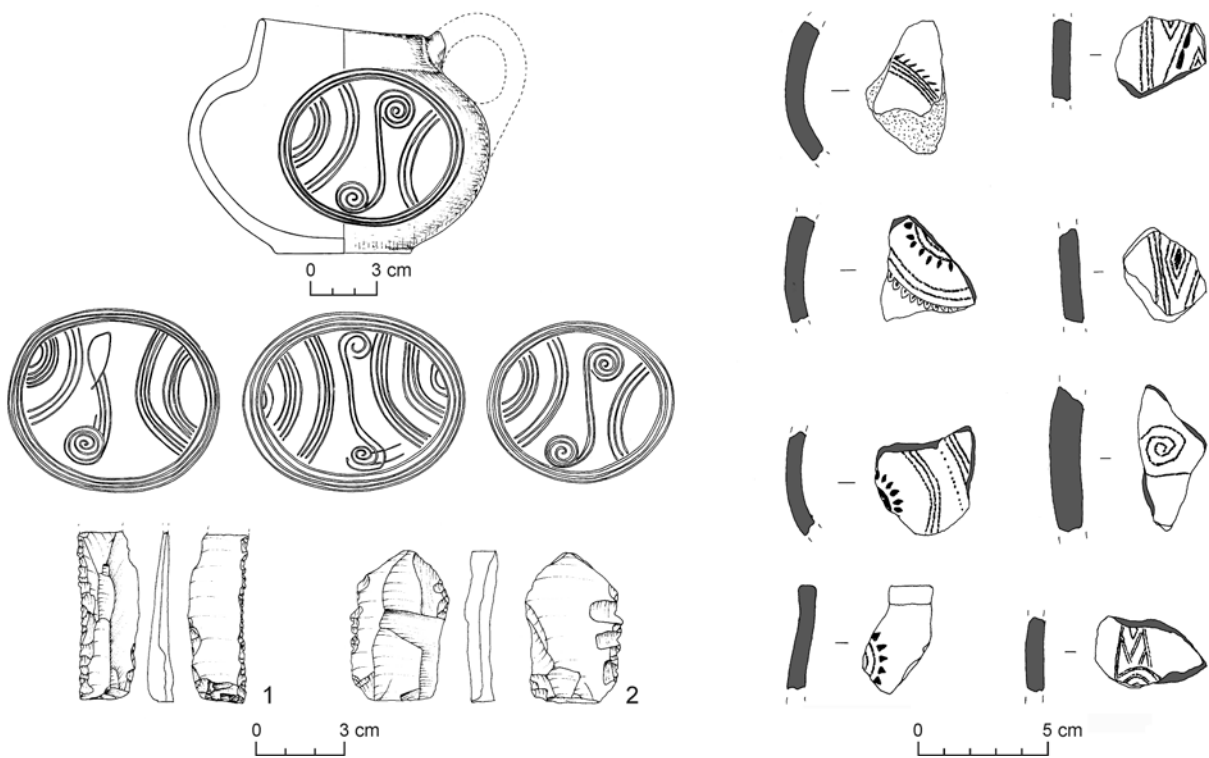


Fig. 11. Ceramic finds and flint tools found in the excavation of S-1/2009.

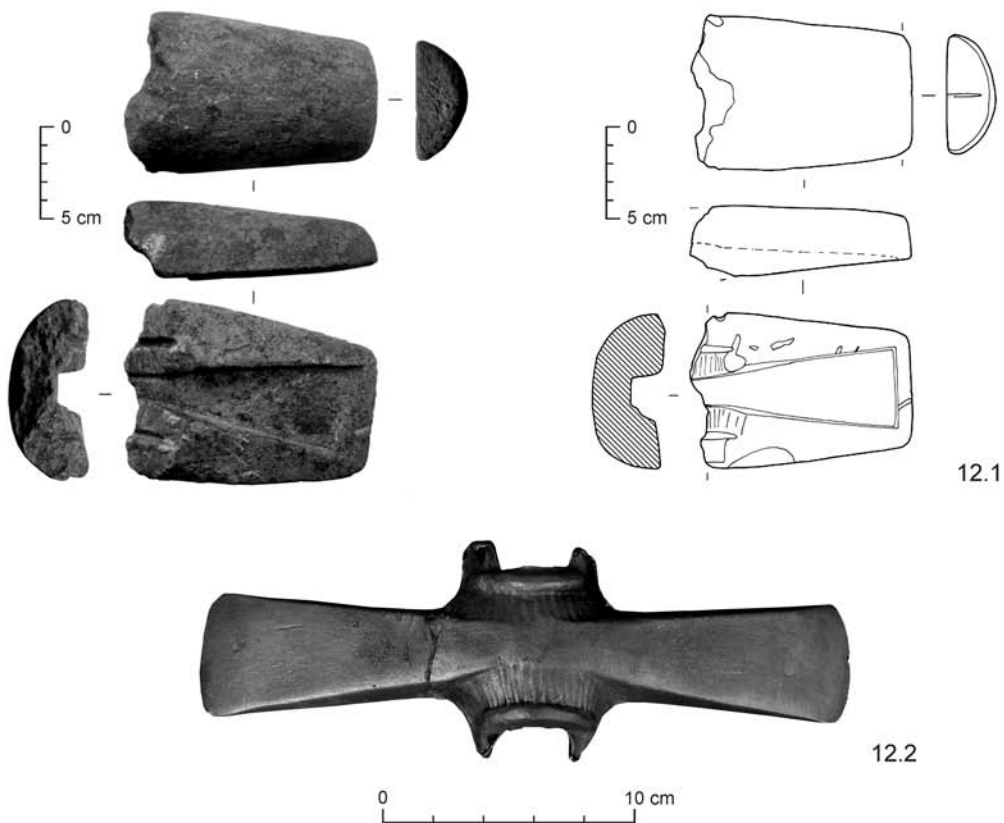


Fig. 12. 1 - Part of a mold for a double axe found in the excavation of S-1/2009; 2 - Double bronze axe. Accidental find from the region of Kirkovo (about 40 km west of Ada tepe). Find from the fund of Regional Historical Museum, Kurdzhali.



Fig. 13. *Parts of the foundation of a stone wall and destruction of structures in one of the parts of sector G-11 on the top of Ada Tepe.*

Despite the fact that the excavations are only in the preliminary stages, already we have a large quantity of finds connected with the habitation of this location – table and kitchen ware, storage vessels, stone molds for bronze axes, sickles, needles, awls, etc., small tools, stone and flint tools, stone maces, stone cores, ‘scepters’, and sword handles, etc. (Fig. 14).

On the basis of the chronological characteristics of finds from different sectors of the site, it could be concluded that the places of habitation and active extraction activities are greater in quantity in the Late Bronze Age than places with materials dated to the Early Iron Age. It is still very hard to answer the question of whether the hiatus between this two main chronological periods existed, or was there rather a gradual decrease of

quantity and decline of gold extraction activities throughout the Iron Age. At the moment, the dating of the features at the site is being built up based mainly on the materials with relative chronology. The findings are typical for Classical and later periods of the Late Bronze Age in Thrace. The most significant findings are dated to the 14th – 11th centuries B.C. The Early Iron Age is represented by ceramic finds peculiar to both main phases. It could be said that on Ada Tepe, that they are covering in the periods 10-8 or 10-7 c. B.C. The areal, connected with the materials from the Late Bronze Age is much bigger than the areal of spreading of later period of Early Iron Age materials. The sanctuary on the top is originated from a later period. It is quite possible along with its functioning on Ada Tepe there have been extracted gold yet, because the materials from early Iron Age have been found in some dumps at the eastern and south-western slopes. But the mining activity gradually died down. The sanctuary existed down to the end of first mill. BC. In our opinion the findings and structures from earlier period of the hill found on it higher part could be regards to mining activity and temporary habitation rather than cult practices.

Studies of gold mining on Ada Tepe and in the Krumovgrad region, and its early dating raise a number of important questions regarding not only the details relating to production technology and the characteristics of daily life and habitation, but also regarding the cultural environment in which the mines operated. Trade contacts and routes of distribution, economic and social structure that allows large-scale organization, the production of strategically important raw materials such as gold, are all important issues of macroanalysis which will need to be resolved in the future.

In recent years, the number of finds from southern Thrace which testify to the enduring contacts of this part of the Balkans to the Aegean Late Bronze Age is gradually increasing. Here, the finds of Mycenaean pottery from Drama and Koprivlen²⁰ and Dragoina²¹ should be mentioned. Although in a very poor condition, ceramic fragments from wheel-thrown pots which are identifiably imports, were discovered in Late Bronze Age contexts on Ada Tepe. Gold finds from the necropolis near Devin also give an indication of connections with Mycenaean cultural circles²². Bronze rapiers of the Mycenaean type from southern Thrace and the ends of handles of this type of weapon in turn, irrespective of whether they are interpreted as imports or local works and imitations, represent a high density of artefacts, which undoubtedly

²⁰ Alexandrov 2002, 74-5.

²¹ Bozhinova 2007; Mommsen et al. (forthcoming).

²² Leshtakov 2008, 73-4.

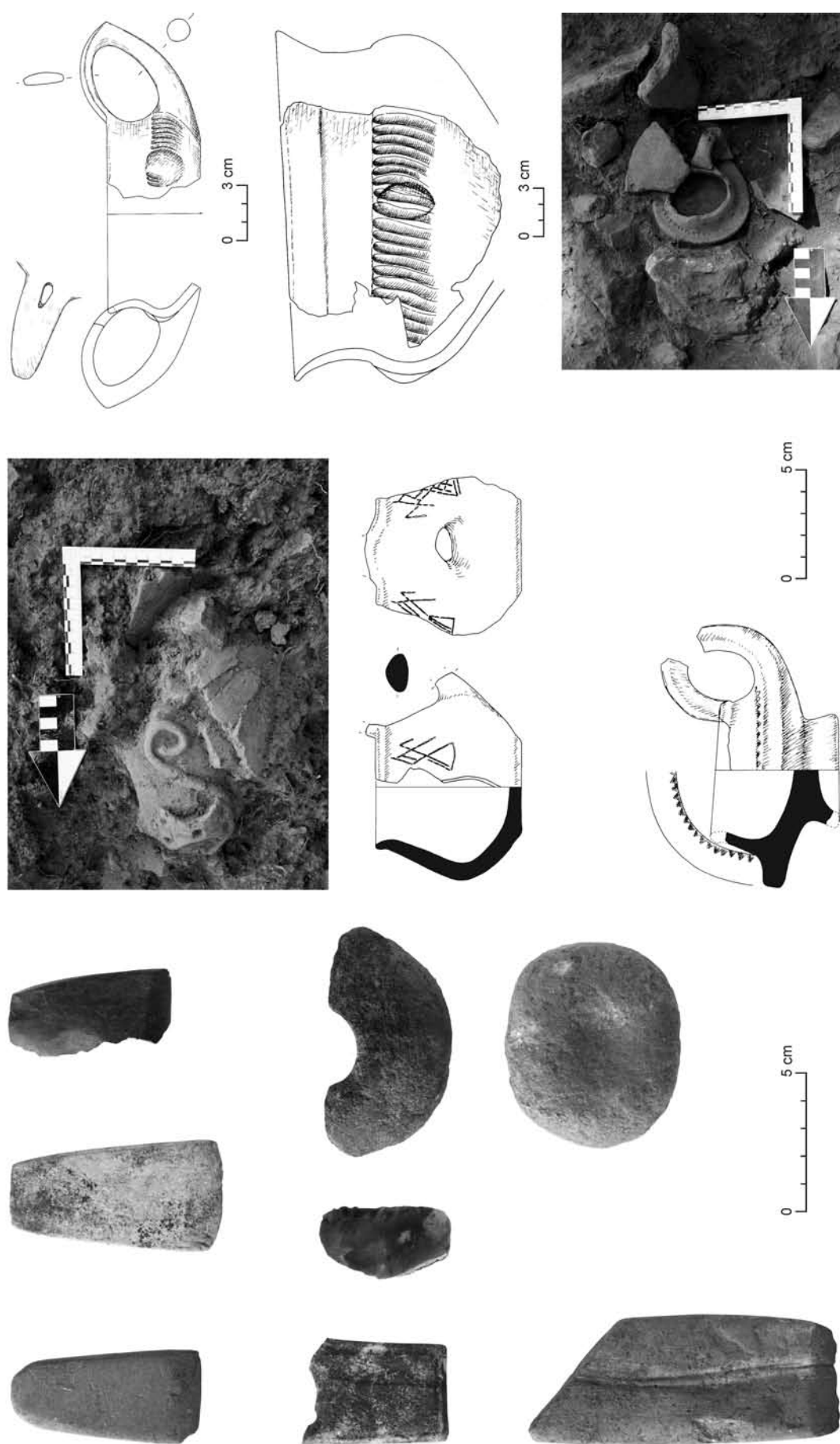


Fig. 14. Small finds from the area of the settlement on the top of Ada tepe.

indicates not sporadic, but rather regular and well-established contacts with the south Aegean and western and north-western Anatolia²³.

This trend is traceable not only during the Bronze Age, but continues to be manifested during the Early Iron Age, immediately preceding and synchronous with early Greek colonization of the Thracian coast²⁴. Ada Tepe is located in the immediate northern periphery of the northern Aegean coast. One of the important centres of this period is known to be located approximately 50 km to the south. It is known from Homer as Ismaros, later to be called Maroneia as a Greek colony. Interestingly, speaking about the attack by the pirates of Odysseus on Ismaros, Homer mentions important details about the Kikoni of the coastal and interior regions, who inhabited this area of the Rhodopes, and about gifts, which Maron, the king of Ismaros and priest of Appollo, gave to Odysseus. Together with other items, they included seven talents of gold²⁵. Of course it is tempting to search for a direct link between Ada Tepe and Ismaros, but such a possibility should only be taken as hypothetical.

Something else is of greater importance here, the presence of increasingly concrete indicators from accidental finds and from targeted archaeological studies, complementing and supporting information from earlier written sources. In the Eastern Rhodopes, there are an extremely high number of archaeological sites associated with the Late Bronze and Early Iron Ages²⁶.

Last, but not least, we should note that the ceramics from the Eastern Rhodopes and other elements of life and material culture share a strong affinity with the material from the northern Aegean coast of modern-day Greece, indicating a single cultural environment. The pottery from Ada Tepe fits correctly together with the materials known from the Rhodopi Mountains and North Aegean coasts. We are gradually forming a picture of intense habitation by the numerous population, which supported regular contact with the neighbouring highly developed Aegean cultures, and in these contacts, metals, as important raw materials, clearly played an important role.

In conclusion it can be said that Ada Tepe is an important precedent in the study of early Thracian ore-mining and metallurgy. Certainly, we should not claim that this site is unique – that there are no similar sites. There has been an element of luck in its discovery and investigation, which enabled modern Bulgarian archaeology to pay more attention to this type of site. Surely, the lack of fieldwork experience and targeted surveys of mining sites over the last 30 years makes this precedent important. It should be mentioned that even the famous site of Pangaion which lies at the mouth of the Struma in modern-day Greece, frequently mentioned in ancient sources, remains virtually unexplored²⁷. Although there is preliminary information to suggest that besides the extraction of precious metals from the classical and Hellenistic period, the presence of traces from much earlier periods of production can be expected. In the future, analogues can be looked for amongst the poly-metallic deposit in Chala, near Haskovo Mineral Baths, whose research team led by Prof. Leshtakov began several years ago. In this sense, Ada Tepe is one of the raw material sources of the Late Bronze Age which can be recognized.

Certainly, the old gold mine on Ada Tepe raises some interesting questions about the macro analysis of infrastructure and the economic development of the region. Krumovgrad and Ada Tepe are near the periphery of North-Aegean coast. In recent years, information about contacts with the ancient Aegean world has increased, so the Rhodopa Mountains and Southern

²³ Among the finds of rapiers from the region of Rhodopes and Southern Thrace should be mentioned those from Drama (Aladzov 1997, 59-60; Leshtakov 2006, 196, Fig. 34; Petrov 2007, 19-20, 33), Lilo (Borislavov and Ivanova 2007, 87-8), Perustitza and Dolno Levski (Kilian-Dirlmeier 1993, 50), Gorski Izvor (Aladzov 1997, 59-60; Petrov 2007, 20, 33). The ends of handles of rapiers were found at Ada Tepe and DolnoTcherkovishte.

²⁴ Nikov 2000; 2011, 223-4; Dimitrova 2011.

²⁵ Hom. Od. IX. 196-211.

²⁶ Kulov 1991, 73-81.

²⁷ Unger 1987, 100, 110-11.

Thrace could be a periphery or even a part of ancient Mycenaean and Trojan regions with their infrastructures and trade connections. In view of the fact that Ada Tepe is near Maroneia/Ismaros and Troy, it could be suggested that the mine was one of the sources for precious metals in the ancient Aegean world.

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Bibliography

- Aladzov, D. 1997. *Selista, pametnizi, nahodki ot Hakovskija kraj*. Haskovo.
- Alexandrov, S. 2002. "The Late Bronze Age Settlement at Koprivlen." In *Koprivlen*, edited by A. Bozkova and P. Delev, 63-82, Vol. 1. Sofia.
- Bonev, A. 2003. *Ranna Trakija. Formirane na trakijskata kultura – kraja na vtoroto-nachaloto na parvoto hiljadoletie pr. Hr. Razkopki I prouchvanija* 31. Sofia.
- Borislov, B., and N. Ivanova. 2007. "Arheologicheski razkopki na trakiyski mogilen nekropol v m. Lilovo, obshtina Devin, Smoljanska oblast." In *Arheologicheski otkritia I razkopki prez 2006 g.*, 87-91. Sofia: National Institute of Archaeology with Museum – Bulgarian Academy of Sciences.
- Borislov, B. and N. Ivanova. 2009. "Nadgrobna mogila v m. Jorgovite mogili, do s. Izvorovo, Obst. Harmanli." In *Arheologicheski otkritia I razkopki prez 2008 g.*, 132-5. Sofia: National Institute of Archaeology with Museum – Bulgarian Academy of Sciences.
- Bozhinova, E. 2007. "The Bronze and Iron Age Site of Dragoyna." In *Aegeo-Balkan Prehistory*, edited by B. Horejs and P. Pavúk, 14 June 2007. <http://www.aegeobalkanprehistory.net>
- Dimitrova, Y. 2011. "Rhodopi Mountain between Thracia and Aegea Region: Some elements of a Border Culture of Early Iron Age in Southern Bulgaria. In *Anodos. Studies of the Ancient World* 10/2010, 71-84.
- Feuer, B. 2003. "Cultural Interaction Processes in the Mycenaean Periphery" In *The Periphery of the Mycenaean World. 2nd International Interdisciplinary Colloquium Lamia 1999. Proceedings*, 15-24. Athens.
- Gergova, D. 1994. "The Treasure from Vulcitrán and the Amber Route in the Balkans." In *The Early Hallstatt Period (1200-700 B.C.) in South Eastern Europe. Proceedings of the International Symposium from Alba Iulia, 10-12 June, 1993*, edited by H. H. Ciugudean and N. Boroffka, 69-79. Alba Julia.
- Hristov, M. 2005. "Nekropol ot rannata bronzova epoha kraj Dabene, Karlovsko (predvaritelno saobstenie)." *Arheologija* 46, 1-4: 127-37.
- Hristov, M. 2011. "Interdisciplinary study of materials from the ritual structures at the village of Dabene, near Karlovo." In *Interdisziplinäre Forschungen zum Kulturerbe auf der Balkanhalbinsel*, edited by V. Nikolov, K. Bacvarov and H. Popov, 139-49. Sofia.
- Jockenhövel, A., and H. Popov. 2008. "Archaeometallurgical Surveys in the Eastern Rhodopes 2004-2006." In *Ancient Mining in Turkey and the Eastern Mediterranean*, 251-70. Ankara.
- Kilian-Dirlmeier, I. 1993. *Die Schwerter in Griechenland (außerhalb Peloponnes), Bulgarien und Albanien*. Prähistorische Bronzefunde 12, Abt. IV. Stuttgart.
- Kulov, G. 1991. "Trakijskata kultura prez bronzovata I rannozeljaznata epoha po srednoto techenie na r. Arda I nejnite pritozi." *Izvestia na Muzeite v Juzna Bulgaria* 17: 73-86.
- Leshtakov, K. 2006. "Bronzovata epoha v Gornotrakijskata nizina." *Godishnik na Sofijskija universitet „Sv. Kliment Ohridski“*. Istoricheski fakultet – spezialnost Arheologija 3: 141-216.
- Leshtakov, K. 2008. "New evidence on the LBA Mortary Practices in South Bulgaria." In *Funeral Rites, Rituals and Ceremonies from Prehistory to Antiquity*, 69-82. Ankara.
- Lönnberg, F.G., ed. 2000. *Muinaiset Traakia. Kulta – ja – hopea – aarteita Bulgariasta 5000 ekr.-300 jkr.* Helsinki.
- Marazov, I. 2011. *Trakija I drevnijat svjat XV-I v.pr.Hr. "Kolekzija Vasil Bozkov"*. Sofia.
- Mommson, H., R. Jung, and E. Bozhinova. Forthcoming. "Dragojna – eine spätbronzezeitliche Höhensiedlung in den bulgarischen Rhodopen mit importierter mykenischer Keramik." *AM*.
- Nekhrizov, G. 2003. "Spasitelni arheologivheski prouchvania na obekt Ada tepe pri gr. Krumowgrad prez 2002 g. In *Arheologicheski otkritia i razkopki prez 2002 g.*, 67-8. Sofia: National Institute of Archaeology with Museum – Bulgarian Academy of Sciences.

- Nekhrizov, G. 2006. "Spasitelni razkopki na trakijskoto svetilishte Ada tepe" In *Arheologicheski otkritia i razkopki prez 2005 g.*, 140-2. Sofia: National Institute of Archaeology with Museum – Bulgarian Academy of Sciences.
- Nekhrizov, G., and R. Mikov. 2002. "Spasitelni arheologicheski prouchvania na obekt Ada tepe prig r. Krumovgrad prez 2001 g." In *Arheologicheski otkritia i razkopki prez 2001g.*, 42-4. Sofia: National Institute of Archaeology with Museum – Bulgarian Academy of Sciences.
- Nekhrizov, G. and J. Tzvetkova, eds. Forthcoming. *Ada Tepe. Thracian sanctuary near Krumovgrad*. Sofia.
- Nikov, K. 2000. *Kulturni kontakti na Juzhna Trakia s Egeiskia sviat prez rannata zheliazna epoha po dannii na keramikata*. Ph. D. diss., Sofia University.
- Nikov, K. 2011. "The meaning of the regionalism in the Early Iron Age pottery decoration in South Thrace." In *Interdisziplinäre Forschungen zum Kulturerbe auf der Balkanhalbinsel*, edited by V. Nikolov, K. Bacvarov and H. Popov, 209-27. Sofia.
- Panajotov, I., and K. Jordanov. 1976. "Po vaprosa za minното delo i metalurgijata v Trakija prez bronzovata i zeljaznata epoha." In *I Simpozium po istorija na minното delo v Jugoiztochna Evropa, Varna, 3-6.11.1975*, 24-39. Vol. 1. Varna.
- Petrov, I. 2007. "The Region of Haskovo during the Prehistory, Antiquity and the Middle Ages." In *Regional Museum of History Haskovo. Selected from the Stocks. Catalogue*, edited by G. Gramatikov, 26-59. Printed in the Czech Republic.
- Photos, E., Ch. Koukuli-Chrysanthaki, R. Tylecote and G. Gialoglu. 1989. *Precious Metals Extraction in Palaia Kavala, N.E. Greece. An Archaeometallurgical Attempt to Locate Skapte Hyle*. Old World Archaeometallurgy, Der Anschnitt, Beiheft 7, 179-90. Bochum.
- Popov, H. 2004. "Arheometalurgija na zeljaznata epoha v balgarskite zemi – sostojanie i perspektivi." *Arheologija* 45, 1-2: 33-41.
- Popov, H., and S. Iliev. 2006. "Antichni rudni razrabotki, zapaden sklon na Ada tepe." In *Arheologicheski otkritia i razkopki prez 2005 g.*, 154-6. Sofia: National Institute of Archaeology with Museum – Bulgarian Academy of Sciences.
- Popov, H., A. Jockenhövel, Z. Tsintsov and S. Iliev. 2011. "Montanarchäologische Forschungen in den Ostrhodopen, Südostbulgarien." In *Interdisziplinäre Forschungen zum Kulturerbe auf der Balkanhalbinsel*, edited by V. Nikolov, K. Bacvarov and H. Popov, 253-90. Sofia.
- Sotirov, I. and P. Ilieva. 2002. *The Vulchitrun Gold Treasure*. Sofia.
- Unger, H. J. 1987. "Das Pangaion, ein altes Bergbauzentrum in Ostmakedonien." *PZ* 62: 87-112.
- Velkov, V. 1972. "Rudodobivane i minno delo v Drevna Trakija." In *Godishnik na politechnicheskija muzej* 2: 23-39.
- Venedikov, I. 1988. *The Vulchitrun Treasure*. Sofia.
- Vulpe, A. 1995. "Der Schatz von Perşinari in Südrumänien." In *Festschrift für Hermann Müller-Karpe zum 70. Geburtstag*, edited by A. Jockenhövel. Bonn, 43-62.
- Vulpe, A., and V. Mihailescu-Birliba. 1985. "Der Goldschatz von Rădeni, Jud. Neamt, in der Westmoladau, Rumänien." *PZ* 60: 47-69.
- Wagner, G., and G. Weisgerber. 1988. *Antike Edel- und Buntmetallgewinnung auf Thasos. Der Anschnitt*, Beiheft 6. Bochum.
- Želeč, D. 2006. "Zlatno nahodiste „Han Krum“, uchastak Ada Tepe." *Geologija i mineralni resursi*: 27-33.
- Želeč, D. 2007. "Zlatno nahodiste „Han Krum“, uchastak Ada Tepe." In *Zlatnite nachodista v Bălgarija*, edited by V. Milev, N. Obretenov, V. Georgiev, A. Arizanov, D. Želeč, I. Bonev, I. Baltov, and V. Ivanov, 104-15. Sofia.



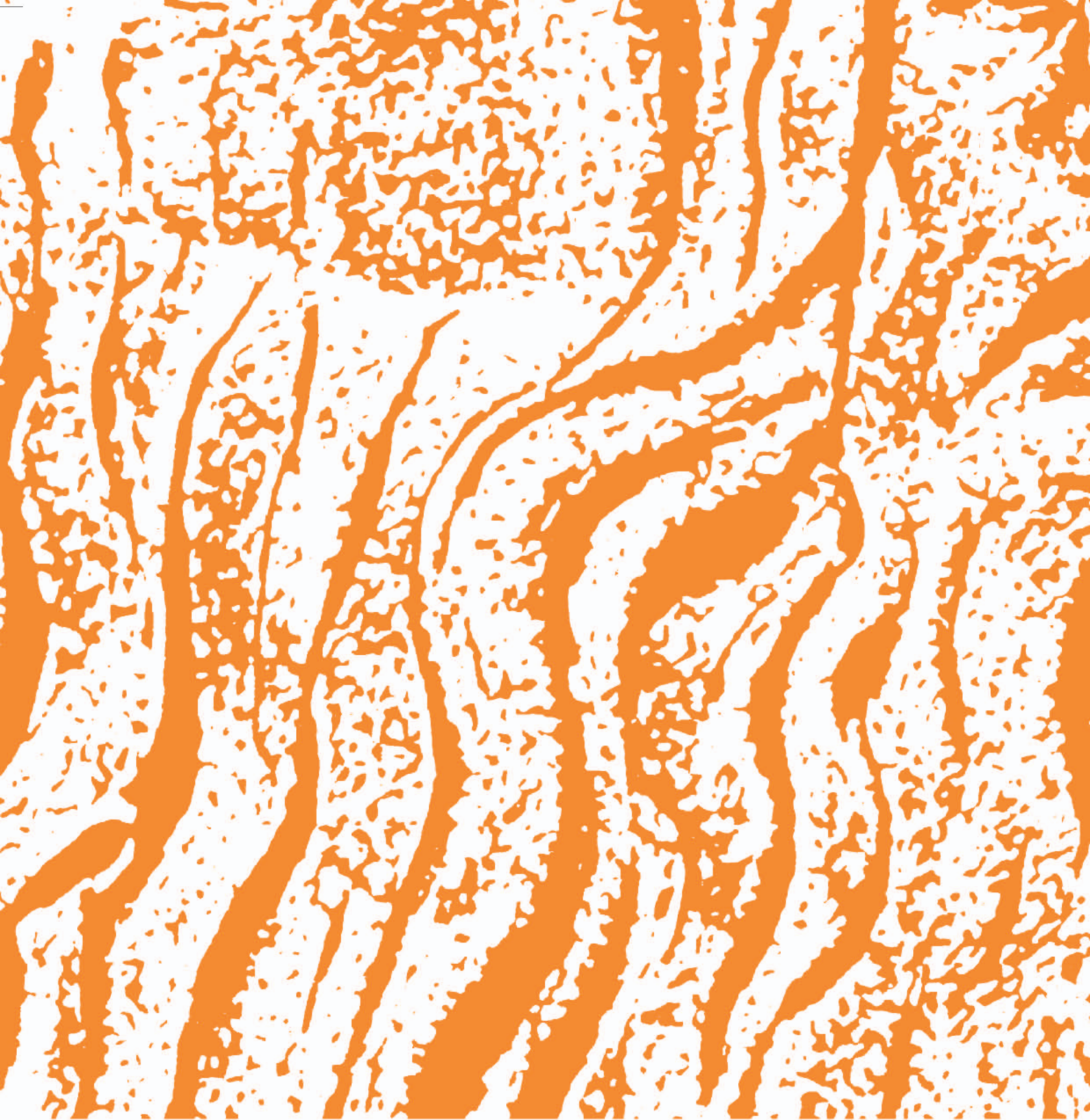
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ISBN 978-80-8082-500-3

ISSN 1338-5410