

CHRONOLOGY REVISED. THE FINDS FROM PLOVDIV, CHERKOVNA AND ESENITSA IN BULGARIA

Yana DIMITROVA

National Institute of Archaeology with Museum,
Bulgarian Academy of Sciences, Sofia, Bulgaria
yana.dimitrova@naim.bg
ORCID ID: <https://orcid.org/0000-0003-1411-9937>

Elena BOZHINOVA

Regional Museum of Archaeology Plovdiv, Bulgaria
elena.bozhinova@gmail.com
ORCID ID: <https://orcid.org/0000-0002-3279-4410>

Abstract: The collective finds of ceramic vessels from Plovdiv and Cherkovna, together with the necropolis at Zimnicea, are eponyms of a Late Bronze Age cultural horizon in the Eastern Balkans. Its chronology is covering the whole period of the Late Bronze Age, as in the Bulgarian literature it is usually placed in the second half or even the last phase of the period. A third find of ceramic vessels, the one from Esenitsa, is considered as the very final stage of the Bronze Age. The current state of the sources, which have grown considerably as a result of numerous archaeological investigations in the last decades, came with a series of radiocarbon dates and Aegean imports found in context. Parallels in well-dated complexes indicate that the initial date of this horizon can almost certainly be set no later than the beginning of the Late Bronze Age. Two differentiated groups of vessels with characteristics respectively indicating later and earlier chronology are distinguished. Both groups are represented in the complex from Plovdiv, with predominance of the first one, while the one from Cherkovna only contains vessels from the second group. This led to the authors defining the Cherkovna find as the earliest, followed by that from Plovdiv. The small number of vessels in the Esenitsa find, two of which have unique shapes hamper precise definition. Still, the latter group is clearly distinguished among the exemplars of this collection, which indicates a later date.

Rezumat: Depunerile de vase ceramice de la Plovdiv și Čerkovna, împreună cu necropola de la Zimnicea, sunt eponime pentru un orizont cultural de la sfârșitul epocii bronzului din Balcanii de Est. Cronologia acestuia acoperă întreaga perioadă a epocii târzii a bronzului, în literatura bulgară este plasat de obicei în a doua jumătate sau chiar în ultima fază a perioadei. Un al treilea depozit de vase, cel de la Esenița, este datat chiar la sfârșitul epocii bronzului. Stadiul actual al cercetărilor a crescut considerabil ca urmare a numeroaselor investigații arheologice din ultimele decenii. Acestea au adus și o serie de date cu radiocarbon dar și asocieri cu importuri din Marea Egee. Toate acestea indică faptul că începutul acestui orizont poate fi aproape sigur stabilit nu mai târziu de începutul perioadei târzii a epocii bronzului. Pe ansamblu autorii au delimitat două grupe distincte de vase. Ambele sunt reprezentate în complexul de la Plovdiv, cu predominanța celei dintâi, în timp ce depozitul de la Čerkovna conține doar vase din a doua grupă. Acest lucru a făcut ca autorii să definească descoperirea de la Čerkovna ca fiind cea mai veche, urmată de cea de la Plovdiv. Numărul mic de vase de la Esenitsa, dintre care două au forme unice, împiedică o încadrare precisă. Totuși, cel din urmă grup se distinge clar printre exemplarele acestei colecții, ceea ce indică o dată ulterioară.

Keywords: Late Bronze Age chronology, collective finds, Plovdiv-Zimnicea-Cherkovna horizon, pottery.

Cuvinte cheie: perioada târzie a epocii bronzului, depozite, orizontul Plovdiv-Zimnicea-Čerkovna, ceramică.

INTRODUCTION

The collective finds of ceramic vessels from Plovdiv and Cherkovna are representative for the Late Bronze Age culture in the Eastern Balkans. In most publications concerning sites from this period, these vessels are used as analogies in order to determine chronological and cultural affiliation. However, their chronology remained broad, as they were usually placed in the second half or even the last phase of the period. Thus, the revision of the dating of these finds is important as it influences the general situation of the Late Bronze Age finds from this region. In addition, collective finds of whole vessels are very rare and as a result become a standard for further attempts to determine the chronology of a number of features, when ^{14}C data are not available and the pottery is in a fragmentary state. In this paper, for the first time, all the vessels from these finds are illustrated both photographically and graphically with the intention of supporting further research in this direction. A stylistic analysis based on information from new studies is used in order to clarify the dating of the hoards from Plovdiv and Cherkovna, as well as the one from Esenitsa, where collections of a large number of whole vessels were found in closed complexes.

THE COLLECTIVE FINDS (Fig. 1)

The collective find of pottery vessels from Plovdiv comes from a deep pit discovered in 1964 during construction work in the eastern part of the city, in the Second Kamenitsa district, from which its name derives (Fig. 2; Figs. 3-13).¹ The pit was a deep shaft with a cylindrical shape and a diameter of approximately 1 m, with no traces of coating. It reached down to the groundwater. In it, 44 whole ceramic vessels were found, which were divided into six clusters by successive layers of clay. The pit probably served as a well.² All the vessels are closed forms, being probably used to transport and store liquids, and are undecorated. Almost half of the vessels have broken handles. Their distribution on several levels and their large number testify to a relatively long use of the well. In addition to the vessels, pottery fragments were also found in the pit, which, according to the excavator, are handles from double vessels and a pedestal, used secondarily as a bowl; also several animal bones and wood

¹ Девев 1964.

² Bozhinova 2018.

remains were recovered from the pit.³ Other finds and structures from the Bronze Age are not registered in the area, but it should be noted that this zone is outside the territory with mandatory archaeological surveys. The nearest documented Late Bronze Age site is about 3 km to the west, on the ridge of Dzhandem tepe – the highest of several rocky elevations around which the later Philippopolis developed.⁴

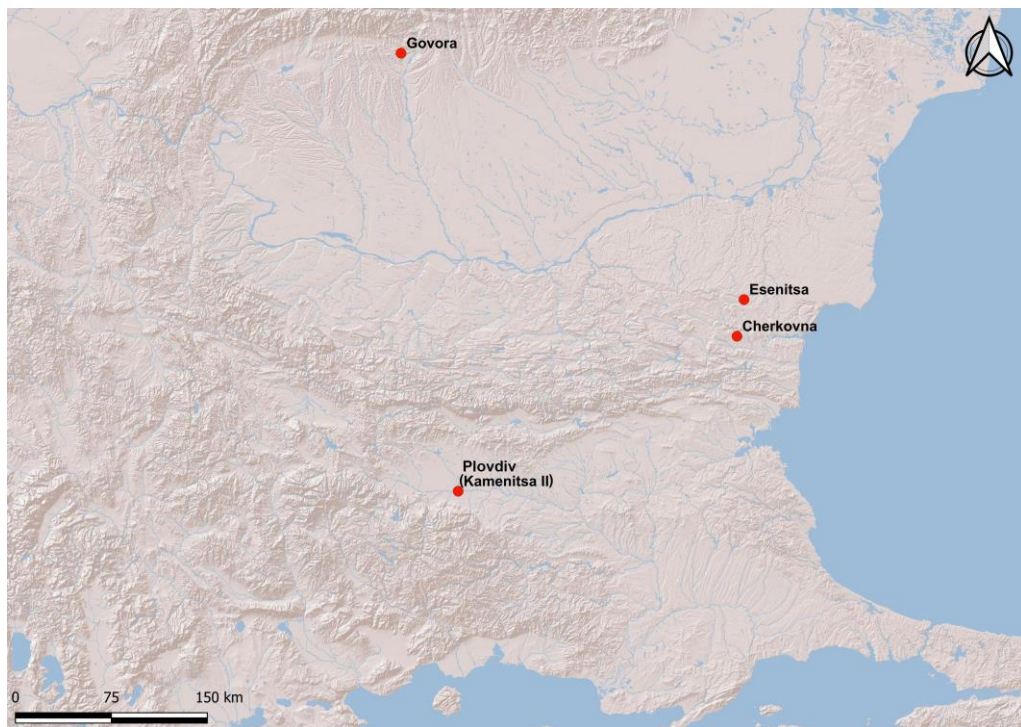


Fig. 1. Map with the locations of vessels' collections.

In the western part of the village of Cherkovna, Razgrad region, eight ceramic vessels were discovered in 1963 during a geological survey for an underground spring at a depth of 8 m (Figs. 14-16). According to Bernhard Hänsel, the pit was a well discovered under the foundations of a later well from the Roman period.⁵

³ Детев 1964, 66.

⁴ Цончев 1938, 23-24, обр. 41, 43-45.

⁵ Hänsel 1976, 77; Dimitrova, Dilov 2018.



Fig. 2. The Plovdiv find: 1. A part of the discovered vessels; 2-4. The pit (well) during excavations (Archive of Regional Archaeological Museum of Plovdiv).

In the village of Esenitsa, Varna region, during excavation works in 1969, in a pit with a diameter of approximately 1.50 m, at a depth of 2.00 m, seven-eight, or more whole vessels were found (Fig. 17)⁶. They were partially filled with charred wheat. The vessels were in an upright position, placed close to each other, probably not at the very bottom of the pit. No traces of charcoal, bones, or ashes were found around them but the soil in the pit was different from the surrounding clay soil.⁷

To these finds should be added the one near the town of Govora in central southern Romania, where 17 (or 20) *kantharos*-like vessels were found in a pit. Here also no traces of other archaeological materials or habitation have been found in the vicinity.⁸

PLOVDIV-ZIMNICEA-CHERKOVNA HORIZON

The finds from Plovdiv and Cherkovna defined a chronological horizon of the Late Bronze Age in this part of south-eastern Europe in the scientific literature, namely Plovdiv – Zimnicea – Cherkovna.

In 1970, Sebastian Morintz and Niță Angelescu were the first to define a separate chronological horizon and named it the "Zimnicea – Plovdiv complex". The authors based their opinion on the analogy between the finds from Plovdiv and Cherkovna with those from the necropolis at Zimnicea.⁹ Bernhard Hänsel accepted the existence of this Late Bronze Age horizon, but suggested the name "Cherkovna". According to him, numerous finds belonged to this group, including the collective finds from Plovdiv and Cherkovna.¹⁰ The connecting link of the entire chronological horizon, which according to him extended over the territory of Bulgaria and the eastern Danube regions of Romania could be found in the globular *kantharoi* and in some elements of the cups, *amphorae*, and jugs. Due to the similarity of some forms with those of the Early Bronze Age he assumed the beginning of the horizon lay in the Middle Bronze Age, and its end came with the appearance of the stamped decoration or at the end of the 12th or beginning of the 11th century BC.¹¹

⁶ The number of vessels placed in the pit is not clear. In a footnote, the authors of the paper point out that they were informed of more vessels broken during excavation when the pit was discovered.

⁷ Николов, Жекова 1982, 87.

⁸ Berciu *et alii* 1961, 134-136; Hänsel 1976, 59.

⁹ Morintz, Angelescu 1970, 407-408.

¹⁰ Hänsel 1976, 76-79.

¹¹ Hänsel 1976, 81-87.

Ivan Panayotov, in his synthesis on the Bronze Age in Bulgaria, divided the Late Bronze Age into two phases – the first is Razkopanitza VII-Assenovetz, and the second is Plovdiv-Zimnicea group, marking the end of the Bronze Age (BA VI) for the region of the Upper Thracian Valley and north-eastern Bulgaria. The second one, according to him, is synchronous to the "Esenitsa" cultural phenomena in central northern Bulgaria.¹² These chronological phases are accepted by Alexander Bonev¹³ and Jan Lichardus.¹⁴ The late chronology of the Plovdiv-Zimnicea-Cherkovna type of finds is followed by most of the Bulgarian archaeologists to determine the date of further discovered Late Bronze Age materials (despite the broader date for the complex, accepted in the recent studies).

Based on the stratigraphy and ¹⁴C dating of the Popești site, Nona Palincaș establishes a connection between the Fundeni-Govora and Zimnicea-Plovdiv type materials in the settlement. She also compares the dates and pottery shapes to Kastanas layers 17 to 15, Tei phases IV and V, Căscioarele and Radovanu and proposes the existence of both Fundeni-Govora and Zimnicea-Plovdiv groups between 1450/1400 BC and 1100 BC, considering Zimnicea-Plovdiv as the later group.¹⁵

Monica Șandor-Chicideanu and Mihai Constantinescu, on the basis of the research of the Plosca necropolis and some ceramic forms found in certain graves, establish a synchronicity between the classical phase of the Žuto Brdo-Gârla Mare culture, the Govora group and the Zimnicea-Plovdiv culture, the latter two cultures being more long-lived than the Žuto Brdo-Gârla Mare culture and thus also partly contemporaneous with the Bistreț-Ișalnița group of fluted ware.¹⁶ The absolute dates for the classical phase of Žuto Brdo-Gârla Mare are considered between 1500/1425 and 1250 BC.¹⁷

Ion Motzoi-Chicideanu, based on parallels between vessels from Zimnicea and those from Gârla Mare and Cârna, assumed that the Zimnicea-Plovdiv-Cherkovna "group" or "culture" existed from the end of the Middle Bronze Age and lasted until the appearance of fluted pottery, i.e. until the 12th-11th century BC.¹⁸ He accepted the 'Fundeni-Govora' group, dated to 1460-1425/1410 BC, as a separate expression of this culture.

¹² Panayotov 1995, 248.

¹³ Бонев 2003, 35-38.

¹⁴ Lichardus *et alii* 2002, 136-137.

¹⁵ Palincaș 1997, 252-253; Palincaș 2000, 213, 219, 222-224.

¹⁶ Șandor-Chicideanu, Constantinescu 2019, 60-61.

¹⁷ Șandor-Chicideanu, Constantinescu 2019, 63-65, 150-151.

¹⁸ Motzoi-Chicideanu 2011, 117.

Raiko Krauss, recognizing a Middle Bronze Age horizon of finds in northern Bulgaria, points the beginning of the Cherkovna group with the beginning of the Late Bronze Age, accepting the name given by Bernhard Hänsel.¹⁹

Neculai Bolohan proposes a broad geographical and chronological framework for the Zimnicea-Plovdiv-Cherkovna group, which develops in a south-north direction in the center of the Balkan Peninsula: a space encompassing the territory of the southernmost part of Wallachia, between Zimnicea and Oltenița; the area south of the Danube reaches to the Rhodope and Rila Mountains, bounded in the south-west by the Struma and Mesta rivers and in the north-west by the area of the Gârla Mare-Žuto-Brdo culture.²⁰ He assumes the long chronology of the group – from the end of the 15th century to the beginning of the 12/11th century BC, with two phases: the Plovdiv collective find being the early phase and Cherkovna and the Zimnicea necropolis – the later.²¹

The broad chronological frameworks into which these eponymous finds were placed do not correspond to the current state of the sources, which have grown considerably in recent decades as a result of numerous archaeological investigations of Bronze Age sites. Some are large in scale and have a series of radiocarbon dates (Ada Tepe);²² others, although smaller in scale, have Aegean imports (Koprivlen, Dragoina).²³ It is thus possible to attempt to narrow down the date of these finds, or at least to advocate about their possible earlier chronology than the second half or the end of the Late Bronze Age, traditionally assumed by the Bulgarian archaeology.

HOARD OR DEPOSIT (INTERPRETATION)

Collective finds of ceramic vessels from the Bronze Age are known from Eastern, Central, and Western Europe (Romania, Moravia, Austria, Bavaria)²⁴. They were discovered in different environments: settlements, architectural contexts, necropoleis, special places (like caves in Bavaria²⁵, or different choices of landscapes in Romania²⁶). Cases of finds without registered archaeological contexts in their surroundings are rather an exception.²⁷ The interpretation of these finds is highly controversial in the

¹⁹ Krauß 2006, 18-23.

²⁰ Bolohan 2016, 225-227.

²¹ Bolohan 2016, 228-229.

²² Popov *et alii* 2024.

²³ Jung *et alii* 2017 with literature; Bozhinova 2024.

²⁴ Stapel 1999, 109-115; Zuber 2015; Gogâltan, Németh, Apai 2011; Gogâltan 2014 with literature.

²⁵ Zuber 2015, 172-173, 182-183.

²⁶ Soroceanu 2012.

²⁷ Zuber 2015, 171-172, 180-181.

scientific literature with differing, often contradictory opinions being held.²⁸ Most often they are referred to as "hoards" or "deposits", but the most precise definition is *"the deposition of one or several objects that are not part of a funerary inventory or represent settlement remains"*²⁹, with an explanation of vessel finds: *"a pot deposit represents an intentional and irreversible deposition of one or several complete or restorable vessels simultaneously, mainly for drinking, in various contexts which do not represent a funerary inventory or have other ritual meaning, or a proved domestic use"*.³⁰

Bulgarian literature does not contribute much to clarify the nature of these finds. The vessels from Plovdiv and Cherkovna were discovered in deep, cylindrical pits which reached groundwater level, which led some authors to define them as wells.³¹ The presence of charred wheat in the vessels from Esenitsa is used by the authors of their publication as an argument for interpreting all these finds as storages for food products.³² Still, similar generalization is unconvincing as the different characteristics of each find suppose they had different functions. A religious purpose as family cenotaphs is seen in the Plovdiv find.³³ It relies on the information about the presence of clay levels, sealing different layers of vessels, which is rather questionable, as the circumstances of the archaeological situation seen on the pictures define such an observation difficult to be ascertained.

However, all three finds from Bulgaria, as well as the find from Govora in Romania, are accidental and remain isolated, as the environment in which they were located remains unclear. There are no registered Bronze Age settlements, layers, or materials in the areas where the collective finds of vessels were found. For this reason, they cannot contribute to the discussion regarding whether they are evidence of specific rituals or were part of everyday life. This paper attempts to precise the chronology of the three collective finds from Bulgaria – Plovdiv, Cherkovna, and Esenitsa – without entering into the discussion about their interpretation.

THE VESSELS

Plovdiv, Kamenitsa II district

The 39 vessels are preserved today in the Regional Museum of Archaeology – Plovdiv, although Petar Detev mentions in his publication that 44 containers were discovered.

²⁸ Vulpe 1996; Berthold 1998; Stapel 1999; Czyborra, Blischke 2005; Metzner-Nebelsick 2012; Zuber 2015, Gogâltan 2014.

²⁹ Gogâltan 2014, 49.

³⁰ Gogâltan 2014, 52.

³¹ Bozhinova 2018.

³² Николов, Жекова 1982, 91-92.

³³ Бонев 2003, 78-79.

All of them have closed forms, functionally intended for storage, transport and/or consumption of liquids. The categories presented are four – the most numerous are *amphora*-like vessels – 19 (Figs. 3-8), followed by jugs – 10 pieces (Figs. 9-10, 11/1-2), *kantharos*-like vessels – 5 (Fig. 12), four cups (Fig. 13) and one vessel with a handle over the mouth (a bucket) (Fig. 11/3). Their surface is black, more rarely grey, grey-beige, or dark brown, often with spots, most probably caused during firing by contact with the walls of the furnace or with other vessels. Almost all have a well-burnished surface, in some cases even polished. The exceptions are two - a light brown jug and a black cup (Fig. 10/4) have roughly smoothed surface. All are undecorated. On one of the *amphorae* (Fig. 7/3), a vertical crack emanating from the mouth was reinforced with a thick layer of resin, and the rim of another amphora was also repaired using resin. Secondary holes were made in the upper part of two others, probably to facilitate the pouring of the liquid.

Most of the *amphora-like vessels* belong to the type with a funnel-shaped open mouth and a closed conical neck, distinguished by an indent from an ovoid body narrowing smoothly to a flat base (14 vessels, Figs. 3-6; 7/1-2). Two small vertical "ear-shaped" handles with an oval or triangular cross-section are placed on or slightly above the widest part of the body. One vessel has four handles. The height of the necks varies. One of the *amphorae* has a cylindrical, short neck (Fig. 3/3). In five vessels, the mouth is markedly separated from the neck by an indentation in the wall and/or a thickening of the mouth (Fig. 3/3; 4/2, 4; 5/2; 6/1; and 7/3). Because of a very similar silhouette, another vessel is to be added to this type, which differs by a more elliptical body shape and a slightly bulging neck (Fig. 7/3).

Two *amphorae*, both on pedestals (Fig. 3/1-2), represent particular types, although the ovoid shape of the body and the general silhouette place them in the largest group. One has a wider body and high pedestal, which changes greatly the proportions of the vessel and thus differentiate it from the whole group. In addition, it has four handles, and four low knobs placed between the handles on the shoulders. The second vessel is finely made, has a smooth grey surface, and two disc-shaped knobs symmetrically placed between the handles. Its base is a low cylindrical pedestal. The general characteristics of this vessel distinguish it from the whole group. It could be an import which provenance cannot be determined

Two other *amphorae* can be distinguished by their silhouettes. One has an oval body without a neck and a funnel-shaped open mouth (Fig. 8/1). The second has an almost biconical body that merges smoothly into a cylindrical neck and ends with a straight mouth (Fig. 8/2). The handles of both vessels are broken off.

All *jugs* have an oblique mouth, a high handle that rises above it, and a triangular or round cross-section. They refer to two eminent forms – with a conical neck

distinguished from the body by an indentation (8 vessels, Fig. 9-10) and without a neck (2 vessels, Fig. 11/1-2). In the first type, two subtypes can be separated by the shape of the body – ovoid or spherical. In all of them, the mouth is slightly funnel-like everted and the transitions mouth – neck and neck – body are emphasized by an indentation. One of the vessels has an elongated silhouette, a light brown color, and a poorly smoothed surface. The color and the rough surface distinguish it from all the other vessels in the find (Fig. 10/4). The jugs of the second type have an ovoid body, the mouth is distinguished by a rim, and in one vessel it is funnel-shaped. The bases of all the jugs are slightly concave, in a few cases profiled.

Kantharos-like vessels have a closed conical neck, but the shape of the body divides them into two types - those with an almost ovoid shape, but flattened, with a maximum diameter in the upper part (3 vessels, Fig. 12/1-3) and with a spherical body (2 vessels – Fig. 12/4-5). In all representatives of the first type and in one of the second type, the transitions between the mouth and the neck as well as between the neck and the body are emphasized by indentations and thickenings of the mouth. Only the fifth vessel has an everted mouth rim. All of the handles (one of the vessels has no preserved handles) are with triangular cross-sections. Almost all of them have a very well-burnished and polished surface. Those of the second type are characterized by a higher precision of craftsmanship and a polished surface.

The four cups are of four different types (Fig. 13). All have handles that protrude beyond the mouth, with a round or oval cross-section. One cup has a polished surface, a pear-shaped body, and a slightly concave base. The mouth is broken off, but it may have been emphasized with an incised line (Fig. 13/1). The second cup has a truncated ovoid body with a mouth emphasized by a deep line (Fig. 13/2). The third cup, also polished, has a cylindrical body, an oblique mouth that is extended upwards on the side opposite the handle, thus forming a spout (Fig. 13/3). The fourth cup, also cylindrical, is very small and narrow – with a small diameter and a roughly smoothed black surface (Fig. 13/4).

The vessel with a massive handle above the mouth has a simple profile, a truncated spherical body, and a flat base (Fig. 11/3). Its surface is smooth and brown, with spots of secondary burning.

Cherkovna

The find consists of 8 ceramic vessels, which are now kept in the Regional Museum of History – Razgrad: 2 *amphora*-like vessels and a third one with spherical body (Fig. 14), 2 *kantharos*-like vessels (Fig. 16), 2 bowls (Fig. 15/2-3), and a large closed vessel with a shape that represents a hybridization between *amphora* and *kantharos* (Fig. 15/1). All are dark grey, with brown spots. Most have a burnished surface, the decorated spherical *kantharos* is polished, and the hybrid vessel has an uneven, roughly smoothed surface.



Fig. 3. Plovdiv, *amphorae* Inv. № I-389, I-386, and I-404
(drawings – E. Bozhinova, Y. Dimitrova).



Fig. 4. Plovdiv, *amphorae* Inv. № I-423, I-397, I-419, and I-420
(drawings – E. Bozhinova, Y. Dimitrova).



Fig. 5. Plovdiv, *amphorae* Inv. № I-421, I-403, I-388, and I-422
(drawings – E. Bozhinova, Y. Dimitrova).



Fig. 6. Plovdiv, *amphorae* Inv. № I-403, I-402, and I-73 (drawings – E. Bozhinova, Y. Dimitrova).



Fig. 7. Plovdiv, *amphorae* Inv. № I-405, I-387, and I-390
(drawings – E. Bozhinova, Y. Dimitrova).



Fig. 8. Plovdiv, *amphorae* Inv. № I-396 and I-401m (drawings – E. Bozhinova, Y. Dimitrova).

The *amphorae* have an ovoid body, a flat base, and an everted mouth. The handles of one amphora are placed on the widest part of the body (Fig. 14/1), and those of the other are slightly lower (Fig. 14/2). The third vessel (Fig. 14/3), tentatively assigned to this category, has a spherical body, everted mouth, and handles on the shoulders, below the neck.

The decorated *kantharos* (Fig. 16/1) has a spherical body separated by an indentation from a closed-conical neck, an everted mouth rim and two high vertical handles starting below the rim, with a triangular cross-section. The base is flat and profiled. The central part of the body and the upper part of the handles are decorated with a composition of geometric motifs in the *Furchenstich* technique with white inlay. The central motif is a composition of cross-hatched triangles surrounded by two bands of inscribed circles, set between motifs of hatched and inscribed triangles and rhombs. The latter are also applied to the handles. The second *kantharos* (Fig. 16/2) has a spherical body that flows smoothly into a high, closed, conical neck, a concave base, and two vertical handles that rise above the mouth.



Fig. 9. Plovdiv, jugs Inv. № I-409, I-408, I-415, and I-414
(drawings – E. Bozhinova, Y. Dimitrova).



Fig. 10. Plovdiv, jugs Inv. № I-417, I-399, I-406, and I-416
(drawings – E. Bozhinova, Y. Dimitrova).



Fig. 11. Plovdiv, 1–2. Jugs Inv. № I-418 and I-422; 3. Bucket Inv. № I-407
(drawings – E. Bozhinova, Y. Dimitrova).



Fig. 12. Plovdiv, *kantharoi* Inv. № I-395, I-393, I-394, I-392, and I-391
(drawings – E. Bozhinova, Y. Dimitrova).



Fig. 13. Plovdiv, cups Inv. № I-411, I-410, I-412, and I-413
(drawings – E. Bozhinova, Y. Dimitrova).

The two vessels, which are formally defined as bowls, are small and probably had the function of cups. One of the bowls (Fig. 15/2) has a conical body, a short, cylindrical neck, a thickened and everted mouth rim, a flat, profiled base, and two small, vertical handles that begin below the mouth rim and end below the widest part of the body. Two low conical knobs, resembling small knobs, are symmetrically placed between the handles at the maximum diameter, at the transition to the neck. The second bowl (Fig. 15/3) has a slightly elongated S-shaped silhouette, a concave base, and two small vertical handles at the widest part of the body.

The vessel with two high vertical handles (Fig. 15/1), which is more carelessly crafted than the others, is atypical. It has a straight mouth, a short cylindrical neck that is not separated from the ovoid body, a flat base, and two vertical handles that are placed in the manner of the *kantharos*-like vessels – starting from the mouth, rising slightly above it and ending at the widest part of the body. Formally and functionally, it belongs to the amphorae and should probably be considered a separate form of this category. The vessel has a careless decoration – motifs close to hatched, inscribed, and filled triangles arranged on three parallel incised lines in a composition placed as a band on the widest part of the body.



Fig. 14. Cherkovna, *amphorae* Inv. № 807, 809, and 645 (drawings – Y. Dimitrova).



Fig. 15. Cherkovna, 1. Jar Inv. № 583; 2-3. Bowls Inv. № 805 and 806 (drawings – Y. Dimitrova).



Fig. 16. Cherkovna, *kantharoi*, Inv. № 808 and 647 (drawings – Y. Dimitrova).

Esenitsa

The number of vessels originally placed in the pit is not clear. Seven, eight or more whole vessels were discovered, six of which are described in the publication. Five of them are presented with images (here Fig. 17).³⁴ The five vessels illustrated are large and have closed forms; the sixth is a cup with a handle that rises high above the mouth and a flat base. Two of the vessels represent "classical" forms of *amphora*-like vessels and jugs.

The *amphora* (Fig. 17/1) has an ovoid body, a flat base, a conical neck, and a funnel-shaped mouth with two vertical "ear-shaped" handles at the widest part of the body. Two low conical knobs are arranged symmetrically between the handles.

The *jug* (Fig. 17/2) has an ovoid body, a conical neck, and a short funnel-shaped mouth. Three small, conical knobs are symmetrically located at the transition between the body and the neck. Another vessel (Fig. 17/3) is almost identical in shape and mouth but unusually has three vertical handles.

The *vessel with the horizontal handles* (Fig. 17/4) has an ovoid body that turns directly, without a neck, into an everted mouth. The handles are placed just above the widest part of the body.

The *big vessel with two high vertical handles* (Fig. 17/5), is the most unusual, with an elongated, pear-shaped body, in the center of which a spherical body is separated from a high, conical neck by an indentation. The handles extend from the mouth and protrude high above it, as on the *kantharos*-like vessels.

THE VESSEL ANALOGIES

The vessels from the three collective finds have been taken as a standard for the main pottery forms of this period, with the prevailing opinion being that they are characteristic of the second half of the period. Materials accumulated during excavations in recent decades suggest a possible earlier chronology, as some of them are probably not later than the very beginning of the Late Bronze Age.

The vessels from the three finds can generally be divided into two groups - the first with features that became common for the Late Bronze Age and the second with more archaic features. These groups are most recognizable in the Kamenitsa find, as it is the largest of all three.

³⁴ НИКОЛОВ, Жекова 1982, Табл. I-II.

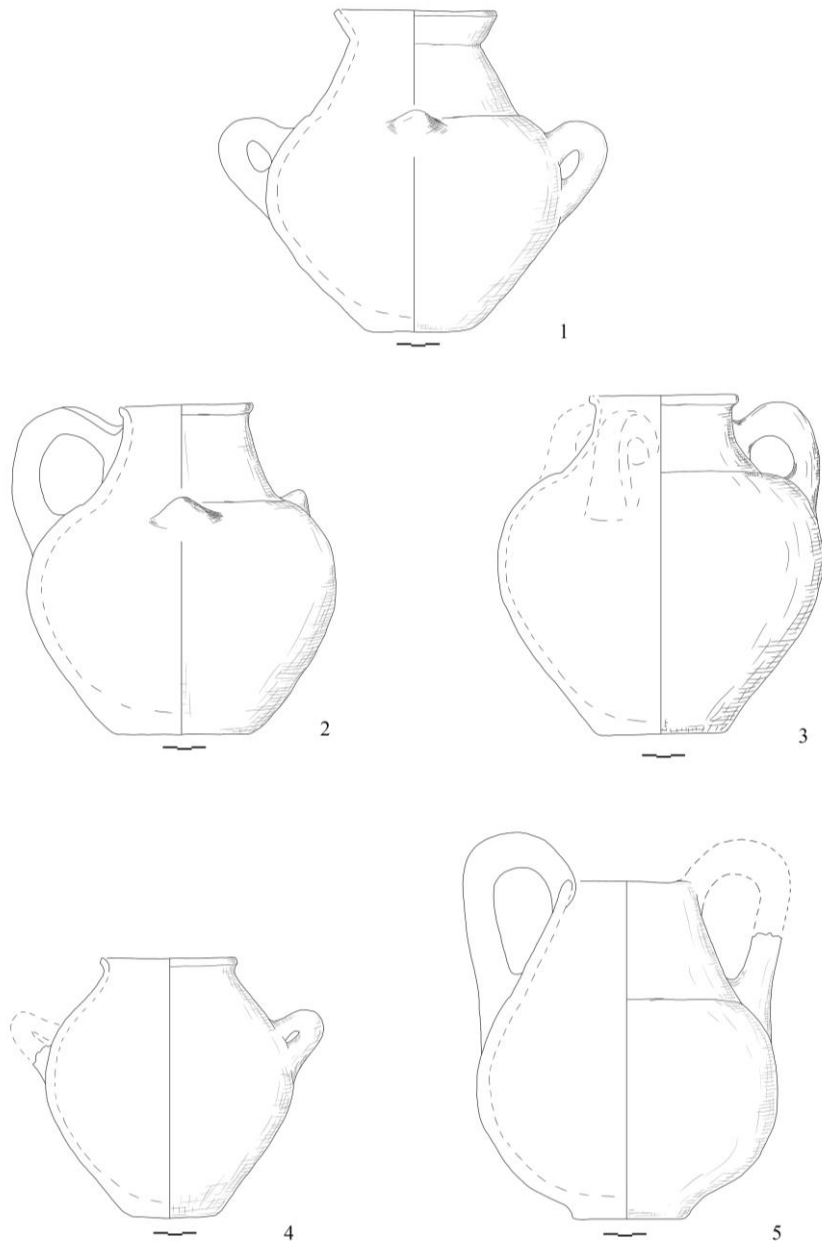


Fig. 17. Esenitsa (drawings – Y. Dimitrova, after Николов, Жекова 1982).

Group 1

Most of the *amphora*-like vessels, *kantharos*-like vessels and jugs from the Kamenitsa find are characterized by a common silhouette and specifically repeated details. Their profile is S-shaped and consists of a flat, often slightly profiled base, an ovoid body, a closed-conical neck, and an open, funnel-shaped mouth; the transitions between body and neck as well as between the neck and the mouth are emphasized by indentations on the walls and a thickening of the mouth rim. The handles of the *amphora*-like vessels are placed on or just above the widest part of the body, at the lower part of the shoulders. This group also includes the decorated *kantharos* from Cherkovna, the *amphora*-like vessel, and the jugs (including the three-handled piece) from Esenitsa.

Seventeen vessels from the Plovdiv find (Fig. 3-7) and one from the Esenitsa find (Fig. 17/1) belong to the *amphora*-like vessels with this silhouette. The shape is one of the most popular in this category in the Balkan region.³⁵ *Amphorae* of this type are found in Toumba Thessaloniki in phases VIII-VI,³⁶ in Assiros in Phase 9,³⁷ Kastanas III-IV (types IIIc and IIIe)³⁸ and in all the Late Bronze Age layers of Agyos Mammas (types IB, IIA and IIB),³⁹ which indicates that they appeared at the latest at the beginning of the period. This shape with a flat base or pedestal is considered typical of the Late Bronze Age in eastern Macedonia.⁴⁰ The *amphora* on a high pedestal with four handles (Fig. 3/2), which is almost identical to an *amphora* from Batak,⁴¹ is close to the vessels from Assiros, phase 14, where its appearance is dated to the LH III A period.⁴² New data from Ada Tepe from well-dated contexts with ¹⁴C dates confirm the existence of the form as early as the mid-15th century BC.⁴³ The early appearance of the form can also be suggested by its presence in the complex from Vratitsa, dated broadly between the 17th and 12th centuries BC⁴⁴ and synchronized with Troy VI-VII.⁴⁵ The presence of bowls with spouts, Asenovets-type handles, the spherical bowls (cups according to the author) with everted mouth rims, and the shapes of the kitchenware

³⁵ Иванов 2007, 252-253; Bozhinova, Jung, Mommsen 2013, 55; Димитрова 2014, 11-12 with literature; Nekhrizov, Tzvetkova 2018, Fig. 2/13, 15..

³⁶ Andreou-Psaraki 2007, 407-410, Fig. 9. KA 1427/1469.

³⁷ Wardle, Wardle 2007, 469, Pl. 7/a, 11, 13.

³⁸ Hochstetter 1984, 38-48, Taf. 10/1.

³⁹ Horejs 2007, 153-159.

⁴⁰ Koukouli-Chrysanthaki 1982, 233-234.

⁴¹ Цончев, Милчев 1970, 190, Обр. 81.

⁴² Wardle 1997, Fig. 2/1; Wardle, Wardle 2007, Pl. 13.

⁴³ Popov *et alii* 2017, 177, Abb. 14/1, 3; 179, Abb. 16/7; 182, Abb. 19/4.

⁴⁴ Hristova 2011, 120, fig. 7/1-4.

⁴⁵ Leshtakov 2009, 62.

suggest an earlier date for the Vratitsa complex, within the Middle Bronze Age, no later than the very beginning of the Late Bronze Age.⁴⁶ Two *amphorae* from Novgrad have a similar silhouette, which complex is dated to the Middle Bronze Age in the new studies.⁴⁷ The vessels from Novgrad and Vratitsa have small knobs on the shoulders, symmetrically placed between or above the handles. This feature is important as the presence of these knobs has been considered one of the arguments in favour of dating the find from Esenitsa to the very end of the period.

The form, again with knobs, is present in the assemblage from Troy, as it is the most numerous type among the group of the Knobbed Ware and is pointed to be an innovation with of Troy VII.⁴⁸ The close similarity between the exemplars of Novgrad and one of Troy prove the long occurrence of the form. As far as the vessels of Troy, all presented in the group of the Knobbed ware are considered as introducing a foreign ceramic tradition, to understand its origin parallels should be searched in the local pottery groups of the previous phases. A jar of the group known as Grey Minyan Ware that occurs in Early Troy VI has a similar silhouette to the described amphorae.⁴⁹ The further development of the type in Troy VIIa has handles that are moved up on the shoulders of the vessels⁵⁰ which development moves this type of jars away from the evolution of the *amphora*-like vessels in Thrace. The latest version of the last ones arrives as an innovation by newcomers at Troy VIIb.

The form is generally known from sites north of the Danube, where it appears together with vessels typical for the Žuto Brdo-Gârla Mare culture, its classical stage dated broadly from 15th to the middle of 13th century BC.⁵¹ From the same cemetery is an *amphora* with two handles and two flat knobs between them⁵² with close similarity to the *amphora* on a low pedestal from Plovdiv (Fig. 4/1).

Jugs with an S-shaped profile are represented by four vessels in the find from Plovdiv (Fig. 10) and by two vessels in the find from Esenitsa (Fig. 17/2-3), including

⁴⁶ To this day the prevailing opinion is that bowls with inverted rims and handles of the Asenovets type (wish-bone handles) are not found in clear Late Bronze Age contexts in the territory of Bulgaria. This type is completely absent from the pottery of Ada Tepe, Dragoyna, etc. An argument in favour of an earlier chronology of the Vratitsa site is the absence of cooking jars with a wide-open funnel-shaped mouth and an applied band immediately below the mouth. It can therefore be assumed that the complex dates back to at least the end of the Middle Bronze Age, if not earlier.

⁴⁷ Krauß 2024, 147, Fig. 8/5.

⁴⁸ Shape C84 in Blegen *et alii* 1958, 174-175, Fig. 218 and 265.

⁴⁹ Shape C48 in Blegen *et alii* 1953, 36, 133, Fig. 324 and 423 – 23.26.

⁵⁰ Blegen *et alii* 1958, Fig. 233 – 35.440.

⁵¹ Șandor-Chicideanu, Constantinescu 2019, 150-151; 184, Pl. 24/2; 221, Pl. 61/3

⁵² Șandor-Chicideanu, Constantinescu 2019, 173, Pl. 13/2a-b.

that with three handles. Both types of jugs from Kamenitsa have exact equivalents in the vessels from the necropolis at Zimnicea,⁵³ but earlier analogies can also be identified. The small vessels with oblique mouths and spherical bodies (Fig. 9/1-2) have similar silhouettes to the richly *Furchenstich*-decorated vessels from Ada Tepe from the mid-15th century structures.⁵⁴

The spherical *kantharos* from Cherkovna (Fig. 16/1), three similarly shaped ones from Kamenitsa (Fig. 12/1-3) and several from Govora⁵⁵ have the silhouette emblematic of the Late Bronze Age.⁵⁶ They have widespread analogues throughout the southern Balkans, including north of the Danube, in complexes from the entire Late Bronze Age period.⁵⁷ Both types of *kantharoi*, as well as jugs, have analogues in the necropolis at Zimnicea.⁵⁸ Only the first type has parallels in the Dragoina complex, where similar vessels are found with decoration.⁵⁹ The form is known from early contexts, e.g. from the middle of the 15th century BC from Ada Tepe,⁶⁰ Kastanas,⁶¹ and north of the Stara Planina – in the area of the Tei culture.⁶²

Pear-shaped cups are also emblematic of the Late Bronze Age and typical of a wide area⁶³, but the shape can be traced back the beginning of the Late Bronze Age

⁵³ Alexandrescu 1973, 98, Pl. IX, 17-19.

⁵⁴ Popov *et alii* 2017, 184, Abb. 21, 5; 199, Abb. 35, 6; Popov *et alii* 2024, 46, Fig. 17, 5; 55, Fig. 26; 62, Fig. 32, 1; 74, Fig. 42, 1.

⁵⁵ Berciu, Purcărescu, Roman 1961, 135, 1, 5-6.

⁵⁶ Hänsel 1976, 83.

⁵⁷ In the Thrace valley: Hänsel 1976, taf. 36/2; 70/5; Кънчев, Кънчева 1990, 10, обр. 9/ж; in the Rhodope Mountain: Попов 2009, 29, табл. 11; Нехризов 2008, обр. 2, 5; Кисьов 1993, 5, обр. 6/ и; 10, 14/б; Георгиева 2003, 162, обр. 1/9, 11; Grammenos 1979, 32, I/9; 35, III/1; II, ε; along the Struma Valley: Alexandrov *et al.* 2007, 381, tabl. 6/d; Wardle, Wardle 2007, 468, Pl. 14; and along the Mesta valley: Alexandrov 2002, fig. 14/4-8; 23/1, 5, 6; in eastern and central Macedonia: Koukouli-Chrysantaki 1982, pl. 9-10; Hochstetter 1984, 62-63, Abb. 15; Horejs 2007, 117-122, Abb. 61.

⁵⁸ Alexandrescu 1973, VIII/10-12.

⁵⁹ Bozhinova, Jung, Mommsen 2013, Taf. 3/1, 2, 5.

⁶⁰ Popov *et al* 2024, 74, Fig. 42/3; 75, Fig. 43/8.

⁶¹ Hochstetter 1984, Taf. 8/7; 17/1.

⁶² Leahu 2003, Pl. LXVIII/3, 9; LXX/7; Frînculeasa 2014, 251, Pl.11/1-5.

⁶³ Bozhinova, Jung, Mommsen 2013, Taf. 5/1-2, 5; Detev 1981, Fig. 36/4; Дремсизова-Нелчинова 1984, Обр. 18, 20; Вълчанова 1985, Фиг. 3; Hänsel 1976, Taf. 11/1, 2, 4; Alexandrescu 1974, Fig. 2/4; Alexandrescu 1973, Fig. IX/1-6; Leshtakov 2009, 78, Fig. 8.

and even to the Middle Bronze: Chokoba-18,⁶⁴ Kastanas 18 Bauschicht⁶⁵ and Ada Tepe in contexts from the middle of the 15th century BC.⁶⁶

Group 2

The second group comprises vessels that have a smooth silhouette with flowing transitions between the individual parts. The *amphorae* in this group are two vessels from Plovdiv (Fig. 8) and two from Cherkovna (Fig. 14/1-2). *Kantharoi* are also presented in both finds, two in Plovdiv (Fig. 12/4-5) and one in Cherkovna (Fig. 16/2). The two jars with simple profile from Plovdiv are also considered to belong to this earlier group.

The *amphorae* in this group include a vessel from Plovdiv (Fig. 8/1) and the *amphorae* from Cherkovna. They are characterized by an ovoid body that merges smoothly into a funnel-shaped, open mouth without a pronounced neck. The handles are attached to the widest part of the body or the shoulders. The shape is represented in the early structures of the settlement on Ada Tepe near Krumovgrad, dated to the middle of the 15th century BC.⁶⁷ The antecessors of the form are to be seen in a vessel from the Svishtov Treasure, dated to the Middle Bronze Age,⁶⁸ the Vratitsa complex,⁶⁹ Polsko Kosovo,⁷⁰ and others. An indication for the early chronology of the form is its presence with only one vessel at the Dragoyna site, which handles being placed over the upper part of the body could be considered as a developed version of the type.⁷¹

Both *amphora* forms are presented in the complex in Kaimenska Čuka,⁷² though the *kantharoi* and the bowls there are of different types. The absolute dating of the site spans a large period of time, between the 15th and the 11th century, with the excavators' preference for the second half of the Late Bronze Age, the 14th-12th centuries BC.⁷³ A latter suggestion about its chronology at the beginning of the period seems more reasonable.⁷⁴

⁶⁴ Петрова, Кацаров 2010, 127, обр. 2; Leshtakov, Tsirtsoni 2016, 486, Fig. 4-5.

⁶⁵ Hochstetter 1984, Taf. 7/5-7

⁶⁶ Popov *et alii* 2024, 78, Fig. 46/3,4.

⁶⁷ Popov *et alii* 2024, 46, Fig. 17, 2.

⁶⁸ Alexandrov *et alii* 2018, 490, Cat. No 218.

⁶⁹ Hristova 2011, 110, fig. 7/4.

⁷⁰ Krauß 2006, Abb. 10/2.

⁷¹ Bozhinova, Jung, Mommsen 2013, Taf. 2/9.

⁷² Stefanovich, Bankoff 1998, Fig. 29 and 30/A-B for the first type, and Fig. 33/A-C for the second type.

⁷³ Stefanovich, Bankoff 1998, 279-282.

⁷⁴ Krauß 2006, 18-19.

The biconical *amphora* with a cylindrical neck and a simple, unemphasized mouth from Plovdiv finds remote parallels in the sites from Bulgaria: the Bratanova Cave in the Strandzha Mountain area,⁷⁵ the Sandanski necropolis,⁷⁶ Yambol – Cherven Bair⁷⁷ and three vessels from Ada Tepe, two of which come from a 15th century.⁷⁸ Closer to it is a large jar, shape C10 from the local Early Aegean ware in Troy, with its evaluated variant from Troy V.⁷⁹ In Thrace, a prototype of the form is to be seen in the ditch site at Cherna gora, dated in the Early Bronze Age III.⁸⁰ Most parallels, though not exact, point toward an early date for the type.

The *kantharoi* in the second group have a similar silhouette, with flowing transitions. Those are one vessel from Plovdiv (Fig. 12/5) and one from Cherkovna (Fig. 16/2). Analogous vessels are found in the necropoleis at Borino,⁸¹ Ovcharitsa-2,⁸² and next to Nova Zagora. The last one, together with the necropolis from Zimnicea, present closest parallels to the *kantharoi* and the jars from this second group, as also to the cups.⁸³ The three mentioned sites are conventionally dated in the Late Bronze Age, respectively the necropoleis from Bulgaria – in the second part of the period. The Ovcharitsa-2 necropolis present more peculiar vessels and reassessment of its chronology is required too.

The two jugs from Plovdiv with an ovoid body that merges directly into an oblique mouth with a marked transition between the individual parts (Fig. 11/1-2) have almost identical silhouette to the small pear-shaped cups. Still, outside of the mentioned necropolises, jugs of this shape are not known from other Late Bronze Age sites. A vessel from the Krakra fortress in Pernik, dated to the end of the Early Bronze Age, has a very similar body silhouette, albeit with a specifically shaped handle.⁸⁴

The vessel from Esenitsa with two horizontal handles is unusual (Fig. 17/4), and no other similar vessel is known from Bulgaria. The form of the body is very close to a vessel from the Cherkovna find, again a peculiar exemplar. We can probably look for the evolution of these vessels in the Middle Bronze Age amphorae, as they resemble

⁷⁵ Теоклиева, Балабанов 1981, 11-12, Обр. 5.

⁷⁶ Alexandrov, Petkov, Ivanov 2007, Tabl. 4/g.

⁷⁷ Lichardus *et alii* 2002, Abb. 8/3

⁷⁸ Попов *et alii* 2024, 46 Fig. 17/3-4. The authors assume that “the ceramic inventory of the northeastern settlement should be dated to the first half of the 15th century, but not later than the middle of the same century” (p. 48 and note 31 on the same page).

⁷⁹ Blegen, Caskey, Rawson 1951, 245, Pl. 238.

⁸⁰ Leshtakov 2006, 420, Fig. 12/2-3

⁸¹ Кисъов 1990, Фиг. 11.

⁸² Kuncheva-Russeva 2000, Fig. 25.2.1.

⁸³ Кънчев, Кънчева 1990, Обр. 8/д and Обр. 9/а, б, д and ж; Alexandrescu 1974, Fig. 2/1-5.

⁸⁴ Александров 2003, 60, Обр. 5/3.

the vessel from the Svishtov hoard, defined by the authors as characteristic of the repertoire of the II-III phase of the Middle Bronze Age Tei local culture.⁸⁵ Closer parallels, though distant, are found in Maydos-Kilisetep⁸⁶ and Troy VI,⁸⁷ again pointing an early chronology for the form.

The Cherkovna bowls find a parallel in one vessel from Chokoba-18A,⁸⁸ which has a similar silhouette to the second Cherkovna bowl but is decorated with knobs as the first bowl. However, the long chronology of the site, 2200-1260 BC, cannot help to determine more precisely the chronology of the vessel before the full publication of the site.⁸⁹ It should be noted that the Chokoba vessel represents a more developed variant of the form known also from Thasos⁹⁰ and Dragoyna⁹¹ and is probably later than the vessels from Cherkovna. Again, a similar profile and knobs, but with high handles is a bowl from the Sandanski necropolis, referred to the later phase of the Late Bronze Age.⁹² Richly decorated with *Furchenstich* bowls with a similar silhouette and handles have also been found in Ada Tepe, in contexts dating to the middle of the 15th century BC.⁹³

CONCLUSION

The collective finds of ceramic vessels considered in this study gave their name to a chronological horizon, conventionally referred to as the last phase of the Bronze Age. Contradictory, even with this definition, the possibility was admitted that it already began at the end of the Middle Bronze Age (Hänsel in the 1970s, Motzoi-Chicideanu in 2011). The attempt at a more precise chronological determination of the finds from Plovdiv, Cherkovna and Esenitsa is not definitive here due to the broad frameworks within which the individual forms can be dated. However, the parallels drawn from well-dated complexes indicate that the initial date of this horizon can almost certainly be set no later than the beginning of the Late Bronze Age.

⁸⁵ Alexandrov *et alii* 2018, 367.

⁸⁶ Sazcı, Mutlu 2014, Fig. 6/a, Level VI, Middle Bronze Age.

⁸⁷ Blegen, Caskey, Rawson 1953, 66-67, Shape C65, Taf. 326/36.721; the shape is common during the Early and Middle period, produced in nearly all groups.

⁸⁸ Лецаков 2010, Обр. 1.

⁸⁹ Tsirtsoni 2021, Fig. 10.

⁹⁰ Koukouli-Chrysanthaki 1982, 234, Pl. 5/1.

⁹¹ Bozhinova, Jung, Mommsen 2013, 56-58, Taf. 4/1-2.

⁹² Alexandrov, Petkov, Ivanov 2007, Tabl. 4/f; 5/b.

⁹³ Popov *et alii* 2024, 73, Fig. 41/3; 78/1.

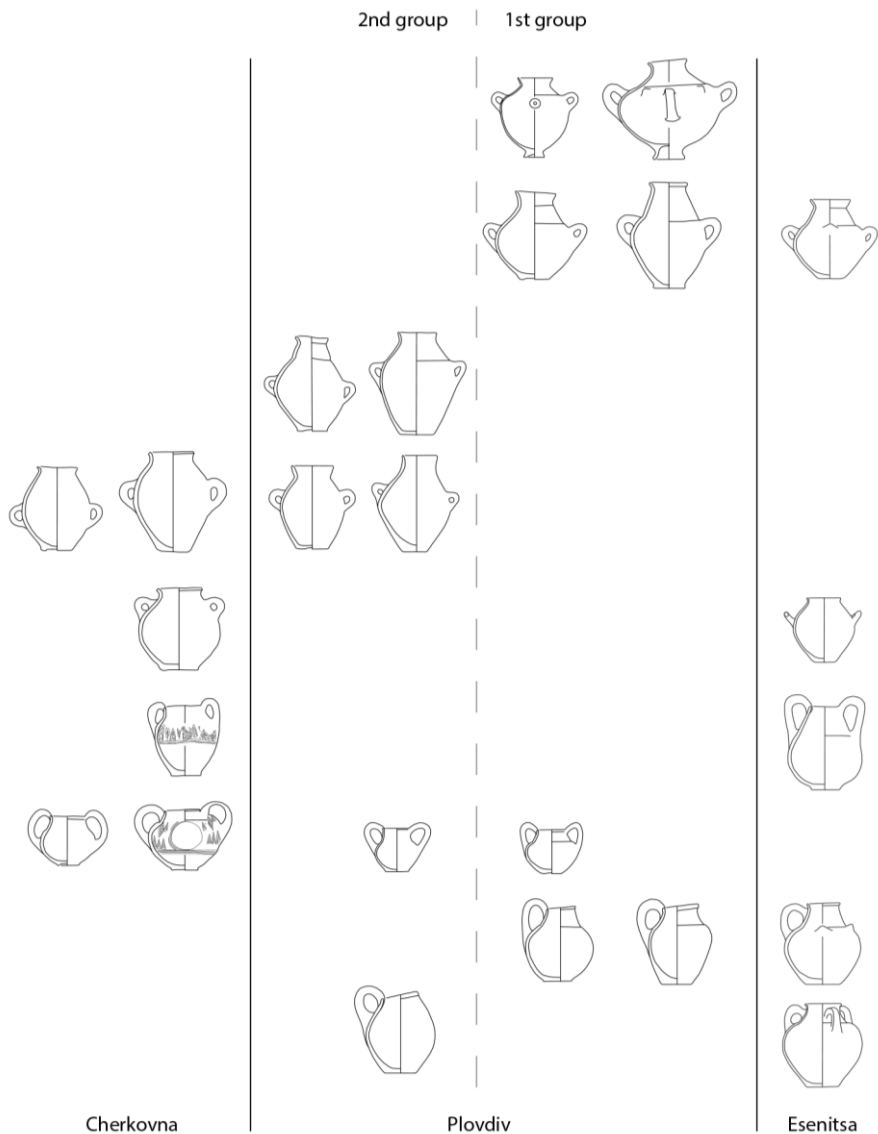


Fig. 18. Main vessel types from Plovdiv, Cherkovna and Esenitsa.

Two differentiated groups of vessels with characteristics respectively indicating later and earlier chronology are distinguished (Fig. 18). Both groups are present in the hoard from Plovdiv, with predominance of the first group, while the find from Cherkovna only contains vessels from the second group. This situation probably reflects chronological differences between the two finds, with the one from Cherkovna being the

earliest, followed by that from Plovdiv. The small number of vessels in the Esenitsa hoard, two of which have unique shapes, hampers precise definition. The amphora and the two jugs (Fig. 17), belong to the first group which indicates a later date for this find.

The given parallels of the individual vessel types do not allow the first (later) group to be placed within a narrow chronological range, as they occur in contexts that are dated within the frames of the Late Bronze Age as a whole. They all have predecessors in the Middle Bronze Age. Furthermore, the arguments in favour of dating the vessels to the final phase of the Bronze Age are contradicted by field data from the last two decades, in which vessels cited as examples of the final stage of the period have been found in contexts with ¹⁴C dating in the early phases of the Late Bronze Age. The vessels from Cherkovna demonstrate archaic characteristics for the Late Bronze Age and the chronology of the find should probably be placed no later than the earliest phase of the period or 16th-15th centuries BC, if not even earlier. The presence of pear-shaped jugs, *amphora*-like and *kantharos*-like vessels with a smooth silhouette in the Plovdiv complex suggests that its final date cannot be placed in the late phases of the period and certainly not in its final phase. The presence of some vessels that show characteristics of an earlier chronology than the main part of the group should be explained by the fact that they continued to be produced even after the introduction of new types. The peculiarities of the structure in which they were found – a pit (or a well) without a lining do not suggest long-term use, which could not have been longer than a few decades. Although these vessels are few (15% of all), the date of the structure have to be set not far from their chronology, or between the 15th and the 13th century BC.

An exact chronological definition of the three collective finds is not possible at this stage. Nevertheless, we hope that the paper will contribute on shifting the lower chronological boundary of the Plovdiv-Zimnicea-Cherkovna horizon to the beginning of the Late Bronze Age (or 15th century BC) at the latest. The first-ever precise photographic and graphic representation of the vessels from the three complexes offers the possibility of using them for further scientific research.

Acknowledgements

The publication is part of the realization of a project '*Non-destructive archaeology: an interdisciplinary study of the settlement pattern of the Ludogorsko Plateau in the Bronze and Early Iron Age*', contract between the National Archaeological Institute with Museum of the Bulgarian Academy of Sciences and the Bulgarian National Science Fund No. КП-06-H80/12 from 15.12.2023.

BIBLIOGRAPHY

- Alexandescu, A. 1973, *La nécropole du bronze récent de Zimnicea (départ. De Teleorman)*, Dacia. *Révue d'Archéologie et d'Histoire Ancienne, Nouvelle Série* 17, 77-101.
- Alexandrescu, A. 1974, *Autour des fouilles de Zimnicea*, *Thracia* 3, 1974, 47-64.
- Alexandrov, S. 2002, *The Late Bronze Age Settlement at Koprivlen*, in Bozkova, A., Delev, P. (eds.), *Koprivlen. Rescue Archaeological Investigation along the Gotse Delchev – Drama Road 1998-1999*, Vol. I, Sofia, 63-82, Fig. 4-41.
- Alexandrov, S., Dimitrova, Y., Popov, H., Horejs, B., Chukalev, K. (eds.) 2018, *Gold and Bronze. Metals, Technologies and Interregional Contacts in the Eastern Balkans during the Bronze Age*, Sofia.
- Alexandrov, S., Hristova, T., Marinov, M. 2018, *Hoard from the Area of Svishtov*, in Alexandrov, S., Dimitrova, Y., Popov, H., Horejs, B., Chukalev, K. (eds.), *Gold and Bronze. Metals, Technologies and Interregional Contacts in the Eastern Balkans during the Bronze Age*, Sofia, 364-367.
- Alexandrov, S., Petkov, V., Ivanov, G. 2007, *The Late Bronze Age Necropolis in the Town of Sandanski, Southwest Bulgaria*, in Todorova, H., Stefanovich, M., Ivanov, G. (eds.), *The Stuma/Strymon River Valley in Prehistory. In The Steps of James Harvey Gaul*, Vol. 2, Sofia, 373-387.
- Andreou, S., Psaraki, K. 2007, *Tradition and Innovation in the Bronze Age Pottery of the Thessaloniki Toumba. Food and drink consumption and "tableware" ceramics*, in Todorova, H., Stefanovich, M., Ivanov, G. (eds.), *The Stuma/Strymon River Valley in Prehistory. In the Steps of James Harvey Gaul*, Vol. 2, Sofia, 397-420.
- Berciu, D., Purcărescu, P., Roman, P. 1961, *Săpături și cercetări arheologice în raionul R. Vâlcea, Materiale și Cercetări Arheologice* 7, 131-137.
- Berthold, B. 1998, *Bronze-, urnenfelder- und früheisenzeitliche Keramikdeponierungen in Süddeutschland*, in Berthold, B., Kahler, E., Kas, S., Neubauer, D., Schmidt, S., Schußmann, M. (eds.), *Zeitenblicke. Ehrengabe für Walter Janssen*, Rahden/Westf., 25-71.
- Blegen, C., Boulter, C. G., Caskey, J. L., Rawson, M. 1958, *Troy. Settlements VIIa, VIIb and VIII*, vol. IV, Princeton University Press.
- Blegen, C., Caskey, J. L., Rawson, M. 1951, *Troy. The Third, Fourth, and Fifth Settlements*, Vol. II, Princeton University Press.
- Blegen, C., Caskey, J. L., Rawson, M. 1953, *Troy. The Sixth Settlement*, III, Princeton University Press.
- Bolohan, N. 2016, *Bronzul târziu la Dunărea de Jos. Componente și relații intercultural*, Mega Publishing House, Cluj-Napoca.

- Bozhinova, E. 2018, *Late Bronze Age Well in Plovdiv*, in Alexandrov, S., Dimitrova, Y., Popov, H., Horejs, B., Chukalev, K. (eds.), *Gold and Bronze. Metals, Technologies and Interregional Contacts in the Eastern Balkans during the Bronze Age*, Sofia, 442-445.
- Bozhinova, E. 2024, *The Late Bronze Age Site of Dragoyna*, in Popov, H., Jung, R. (eds), *Searching for Gold. Resources and Networks in the Bronze Age of the Eastern Balkans*, *Oriental and European Archaeology* 31, Vienna, 231-254.
- Bozhinova, E., Jung, R., Mommsen, H. 2013, *Dragojna – eine späetbronzezeitliche Hoehensiedlung in den bulgarischen Rhodopen mit importierter mykenischer Keramik*, *Mitteilungen des Deutschen Archäologischen Instituts. Athenische Abteilung*, Band 125, 2010, Darmstadt, Mainz, 45-97.
- Czyborra, I., Blischke, J. 2005, *Opfer- Abfall – Opferabfall? Bronzezeitliche Gefäßdepots*, in B. Horejs et al. (eds.), *Interpretationsraum Bronzezeit. Bernhard Hänsel von seinen Schülern gewidmet*, *Universitätsforschungen zur Prähistorischen Archäologie* 121, Bonn, 481-489.
- Dimitrova, Y., Dilov, D. 2018, *Cherkovna Hoard*, in Alexandrov, S., Dimitrova, Y., Popov, H., Horejs, B., Chukalev, K. (eds.), *Gold and Bronze. Metals, Technologies and Interregional Contacts in the Eastern Balkans during the Bronze Age*, Sofia, 438-441.
- Frînculeasa, A. 2014, *Cimitirul din epoca bronzului de la Câmpina (jud. Prahova)*, Târgoviște.
- Gogâltan, F., Németh, R. E., Apai, E. 2011, *Eine rituelle Grube bei Vlaha, Gemeinde Săvădișla (Kreis Cluj)*, in Berecki, S., Németh, R. E., Rezi, B. (ed.), *Bronze Age Rites and Rituals in the Carpathian Basin, Proceedings of the International Colloquium from Târgu Mureș 8-10 October 2010*, Mega Publishing House, Târgu Mureș, 163-183.
- Gogâltan, F., 2014, *Drinking with the gods? The problem of Bronze Age pot deposits in Transylvania*, in *Banquets of Gods, Banquets of Men. Conviviality in the Ancient World*, *Studia Universitatis Babeș-Bolyai* 59 (1), 35-82.
- Grammenos, D. 1978, *Late Bronze Age tombs and other antiquities in the region of Nevrokopi (nome of Drama)*, *Archaeologiki Ephemeris* 118, 26-71.
- Hänsel, B. 1976, *Beiträge zur regionalen und chronologischen Gliederung der Älteren Hallstattzeit an der Unteren Donau*, *Beiträge für Ur- und Frühgeschichtlichen Archäologie des Mittelmeer-Kulturraumes* 27, Bonn.
- Hochstetter, A. 1984, *Kastanas. Ausgrabungen in einem siedlungshugel der Bronze- und Eisenzeit Makedoniens 1975-1979. Die Handgemachte keramik Schichten 19 bis 1*, *Prahistorische Archäologie in Südosteuropa* 3, Berlin.

- Horejs, B. 2007, *Das Prähistorische Olynth. Ausgrabungen in der Toumba Agios Mamas 1994-1996. Die Spätbronzezeitliche handgemachte Keramik der Schichten 13 bis 1*, *Prähistorische Archäologie in Südosteuropa* 21, Randen/Westf.
- Hristova, R. 2011, *Characteristic Features of the Bronze Age Pottery from a Site Near the Village of Vratitsa, Municipality of Kameno*, *Arkeoloji, Anadolu & Avrasya* 1-2, 104-137.
- Jung, R., Alexandrov, S., Bozhinova, E., Mommsen, H. 2017, *Mykenische Keramik in der Rhodopenregion. Herkunft, regionaler Kontext und sozialökonomische Grundlagen*, *Archaeologia Austriaca* 101, 269-302.
- Krauβ, R. 2006, *Indizien für eine Mittelbronzezeit in Nordbulgarien*, *Archaeologia Bulgarica* 10 (3), 3-26.
- Krauβ, R. 2024, *The Lower Danube Region and Thrace at the End of the 3rd and the First Half of the 2nd Millennium BC*, in Popov, H., Jung, R. (eds), *Searching for Gold Resources and Networks in the Bronze Age of the Eastern Balkans*, *Oriental and European Archaeology* 31, Vienna, 167-191.
- Koukouly-Chrysanthaki, Ch. 1982, *Late Bronze Age in Eastern Macedonia*, *Thacia Praehistorica, Supplementum Pulpudeva* 3, Sofia, 231-258.
- Kuncheva-Russeva, T. 2000, *Late Prehistoric Burials in the Area of Ovcharitsa II*, in L. Nikolova (ed.), *Technology, Style and Society*, *British Archaeological Reports. International Series* 854, 325-329.
- Leahu, V. 2003, *Cultura Tei. Grupul cultural Fundeniă Doamnei. Probleme ale epocii bronzului în Muntenia*, *Bibliotheca Thracologica* 38, București.
- Leshtakov, K. 2006, *Structure, Function and Interpretation of Cherna gora 1 enclosure in Upper Thrace (Southern Bulgaria)*, in Lichardus-Itten, M. (ed.), *Des trous... Structures en creux pré- et protohistoriques, Actes du colloques de Dijon et Baume-les-Messieurs, 24-26 mars 2006*, Montagnac, 405-430.
- Leshtakov, K. 2009, *The Second Millennium BC in the Northern Aegean and the Adjacent Balkan Lands: Main Dynamics of the Second Cultural Interaction*, in Μπόνιας, Ζ., Perreault, J. (eds.), *Greeks and Thracians. Acts of the international Symposium "Greeks and Thracians along the coast and in the Hinterland of Thrace during the years before and after the great colonization"*, *Thasos, 26-27 September 2009*, 53-82.
- Leshtakov, K., Tsirtsoni, Z. 2016, *Caesurae in the Bronze Age Chronology of Eastern Bulgaria*, in Hänsel, B., Schier, W. (eds.), *Der Schwarzmeerraum von Neolithikum bis in die Früheisenzeit (6000-600 v. Chr.)*, *Prägustirische Archäologie in Südosteuropa* 30, Rahden/Westf.

- Lichardus, J., Echt, R., Iliev, I., Christov, C. 2002, *Die Statbronzezeit an der unteren Tunda und die ostgaischen Verbindungen in Sudostbulgaria*, Eurasia Antiqua 8, 135-184.
- Metzner-Nebelsick, C. 2012, *Das Opfer. Betrachtungen aus archaologischer Sicht*, in Metzner-Nebelsick, C., Lang, A., Marinkovic, P. (eds.), *Zu Religion und Kultur - Von den biologischen Grundlagen bis zu Jenseitsvorstellungen. Beitrage der interdisziplinaren, Kolloquien vom 10.- 11. Marz 2006 und 24.- 25. Juli 2009 in der Ludwig-Maximilians-Universitat Munchen*, Internationale Archaologie 16, Rahden/Westf., 157-179.
- Morintz, S., Anghelescu, N. 1970, *O noua cultura a epocii bronzului n Romania. Cultura de tip Coslogeni*, Studii i Cercetari de Istorie Veche 21 (3), 373-415.
- Motzoi-Chicideanu, I. 2011, *Obiceiuri funerare n epoca bronzului la Dunarea Mijlocie i Inferioara*, I-II, Bucureti.
- Palinca, N. 1997, *Ceramica de tip Zimnicea-Plovdiv din aezarea de la Cascioarele, jud. Calarai*, Studii i Cercetari de Istorie Veche i Arheologie 48, 237-254.
- Palinca, N., 2000, *Archaologische Auswertung von ¹⁴C-Proben aus der spatbronzezeitlichen Befestigten Siedlung von Popeti (Rumanien)*, Archaologisches Korrespondenzblatt 30, 209-226.
- Panayotov, I. 1995, *The Bronze Age in Bulgaria: Studies and Problems*, in Bailey, D.W., Panayotov, I. (eds.), *Prehistoric Bulgaria*, Monographs in World Archaeology No. 22. Madison, Wisconsin, 243-252.
- Popov, H., Koleva, M., Andonova, A., Dimitrova, J., Valcev, I. 2017, *Das Goldbergwerk auf dem Ada Tepe: Zu Topografie, Stratigrafie, Chronologie und Interpretation des Nordostquartiers*, Archaeologia Austriaca 101, 161-204.
- Popov, H., Jung, R., Weninger, B., Georgiev, P., Dimitrova, Y., Mommsen, H. 2024 *Dating the Early Mining and Settlement Activities at Ada Tepe: Contributions to the Absolute and Relative Chronology*, in Popov, H., Jung, R. (eds.), *Searching for Gold Resources and Networks in the Bronze Age of the Eastern Balkans*, Oriental and European Archaeology 31, Vienna, 19-135.
- Sazcı, G., Mutlu, M.B. 2018, *Maydos-Kilisetepe: A Bronze Age Settlement on the Border Between Asia and Europe*, in Gimnatzidis, S., Pieniazek, M., Mangaloglu-Votruba, S. (eds.), *Archaeology Across Frontiers and Borderlands. Fragmentation and Connectivity in the North Aegean and the Central Balkans from the Bronze Age to the Iron Age*, Oriental and European Archaeology 9, 139-157.
- Soroceanu. T. 2012, *Die Fundplatze bronzezeitlicher Horte im heutigen Rumanien*, in Hansen, S., Neumann, D., Vachta, T. (eds.), *Hort und Raum. Aktuelle Forschungen zu bronzezeitlichen Deponierungen in Mitteleuropa*, Berlin, 225-254.

- Stapel, A. 1999, *Bronzezeitliche Deponierungen im Siedlungsbereich*, Tübinger Schr. Ur- u. Frühgesch. Arch. 3, Münster/New York/München/Berlin.
- Stefanovich, M., Bankoff, H.A. 1998, *Kamenska Čuka 1993-95 – Late Bronze age Site in Southwest Bulgaria: Preliminary Findings*, in Stefanovich, M., Todorova, H., Hauptmann, H. (eds.), *James Harvey Gaul - In Memoriam. In the Steps of James Harvey Gaul 1*, Sofia, 255-338.
- Șandor-Chicideanu, M., Constantinescu, M. 2019, *Necropola din epoca bronzului de la Plosca*, Mega Publishing House, Cluj-Napoca.
- Tsirtsoni Z. 2021, *The Temporal Framework of the Early-to-Late Bronze Age Transition in Thrace and the Adjacent Regions*, in Leshtakov, K., Andonova, M. (eds.), *Galabov in Southeast Europe and Beyond. Cultural Interactions during the 3rd-2nd Millennium BC*, Sofia, 238-275.
- Vulpe, A. 1996, *Deponierungen, Opferstätten und Symbolgut im Karpatengebiet*, in Schauer, P. (ed.), *Archäologische Forschungen zum Kultgeschehen in der jüngeren Bronzezeit und frühen Eisenzeit Alteuropas, Ergebnisse eines Kolloquiums in Regensburg 4.-7. Oktober 1993*, Bonn, 517-533.
- Wardle, K. 1997, *Change or Continuity: Assiros Toumba at the Transition from Bronze to Iron Age*, *Archaeologikon Ergon Makedonias kai Thrakias* 10, 443-457.
- Wardle, K., Wardle, D. 2007, *Assiros Toumba. A brief history of the settlement*, in Todorova, H., Stefanovich, M., Ivanov, G. (eds.), *The Stuma/Strymon River Valley in Prehistory. In The Steps of James Harvey Gaul 2*, Sofia, 451-479.
- Zuber, J. 2015, *Keramikdeponierungen der Bronze- und Urnenfelderzeit in Ostbayern*, in Chvojka, O., Chytráček, M., Gruber, H., Husty, L., Michálek, J., Sandner, R., Schmotz, K., Traxler, S (eds.), *Archäologische Arbeitsgemeinschaft Ostbayern/West- und Südböhmen/Oberösterreich. 18. bis 21. Juni 2014 in Bechyně, Der langjährigen Förderin unserer Arbeitsgemeinschaft Marie Zápotocká, Fines Transire 24. Rahden/Westf.*, 163-189.
- *
- Александров, С. 2003, *Ранната бронзова епоха в Югозападна България (проблеми на проучването)*, in Ангелова, С., Гочева, З., Стефанова, Т., Милчева, М. (eds.), *Сборник в памет на д-р Петър Горбанов, Годишник на Софийския университет „Св. Климент Охридски“*. Специалност Археология 1, *Studia Archaeologica, Supplementum 1* (1994), София, 50-61.
- Бонев, А. 2003, *Ранна Тракия. Формиране на тракийската култура – края на второто – началото на първото хилядолетие пр. Хр.*, Разкопки и проучвания 31, София, 1988.

- Георгиева, Р. 2003, *Керамиката от ранната желязна епоха в Югозападна България и феноменът "Цепина"*, *Ryаichmes* 2, Kumanovo, 159-185.
- Детев, П. 1964, *Колективна находка от глинени съдове в Пловдив*, *Археология* 6 (4), 66-70.
- Димитрова, Я. 2014, *Керамичен комплекс от късната бронзова и ранната желязна епоха от светилището Бабяк*, *Археология* 40 (1-2), 7-27.
- Иванов, Г. 2007, *Относно хронологията на некрополите на култура Брница в Централните Балкани*, in Stefanovich, M., Angelova, Ch. (eds.), *Prae. In Honorem Henrieta Todorova*, Sofia, 249-258.
- Кисъов, К. 1990, *Нови данни относно погребалния обичай през късната бронзова епоха в Средните Родопи*, *Известия на музеите от Южна България* 16, 41-51.
- Кисъов, К. 1993, *Керамиката от късната бронзова епоха в гробните комплекси от Централните Родопи*, *Археология* 35 (2), 1-12.
- Кънчев, М., Кънчева, Т. 1990, *Некропол от късната бронзова епоха източно от Нова Загора*, *Археология* 32 (4), 8-14.
- Лещаков, К. 2006, *Бронзовата епоха в Горнотракийската низина*, *Годишник на Софийския университет, Исторически факултет, Специалност Археология* 3, 2002, София, 141-216.
- Лещаков, К. 2010, *Спасителни разкопки на обект 18 А, м. Бозаджийска кория, землище на с. Чокоба, община Сливен (АМ Тракия – ЛОТ 3 км 270+300 – 270+500)*, *Археологически открития и разкопки през 2009 г.*, София, 129-131.
- Нехризов Г. 2008, *Тракийско светилище "Аул кая" при с. Долно Черковище, Хасковско*. *Археологически открития и разкопки през 2007*, София, 130-134.
- Николов, В., Жекова, В. 1982, *Колективна находка от керамични съдове от късната бронзова епоха в с. Есеница, Варненски окръг*, *Известия на Народния музей – Варна* 18 (33), 87-92.
- Петрова, В., Кацаров, Г. 2010, *Спасителни разкопки на обект от бронзовата епоха край с. Чокоба, Сливенско (Обект 18, ЛОТ 3 по трасето на АМ „Тракия“, км 270+000-270+300)*, *Археологически открития и разкопки през 2009 г.* София, 126-128.
- Попов, Х. 2009, *Куш кая. Характеристика на обитаването през късната бронзова и ранната желязна епоха*, *Археология* 49 (1-2), 21-39.
- Теоклиева, Е., Балабанов, П. 1981, *Пешери и рудни галерии в централна Странджа*, *Известия на музеите от Югоизточна България* 6, 9-28.
- Цончев, Д. 1938, *Приноси към старата история на Пловдив*. София.
- Цончев, Д., Милчев, А. 1970, *Разкопки в чашата на язовир "Батак"*, *Известия на археологическия институт* 32, 149-205.