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THE CULTURAL AND CHRONOLOGICAL CONTEXT OF SITES OF BUBANJ AND VELIKA HUMSKA ČUKA NEAR NIŠ (SOUTHEASTERN SERBIA) AND THEIR SIGNIFICANCE FOR UNDERSTANDING THE EMERGENCE AND DEVELOPMENT OF THE CENTRAL BALKANS ENEOLITHIC

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Abstract

Aim. To elaborate the cultural and chronological context of two eponymous multilayered prehistoric sites in southeastern Serbia, in order to understand the eneolithisation process in the Central Balkans.

Methodology. The research is based on the methods of comparative analyses and synthesis, as well as the interpretation of the existing and fresh data acquired through archaeological excavations at the sites of Bubanj and Velika Humska Čuka near Niš. The following factors have been taken under consideration: geographic setting, resources, mutual spatial relations, stratigraphic characteristics, chronology, character of settlements during the Eneolithic, and other relevant data.

Results. The presented cultural and chronological contexts of the two researched sites, as well as other contemporary sites, compared to the pattern of the preceding Vinča settlements, indicated the character of changes that have occurred during the mid-5th millennium BC.

Research implications. The results of the research contribute to the perception of transformation processes within the Late Neolithic communities and the process of eneolithisation in the territory of the Central Balkans.

Keywords: Bubanj, Velika Humska Čuka, Central Balkans, 5th and 4^h millennium BCE, geographic setting, spatial relationship, stratigraphy, eneolithisation

КУЛЬТУРНО-ХРОНОЛОГИЧЕСКИЙ КОНТЕКСТ ПАМЯТНИКОВ БУБАНЬ И ВЕЛИКА ХУМСКА-ЧУКА НЕДАЛЕКО ОТ НИША (ЮГО-ВОСТОЧНАЯ СЕРБИЯ) И ЕГО ЗНАЧЕНИЕ ДЛЯ ПОНИМАНИЯ ВОЗНИКНОВЕНИЯ ЭНЕОЛИТА ЦЕНТРАЛЬНЫХ БАЛКАН

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Аннотация

Цель. Разработать культурный и хронологический контекст 2 одноимённых многослойных доисторических объектов на юго-востоке Сербии, чтобы понять процесс энеолитизации на Центральных Балканах.

Процедура и методы. Исследование основано на методах сравнительного анализа и синтеза, а также интерпретации существующих и свежих данных, полученных в ходе археологических

раскопок в местах Бубаня и Велика-Хумска-Чука близ Ниша. Были приняты во внимание следующие факторы: географическое положение, ресурсы, взаимные пространственные отношения, стратиграфические характеристики, хронология, характер поселений во время энеолита и другие соответствующие данные.

Результаты. Представленные культурно-хронологические контексты двух исследованных участков, а также других современных участков, по сравнению с рисунком предшествующих поселений Винча, указывали на характер изменений, произошедших в середине V тысячелетия до н. э.

Теоретическая и/или практическая значимость. Результаты исследований способствуют восприятию процессов трансформации внутри позднеолитических сообществ и процессу энеолитизации на территории Центральных Балкан.

Ключевые слова: Бубань, Велика Хумска-Чука, Центральные Балканы, V и IV тысячелетия, географическое положение, пространственные отношения, стратиграфия, энеолитизация

Introduction

The process of the formation of the Eneolithic in the territory of the Central Balkans has traditionally been associated with large-scale migrations that marked the end of the Late Neolithic Vinča culture. According to such a scenario, groups of newcomers, bearers of the Bubanj-Salkuša-Krivodol cultural complex (hereinafter: BSK) inhabited the territory of the preceding communities of the Vinča culture and gradually repressed them [1, p. 204–205; 2; 3, p. 28; 4, p. 158–159]. The majority of authors consider that the aforementioned cultural complex was formed within the territory of western Bulgaria, on the core of the Gradešnica culture, between 4500 and 4400 cal BCE [5; 6; 7]. Its gradual expansion towards the north and east encompassed primarily the areas of present-day southeastern Romania and eastern Serbia, which consequently constrained the territory of the Vinča culture. The key arguments for such a violent end of the Neolithic settlements were increased frequencies of settlements on raised grounds, on naturally fortified places, the so-called *Gradina* settlements, fortification features (ditches and palisades), and burnt final habitation horizons [4, p. 158–159]. It has previously been considered that life in most of the Vinča settlements ended between 4650 and 4550 cal BCE [4; 8], and such high dates for the end of the Vinča culture resulted in a hiatus between the final horizon of Vinča settlements

and early BSK settlements. Furthermore, early BSK settlements, which could serve as a cause for an almost synchronous end of life in many Vinča settlements, have not been recorded in Serbia and Romania [5; 7]. However, new radiometric measurements have indicated a prolonged duration of the Vinča culture in certain micro-regions (up to approximately 4400 cal BCE)¹ [9; 10], compared to the previous stance of D. Borić. Likewise, fresh data indicate that early BSK settlements have existed in the territories of both Serbia and Romania² [10].

Recent research suggests that Vinča settlements have rarely been formed on dominant and raised ground, while it seems like the number of such settlements gradually increases, although their chronology is often unknown [11; 12], and the material culture resembles the earliest BSK settlements, which aggravates the precise cultural distinction [10]. What is certain is that during the BSK cultural complex (4500–3800/3700), the number of such settlements increases [12; 13]³. Apparently, the fortifications repre-

¹ Milanović D. The Copper Age in the Central Balkans. In: Parkinson W. A., Gyucha A., Galaty M., eds. *Oxford Handbook of Balkan Prehistory*. Oxford, Oxford University Press (готовится к печати в 2022 г.).

² Там же.

³ Milanović D. Centralni Balkan u 5 milenijumu pre n. e: obrasci naseljavanja i društveno-ekonomske promene. Unpublished PhD thesis, University of Belgrade, Faculty of Philosophy, Belgrade, 2017; Milanović D. The interplay between lowland and highland zones: Engaging the landscape of eastern Serbia and western Bul-

sent a characteristic of the Vinča settlements starting from the Early Vinča (Vinča A–B), and a similar trend amplifies during the Late Vinča (Vinča C–D) and continues during the BSK period¹ [4, p. 166–169; 14, p. 201–238; 15], especially considering the fact that naturally fortified and elevated plateaus of topographically limited sites should likewise be considered as elements of fortifications [16]. Besides, burnt habitation horizons are characteristic for most of the Vinča and BSK settlements, as it remains unclear whether the burning represents a part of a ritual and a social act connected with the practice of abandoning of parts or entire settlement and/or conflicts and intentional fires [4, p. 166]². However, it seems as if the complex process of transformation of the Vinča culture included a series of internal and external factors [4, p. 159–162], which have led to the gradual abandonment of long-lasting large settlements, micro-regions, and regions, and the formation of the new cultural milieu of the Copper Age³. Such a new cultural environment implied smaller and spatially closer settlements, increased inhabitation of dominant high grounds, and the establishment of new relations between the settlement and

garia in the second half of the 5th millennium BCE. In: Gori M., Hellmuth-Kramberger A., Krapf T., Recchia G., eds. *Archaeology of Mountainous Landscapes in Balkan Prehistory*. Universitätsforschungen zur prähistorischen Archäologie, Rudolf Habelt, Bonn (готовится к печати в 2022 г.).

- ¹ Milanović D. The Copper Age in the Central Balkans. In: Parkinson W. A., Gyucha A., Galaty M., eds. *Oxford Handbook of Balkan Prehistory*. Oxford, Oxford University Press (готовится к печати в 2022 г.); Milanović D. The interplay between lowland and highland zones: Engaging the landscape of eastern Serbia and western Bulgaria in the second half of the 5th millennium BCE. In: Gori M., Hellmuth-Kramberger A., Krapf T., Recchia G., eds. *Archaeology of Mountainous Landscapes in Balkan Prehistory*. Universitätsforschungen zur prähistorischen Archäologie, Rudolf Habelt, Bonn (готовится к печати в 2022 г.).
- ² Milanović D. Centralni Balkan u 5 milenijumu pre n. e: obrasci naseljavanja i društveno-ekonomske promene. Unpublished PhD thesis, University of Belgrade, Faculty of Philosophy, Belgrade, 2017 p. 274–275, 286.
- ³ Milanović D. The Copper Age in the Central Balkans. In: Parkinson W. A., Gyucha A., Galaty M., eds. *Oxford Handbook of Balkan Prehistory*. Oxford, Oxford University Press (готовится к печати в 2022 г.).

social groups, which included more frequent conflicts [13; 17; 18]⁴, the increased significance of stockbreeding, the increased significance of new crafts, especially metallurgy of copper, gold and other metals, enhanced social mobility and reorganization of trade networks [19; 20; 21; 22; 23; 24]. Such a cultural environment or the process of eneolithisation has been perceived in this paper through the example of the settlement dynamics of two eponymous multilayered sites, Bubanj and Velika Humska Čuka near Niš (southeastern Serbia), during the Eneolithic of the Central Balkans.

The geographic setting, resources, and spatial relations between Bubanj and Velika Humska Čuka

The sites of Bubanj in Novo Selo and Velika Humska Čuka in Hum are located within the Nišava and South Morava confluence zone, in the proximity of the present-day city of Niš. Geomorphologically, the area represents a part of the Niš Basin which stretches between the Seličevica Mountain and Jastrebac-Kalafatbarrier (fig. 1).

The Niš Basin is approximately 44 km long, 22 km wide, and it encompasses an area of 630 km². The wider area in which the sites of Bubanj and Velika Humska Čuka are located lies within the Serbian-Macedonian Mass. The terrain is primarily comprised of crystalline shales, covered by volcanic sediments of the Lece region and the Neogenic sediments represented by systems of ditches and valleys of the South Morava River and its tributaries. The Nišava River is the largest tributary to the South Morava River, in

⁴ Milanović D. Centralni Balkan u 5 milenijumu pre n. e: obrasci naseljavanja i društveno-ekonomske promene. Unpublished PhD thesis, University of Belgrade, Faculty of Philosophy, Belgrade, 2017; Milanović D. The interplay between lowland and highland zones: Engaging the landscape of eastern Serbia and western Bulgaria in the second half of the 5th millennium BCE. In: Gori M., Hellmuth-Kramberger A., Krapf T., Recchia G., eds. *Archaeology of Mountainous Landscapes in Balkan Prehistory*. Universitätsforschungen zur prähistorischen Archäologie, Rudolf Habelt, Bonn (готовится к печати в 2022 г.).

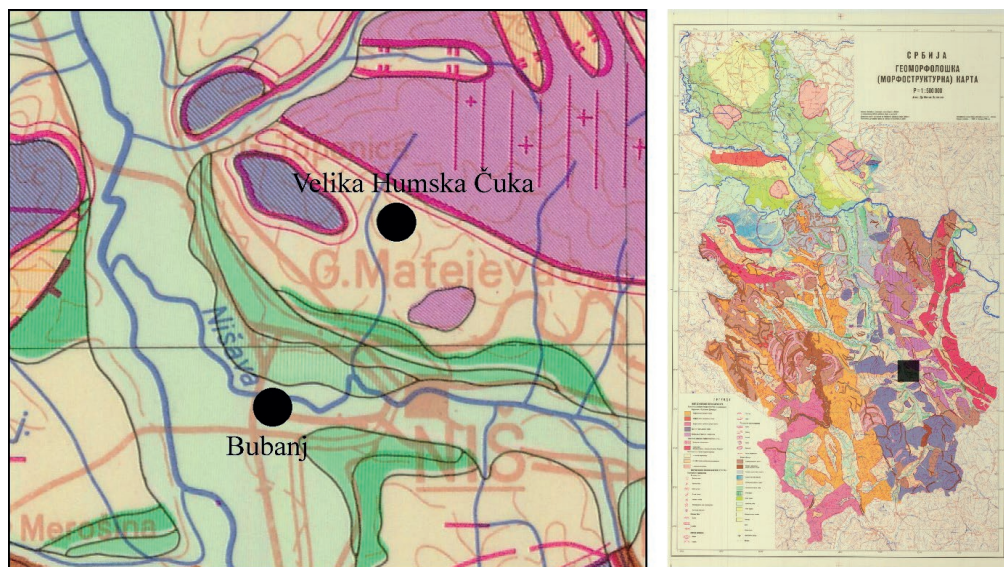


Fig. 1 / Рис. 1. Geomorphological map of Serbia (Zremski) with the highlighted area of southeastern Serbia and the positions of sites of Bubanj and Velika Humska Čuka / Геоморфологическая карта Сербии (Зремски) с выделенной областью юго-востока Сербии и положениями памятников Бубань и Велика Хумска Чука

Источник: данные авторов

which it inflows some 10 km downstream of Niš. The river springs in Bulgaria, below Mali Kom (1840 m), and its flow, which follows the southeast-northwest direction, encompasses a total of 218 km² [25, p. 33]. Nišava runs through a wide valley where it meanders due to small river fall, and through narrow gorges with significantly higher river fall.

The archaeological site of Bubanj is located 5 km west of the city of Niš, on the western fringe of the lowest river terrace, next to the wide alluvial plain of the South Morava River, approximately 7 km southeastern of the confluence of Nišava and South Morava rivers (fig. 1–2).

An ellipsoid loess elevation with an altitude of 198 m, oriented northwest-southeast, with a length of more than 300 m and a width up to 170 m, has once risen within the vast plain, exceeding the surrounding terrain up to 15 m in height. Formerly, the Nišava River flowed next to the site, on its northern side, but following the melioration during the 60s of the 20th century, the river flow has been altered as it now runs further north of

the site. In the course of archeological excavations in 1935 and between 1954 and 1958, all three plateaus of the site were preserved: eastern (approximate surface of 0.85 ha), central (approximate surface of 0.3 ha), and the smallest, western (approximate surface of 0.09 ha). Those plateaus, together with the surrounding slopes of the site, covered an area of approximately 5 ha. The southern and western slopes were the most accessible, while the eastern slope connected the site with the river terrace. The northern side of the site, towards the Nišava River, was inaccessible due to the degree of slope, while the mild slope in the west led towards the confluence of Nišava and South Morava rivers. The eastern portion of the location, within a width of 80 m, was damaged by railroad construction even before the first excavations in 1935, and it was almost completely devastated in the second half of the 20th century by the construction of the highway and the accompanying bypass. Currently, solely the northeastern portion of the site, with a length of around 70 m and a width of approximately 5 m remains preserved, repre-

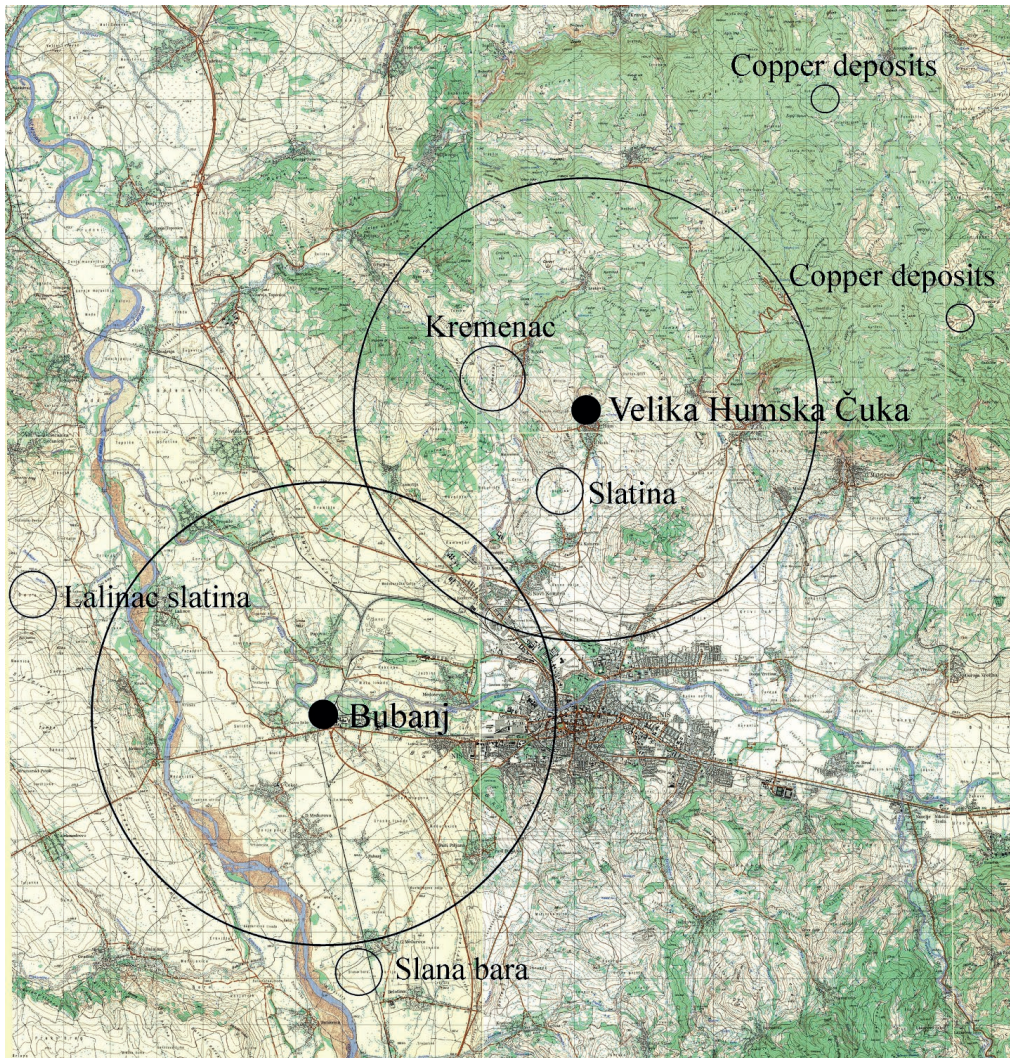


Fig. 2 / Рис. 2. A topographic map with the positions of sites of Bujanj and Velika Humska Čuka, toponyms that indicate salinated soils and saltwater springs, deposits of flint and copper / Топографическая карта с расположением стоянок Бубань и Велика Хумска Чука, топонимы, обозначающие засоленные почвы и источники соленой воды, месторождения кремня и меди

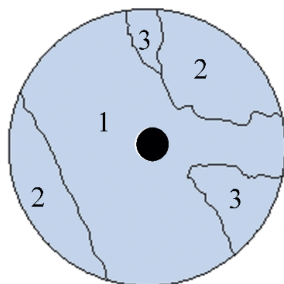
Источник: данные авторов

senting less than 1% of the former surface of the site. The construction of modern infrastructure and Penitentiary southern and eastern of the site, the territorial expansion of the village of Novo Selo towards the west and south of the site during the second half of the 20th and the 21st century, as well as the aforementioned shifts of the river flow, have significantly altered the former surroundings of the site.

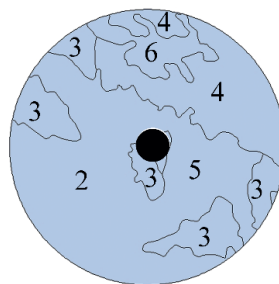
In terms of geology, the immediate vicinity of the site of Bujanj (within a diameter of 10 km), lies on alluvial sediments, while the hinterland is represented by conglomerates, sandstones, sands, marls, limestones, and clays. Judging by geological and topographic characteristics of the surrounding terrain, the settlement at the site of Bujanj was oriented towards river terraces on the east and southeast, and the alluvial plain on

the west, north, and northwest. Due to numerous meanders of the Nišava River before the aforementioned melioration during the second half of the 20th century, a marshy environment was represented. Three types of

soil are present in the territory of the site of Bubanj, within a diameter of 10 km: fluvisol is the most represented, followed by vertisol, and eutric cambisol as the least represented type of soil (fig. 3).



Bubanj, Niš district



Velika Humska Čuka, Niš district

Legend

1. Fluvisol, 2. Vertisol, 3. Eutric cambisol, 4. Calcocambisol and calcomelanosol,
5. Calcomelanosol, regosol and lithosol on limestone, 6. Ranker, regosol and lithosol on sandstone, flvsch and chert

Fig. 3 / Рис. 3. Pedology of sites of Bubanj and Velika Humska Čuka within a 10 km diameter / Почвоведение памятников Бубань и Велика Гумска Чука в пределах 10 км в диаметре

Источник: данные авторов

The site of Velika Humska Čuka is located on a dominant elevated plateau on the north-eastern periphery of the village of Hum, approximately 7 km north of Niš (fig. 1–2). The plateau itself is comprised of four terraces, each on a different height level. The length of the site in the east-west direction is approximately 200 m and the width of the site in the north-south direction is approximately 160 m, measuring a total surface of around 3 ha. The highest point on the central and also the smallest plateau lies at the altitude of 454.79 m. Each of the aforementioned terraces is some 5 m lower than the previous one, and the lowest terrace lies at the altitude of 435–440 m. The Hum River, nowadays a rivulet, surrounds the site on its northern and western sides. Due to vertical slopes, all of the sides of the site are hardly accessible, save for the northern, which is through a smaller saddle connected with the neighboring Mala Humska Čuka. The elevation of the central

plateau, compared to the bank of Hum rivulet (333 m) is 121,79 m. Several cavelets have been recorded beneath the central plateau, on the western portion of the site, at the altitude of approximately 400 m.

Geologically, the narrower and wider zone of the site is comprised of Miocene formations of sandstones, bituminous shales, and marls. On the other hand, the area east of the site (and further to the south and west) is represented by formations of conglomerates, sandstones, sands, marls, limestones, and clay, while the hinterland is also covered with dolomites, shales, and cherts. The site lies directly on calcomelanosols (calcareous-dolomite chernozem), regosol, and orthents on limestone. An area covered with eutric cambisol is present in the southern side of the site, while the hinterland of the site is covered with significant areas of vertisol, calcocambisol (brown soil on limestone and dolomite), and calcomelanosol (fig. 3).

The existence of toponyms that indicate surfaces with saline soils and springs of salt-water in the wider area or the periphery of the researched territory (within a diameter of 10 km) of the sites of Bubanj (Slana Bara, Slatina I and Slatina in Lalinac) and Velika Humska Čuka (Slatina 1) point to the importance of animal husbandry and hunting in those settlements and the possibility of salt procurement for both human and animal diet (fig. 2).

Velika Humska Čuka lies 8.5 km north-east of Bubanj. Flint deposits are represented at the Kremenac location which lies 2.1 km west of the site in the village of Hum, and it is considered that those deposits were exploited in prehistory [26, p. 289–290; 27; 28], while copper deposits are located 8.3 km northeastern of the site. Claypits in the vicinity of both sites (one about 300 m from Velika Humska Čuka and one near Bubanj) point out the possibility that the population from those sites was using those pits for pottery production.

The history of research and stratigraphy

The importance of previous excavations is reflected in the fact that materials uncovered at the sites of Bubanj and Velika Humska Čuka, and publication by A. Oršić Slavetić in 1940 have served M. Garašanin to define two phases of the Bubanj-Hum group of the Central Balkans on the 3rd International Congress of Prehistorians in Zurich in 1950, prior to his excavations [29, p. 8]. M. Garašanin conducted archaeological excavations at the site of Bubanj between 1954 and 1958, and at the site of Velika Humska Čuka in 1956, which enabled him to define and further elaborate the cultural development of the Bubanj-Hum group [30; 31; 32; 33; 34], and subsequently provide certain complements and modifications according to the new data on the Eneolithic cultures of the neighboring regions [29, p. 8–16; 35, p. 154–166].

The site of Bubanj

Six cultural horizons were recorded at the site of Bubanj following Oršić's (1937) and

Garašanin's excavations (1954–1958) [36; 37, p. 246–247]. A total of more than 520 m² have been excavated. The following cultural horizons have been recorded:

1. Starčevo-Middle Neolithic;
2. Bubanj-Hum Ia, i. e. Bubanj-Krivodol-Sălcuța cultural complex – Early Eneolithic;
3. Bubanj Ib, i. e. Cernavodă III-Boleraz-Baden cultural complex – Middle or Late Eneolithic;
4. Bubanj-Hum Ib, i. e. early southern variation of the Coțofeni culture, early Kostolac and Baden cultures – Late Eneolithic;
5. Bubanj-Hum II, i. e. late southern variant of the Coțofeni culture, late Kostolac culture, and certain elements from the southeast (Dikili Tash and Sitagroi in north-eastern Greece) and the northwest (Vučedol culture) – Late Eneolithic;
6. Bubanj-Hum III – Early Bronze Age, i. e. late Glina culture.

The final research campaigns at the site of Bubanj were conducted in a period between 2008 and 2014 by the Institute of Archaeology in Belgrade and the National Museum in Niš. In the course of this period, a surface of approximately 150 m² was investigated on a small remaining part of the site on the eastern plateau. The length of the dig, which was organized in three trenches, was 24 m, and the width up to 6.5 m. A total of five cultural layers (six, in fact, considering that the youngest layer V is separated into upper and lower portion) with at least eleven settlement horizons (Starčevo-level I, Bubanj-Hum Ia-levels IIA-c, Bubanj Ib-Cernavodă III-Boleraz-Baden cultural complex – levels IIIa-b, Bubanj-Hum Ib-levels IVA-c, Bubanj-Hum II-lower level V and Bubanj-Hum I-upper level V) were recorded in a layer of up to 2.7 m of depth. The latest excavations in the eastern plateau have enabled the separation of 11 settlement horizons, and the finds indicate the existence of Middle Bronze Age, Late Bronze Age and Early Iron Age horizons, as well as a Modern Age necropolis. Those excavations implied detailed analyses of Early Eneolithic settlement patterns in the Niš Basin, results of previous

excavations, stratigraphy, and chronology of the site, pottery, chipped stone and bone industry, animal and plant remains [37]. Of significant importance are the results of the dating of Eneolithic and Early Bronze Age contexts which provided the first chronological framework for certain cultural manifestations in southeastern Serbia and enabled the comparison with dates from the excavated settlements in western Bulgaria and the surrounding regions [38; 39; 40].

The site of Velika Humska Čuka

The first mention of the site, as a Neolithic, comes from the survey reports of V. Fewkes [41]. The first archaeological excavations at the site of Velika Humska Čuka were conducted in 1932 and 1933 by the National Museum in Niš and continued in 1934 by V. Grbić, who attributed the site to the Bronze Age. The excavations were continued in the following years, although the results have never been published. The continuation of excavations in 1956 enabled the separation of a specific prehistoric phase marked as the Bubanj-Hum group [42]. Judging by the plan that was published in 1959, the excavations were conducted on the first and the second terrace [42, fig. 1].

The total depth of the archaeological layer varied between 0.9 and 1.2 m [42, fig. 2–3]. Different stratification was caused by the fall of the terrain from the north towards the south, and the difference in the thickness of cultural layers was caused by erosion and digging of later structures from historical periods. During the earlier excavations, a total of two cultural layers have been separated in the stratigraphy of the site, both with a different degree of preservations and depth. The first cultural layer contained mixed material from the Eneolithic, Bronze Age and historical periods, and the older cultural layer contained the Early Eneolithic Bubanj-Hum Ia material [42, p. 245). A total of four phases of settling have been separated (Early Eneolithic Bubanj-Hum Ia phase, Bronze Age – the so-called Slatina group, Roman phase, and Medieval-Slavic phase), while certain activi-

ties and phases were presumed based on the scarce material (Late Eneolithic Bubanj Hum Ib phase, i. e. Baden-Kostolac, Late Eneolithic/Early Bronze Age Bubanj-Hum II phase, Early Bronze Age Bubanj-Hum III phase, Early Iron Age and La Tène periods) [42, p. 245–249].

The archaeological excavations conducted by the Institute of Archaeology in Belgrade and the National Museum in Niš in 2009 and between 2014 and 2021, covered an area of 530 m² within the eastern portion of the site, on the fringe of the second terrace [43, fig. 1]. The depth of the cultural layer at the plateau measures up to 2 m. The recorded remains of settlement structures and portable archaeological finds indicated the existence of at least 11 habitation horizons:

1. Early Eneolithic Bubanj-Hum Ia phase;
2. Late Eneolithic Bubanj-Hum Ib phase i. e. Late Kostolac-Coţofeni;
3. Late Eneolithic/Early Bronze Age Bubanj-Hum II phase;
4. Early Bronze Age Bubanj-Hum III phase;
5. Middle Bronze Age;
6. Late Bronze Age;
7. Early Iron Age;
8. Later phases of the Early Iron Age (5th/4th century BC);
9. La Tène III phase;
10. Antique (Roman) Period (2nd–3rd century AD);
11. Late Antique-Early Byzantine Period (4th–5th century AD).

The earliest prehistoric layers were more or less damaged by digs from later prehistoric periods and especially the Late Antique Period.

The chronology and the settlement character during the Eneolithic at the site of Bubanj

Early Eneolithic (ca. 4500/4400–3800/3700 cal BCE)

The archaeological excavations at the site of Bubanj have pointed out that two out of three plateaus at the site were inhabited

during the Early Eneolithic. The smallest western plateau, yielded no remains of above-ground structures, while previous excavations recorded the remains of a stone ring, which together with the topographic characteristics of the terrain (circular form and emphasized sloping of the terrain) indicate its defensive function [36, p. 55]. On the largest, eastern plateau, two Early Eneolithic horizons, with a depth between 1.2 and 1.4 m, were registered during the excavations by A. Oršić Slavetić (levels A and B) and later by M. Garašanin (levels V–IV) [29; 35; 36; 44, p. 14]. Latest excavations have pointed out that a portion of the plateau (or perhaps the entire plateau) was encircled by a deep ditch with a deposit of compact soil on its inner side, which might have served as a rampart. Remains of habitation horizon C were recorded in the central plateau. The level is represented by an earlier horizon with above-ground structures possibly separated in at least two phases, and a younger horizon represented by pits. The depth of the layer was up to 0.5 m. Levels with burnt structures in the eastern plateau built in wattle and daub technique, of which one measured the dimensions of 8x4 m (outer dimensions) (Oršić's level A) could represent the parts of simultaneous settlement (Oršić's level A and Garašanin's level V, i. e. Oršić's level B and Garašanin's level IV), while level C on the central plateau was represented by unburnt structures built in different technique (the foundation of walls into deep ditches and the utilization of stone as a building material in the upper portions of the structures). The inner dimensions of three partially excavated structures on the central plateau are approximately 6.4x5.5 m. A foundation wall of a palisade, with an emphasized function of protection from the northern winds, was recorded in the vicinity of the aforementioned structures [29, p. 11].

The latest research has confirmed that during the Early Eneolithic, the preserved portion of the eastern plateau hosted structures built in wattle and daub technique (without foundation ditches and stone as

building material), although no significant remains of burnt daub have been recorded. Several structures with post holes, that had economic and possibly residential character, were recorded within three building horizons of the cultural layer II, with a depth of around 1.35 m [37, p. 69–90]. According to the distribution of finds, it has been suggested that the other features within the excavated area (oven, pits, and ditch) served as working areas in which the most prominent activities were connected with preparation for weaving, weaving, and the production of utility products made of leather and fur [37, p. 162–166, tab. 7, 13, 14]. Additionally, six available AMS dates indicate that three building horizons within the excavated portion of the eastern plateau originate from a relatively short period within one to two centuries between 4343 and 4262 cal BCE (68.2% probability) and 4351 and 4245 cal BCE (95.4%) (tab. 1/6-10). Therefore, it remains unclear whether the remains of the Early Eneolithic settlement in the eastern and central plateau are concurrent or represent settlements from different phases of development of the BSK cultural complex. The existence of the early phase of the BSK complex at the neighboring site in Hum [10, p. 19, fig. 8], might indicate that the phase was present at Bubanj as well and that it could be represented within Garašanin's level C at the central plateau. On the other hand, if the remains of settlements on the central and eastern plateau are concurrent, it would indicate social segregation within a larger settlement, which would in this case encompass both plateaus. An absolute date that originates from the lower portions of a deep Late Eneolithic pit, which might indicate the possibility of settling at the site of Bubanj between the 40th and the 39th century BC, is quite representative of the development and chronology of the Early Eneolithic at the site (tab. 1/12). During the excavations, no features or cultural layers which would correspond to that period were recorded, although certain stylistic and typological characteristics were noted on a series of potsherds, which draw parallels in

period-related cultural groups of the Lower Danube Region, such as Salcuta IV, Galatin, Cernavodă I and others [45, p. 131, fig. 1/1; 36, cat. number 77; 37, Pl. 3/1, 5; Pl. 6/1, 5; Pl. 16; Pl. 17/1, 9, 10, 13, 15]. However, the aforementioned absolute date does not automatically imply that the sample (a river shell valve) was utilized by humans, since those are used both in human and animal diet, and the sample could have been brought to the site in that manner, especially considering the former proximity of the Nišava River to the site. Numerous finds of chipped stone tools (primarily blades) and cores, grinding stones, ceramic weights, and spindle whorls represent a prominent characteristic of the Early Eneolithic habitation horizons at the site. Additionally, finds of ceramic and bone anthropomorphic figurines, ceramic altars and palettes, ceramic vessels coated with golden dust, painted with pasty colors (usually red) and graphite, marine shell jewelry, and copper tools, are all important. Likewise, several features containing a significant number of completely preserved yet broken ceramic vessels have been recorded, as well as several features containing a large number of stone objects, bone tools, and pottery. Pottery from all of the horizons of the cultural layer II is characteristic for the Bubanj-Hum I group, meaning the BSK cultural complex (pl. 1).

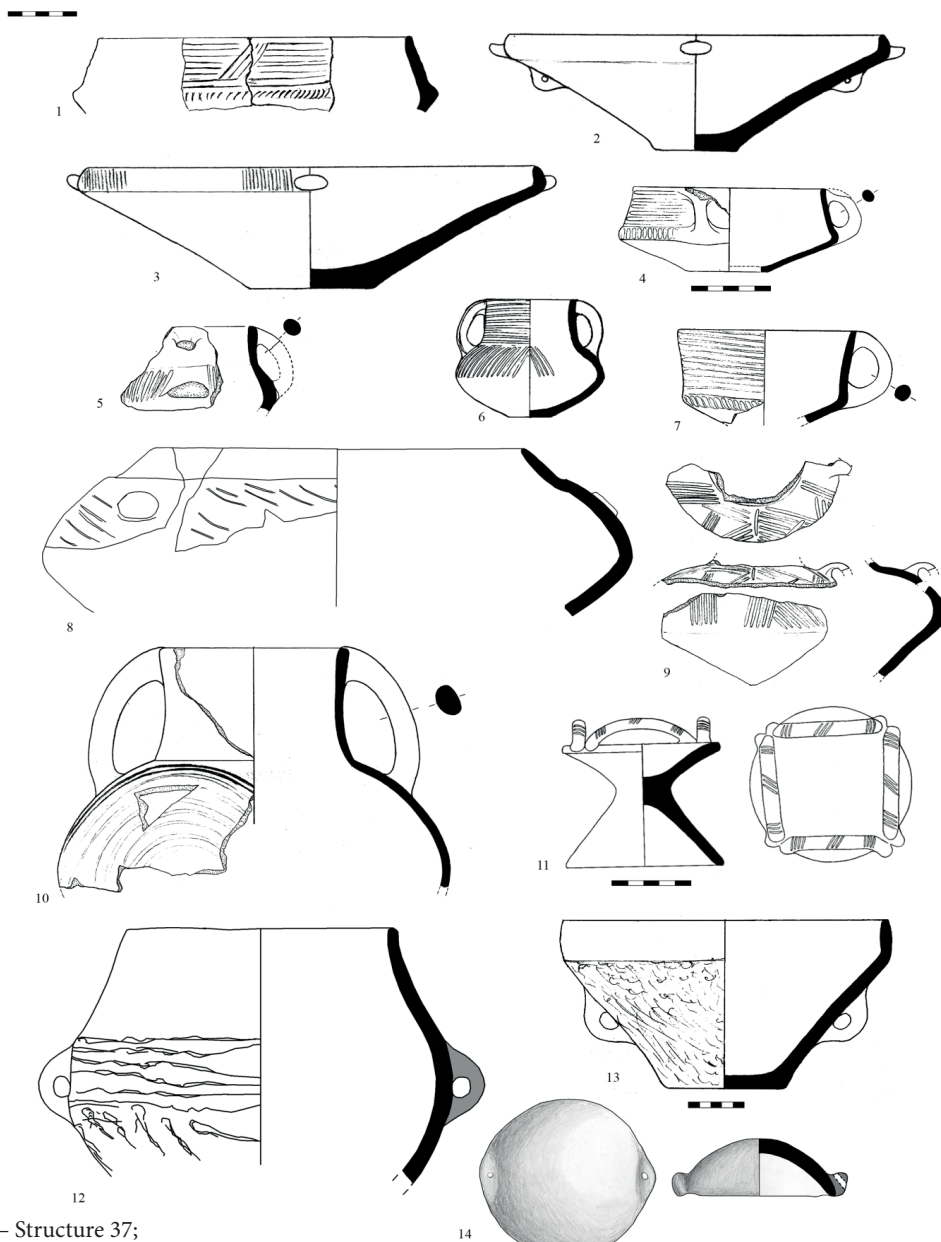
Bowls, beakers, amphorae, pots, and lids comprise most of the recorded vessels from the Early Eneolithic features at the site of Bubanj, while beakers on a foot, cups, strainers, miniature vessels, altars, and vessels with a handle on the bottom comprise a total of 3%. Bowls represent the most numerous forms of ceramic vessels. The most represented are bowls with an inverted rim, followed by conical bowls with a thickened rim, conical, semi-globular, globular, and biconical bowls. In terms of quantity, the beakers represent the second group of vessels, amphorae the third, and pots the fourth. Channeling and barbotine ornamentation are the most common decoration techniques. Other represented decoration techniques are incising, impressing, red color painting, grooving, graphite painting,

notching, and ornamentation comprised of burnished lines, modeled bands and ribs, and a bicolored outer surface of the vessel.

Middle Eneolithic (ca. 3600/3500-3300/3200 cal BCE)

During the earlier excavations, remains of the settlement from the middle or early phase of the Late Eneolithic period, which was connected with the Cernavodă III-Boleraz cultural complex (the Bubanj Ib group), were confirmed in Garašanin's level III on the eastern plateau [36, p. 54; 46; 47]. The discovered structure, which was probably burnt, was built in the wattle and daub technique. Finds from this period were also recorded in Oršićs trenches, and his level C could be related to Garašanin's level III. Finds from the trenches on the central plateau from 1957 and 1958 confirm the activities from the same period.

In the course of research between 2008 and 2014 cultural layer III with 2 horizons, which was attributed to the Middle Eneolithic period, with pottery whose stylistic and typological elements correspond to both Cernavoda III-Boleraz and Baden groups was registered. In line with that, the authors suggested a new term for the Middle Eneolithic of the Central Balkans – Cernavoda III-Boleraz-Baden cultural phenomenon (hereafter: CVIII-B-B) [37]. The remnants of a floor made of burnt soil, one storage pit, and several waste pits were recorded in the earlier horizon of this layer. Interestingly, a completely preserved amphora with a small number of various plant residues was recovered *in situ* in the storage pit. The remains of a floor substructure indicate the existence of a kiln in this period, yet, based on finds from both of the horizons, this part of the settlement was not utilized for habitation, but rather for waste disposal and storage, which indicates that the settlement was located in the immediate vicinity, probably somewhat to the south. This is further confirmed by numerous finds of house daub in structures and the layer from this period, as well as a structure made of wattle and daub which was



1 – Structure 37;

2, 3, 6, 11–14 – Structure 25/27;

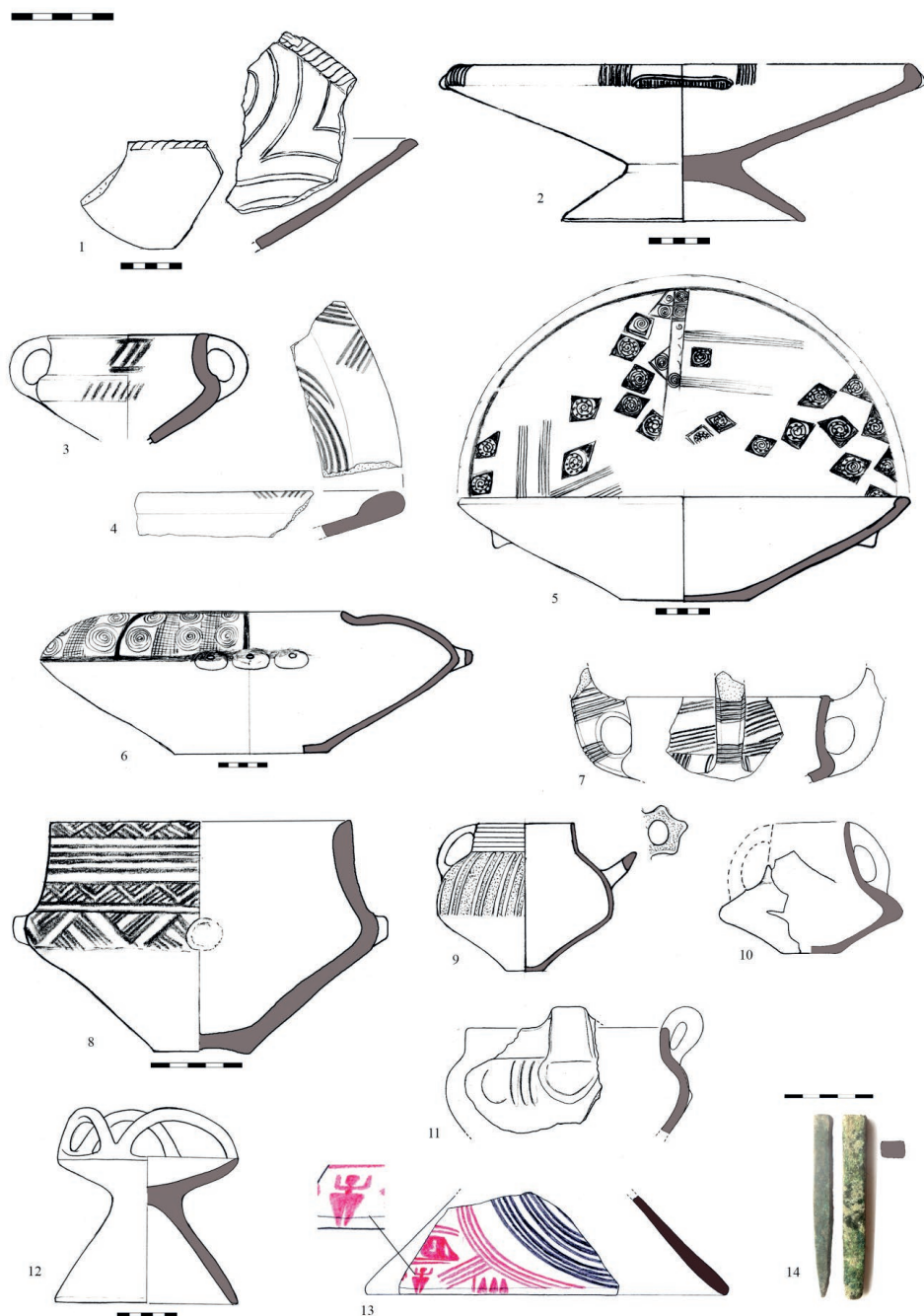
4, 5, 7, 9, 10 – Structure 69; 8 – Structure 26.

Pl. 1 / Рис. 1. EE Bubanĵ / EE Бубань

Источниĳ: данные авторов

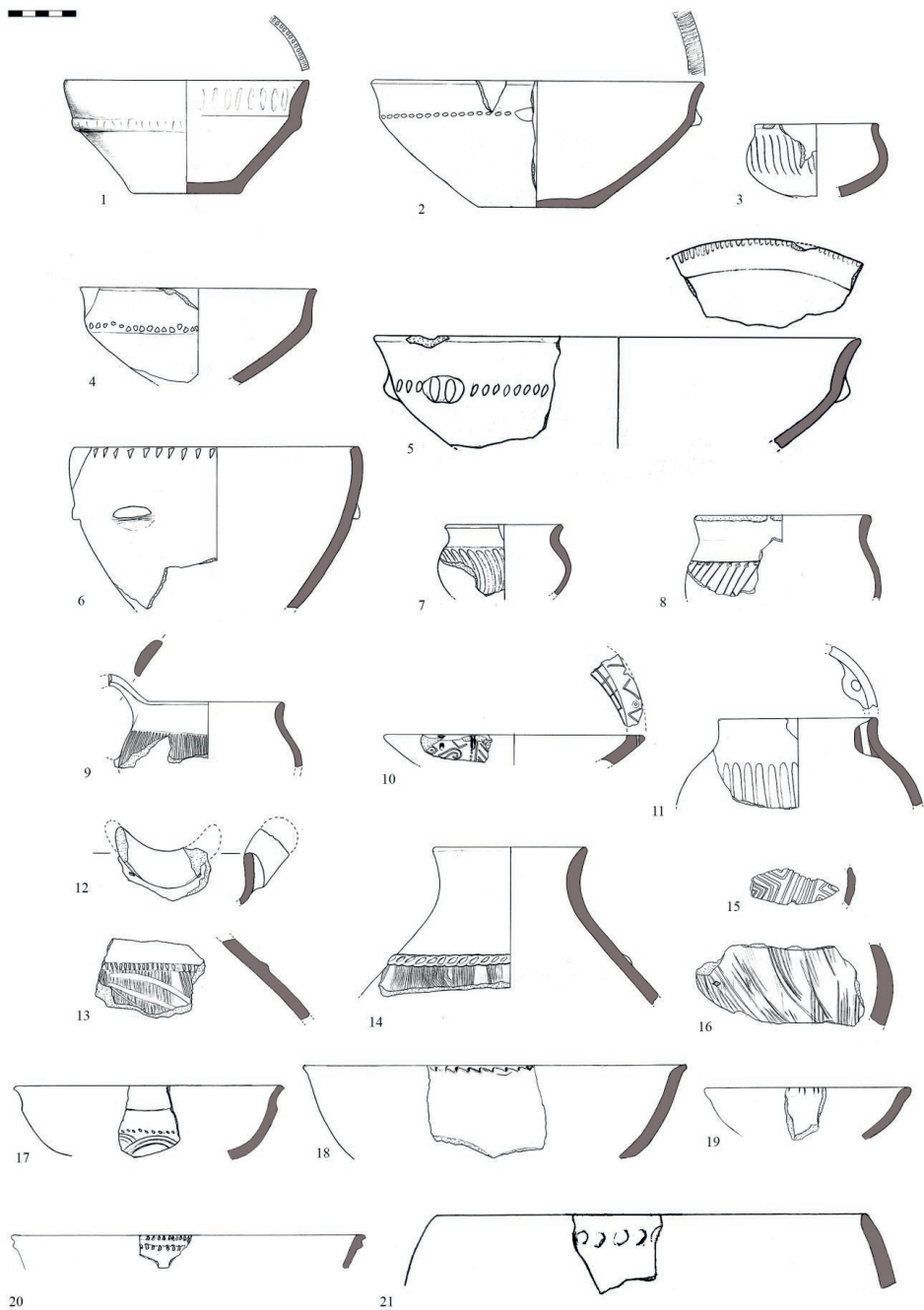
detected in Garašanin's trench I [47], some 10 m to the southeast of trench III from the 2013–2014 campaigns. The most common types of vessels and characteristic elements of Cernavoda III-Boleraz-Baden phenomenon are a conical or a semi-globular bowl with a funneled neck, sometimes decorated

with channels and circular or oval impressions on the rim, globular vessels with short cylindrical or funneled necks (cups), with or without ribbon-like handles, lids or plates of the Bratislava type, semi-globular bowls with a slightly emphasized neck, handles with a segmented body and so on (pl. 3).



Pl. 2 / Рис. 2. ЕЕ Velika Humska Ćuka
 Источник: данные авторов

- 1 and 2 – House 3, the earliest House floor
 3, 7, 8 and 14 – House 2
 4 and 10 – House 1
 5 and 6 – House 3, the latest horizon
 9 and 11 – trench 1/18, ЕЕ cultural layer
 12 – House 4
 13 – Structure 18



РІ. 3 / Рис. 3. ME – Vubanĵ / ME – Бубанĵ
 Источник: данные авторов

1-16 – The earlier horizon of the ČVIII-B-B phenomenon

17-21 – The later horizon of the ČVIII-B-B phenomenon

Table 1 / Таблица 1

Table of Eneolithic absolute dates and cultural horizons at the sites of Bubanj and Velika Humska Čuka / Таблица абсолютных дат энеолита и культурных горизонтов на стоянках Бубань и Велика Хумска Чука

No	Site	Context	Lab Code	BP	Cal BC	Published
1	Velika Humska Čuka	House 3 (the oldest house floor)	DeA 21482	5571±39	4490-4340 sigma 2, 4447-4373 (68% CalPal)	Bulatović et al. 2020
2	Velika Humska Čuka	Substruction of the kiln floor between Houses 1 and 3	DeA 26775	5539±32	4450-4340 (95.4%) 4370-4345 (47%) 4442-4421 (37%)	This study
3	Velika Humska Čuka	House 4	DeA 21483	5481.40	4450-4250 sigma 2, 4360-4282 (68% CalPal)	Bulatović et al. 2020
4	Velika Humska Čuka	House 2	AA 109498	5473±31	4365-4259 (95.4%) 4352-4326 (51.0%)	Bulatović, Vander Linden, Gori 2018
5	Velika Humska Čuka	Structure 18	DeA 26776	5469±32	4370-4250 (95.4%) 4349-4326 (58,5%)	This study
6	Bubanj	structure 69 (pit)	SUERC 50666	5452±28	4351-4257 (95.4%) 4343-4266 (68,2%)	Bulatović, Vander Linden 2017
7	Bubanj	structure 3 (remains of the LE house)	MAMS 31460	5445±24	4344-4260 (95.4%) 4291-4266 (40.8%)	Bulatović, Vander Linden, Gori 2018
8	Bubanj	structure 37 (pit)	Lyon 13690	5440±30	4346-4246 (95.4%)	Bulatović, Vander Linden, Gori 2018
9	Bubanj	27 (pit)	Lyon 13689	5435±30	4343-4245 (95.4%)	Bulatović, Vander Linden, Gori 2018
10	Bubanj	structure 69 (pit)	SUERC 50670	5433±30	4342-4245 (95.4%) 4336-4262 (68.2%)	Bulatović, Vander Linden 2017
11	Velika Humska Čuka	House 1	DeA 26774	5416±38	4350-4070 (95.4%) 4348-4228 (90.4%) 4304-4250 (72.6%)	This study
12	Bubanj	structure 20 (pit)	MAMS 31463	5087±25	3960-3800 (95.4%) 3881-3800 (61.8%)	Bulatović, Vander Linden, Gori 2018
13	Velika Humska Čuka	House 3 (the youngest house floor)	DeA-19350	5064±36	3960-3780 (sigma 2) 3848-3801 (42%)	This study
14	Bubanj	structure 23 (pit)	Lyon 13228	4615±35	3517-3339 (94.3%) 3517-3396 (63.6%)	Bulatović, Vander Linden 2017

No	Site	Context	Lab Code	BP	Cal BC	Published
15	Bubanj	structure 108 (pit)	SUERC 69295	4587±37	3502-3109 (95.4%) 3495-3138 (68.2%)	Bulatović, Vander Linden 2017
16	Bubanj	structure 82A (under the floor)	MAMS 31462	4586±22	3493-3138 (95.4%) 3481-3348 (68.2%)	Bulatović, Gori, Vander Linden 2020
17	Bubanj	structure 54	SUERC 50673	4529±32	3361-3102 (95.4%) 3355-3117 (68.2%)	Bulatović, Vander Linden 2017
18	Bubanj	Trench 2/spit 17	SUERC 50672	4516±32	3356-3098 (95.4%) 3347-3115 (68.2%)	Bulatović, Vander Linden 2017
19	Bubanj	structure 49/93 (remains of a house)	MAMS 31466	4494±24	3339-3098 (95.4%) 3331-3105 (68.2%)	Bulatović, Gori, Vander Linden 2020
20	Bubanj	structure 42	MAMS 31465	4481±23	3338-3037 (95.4%) 3327-3099 (68.2%)	Bulatović, Gori, Vander Linden 2020
21	Bubanj	structure 15 (remains of the house)	SUERC 69296	4470±37	3341-3024 (95.4%) 3330-3037 (68.2%)	Bulatović, Vander Linden 2017
22	Bubanj	structure 83 (remains of a house)	MAMS 31458	4400±25	3092-2925 (95.4%) 3086-2933 (68.2%)	Bulatović, Gori, Vander Linden 2020
23	Bubanj	structure 15/2 (remains of a house)	MAMS 31459	4398±23	3090-2925 (95.4%) 3084-2932 (68.2%)	Bulatović, Gori, Vander Linden 2020
24	Bubanj	structure 3 (remains of a house)	SUERC 69297	4393±35	3101-2910 (95.4%) 3083-2928 (68.2%)	Bulatović, Vander Linden 2017
25	Bubanj	structure 40	MAMS 31464	4289±23	2919-2885 (95.4%) 2909-2893 (68.2%)	Bulatović, Gori, Vander Linden 2020
26	Velika Humska Čuka	structure 6A (remains of a house)	MAMS 31475	4103±16	2851-2579 (95.4%) 2835-2587 (68.2%)	Bulatović, Gori, Vander Linden 2020

Источник: составлено авторами

Besides the mentioned finds, a figurine of the *Kopfloze* type, a zoomorphic figurine, as well as numerous loom weights, weights, spoons, chipped and ground stone tools, and other finds that testify the life of those communities at the site of Bubanj during the Middle Eneolithic were recorded.

Several absolute dates originating from enclosed features and one from the cultural layer indicated that the settlements within the cultural layer III with two horizons (Middle Eneolithic) existed in a period between 3517 and 3098 cal BCE (probability of 95.4%) or be-

tween 3517 and 3115 cal BCE (probability of 68.2%) (*tab. 1/14-18*) [38].

Late Eneolithic (ca. 3200/3100-2800/2700 cal BCE)

According to the stratigraphy and the enclosed features registered during the excavations at the site of Bubanj, within the cultural layer comprised of ashy grey soil, which is attributed to the Late Eneolithic (cultural layer IV), a total of three habitation horizons have been separated (marked I to III, from the earliest to the youngest), with finds attributed to the Coțofeni-Kostolac group (cf. [3; 49; 50; 51; 52]). A slightly different layer of light-brown soil (layer V) with finds attributed to the final phase of the Late Eneolithic or the Bubanj-Hum II group, was registered above it [37].

The enclosed features of layer IV are represented by house remains, oven floors, various pits, walking surfaces, etc. The layer could be correlated with horizons II and IIa defined by M. Garašanin during the excavations in the 50s of the last century [35; 36].

The most prominent features from this layer are the remains of two houses with rectangular layout, oriented approximately north-south, with the width of 3-3.5 m and unknown length. Both houses originate from the earliest horizon. The western house most likely had an apsidal northern wall, which is an architectural feature already noted in contemporary houses in the territory of Pannonia [52]. The houses are parallel and the gap between them measures 1.5–2 m, while a walking surfaces was recorded surrounding the houses. Judging by numerous post holes, finds of daub, and the vast amount of ash within the layer, the houses were most likely built in the wattle and daub technique, with an abundance of timber. Two hearths were located around 1–2 m west of the eastern house, and an oven was recorded approximately 2 m east of the houses.

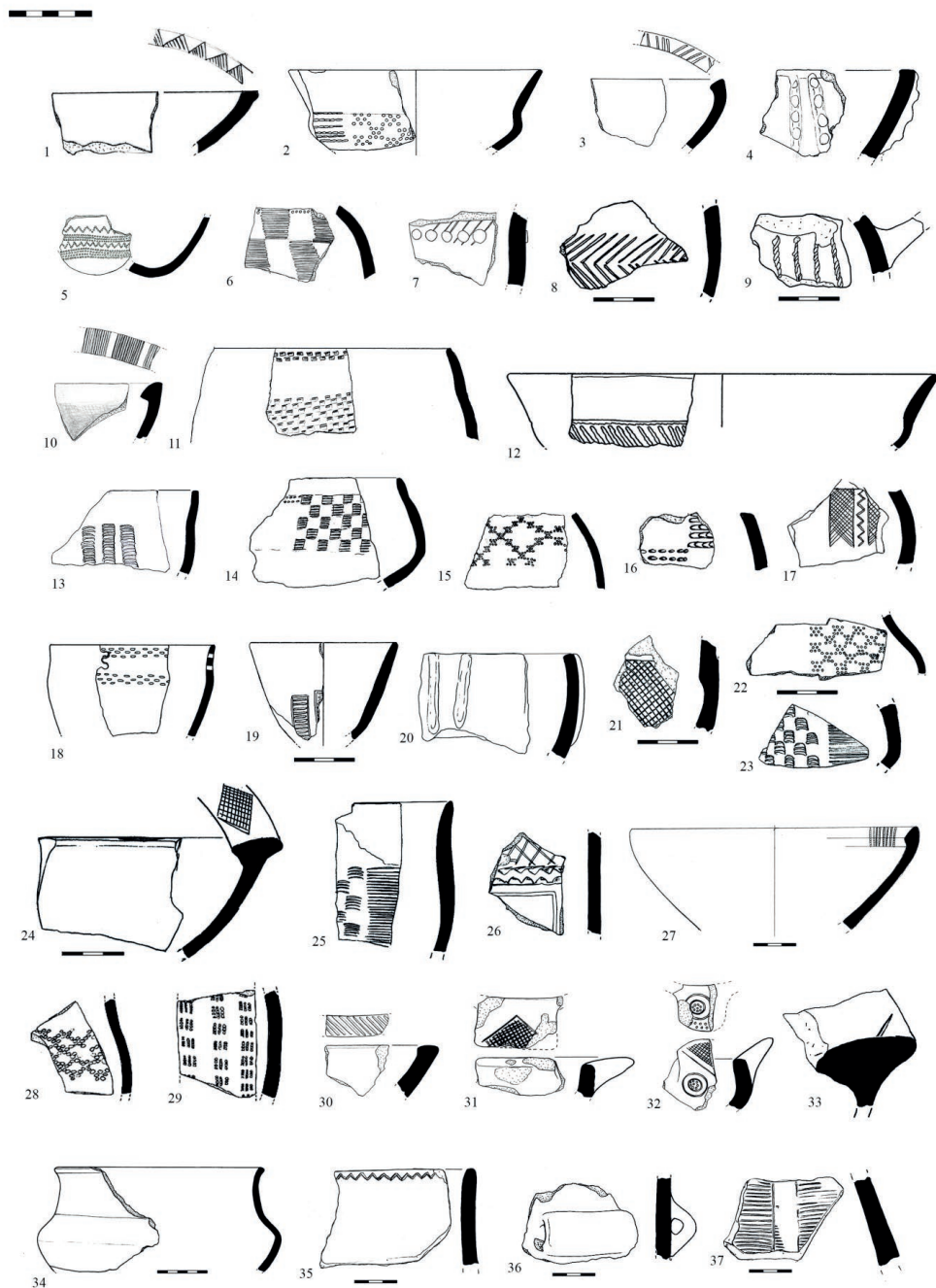
The western, apsidal house, was renewed within the second horizon and judging by the remains of floors to the east, it is possible that the eastern house was likewise renewed

in this horizon. The remains of floors made of stamped and burnt soil have also been recorded western of the apsidal house, which opens the possibility that the settlement was more densely inhabited during this horizon compared to the previous.

Remains of floors of at least two rectangular houses, with the width of 2.5–3.5 m and unknown length, with the remains of oven floors and numerous surrounding pits, have also been recorded within the third horizon.

Unfortunately, this remaining part of the site that was excavated in a period between 2008 and 2014 was quite narrow and intersected with various recent digs and graves, which significantly complicated the excavations, stratigraphy, and settlement structure distribution analysis. Despite that, one can note that this part of the eastern plateau was most densely settled during the Late Eneolithic period, which is confirmed by the results of Garašanin's excavations in Trench I on the eastern plateau.

According to the stylistic and typological characteristics of the pottery, this cultural layer (layer IV) undoubtedly belonged to the bearers of the Coțofeni-Kostolac culture, which was widespread in the territory of eastern, central, and southeastern Serbia. The elements characteristic for the Coțofeni culture are semi-globular bowls with a slanted rim decorated with incised ornaments, deep semi-globular vessels decorated with vertical modeled ribs, amphorae with an emphasized and thickened rim, barrel-shaped pots with tongue-shaped handles, decorated with bands with finger impressions, the combed ornament, cross-cutting incised lines that form lozenges, the herringbone motif, lens-shaped applications, corded ornament and so on (pl. 4/4, 7–9, 18, 20). In addition, the elements of pottery characteristic for the Kostolac culture such as the slightly S-profiled bowls with a funneled neck, amphorae with a narrow opening and widened belly (the so-called *Fischbutte*), and semi-globular cups, as well as decoration such as the *Furchenstich* ornament and rows of dotted notches forming various ornaments (parallel lines, zigzag



Рл. 4 / Рис. 4. LE – Bubanĵ and Velika Humska Ćuka /
LE – Бубанĵ и Велика Хумска Чука

Источник: данные авторов

1–9 – Bubanĵ, the first horizon of the LE
10–17 – Bubanĵ, the second horizon of the LE
18–23 – Bubanĵ, the third horizon of the LE
24–26 – Bubanĵ, layer V
27–29 – Velika Humska Ćuka, LE cultural layer
30–37 – Velika Humska Ćuka, structure 6A (house
remains from the final phase of the LE)

lines, etc.) were also recorded in this layer (pl. 4/1-3, 5, 10–12, 15, 16, 22) (cf. [50; 51]). It has to be noted that certain elements such as vertical rows of densely incised horizontal or slightly arched parallel lines, or the ornament composed of geometrical shapes filled with a dense net comprised of cross-hatched incised lines, were recorded in both the second and especially the third horizon (pl. 4/6, 13, 14, 17, 19, 21, 23). Such elements are uncommon for this culture in the north, and could, therefore, be characterized as local elements. It has also been noted that starting from the second horizon, the elements of the Kostolac culture are represented to a higher degree than the elements of the Coțofeni culture. On the other hand, both in the second and especially in the third horizon, elements resembling the Vučedol culture sporadically occur. The ceramic inventory includes almost none of the forms characteristic for the previous period, while inherited decoration does prevail to a slightly higher degree.

Several absolute dates originating both from the enclosed features and cultural layer IV, revised based on the well-defined stratigraphy, chronologically determine the layer as belonging to the period between the second half of the 34th century and the beginning of the 29th century cal BCE. According to more precise absolute dates, the beginning of the earliest horizon falls within 3339 cal BCE (95.4%), or 3331 (68.2%), and the end of the youngest horizon III is dated to 2885 (95.4%), or 2893 cal BCE (68.4%) (tab. 1/19-25) (cf. [40, p. 1173–1174]).

In the layer of light-brown soil above cultural layer IV (layer V), remains of a rectangular house oriented northwest-southeast, of undefined dimensions, have been recorded, as well as one pit and two zones comprised of pebbles and potsherds. The ceramic finds from this layer correspond to the Bubanj-Hum II cultural group, defined by M. Garašanin more than half a century ago, yet only recently scientifically affirmed. The basic ceramic forms of the aforementioned group at the site of Bubanj are semi-globular bowls with T-shaped rims, bowls with in-

verted rims, bowls with rectangular modeled extensions on the rim, and the favored ornamental motifs are incised hatched lines, rows of parallel incised short lines (pl. 4/24-25), while deep incising characteristic for the Vučedol group is sporadic (pl. 4/26). No absolute dates are acquired for this layer at the site of Bubanj. The group is more precisely culturally and chronologically defined by finds from the site of Velika Humska Čuka, which will be further elaborated.

The chronology and the settlement character during the Eneolithic at the site of Velika Humska Čuka

Early Eneolithic (ca. 4500/4400-3800/3700 cal BCE)

The earliest layer with the remains of the Early Eneolithic above-ground structures with a depth of up to 0.7 m is the best-preserved layer at the site. The excavations in 2009 yielded ceramic vessels bearing stylistic and typological characteristics that indicated the existence of an older (graphite painted pottery) and younger phase of the Early Eneolithic (the so-called *Scheibhenkel* horizon or Galatin-Sălcuța IV-Teliș IV-Herculane II-II horizon) [43]. The younger phase was not separated by M. Garašanin during his excavations, yet variously graphite decorated pottery was recorded in the central portion of the site during the 1954–1956 campaigns [42]. No residential structures were recorded on that occasion.

The latest research between 2014 and 2021 yielded features comprised of remains of above-ground houses and accompanying working surfaces with a large number of ceramic weights, oven floors, hearths, and pits within the Early Eneolithic layer. Of particular importance is the discovery of a portion of a settlement with four excavated rectangular above-ground structures with a considerable amount of finds, especially completely preserved and fragmented vessels decorated with graphite, which contrast a relatively scarce representation of such vessels at the site of Bubanj. Likewise, the latest

research has pointed out that the residential structures from this period are concentrated in the eastern portion of the site, that those are smaller in dimensions (approximately 5×3.5 m) and rectangular, oriented north-south with a slight deviation, built in wattle and daub technique and burnt. Three of the houses (1–3) were used for a longer period, renewed several times, which is indicated by numerous floors layered one above the other, with the thickness of up to 0.4 m in total, portable finds, as well as absolute dates. The houses contained a significant number of ceramic vessels and other finds, and in one of the houses (House 3), besides several vessels laid into pits dug into the house floor, fragments of two ceramic drums, the so-called *tarabouki* were recorded, which indicate that music and dancing were significant activities at the site. This is further supported with a find of a beaker foot with a painted representation of a woman in motion with raised hands (dance or adoration stance) (pl. 2/13), which was recorded next to the oven in the proximity of House 3. A rectangular altar painted in various colors was recorded within the same house, which indicates that certain rituals took place within the settlement. A find of a copper chisel (pl. 2/14), typologically similar to the examples from the Pločnik hoards, and the radiometric analysis of an animal bone found in the vicinity of the chisel, indicate that this portion of the site is either synchronous or in close chronological relations with the youngest horizon at the site of Pločnik which is characterized by metallurgical activities. Numerous finds of chipped stone objects in all phases of production at the site indicate that the Kremenac deposits represented a significant economic resource of the community that exploited it. The layer is primarily represented by medium and coarse ware vessels tempered with sand and small stones, with slightly burnished or rough surfaces, baked in brown, reddish, or grey. The fine ware vessels tempered with sand, with burnished surfaces, baked in black and brown are dominated by forms such as beakers with

arched handles oval in cross-section (pl. 2/3, 7, 9, 10), bowls with inverted rims, often with large hollow foot (pl. 2/2), conical bowls and plates with thickened rims (pl. 2/1, 4, 5) and deep biconical bowls with a conical and rarely funneled neck (pl. 2/8). Save for the mentioned forms, lavishly decorated vessels with a narrow neck and a wide belly are recorded to a lesser degree (pl. 2/6). In general, the ornamental techniques are represented by incising (pl. 2/1), pricking (pl. 2/9), channeling (pl. 2/1, 2, 9, 11), graphite and pasty color painting (red, white, yellow, purple) (pl. 2/3-8, 13). A golden coating is recorded on two potsherds from House 3, which indicates either the mastering of this technique in the settlement (at least within the latest horizon to which the potsherds are dated) or contacts with communities that were already acquainted with the technique.¹ Particularly interesting are vessels (beakers) on high hollow foot, with arched handles which surpass the mouth of the vessel (pl. 2/2), and often intersect, sometimes with an anthropomorphic figure at the top. Such vessels are extremely rare and appear almost exclusively at the sites of Bujanj and Velika Humska Čuka, especially the latter, and could be interpreted as a local autochthonous ceramic form.

According to the stratigraphy and absolute dates, at least three settlements (horizons) can be observed at the site during the Early Eneolithic. The first horizon is represented by house 3 (earliest habitation horizon) (pl. 2/1, 2) and the remains of the oven between houses 1 and 3, while the second horizon is represented by Houses 1 (pl. 2/4, 10), 2 (pl. 2/3, 7, 8, 14) and 4 (pl. 2/12), as well as the group of potsherds and bones with the aforementioned vessel painted with a woman in motion (pl. 2/13). The youngest, third horizon, is represented by the youngest floor in House 3, probably with pits and lavishly decorated pottery (pl. 2/5-6), *tarabouki*, and a massive altar. The horizon is also characterized by vessels with handles with wid-

¹ The analyses were conducted by the Laboratory of the Institute for the Protection of Cultural Monuments of Serbia – Belgrade.

ened plate-shaped roots (the *Scheinbenhenkel* type) and globular beakers decorated with narrow intertwined channels and small punctures (pl. 2/9). The absolute dates position the first horizon in the 45th–44th century BCE (tab. 1/1, 2), the second horizon into the 44th–43rd century BCE (tab. 1/3-5, 11), and the third horizon into the 40th–39th century BCE (tab. 1/13), (tab. 1/1-5, 11, 13).

Late Eneolithic

(ca. 3200/3100–2800/2700 cal BCE)

No finds or cultural layers attributed to the Middle Eneolithic, meaning Cernavodă III-Boleraz or Baden cultural groups have been recorded at the site of Velika Humska Čuka, save for one enclosed feature, most likely a house, as well as finds which are attributed to the final phase of the Late Eneolithic.

Layers from the Early and Late Eneolithic, all phases of the Bronze Age up to the Late Iron Age have been recorded at the site of Velika Humska Čuka. Unfortunately, such vertical stratigraphy on a relatively small depth of cultural layer, between 0.7 and 2 m, caused poor preservation of all of the layers, including the Late Eneolithic layer. Fortunately, during the 2016 campaign, remains of a structure represented by a zone of stamped and partially burnt soil of approximately rectangular shape were recorded. The structure was laid directly on the rock and penetrated two cross-sections of the trench, which disabled the precise determination of its dimensions. This zone contained exclusively pottery attributed to the final phase of the Eneolithic, the Bubanj-Hum II group. The pottery is represented by bowls with inverted rims and modeled rectangular extensions, mostly decorated with stamps, net motif and incised lines (pl. 4/31, 32), bowls with T-shaped rims (pl. 4/33), and biconical bowls with an emphasized profile which resemble the Vučedol «terina» (pl. 4/34). Some of the elements on pottery are known from the preceding period of the Coțofeni-Kostolac group, such as bowls with widened rim and decorated upper surface (pl. 4/30), large ves-

sels with a long cylindrical neck decorated with a zigzag line below the rim (pl. 4/35), tunneled handles (pl. 4/36) and ornamental motifs comprised of vertical rows of parallel horizontally incised lines (pl. 4/37), which have also been registered at the site of Bubanj in layers IV and V (pl. 4/6, 13, 14, etc.). The absolute dates from the structure position it into the period between 2851 and 2579 cal BCE (probability 95.4%), that is 2835 and 2587 cal BCE (68.2% probability), meaning the period between the end of the 29th and the beginning of the 26th century [40].

Other finds with elements of the Late Eneolithic have also been registered at the site of Velika Humska Čuka (pl. 4/27-29), although mostly without a proper context or absolute dates. Therefore, it remains unclear if those finds are to be attributed to the Coțofeni-Kostolac group or if that horizon is present at the site, or those finds represent the survival within the Bubanj-Hum II group, whose existence at the site is argued by an enclosed context and absolute date.

Discussion

The site of Bubanj is positioned on a plateau of an elevation within a lowland environment on fluvial sediments (altitude of 198 m, elevation of 15 m), within the contact zone of alluvial plain and river terrace, in the vicinity of the confluence zone of Nišava and South Morava rivers. The site in Hum is distanced from fluvial formations and located deep within the hinterland at a dominant elevation (altitude of 455 m, elevation 120 m) within the contact zone of Neogenic sediments and hilly-mountainous hinterland. It lies 8.5 km northeast of Bubanj, while flint deposits at the Kremenac location, which are considered as an important mine exploited during prehistory, lie approximately 2.1 km to the west. Copper deposits have been recorded around 8.3 km to the northeast. The visual communication with the site of Bubanj and the Kremenac deposits indicates their importance and mutual connections.

Significant surfaces covered with alluvial soils, suitable for agriculture and animal hus-

bandry have been recorded in the vicinity of the site of Bubanj, as well as three toponyms that indicate saline soils and saltwater springs. The surroundings of the site of Velika Humska Čuka are dominated by meadow vegetation (vertisol) and forest soil types, as well as one toponym which indicates a surface with saline soils. In terms of geology and pedology, the site is located within an ecosystem quite suitable for the development of meadow biocenosis with pastures and forests, meaning a landscape rather suitable for animal husbandry than agriculture. A small area covered with eutric cambisol, a soil type which could according to its physical and chemical properties be utilized for agriculture, is located on the southern side of the site. However, most of the soil types represented in the surroundings of the site, formed on calcareous sediments, are unsuitable for cereal cultivation even in modern conditions, and therefore the region of Hum is even nowadays favorable for viticulture and animal husbandry, primary sheep and goats, rather than for agriculture.

Considering the character of the portion of the settlement excavated between 2008 and 2014 and the position of the site of Bubanj, within the central part of the lowland landscape, which is equally well connected with communications leading to the south and north through the South Morava Valley, to the east through the Nišava Valley and to the west through the Toplica Valley, it can be considered that the site had a function of a regional communication hub with an important role of agriculture and animal husbandry and an important place for the production of textiles and utilitarian object made of leather and fur, exchange and trade. The site in Hum was formed in the hinterland, distanced from river valleys rich in fertile alluvial soil types and in the vicinity of mineral resources, which indicates higher importance of animal husbandry, hunting, and organized supplying with copper and flint. The spatial proximity between the site of Bubanj and the site of Velika Humska Čuka, which had a visual control over a vast

area of the course of South Morava, as well as their favorable mutual visual communication (fig. 4), confirms that both sites represented important spots for inhabitation, places for the control of the surrounding resources, main communication and the flow of resources and information. The complementarity in terms of soil resources, surrounding flora and fauna and topographic and geomorphological characteristics, the wealth in flint and to a lesser degree copper tools, recorded within the Eneolithic layers on both sites, as well as visual control of the site in Hum over the neighboring quality flint and copper deposits, firmly indicate that those settlements were economically cooperative and tightly connected, at least at one point, the period of 44th/43rd century BCE, as confirmed by absolute dates. Additionally, finds of *tarabouki* at the site of Velika Humska Čuka point out that the sites could have also mutually communicated with sound. Similarly, finds of carbonized pinewood within the Early Eneolithic contexts at the site of Bubanj [53], suggest that the wood was acquired from locations at higher altitudes, such as the surroundings of the site of Velika Humska Čuka.

Significant changes in settlement patterns occur during the Early Eneolithic of the Central Balkans. The site of Bubanj was uninhabited during the Late Neolithic, and the first habitation following the Starčevo settlement is connected with the second half of the 5th millennium BCE. The site of Velika Humska Čuka was inhabited for the first time during the Early Eneolithic, and similarly to the site of Bubanj, remains an often inhabited location during the younger phases of prehistory. Small excavated surfaces, compared to the overall sizes of those sites, suggest that certain horizons have been less represented and noted, which has been partially confirmed by the latest archaeological excavations and radiometric measurements. The assumption that the sites of Bubanj and Velika Humska Čuka were simultaneously inhabited during the Early Eneolithic [43], between 4350 and 4250 BC, is now con-



Fig. 4 / Рис. 4. View on Velika Humska Čuka from the site of Bubanj / Вид на Велика Хумска Чука с городища Бубань

Источник: фото авторов

firmed. Therefore, it is possible that during the summer, glades surrounding Hum were utilized for livestock grazing and hunting, prospection, collection and possible mining of flint, and even copper, while during the winter, the herds were taken to lowland settlement (Bubanj), where the agriculture represented a dominant economic activity. Continuous similarities in stylistic and typological characteristics of pottery between Bubanj and Velika Humska Čuka (Early, Middle, and Late Eneolithic and Bronze Age) speak in favor of it.

Similarly, it is possible that the site in Hum was utilized as an alternative and temporary settlement in certain periods, when climate oscillations, migrations, conflicts, and/or other factors could have significantly affected the life of prehistoric populations within this micro-region. The higher social mobility is indicated by archaeozoological analysis on these two sites, which pointed out the appearance of a new type of stock-breeding during the Early Eneolithic, which

is likewise recorded during the Middle and Late Eneolithic¹. Such a trend is represented by higher dependence on ovicaprines compared to the Late Neolithic [54], a higher degree of diversification and specialization regarding the animal management strategies, meaning that certain settlements were highly focused on ovicaprines, and others on the cattle breeding, pig breeding or hunting [55]. The pedological analysis of the Late Neolithic and Early Eneolithic sites in the Central Balkans suggested the increased spectrum of available soil types surrounding the Early Eneolithic settlements and an overall higher orientation of settlements towards those soils unsuitable for agriculture, as well as the complete lack of groups of settlements focused solely towards fertile forest soils, which are characteristic for the Vinča culture [13]. However, it is important to high-

¹ Bulatović J. Arheozoološki aspekti društvenih i kulturnih promena na centralnom Balkanu u petom milenijumu pre nove ere. Unpublished PhD thesis. Belgrade, 2018, p. 238.

light that the decline in the importance of agriculture in certain settlements is followed by relatively numerous groups of settlements characterized by highly suitable conditions for various agricultural strategies [13]. The research of topographic characteristics of sites suggests a more frequent settling of topographically limited and naturally fortified elevated plateaus and hidden caves in the hinterland, which were often concurrent with adjacent settlements in lowlands¹ [12]. Additionally, the research indicated diversification, specialisation, and integration of local settlements and most likely groups of settlements in the neighboring micro-regions² [13]. Further, the regional spatial distribution of settlements points out the process of abandonment of large and long-lasting Vinča settlements and the formation of small dispersed settlement on completely new locations, abandonment or scarce inhabitation of previously densely settled micro-regions, and the tendency to group settlements in the ore-bearing micro-regions of eastern Serbia [13].

According to the latest radiometric measurement of the youngest habitation horizons of large Vinča settlements, the abandonment process occurred in a period between 4700/4650 and 4400/4350 cal BCE³. The process is followed by an increase in the number of settlements on plateaus of dominant elevations, which are naturally fortified, continuity in the construction of ditches and palisades, and frequent burnt settling horizons within the Late Vinča and BSK cultural complex settlements. The process was gradual and of uneven duration in different

micro-regions of the Central Balkans, and the abundance of sites on naturally fortified elevations and additional enclosing indicate that the process was accompanied by smaller or greater conflicts. The earliest BSK settlements, which were significantly smaller than the Late Vinča settlements and have already embraced innovations in various economic and social aspects, appear during that period. Such settlements were often founded on dominant and naturally fortified elevations, such as Velika Humska Čuka, which reaffirms previous assumptions on their partially concurrent existence and the violent end of life in numerous Vinča settlements.

Therefore, the absolute dates indicate that the settlement at the site of Velika Humska Čuka was formed a century before the settlement at the site of Bubanj, already in the 45th/44th century BCE, which supports the idea that the earliest BSK settlements in the Central Balkans were formed on naturally fortified elevations and additionally fortified. During the 44th/43rd century BCE, settlements existed on both sites and probably formed some sort of coexistence. Yet, according to the existing data, the settlement at the site of Bubanj ceases to exist at the end of the 5th millennium BCE, or at least the settling becomes less intensive, contrary to Velika Humska Čuka, where life continues undisturbed. There is an absolute date from that period from the site of Bubanj, although the sample (shell valve) is insecure since it originates from a younger feature that damaged the Early Eneolithic layer, and therefore it remains unclear whether the location of the sample is the result of human or animal activity. The portable finds whose stylistic and typological characteristics would be securely attributed to this period are lacking, save for several potsherds whose stylistic elements could indicate the latest phase of the Early Eneolithic.

On the other hand, the site of Velika Humska Čuka yielded numerous finds of vessels with the so-called *Scheibenhenkel* handles, characteristic for the Sălcuța IV or Galatin groups (ornament formed of hatched

¹ Milanović D. The interplay between lowland and highland zones: Engaging the landscape of eastern Serbia and western Bulgaria in the second half of the 5th millennium BCE. In: Gori M., Hellmuth-Kramberger A., Krapf T., Recchia G., eds. *Archaeology of Mountainous Landscapes in Balkan Prehistory*. Universitätsforschungen zur prähistorischen Archäologie, Rudolf Habelt, Bonn (готовится к печати в 2022 г.).

² Там же.

³ Milanović D. The Copper Age in the Central Balkans. In: Parkinson W. A., Gyucha A., Galaty M., eds. *Oxford Handbook of Balkan Prehistory*. Oxford, Oxford University Press (готовится к печати в 2022 г.).

summary incised lines, rows of crescent nail impressions, beakers decorated with narrow and densely positioned channels combined with punctuation, vessels on high foot with small tunneled handles on the junction of foot and the recipient, etc.) [56; 57; 58], which points to an active inhabitation of the site during this period. Likewise, the youngest horizon of house 3 is dated to this period, with pits filled with lavishly decorated and multicolored painted vessels, including the golden coating, *tarabouki*, altar, 14 chipped stone tools, which all confirm that the life was intensive at the site during the first quarter of the 4th millennium BCE. Otherwise, lavishly decorated Early Eneolithic pottery at the site has a higher representation compared to the site of Bubanj during their contemporary existence, which could indicate that the population at the site of Velika Humska Čuka had access to certain mineral deposits or other resources for the production of natural paint, or on the other hand possessed staple natural resources (flint, copper) suitable for exchange for lavishly decorated vessels.

The youngest phase of house 3 dated to the first quarter of the 4th millennium BCE was destroyed in a fire with all of the vessels stored in two pits. It is not clear whether the house was intentionally burned due to a sacrifice ritual, mentioned by certain authors [59; 60], or perished in an accidental fire. The theory that the house was burnt amid a sudden conflict seems at the moment as the least possible, since access to the site is hard and the undetected intrusion is impossible. In case that the intrusion was detected, the inhabitants of the settlement would have time to carry some of the vessels that were, however, burnt with the house.

Following this period, both of the sites were inhabited for several centuries and during the third quarter of the 4th millennium BCE, solely the site of Bubanj remains inhabited by the bearers of the Cernavodă III-Boleraz-Baden cultural phenomenon, whose material culture completely differs from the preceding Bubanj-Hum I group (Cental Balkans variant of the BSK complex), which

indicates that the inhabitants are newcomers from the northeast, the mother territory of the group [61]. For some reason, these newcomers did not settle at Velika Humska Čuka, possibly since they had no need to fortify it and defend it. The settling of the aforementioned group lasted for approximately 80 years (63.7% probability) [38], as during the final quarter of the 4th-millennium BCE bearers of the Coțofeni-Kostolac group settle at the site, with the material culture differing from both the preceding and the Bubanj-Hum I group. Bearers of this group are likewise of foreign origin [61], and their settling at the site of Bubanj is longer than their predecessors, judging by the absolute dates, stratigraphy, and the architecture of the settlement. According to Bayesian modeling, the bearers of the Coțofeni-Kostolac group inhabited Bubanj for between 265 and 461 years [40, p. 1175], yet the modeling of all of the dates from the previous and following periods indicate that the first date is more probable [37, p. 241–243]. The stylistic and typological characteristics of their pottery are analogous within the entire territory of this group from Pannonia to the Southern Morava Region, although certain local elements have been noted at the site of Bubanj, especially within the latest phase of the group. Those local elements will provide a basis for the emergence of the following Bubanj-Hum II group, which both culturally and chronologically evolves from the Coțofeni-Kostolac group.

Identical local elements, together with the pottery typical for the Coțofeni-Kostolac group also occur at the site of Velika Humska Čuka, which points out that even after several centuries of hiatus, the site is once again inhabited by the bearers of the Coțofeni-Kostolac group. Unfortunately, the site yielded no period-related architecture or enclosed features suitable for radiometric sampling, which disables any comparisons of the sites during that period. Identical forms and ornamentation on both sites have been recorded in the following period, the Bubanj-Hum II group, which is by means of the house

remains from Velika Humska Čuka dated to the second quarter of the 3rd millennium. Humble remains of a residential structure from Velika Humska Čuka indicate that the residential architecture in this period was similar on both of the sites, while the comparisons of other spheres of life are impossible at the moment due to the lack of data.

Starting from this period, both of the sites remain continuously inhabited for several centuries, throughout the Bronze Age, with almost identical stylistic and typological characteristics of pottery, indicating prevailing close ties and contact between the inhabitants of these two sites during the Bronze Age.

In literature, the sites of Velika Humska Čuka and Bubanj are considered as one of the most important prehistoric sites in the Central Balkans. Owing to the results of the archeological excavation of the eponymous sites, M. Garašanin defined cultural groups Bubanj-Hum I-III more than half a century ago, and for the first time scientifically interpreted the cultural and chronological setting of the Central Balkans during the Eneolithic and the Early Bronze Age [30; 35]. After more than half a century, with all of the modern analyses and large-scale excavations of these sites and period-related sites in the Central Balkans in the last few decades, the definition set by M. Garašanin remains scientifically completely justified.

Conclusion

With their distinct stratigraphy, geostrategic position, continuity in settling, and the scale of research, the sites of Velika Humska Čuka and Bubanj represent one of the most important sites for the research of the Eneolithic and Bronze Age in the Central Balkans. Unfortunately, the site of Bubanj is completely devastated by human activities.

On the other hand, the site of Velika Humska Čuka, which is still being excavated, is only partially researched and could offer an abundance of important data on the emergence and the development of the Eneolithic in the region.

The opposed topographic characteristics of sites of Bubanj and Velika Humska Čuka and the complementarity of soil types and other resources suggest a high degree of integration and cooperation between adjacent settlements, emphasized territoriality, and high control of surrounding landscape, communications, and resources. The stated pattern of two adjacent concurrent and cooperative small settlements with complementary roles and functions¹ [13], was a constitutive element of the eneolithisation process (4700/4650–4400/4350 cal BCE), which coincides with the first steppe migration [6, p. 291–292; 62, p. 48; 63, p. 277–338], Varna I necropolis phenomenon [64; 65], formation of new social groups (e. g. BSK in Serbia, Bulgaria, and Romania, Tiszapolgar and Bodrogkeresztur in Hungary, Karanovo VI in Bulgaria and Rachmani in Greece), the adoption of a series of social and economic innovations and the parallel lasting of strong Late Neolithic traditions², that took place on a vast territory between the Middle Danube Region and the banks of the Black Sea.

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¹ Milanović D. The interplay between lowland and highland zones: Engaging the landscape of eastern Serbia and western Bulgaria in the second half of the 5th millennium BCE. In: Gori M., Hellmuth-Kramberger A., Krapf T., Recchia G., eds. *Archaeology of Mountainous Landscapes in Balkan Prehistory*. Universitätsforschungen zur prähistorischen Archäologie, Rudolf Habelt, Bonn (готовится к печати в 2022 г.).

² Milanović D. The Copper Age in the Central Balkans. In: Parkinson W. A., Gyucha A., Galaty M., eds. *Oxford Handbook of Balkan Prehistory*. Oxford, Oxford University Press (готовится к печати в 2022 г.).

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