11TH INTERNATIONAL SCIENTIFIC CONFERENCE

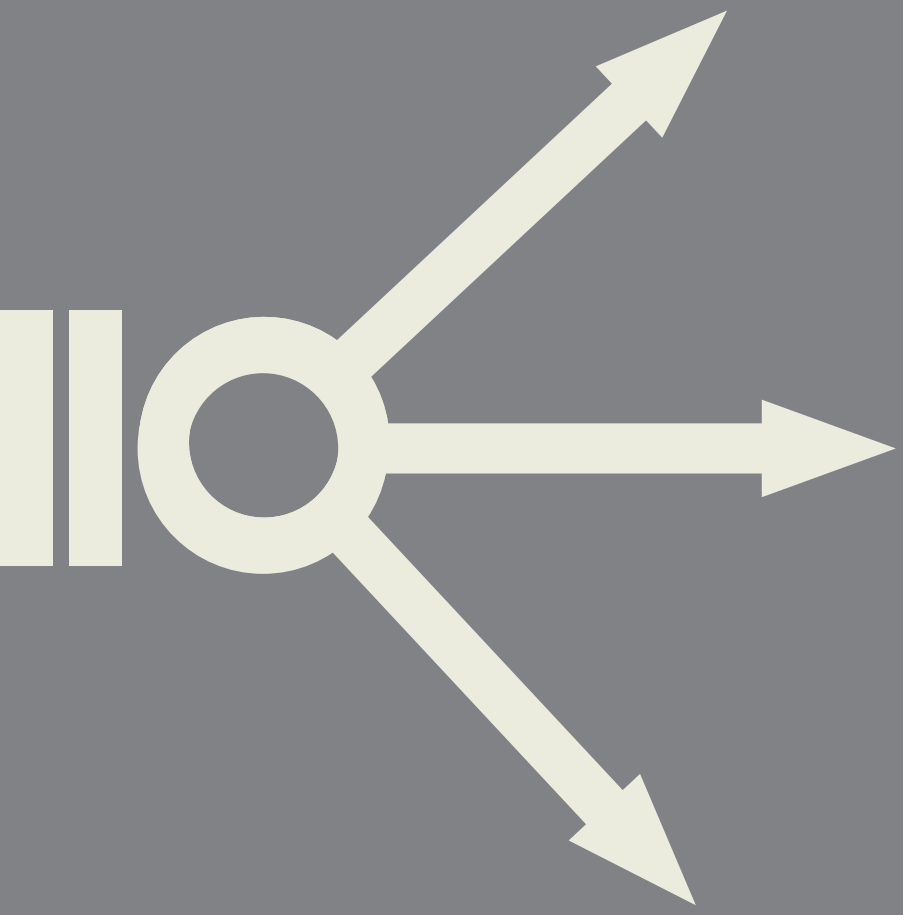
METHODOLOGY & ARCHAEOMETRY

Zagreb, 7th – 8th December 2023

12TH INTERNATIONAL SCIENTIFIC CONFERENCE

METHODOLOGY & ARCHAEOMETRY

Zagreb, 28th November 2024



PROCEEDINGS

FROM THE 11TH AND 12TH SCIENTIFIC CONFERENCE METHODOLOGY AND ARCHAEOMETRY

ISSN 2718-2916

IMPRESSUM

PUBLISHER
Faculty of Humanities and Social Sciences, University of Zagreb

FOR THE PUBLISHER
Domagoj Tončinić

EDITOR
Ina Miloglav
Faculty of Humanities and Social Sciences, University of Zagreb

DESIGN & DTP
Srećko Škrinjarić

All papers were reviewed in a double-blind peer review process in which the identity of both reviewers and authors, as well as their institutions, are respectfully concealed from both parties.

DOI
https://doi.org/10.17234/METARH.2025

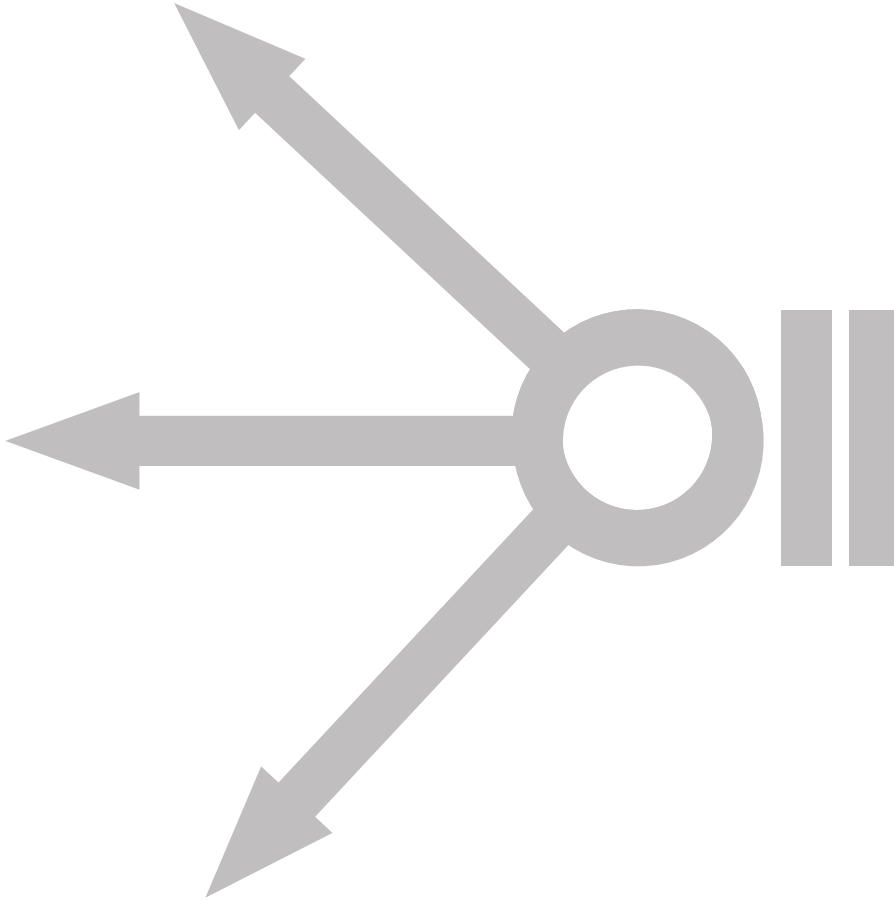
ISSN 2718-2916
Faculty of Humanities and Social Sciences of the University of Zagreb

URL
https://openbooks.ffzg.unizg.hr/index.php/FFpress/catalog/series/MetArh
https://metarh.ffzg.unizg.hr/

Publishing of this e-book is supported by
Faculty of Humanities and Social Sciences of the University of Zagreb
Ministry of Science, Education and Youth of the Republic of Croatia

11TH INTERNATIONAL SCIENTIFIC CONFERENCE
METHODOLOGY & ARCHAEOMETRY
Zagreb, 7th – 8th December 2023

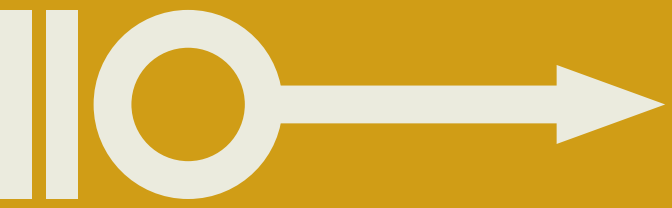
12TH INTERNATIONAL SCIENTIFIC CONFERENCE
METHODOLOGY & ARCHAEOMETRY
Zagreb, 28th November 2024



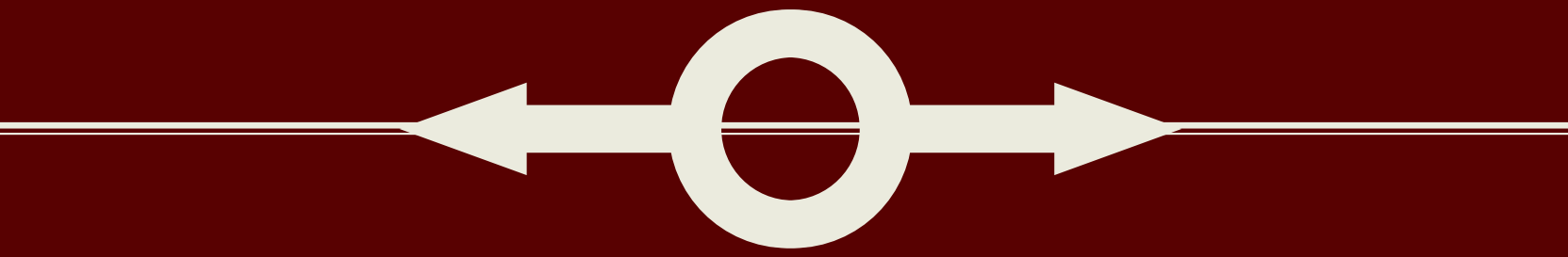
PROCEEDINGS

FROM THE 11TH AND 12TH SCIENTIFIC CONFERENCE METHODOLOGY AND ARCHAEOMETRY

Zagreb, 2025



Content



Building materials and the constructional sequence of the burial mound Gomila in Jalžabet

Saša Kovačević

https://doi.org/10.17234/METARH.2025.5

Saša Kovačević
Institute of Archaeology
Jurjevska 15, 10000 Zagreb, Croatia
skovacevic@iarh.hr

Rescue excavation of the burial mound 1 - Gomila in Jalžabet was carried out between 2017 and 2021. The project was financed by the Ministry of Culture and Media of the Republic of Croatia. Inside one of the largest burial monuments from the Eastern Hallstatt culture, researchers uncovered a complex burial chamber constructed from wood, stone, clay, and charcoal, situated in the center of a massive stone crepidoma. To the east, a ceremonial passage-dromos was discovered. Inside the burial chamber, a layer of cremated bones was placed simply on the chamber's floor, which was paved with split stone tiles and lined with wood. Above this layer, several stratigraphic layers associated with a rest from the cremation pyre were identified. These layers contained abundant burned material, along with some artifacts that had survived the fire, indicating a specific burial rite. Additionally, a significant quantity of archaeologically sterile charcoal was deposited on the exterior walls of both the burial chamber and the dromos. This paper focuses particularly on analyzing the construction sequence of the monument and the materials employed in its building.

Keywords: *Jalžabet (Northwest Croatia), Early Iron Age, Eastern Hallstatt culture, princely burial mound, building techniques and materials, burial rite*

Introduction

Following the Second World War, research into the Early Iron Age in the continental part of Croatia began in the basin of the Plitvica and Bednja Rivers, encompassing areas of the present-day Jalžabet and Martijanec municipalities, East of Varaždin (Fig. 1A). In recent years, the Institute of Archaeology in Zagreb has conducted archaeological research and interdisciplinary studies in the region.* The Early Iron Age landscape comprises several distinct zones. The first zone stretches along the flatlands adjacent to the Plitvica River, which runs parallel to the Drava River. The second zone lies several hundred meters further south, on the second terrace of the Drava River, near the southern edge of the river valley. The third zone is situated in the hilly hinterland, with sites atop the prominent peaks of the hills further to the south. Well-known sites and monuments within the micro-region include the burial mound at Martijanec – Gamulica and Gamula, the Jalžabet – Bistričak necropolis with Gomila and burial mound 2, the Jalžabet-Carev Jarek settlement, the late Hallstatt settlement at Zbelava – Pod Lipom, as well as settlements at Zbelavčak I–III. Additionally, there are multi-layered settlements at Šemovec – Šarnjak, Sigetec, and Sv. Petar Ludbreški (Fig. 1B).

* This paper was created within the project *Synergy of Diversity: Archeology of Landscape and Technological Traditions in Continental and Adriatic Croatia* (SirAkt), funded by the European Union-NextGenerationEU.

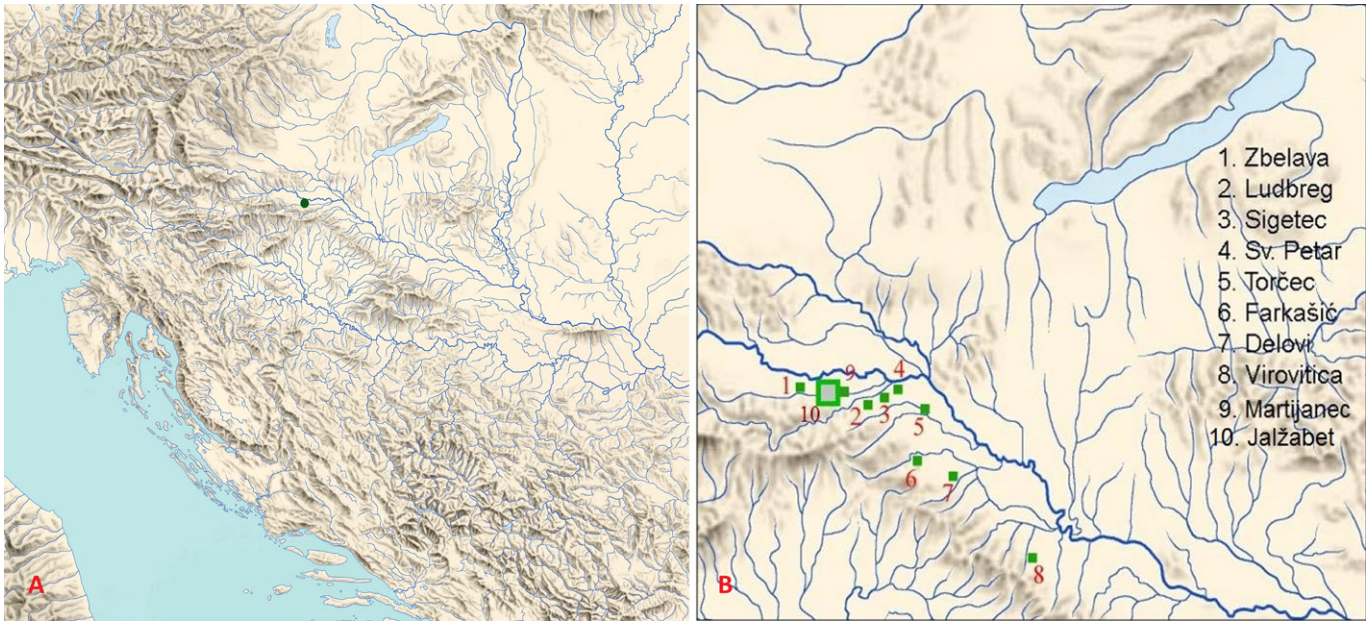


Figure 1. A: The geographic position of Jalžabet; B: The Early Iron Age sites in the micro-region (made by S. Kovačević).

These archaeological sites are published or analyzed in various studies (e.g., Vinski-Gasparini 1961, 1978, 1987; Šimek 1989, 1998, 2001, 2004, 2004a; Teržan 1990; Registar 1997; Kovačević & Kalafatić 2022). The region encompassing the Pltivica and Bednja Rivers basin, between Zbelava on the western end and Sv. Petar Ludbreški on the East is approximately 20 km long and up to 8 km wide. During the Early Iron Age, the area belonged to the Eastern Hallstatt culture with pronounced similarities to other sites within the same circle of the Hallstatt Culture in today's Northeast Slovenia, Southeast Austria, and Transdanubia[1]. More detailed research in this micro-region south of the Drava could provide a valuable cross-section of settlement patterns and burial customs from the end of the Late Bronze Age to the Roman Empire. To the list of previously mentioned sites, we are adding the recently confirmed and investigated (2023, 2024) large settlement of the Eastern Hallstatt culture at Martijanec - Kazinščak (Kovačević 2023). In the third zone, on the highest point of the Kalnik northwest mountain slopes, lies the prehistoric hillfort Slanje - Stari Gradec (2023, 2024).

Thanks to the project "*Monumental Landscapes of the Early Iron Age of the Danube Region*" (*Iron-Age-Danube* Interreg DTP, 2017-2019), co-financed by the EU[2], and the rescue archaeological research of burial mound 1 – Gomila in Jalžabet (2017–2021), financed by the Ministry of Culture and Media of the Republic of Croatia, the foundations of further research have been laid in the basin of the Plitvice and Bednja Rivers. As part of *the Iron-Age-Danube* Interreg DTP project, a comprehensive LIDAR survey of the entire region was conducted. This served as a base for subsequent targeted geophysical and archaeological investigations in both Jalžabet and Martijanec. We would like to express our special thanks to the Municipalities of Martijanec and Jalžabet for recognizing the significance of their valuable prehistoric archaeological heritage and for co-financing our research over the past few years. Following the rescue archaeological excavation of Gomila in Jalžabet in 2021, and in parallel with our ongoing research in the region, the phase of presentation and construction of the "Jalžabet – Gomila Tourist Presentation Center," undertaken by Varaždin County, has commenced.

[1] See, among others, together with quoted literature: Gabrovec 1964-1965, 1987; Vejvoda & Mirnik 1971; Dobiat 1980; Vinski-Gasparini 1987; Patek 1993; Teržan 1990, 1998, 2019; Egg 1996, 2019; Metzner-Nebelscick 2002; Gutjahr & Mandl 2004; Dular & Tecco Hvala 2007; Egg & Kramer 2013, 2016, 2019; Stegman-Rajtar 2014; Szabó & Fekete 2015; Szabó & Horvath 2015; Fekete & Szabo 2017; Gutjahr et al. 2018; Soós 2020.

[2] »Monumental Landscapes of the Early Iron Age of the Danube Region" or the *Iron-Age-Danube project* was implemented under the Danube Transnational Programme (DTP), funded by the European Regional Development Fund (ERDF: 2169200, DTP-1-1-248-2.2). The Institute of Archaeology participated as a project partner 6 (PP6) with research on the Early Iron Age landscape in Jalžabet. The project implementation time was 01.01.2017 - 30.09.2019. (Kovačević 2019, 2020a).

Figure 2. The position of two large burial mounds, in Jalžabet and Martijanec, on a 19th-century map (Europe in the 19th century. The Third Military Survey, www.maps.arcanum.com, accessed 02/05/2024).

Geography

Jalžabet is situated in the southwestern part of the Pannonian Plain, south of the Drava and Plitvica Rivers, and east of Varaždin in central Croatia. The Drava River, one of the major rivers in Central Europe, originates at an elevation of 1,192 meters above sea level on the Italian-Austrian border, specifically in the Puster Valley (Pusterthal) in South Tyrol, Italy. From its source, the river flows through a deeply incised basin, cutting a path through the landscape as it moves eastward towards Slovenia and Croatia. Its journey passes through the city of Maribor in Slovenia, where it traverses a deeply carved valley, and continues through the Drava Plain (Borovac 2002). Near Ormož, approximately 35 kilometers northwest of Martijanec, the Drava enters the open lowland region known as Podravina. Here, the river bed widens considerably, measuring between 140 and 370 meters across, with depths ranging from 4 to 7 meters, creating a dynamic environment that has historically supported diverse ecosystems, human settlements and facilitated movement and trade (Kurtek 1966; Crkvenčić et al. 1974; Crnički 1983). The lowland area along the Drava River, where Martijanec and Jalžabet are located, gradually ascends toward the northern slopes of the Varaždinske Toplice hills. Further south, in an east-west orientation from Novi Marof in the west to Koprivnica in the east, lies Kalnik Mountain, which rises to 643 meters. To the west of Jalžabet are the final slopes of Ivanščica, the highest peak in Hrvatsko Zagorje, reaching 1,059 meters. On clear days, upstream along the Drava, the distant Pohorje Mountains above Maribor in Slovenia are visible, while across the river to the north, the landscape of southern Hungary can be seen. The region is interconnected by numerous smaller and larger watercourses, most notably the Plitvica and Bednja Rivers, both right tributaries of the Drava (Kovačević & Kalafatić 2022, with cited literature). The Early Iron Age cemetery in Jalžabet is named after one of the nearby watercourses - the stream Bistričak. Bistričak divides the burial ground on the east side from the settlement of Carev Jarek on the west side (Fig. 4).

Researching the early Iron Age in the Jalžabet – Martijanec region

Today, on the southern edge of the Drava River valley, two large burial mounds are visible. One is located in Jalžabet, and the other is in Martijanec, approximately 5 kilometers east of Jalžabet (Fig. 2). After World War II, scientific research into the Early Iron Age in northern Croatia began notably in this region, marked by the excavation of the Gamulica burial mound in Martijanec in 1957. (Fig. 3A). This mound contained a quadratic burial chamber constructed from wood and stone and is

Figure 3. A: Rectangular burial chamber made of wood and stones, Martijanec – Gamulica (after Vinski-Gasparini 1961); B: Rectangular burial chamber made of wood and stone with dromos, burial mound 1 in Jalžabet (after Šimek 1998).

attributed to the developed phase of the Early Iron Age – Ha C2 (Vinski-Gasparini 1961, 1978, 1987; Gabrovec 1964–1965; Teržan 1990; Matijaško 2013-2014). In 1989, an archaeological team from the Varaždin City Museum investigated the flattened burial mound 2 in Jalžabet, which dates to the Ha D1 phase (Šimek 1998, 2001) (Fig. 3B). The excavation revealed a quadratic burial chamber constructed from wood and stone, with a dromos facing east, located on a paved plateau. During a rescue excavation in 1997, conducted along the route of a forthcoming highway between Zagreb and Goričan, the Ha D3 settlement Zbelava-Pod Lipom was uncovered approximately 5 km northwest of Jalžabet (Kovačević 2007, 2008; Kovačević & Kalafatić 2022). In recent years, following the discovery of a robbery, the Institute of Archaeology in Zagreb conducted a rescue excavation of the Gomila in Jalžabet – a gigantic burial mound featuring a monumental burial chamber and dromos containing deposited cremated remains (2017–2021). Both burial mounds from Jalžabet are contemporaneous and can be

Figure 4. A: Early Iron Age settlement Carev Jarek; B: Gomila in Bistričak cemetery in Jalžabet (photo by K. Šobat).

dated to the middle of the 6th century BC, towards the end of the Ha D1 phase (Kovačević 2019, 2019a, 2020). The closest analogies for Gomila in Jalžabet are found in Regöly, Strupka-Magyar Birtok (HU), and Wildon (AT) (Fig. 5B). Unfortunately, both of these burial mounds were damaged and/or only partially excavated.

However, they belong to the same period as Gomila and exhibit pronounced similarities in movable finds – such as gold objects, decorated bone or antler artifacts, and metal items – as well as in monument construction, including the use of charcoal in the building sequence. Further similarities are evident with the Princess of Stična grave (SLO), the princely burial mound at Kleinklein-Kröllkogel (AT), and, to some extent, Hochdorf (DE) (Biel 1985; Gabrovec 1987; Gabrovec & Teržan 2008; Egg & Kramer 2013). From the late Hallstatt period in central Croatia, there are relatively few analogies. Notably, we should mention a burial featuring an equestrian grave and a helmet from Sv. Križ, dating to the end of the 6th century BC (Cvitković & Škoberne 2003; Cvitković 2011). All Early Iron Age burial mounds researched in the Podravina and Međimurje contained cremation burials and can be attributed to the Eastern Hallstatt culture. In both Early Iron Age burial mounds from Jalžabet, we observe clear influences from earlier local traditions of the Podravina and Međimurje regions, particularly in burial customs and the layout of the burial monuments, such as cremation rites, quadratic burial chambers, and pottery. At the same time, there are new elements and advancements, including bi-metal scale armor, "exotic" luxury goods, and the addition of a dromos in burial construction. While princely burial mounds containing cremated remains and high-status finds represent only a part of the broader Early Iron Age archaeological landscape, recent research has expanded to include settlements and other potential burial sites. The restoration of numerous finds from Gomila is currently underway, alongside interdisciplinary analyses of all excavated remains (Kovačević et al. 2021; Kovačević & Golubić 2020; Kovačević et al. 2023). Among the significant recent discoveries in the region are those made during small-scale excavations of Early Iron Age settlements, such as at Jalžabet's Carev Jarek (2017, 2023), the large settlement at Martijanec (2023, 2024), at Kazinščak (Kovačević 2023), and the recent discovery of a fortified hilltop settlement at Slanje – Stari Gradec (2023, 2024).

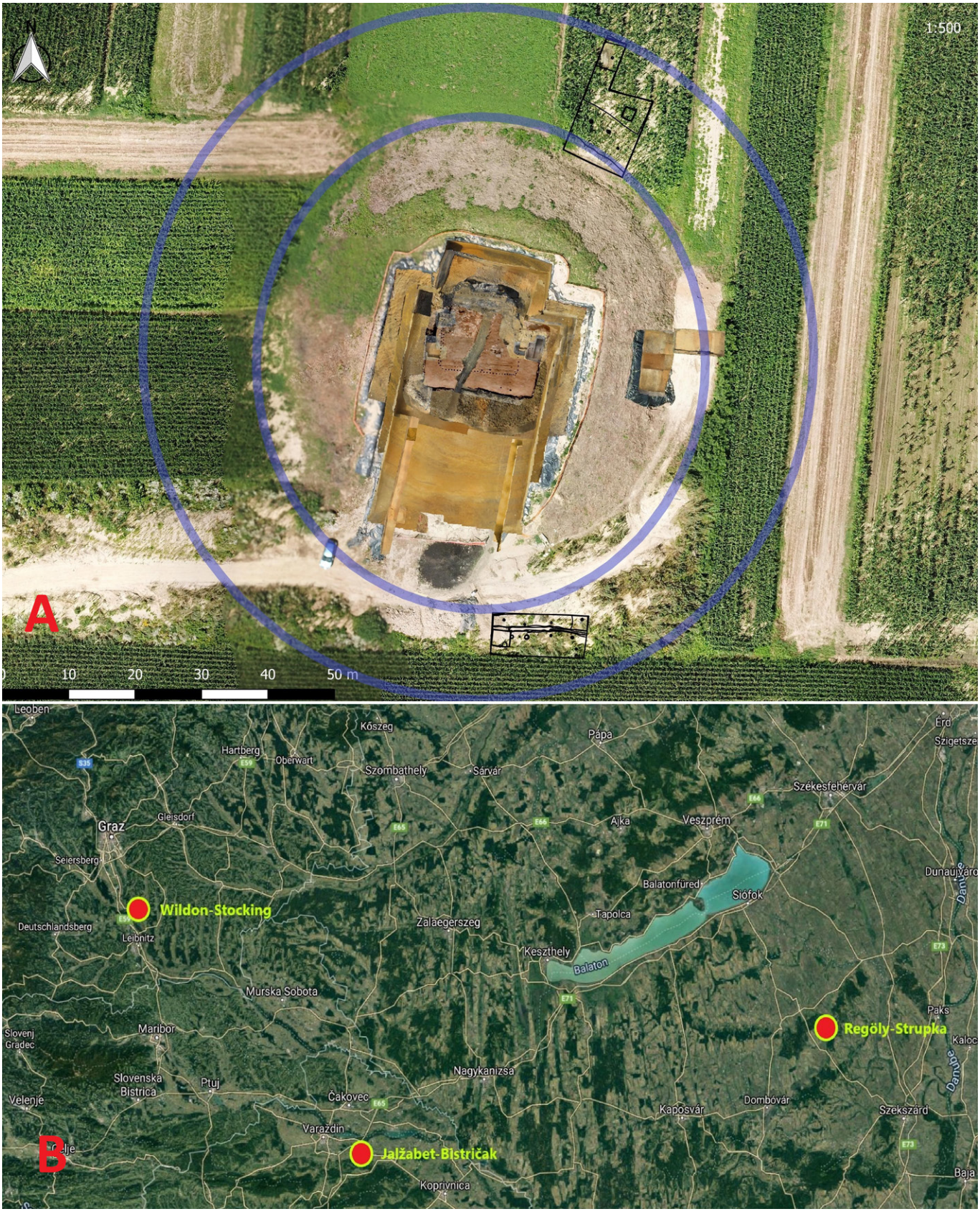


Figure 5. A: Burial mound 1 – Gomila with the position of the circular ditch in Jalžabet; B: the closest cultural and chronological analogies for the finds from the burial mound Gomila in Jalžabet (source: https://www.google.com/maps, edited by S. Kovačević).

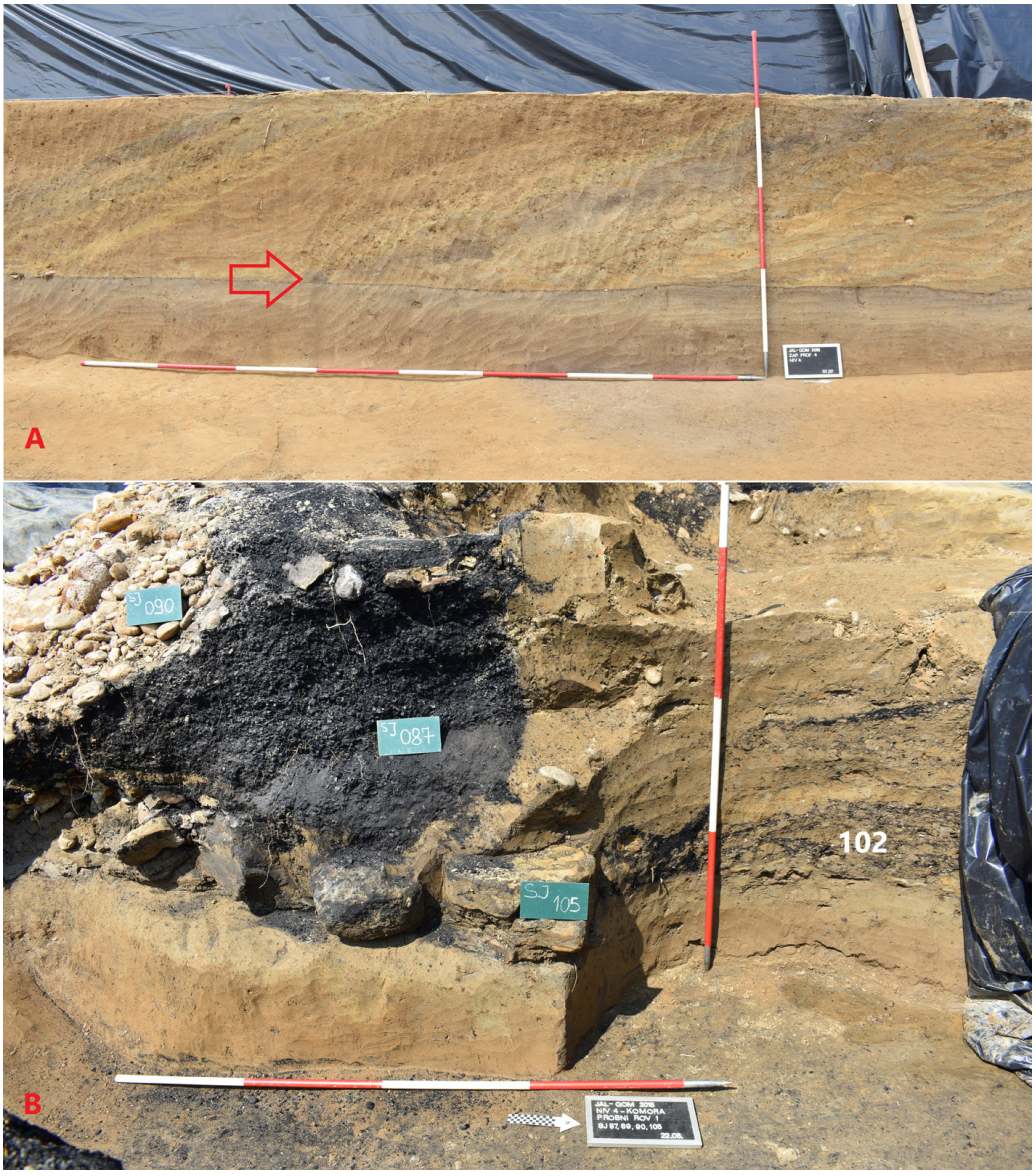


Figure 6. A: west profile of the trench with a plateau on which Gomila was built (red arrow) and visible layers constructing the mound; B: cross-section of the south wall of the burial chamber (in robbers' trench) with a thick layer of charcoal (SU 087) on the outside of the wall and cremated layer with bones on the floor of the burial chamber (SU 102) (photo: S. Kovačević/IARH).

Construction of the burial mound Gomila in Jalžabet

Even by today's standards, the size of the Gomila is of exceptional dimensions. It measures approximately 65 meters in diameter and reaches up to 8 meters in height, with an estimated original height of around 11 meters. It was surrounded by a circular ditch, 100 meters in diameter, 15 meters wide, and up to 2 meters deep (Fig. 5A). The chamber with dromos was constructed of wood, stone, and clay (Fig. 6, 7). Before the construction of the burial chamber, the plateau was leveled and covered with remains of still unidentified plants. The burial chamber had a square layout measuring 11.5 by 11.5 meters and stood approximately 1.6 meters high. The dromos, oriented directly east, was 2.5 meters wide, with its floor and walls lined with wood. The chamber itself was constructed from locally sourced wood, various types of stones, clay, and charcoal.

The construction of the burial chamber was executed in a distinctive manner, through careful planning and coordination. On the leveled and cleared plateau, the area designated for the chamber was paved with split sandstone tiles. Subsequently, the structure's framework was assembled. The framework of the burial chamber comprised multiple layers of walls, creating an impression of several nested chambers within a larger burial chamber, similar to a "babushka doll." Thin stakes,

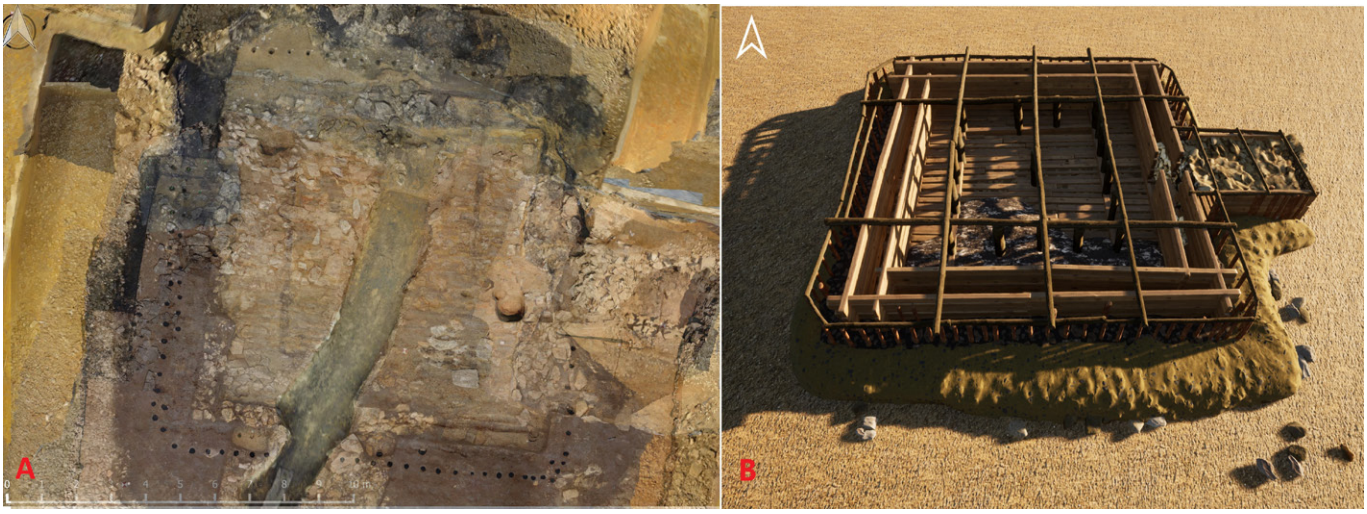


Figure 7. A: Rectangular burial chamber with dromos at the end of excavation, Jalžabet burial mound 1- Gomila (digital documentation M. Mađerić); B: an ideal digital 3D reconstruction of the burial chamber beneath Gomila (made by M. Mađerić).

densely arranged and driven deep into the ground, formed the outermost line of the walls.[3] Two walls constructed from thick wooden planks reinforced with abundant stones and charcoal used as fill material in the interspace between the two, built the inner structure or core of the burial chamber walls. The second wooden wall served as the interior surface of the chamber itself. As previously noted, the entire floor of the burial chamber was paved with split sandstone slabs. After erecting the walls, the floor was further covered with wood and a thin layer of yellow sand. At the center of the chamber, a 5 by 5 meter wooden frame, supported by horizontal beams on the floor and vertical posts, held up a flat roof made of wooden beams. The exterior walls of the burial chamber and dromos were further reinforced by a 50-centimeter-high layer of smaller stones covered with clay. Including this support structure of the outer walls, the size of the burial chamber measures approximately 14.5 by 15 meters. At this step of construction, the outer walls of the burial chamber were covered with a substantial amount of archaeologically sterile charcoal and encased in the crepidoma. The burial chamber was positioned at the center of a stone crepidoma, which was encircled by a perimeter ring of large broken stone slabs. The crepidoma supported the massive structure of the burial chamber, similar to those observed in Scythian burials in the Black Sea region (e.g., Mozolevskiy & Polin 2005:79, Fig. 9; Bidzilja & Polin 2012: 53, Fig. 27, 33). At this stage of construction, it appeared as though the burial chamber was sunken into or buried within the crepidoma; however, in reality, the construction sequence was reversed. After the interment of the burned remains, the entrance of the burial chamber was sealed with a massive wall constructed from large stones bound with clay, and the dromos was at its full height, filled with large stone slabs. Following this, a burial mound was built over the tomb. The burial mound consisted of alternating layers of sandy yellow soil and dense gray clayey soil, which originated from the large circular ditch surrounding Gomila (Fig. 6). Excavations on the slopes of the circular ditch revealed several postholes. On the north side, near the ditch, geophysical surveys suggest the presence of some form of structure—possibly an entrance to the monumental complex—indicating its potential role as a focal point in the ritual landscape following the completion of the burial mound. This hypothesis awaits confirmation through future excavations, but it is already considered a plausible interpretation based on the analysis by Susanne Stegmann-Rajtár of the damaged burial mound in Regöly (kom. Tolna, Hungary), by far the closest analogy to the Gomila in Jalžabet (Stegmann- Rajtár 2014)[4].

The extensive use of diverse materials, particularly stones and wood, is remarkable. The sheer size of the Gomila in Jalžabet further underscores this achievement (Fig. 7). During the construction of burial mound 1 - Gomila and burial mound 2 in Jalžabet, substantial quantities of

[3] Similar can be observed in Regöly (Szabó & Fekete 2019: 290, fig. 2b).

[4] For extensive literature regarding the late Hallstatt period, see also Soós 2020.

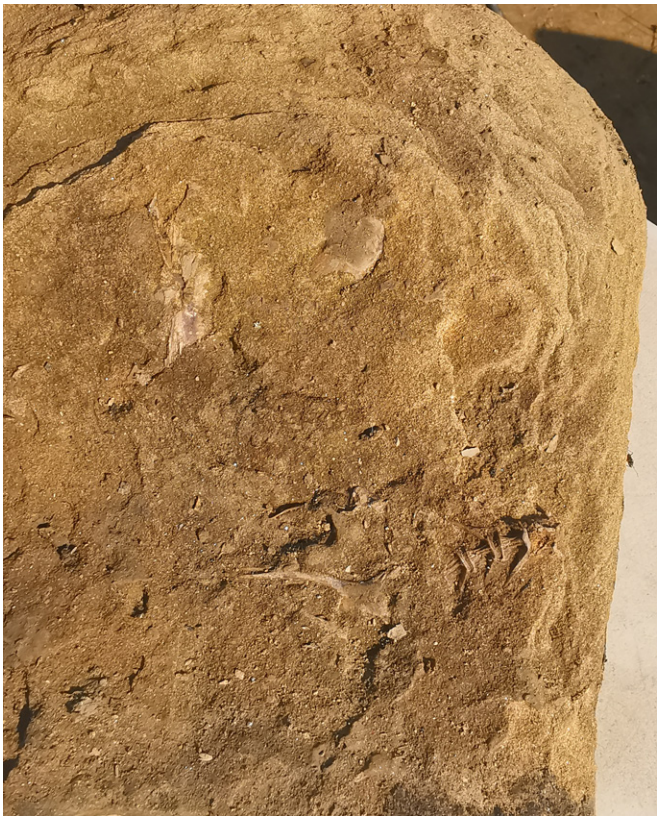


Figure 8. The catfish fossil from the Late Pontian period encased in the sandstone found in the burial chamber in Jalžabet (analysis, determination, and photograph by D. Japundžić/Croatian Natural History Museum).

sandstone, limestone, pebbles, wood, and soil were used. In both cases, the wooden frame of the burial chamber was placed on a prepared, leveled plateau, which was covered with plants. The construction process likely required not only extensive human effort and detailed knowledge of the natural environment as a source of building materials but also advanced organizational skills and highly efficient logistics. It is highly likely that a designated organizer, such as an architect, engineer, or foreman, oversaw the entire burial process. Since the ground on which Gomila was erected consists mostly of loess, sandy soil, together with a substantial amount of timber, every piece of stone found during the excavation would have had to be purposefully transported to the construction site for building the burial chamber. The discovery of a catfish fossil within one of the sandstone slabs helped us determine the age and, at the same time, the likely position of deposits of different types of stones used by Gomila's builders. Large quantities of stone were probably quarried nearby, in the hilly hinterland to the south, where Late Miocene sandstone deposits are close to the surface (Fig. 8).

The construction of the burial chamber could be precisely reconstructed (Fig. 7B). The use of wood and archaeologically sterile wood charcoal in the construction of the burial chamber and dromos played a significant role. Although the exact reason remains unclear, it appears the use of charcoal has been an important aspect of the monument's construction sequence and/or the associated burial rite. Since charcoal possesses little to no structural properties, we might interpret it as an additional buffer zone between the realm of the dead and the living. The builders were quite selective in their choice of wood, predominantly using oak, often from large tree trunks, even when the wood was infected with bark beetles or partially rotten[5]. Concerning movable artifacts, the layer of charcoal applied to the exterior walls of the burial chamber and dromos was completely archaeologically sterile, allowing us to rule out its connection to a funeral pyre in the strict sense of the word. Field research indicates that there were at least two incineration events associated with the Gomila burial. The first involved a funeral pyre used for burning animals, grain, pieces of weaponry, horse equipment, and other archaeologically confirmed finds from the burial chamber. The second was likely used separately for burning a large quantity of wood or charcoal production, as evidenced by archaeologically sterile layers on the outside walls of the chamber and the dromos. The use of archaeologically sterile charcoal has been documented in Early Iron Age burial mounds such as Regöly–Strupka–Magyar, where charcoal was found in positions similar to those at Jalžabet (Szabó 2015: 294, Fig. 3). At another site similar to Jalžabet, Wildon-Grafenkogel (Gutjahr et al. 2018: 70), sterile

[5] Several dozen charcoal samples from various locations outside the walls of the burial chamber were analyzed in detail at the Faculty of Forestry and Wood Technology under the supervision of Ernest Goršić. The preliminary analysis of the animal bones was conducted by Siniša Radović from the Institute for Quaternary Palaeontology and Geology of CASA, and Mario Novak from the Institute of Anthropology in Zagreb. The carbonized macrofossils from the Gomila burial chamber were examined by Renata Šoštarić and Mirjam Kožul from the Division of Botany, Department of Biology, Faculty of Science in Zagreb. Dražen Japundžić from the Natural History Museum in Zagreb assisted in determining the provenance of the stones found at Gomila and in gaining a better understanding of the natural environment in the Plitvice and Bednja River basins during the past. RAMAN and FTIR spectroscopy and pigment analyses of the finds from Jalžabet were performed by Marko Kralj and Marin Petrović from the Institute of Physics in Zagreb, Marko Škrabić from the Department of Physics, Biophysics, and Medical Physics at the School of Medicine, University of Zagreb, along with the team of Marina Van Bos from The Royal Institute for Cultural Heritage- Koninklijk Instituut voor het Kunstpatrimonium Brussels. We are deeply grateful to the entire interdisciplinary team for their valuable contributions.

Figure 9. The project proposal of the future Archaeological Park Gomila in Jalzabet (G. Rako and Radionica arhitekture, financed by Varaždin County).

charcoal in the form of a 20 cm thick layer was placed atop a gravel layer on the roof of the burial chamber. Charcoal in a funerary context has also been found at other Early Iron Age sites in Croatia. For example, in burial mound 26 at Budinjak, a "burnt wooden ring" was identified around the grave (Škoberne 1999: Fig. 15), while in burial mound I at Kaptol-Čemernica, a quadratic ditch or enclosure filled with charcoal was uncovered during excavation (Vejvoda-Mirnik 1971: 188). In these contexts, as at Jalžabet, the presence of charcoal cannot be solely attributed to construction elements of the burials. The use of charcoal, usually on the exterior of burial structures, may serve an apotropaic function, maybe related to cleansing through fire. However, this hypothesis requires further research for confirmation.

Cremation burial rite in Gomila

During the rescue excavation, traces of the funeral pyre weren't found beneath the Gomila. Huge quantities of food and other finds were probably burnt on the pyre, somewhere in the vicinity. On the pyre, a large number of metal objects made of iron and bronze were burned with the deceased, as well as parts of animals (horse, cattle, ship/goat, etc.), and a substantial number of crops and plants (wheat, barley, spelt, oat, lentil, etc.). The huge amount of wood (predominantly oak), was purposefully burned and turned into coal somewhere near. The interdisciplinary analyses of huge amounts of cremated bones are far from finished. We still haven't confirmed human remains yet. Among movable finds, we can recognize parts of bi-metal scale armor, iron spearheads, arrow tips, parts of lavish horse equipment, bronze vessels, and other finds melted or deformed by the fire. After the pyre was extinguished, burned bones were carefully selected and placed on the floor of the burial chamber, along the south wall. Other layers from the pyre were then collected and placed above the burnt bones. But, among the cremated bones, and even more in the layers from the pyre above the bones, we have found objects not touched by the fire. Pieces of ceramic vessels, gold objects, amber and bone beads, and antler plaques ornamented with incisions and black and red paint (Kovačević & Golubić 2020; Kovačević et al. 2021; Kovačević et al. 2023). We can presume pieces of pottery, like cups, bowls, and pots, were purposely broken during the burial rite and put on the pyre at the

end of the cremation process, as not a single complete ceramic or metal vessel was found during the excavation. In the valuable items like amber and gold ornaments, we can probably see parting gifts of high-status individuals partaking in the funeral ceremony. Antler plaque inlays richly decorated with incisions and red and black paint probably belonged to pieces of furniture, maybe to the funeral bed on which the body of the deceased was carried to the pyre. The furniture was probably violently smashed and, together with gold and amber jewelry, placed on the cremated remains after cremation was finished and the pyre was extinguished, but before the cremated remains were interred in the burial chamber.

Conclusion

Finds from Gomila in Jalžabet are of supra-regional importance, illustrating extensive contacts across different regions of the known world during the early part of the Late Hallstatt period. Goods, ideas, and customs discovered in Jalžabet can be traced across regions from the Baltic to the Black Sea. The entire construction sequence at Gomila was closely intertwined with specific burial rituals, reflecting a sophisticated combination of human effort, organizational expertise, detailed environmental knowledge, and resource management. Evidence suggests that the construction of burial monuments was executed within a relatively short timeframe, involving the burning of large quantities of food on pyres and the inclusion of high-status objects made from amber, gold, bronze, and iron. These findings portray a society that was well-organized, wealthy, and stratified. The individual after whose cremation Gomila was built had to belong to the top of society and embodied social, economic as well as religious power. The circular ditch with some substructures uncovered by geophysics and confirmed by targeted excavation reveals the role of the Gomila as a permanent, commemorative focal point in a landscape, probably even long after the funeral was finished. This was a spot that permanently connected the world of the living and the world of the ancestors. The burial monument itself, the beliefs it represented, and the rituals performed there established social connective tissue; it built and rejuvenated a sense of communal identity. At the same time, it is a monument for eternity, an impressive marker in the landscape, projecting an image of the community that built it as strong, united, and powerful.

Following the rescue excavation of Gomila in Jalžabet, Varaždin County has undertaken the task of presenting this burial monument to the public. Important steps toward establishing the Presentation Center Gomila in Jalžabet have already been taken (Fig. 9). As of 2024, the project is in the process of obtaining the location permit, a preliminary architectural design has been developed, and the land has been purchased from private owners. As the completion of the archaeological-tourist center in Jalžabet draws closer, the findings from the archaeological research and interdisciplinary analyses are expected to be effectively integrated into a new tourist attraction, thereby enhancing the cultural and economic vitality of the local community.

References

Bidzilja, V.I. and Polin, V. 2012. *Gajmanova Mogila – Ein Skythischer Königskurgan* (Скифский царский курган Гайманова могила), NASU - Institute of Archaeology of the National Academy of Sciences of Ukraine, DAI - Eurasien-Abteilung, Kyev.

Biel, J. 1985. *Der Keltenfürst von Hochdorf*, Theiss, Stuttgart.

Borovac, I. (ed.) 2002. *Veliki atlas Hrvatske*, Mozaik knjiga, Zagreb.

Crkvenčić I., Dugački Z., Jelen I., Malić A., Riđanović J., Roglić J., Šegota T., Žuljić S. 1974. *Geografija SR Hrvatske*, Regionalni prikaz, knjiga 2, Institut za geografiju Sveučilišta u Zagrebu, Školska knjiga, Zagreb.

Crnički, J. 1983. Mineralne sirovine Varaždinske regije i njihovo privredno značenje, *Zbornik radova sa znanstvenog skupa održanog u Varaždinu od 1. do 3. Listopada 1981. godine povodom obilježavanja 800. godišnjice grada,* Varaždinski zbornik, 75-86.

Cvitković, I. 2011. Sveti Križ Brdovečki – naselje i nekropola (k.č. 1695), *Hrvatski arheološki godišnjak* 8/2011, Ministarstvo kulture RH, Zagreb, 283-286.

Cvitković, I. and Škoberne, Ž. 2003. The Find of an equestrian grave of Iron Age at Sv. Križ Brdovečki (Croatia), *Archäologisches Korrespondenzblatt* 33(2), 221-228.

Dobiat, C, 1980. Das hallstattzeitliche Gräberfeld von Kleinklein und seine Keramik, *Schild von Steier, Beiheft 1.* Graz: Landesmuseum Joanneum.

Dular, J. and Tecco Hvala, S. 2007. *South-Eastern Slovenia in the Early Iron Age. Settlement – Economy – Society / Jugovzodna Slovenija v starješi železni dobi. Poselitev – Gospodarstvo – Družba*, OIAS 12, Inštitut za arheologijo ZRC SAZU, Založba ZRC, Ljubljana.

https://doi.org/10.3986/9789612545239

Egg, M. 1996. *Das hallstattzeitliche Fürstengrab von Strettweg bei Judenburg in der Obersteiermark*, Monographien des Römisch-Germanischen Zentralmusuem, 37, Mainz.

https://doi.org/10.11588/propylaeum.1338

Egg, M. 2019. Princely graves from Kleinklein in Styria, Austria, *Arheološki Vestnik* 70, Ljubljana, 335-352.

Egg, M. and Kramer, D. (eds.), 2013. *Die hallstattzeitlichen Fürstengräber von Kleinklein in der Steiermark: der Kröllkogel*. Monographien, 110, Mainz: Römisch-Germanisches Zentralmuseum Mainz. https://doi.org/10.11588/propylaeum.1367

Egg, M. and Kramer, D. 2016. *Die hallstattzeitlichen Fürstengräber von Kleinklein in der Steiermark: Die beiden Hartnermichelkogel und der Pommerkogel*, Monographien des Römisch-Germanischen Zentralmusuem 125, Mainz.

Egg, M. and Kramer D. 2019, *Krieger – Feste – Totenopfer. Der letzte Hallstattfürst von Kleinklein in der Steiermark*, Mosaiksteine Forschung des Römisch-Germanisches Zentralmuseum, 1.

Fekete, M. and Szabó, G. 2017. Flüchtlinge in Südtransdanubien. Die Freilegung eines Hügels aus dem 7. Jh. v. Chr. im Jahre 2011–2012: Regöly (Ungarn, Komitat Tolna) – Vorbericht – ein Überblick. *Studia archaeologica Brunensia,* 22 (1), 91-122. https://doi.org/10.5817/SAB2017-1-5

Gabrovec, S. 1964-1965. Halštatska kultura v Sloveniji. Die Hallstattkultur Sloweniens. *Arheološki vestnik* 15-16, 21-63.

Gabrovec, S. 1987. Dolenjska grupa, In: Benac, A. (ed.), *Praistorija jugoslovenskih zemalja V, željezno doba*, Akademija nauka i umjetnosti BiH, Centar za balkanološka istraživanja, Sarajevo, 15-120.

Gabrovec, S. and Teržan, B. 2008. *Stična II/2. Gomile starejše železne dobe / Grabhügel aus der Älteren Eisenzeit*, KiM 38, Narodni miuzej Slovenije, Ljubljana.

Gutjahr, C. and Mandl, M. 2014. Wildon-Grafenkogel, Grabungsbericht 2014. Online: https://www.hengist-archaeologie.at/archaeologie/ausgrabungen/407-stocking-grafenkogel (12.03.2021).

Guthjahr, C., Karl, S., Obersteiner, G.P., and Tiefengraber G. 2018. Hengist Best-of. Führer zu archäologischen Fundstellen und Baudenkmalen in der Region Hengist, *Hengist-Magazin Sonderband* 1/2018, Graz: Kulturpark Hengist.

Kovačević, S. 2007. Characteristic Finds from the late Hallstatt Settlement at Zbelava near Varaždin and a Velem-type Fibula, *Prilozi Instituta za arheologiju u Zagrebu* 24, 89-112.

Kovačević, S. 2008. A look at the structure and ceramic production of the late Hallstatt settlement in Zbelava near Varaždin, *Prilozi Instituta za arheologiju* 25, 47-80.

Kovačević, S. 2019. Architecture of power or demise: gigantic burial mounds of Podravina as parts of the Early Iron Age landscape. The Iron-Age-Danube project in the Plitvica-Bednja Rivers Basin (NW Croatia), In: Črešnar M. and Mele M. (ed.), *Early Iron Age Landscapes of the Danube Region*, Graz - Budapest, Archaeolingua, 109-141.

Kovačević, S. 2019a. Gomila in Jalžabet – emergency rescue excavations in 2017 and 2018 within the A4: Ritual

subtopic of the "Strategy for the Scientific Research Activities of the Institute of Archaeology 2014–2019. *Annales Instituti Archaeologici* 15 (1), 143.

Kovačević, S. 2020. Nekoliko detalja o gradnji Gomile u Jalžabetu, In: Tončinić D., Kaić I., Matijević V., et al. (eds.), Zbornik radova u prigodi 65. rođendana prof. dr. sc. Mirjane Sanader, *Dissertationes Et Monographiae 9*, *Studia honoraria archaeologica,* Arheološki zavod Odsjeka za arheologiju Filozofskog fakulteta Sveučilišta u Zagrebu, FF Press, 225-237. https://www.doi.org/10.17234/9789533790343.23

Kovačević, S. 2020a. IRON-AGE-DANUBE INTERREG DTP 2019 in Jalžabet: From research and preservation to the presentation and sustainable use of archaeological monuments, sites, and landscapes. *Annales Instituti Archaeologici* 16 (1), 162.

Kovačević, S. 2023. Archaeological excavation in Jalžabet and Martijanec region in 2023, Report to the Ministry of Culture and Media of the Republic of Croatia (in possession of the author).

Kovačević, S. and Golubić, M. 2020. Restauriranje nalaza halštatskog razdoblja iz tumula u Jalžabetu, *Portal: godišnjak Hrvatskoga restauratorskog zavoda* 11, 7-22.

https://doi.org/10.17018/portal.2020.1

Kovačević, S. and Kalafatić, H. 2022. *Zbelava-Pod lipom. Naseljenost doline rijeke Drave od prapovijesti do srednjeg vijeka*. *Settlement in the Drava River valley from Prehistory to the Middle Ages.* Zagreb, Monografije Instituta za arheologiju 6, Zagreb.

Kovačević, S., Pleše, T. and Gamulin, Lj. 2021. *Gomila u Jalžabetu. Monumantalni kraolik starijega željeznog doba*. Katalog izložbe "Zlato zlatu" Zlatna dvorana HIP, Zagreb, Opatička 10, 17.12.2021.

Kovačević, S., Van Bos, M., Kralj, M., Petrović, M., Gamulin, O., Škrabić, M., Radović, S. and Vanden Berghe, I. 2023. Analysis of Pigments from Decorated Antler or Bone Artifacts from the Early Iron Age Princely Burial Mounds in Jalžabet (NW Croatia), *Interdisciplinaria Archaeologica, Natural Sciences in Archaeology* XIV (1), 41-61. http://dx.doi.org/10.24916/iansa.2023.1.3

Kurtek, P. 1966. *Gornja hrvatska Podravina, Evolucija pejzaža i suvremeni funkcionalni odnosi u prostoru*, Školska knjiga, Zagreb.

Matijaško, M. 2013-2014. Martijanec-Gamulica. Analiza nalaza prikupljenih 1950. godine, *Opuscula Archaeologica* 37/38, Zagreb, 161-187. https://doi.org/10.17234/OA.37.4

Metzner-Nebelsick, C. 2002. *Der „Thrako-Kimmerische" Formenkreis aus der Sicht der Urnenfelder- und Hallstattzeit im südöstlichen Pannonien*, Vorgeschichtliche Vorschungen 23, Rhaden/Westf.

Mozolevskiy, B. N. and Polin, S. 2005. *Kurgans of Scythian Gerros of 4th Century B.C. (Babina, Vodyana, and Soboleva Mohily). Курганы скифского Герроса IV в. до н. э. (Бабина, Водяна и Соболева могилы*), NASU - Institute of Archaeology of the National Academy of Sciences of Ukraine, Kyiv, Stylos.

Patek, E., 1993. *Westungarn in der Hallstattzeit*, Germania 73 Nr. 2 (1995), WCH Acta humaniora, Weinheim.

Registar 1997. *Registar arheoloških nalaza i nalazišta sjeverozapadne Hrvatske*, drugo dopunjeno izdanje, Muzejsko društvo sjeverozapadne Hrvatske, Bjelovar.

Soós, B. 2020. The Late Hallstatt Age Burials of Southern Transdanubia and A Missing Link. *Acta Archaeologica Academiae Scientiarum Hungaricae* 71(2), Budapest, 409-442, https://doi.org/10.1556/072.2020.00011

Stegmann-Rajtár S. 2014. Obrovská mohyla doby halštatskej v Regöly (Zadunajsko). Posvätné miesto rituálnych praktík a uctievania predkov? In: J. Čižmářová, N. Venclová and G. Březinová G. (eds.) *Moravské křižovatky Střední Podunají mezi pravěkem a historií*, Moravské zemské muzeum, Brno, 99-117.

Szabó, G. 2015. Ethno-sociocultural background of the oriental origin of the Pannons of the Carpathian Basin in the Early Iron Age, In: A. Z. Beysenov (ed.) *Sak Culture of Saryarka in the Context of the Study of Ethnic and Socio-Cultural Processes of Steppe Eurasia,* Alma-Ata, 291-299.

Szabó, G. and Fekete, M. 2015. Pannon tumulus feltárásának elökészítése – Regöly. Vorbereitung der Freilegung des Pannon- Grabhügels (Tumulus) Strupka-Magyar Besitz – in Regöly, Strupka- Magyar birtok (2011. február 4. – június 19.). *A Wosinsky Mór Megyei Múzeum Évkönyve (Szekszárd), 36, 7*, 159.

Szabó, G. and Horvath, V. 2015. Scythian Age Scale Armour from the Tumulus at Regöly. In: International scientific and practical conference: "*VII Orazbayev readings. Kazakh Archaeology and Ethnology: Past, Present and Future*", dedicated to the 550th anniversary of the Kazakh Khanate, the 20th anniversary of the Assembly of People of Kazakhstan, 28–29 April 2015, Alma-Ata,100-105.

Šimek, M. 1989. Novi podaci o lokaltetu Šarnjak kod Šemovca, *Muzejski vjesnik. Glasilo muzeja Sjeverozapadne Hrvatske* 12, 23-30.

Šimek, M. 1998. Ein Grabhügel mit Pferdebestattung bei Jalžabet, Kroatien. In: B. Hänsel and J. Machnik (eds.) *Das Karpatenbecken und die osteuropäische Steppe: Nomadenbewegungen und Kulturaustausch in den vorchristlichen Metallzeiten (4000–500 v.Chr.)*. Südosteuropa-Schriften, 20, Prähistorische Archäologie in Südosteuropa 12. München: Verlag Marie Leidorf, 93-510.

Šimek, M. 2001. Weitere Aspekte von Grabhügel II in Jalžabet bei Varaždin. In: A. Lippert (ed.) *Die Drau-, Mur-, und Raab-Region im 1. vorchristlichen Jahrtausend*. Akten des internationalen interdisziplinären Symposiums von 26. bis 29. April 2000. in Bad Radkersburg. Universitätsforschungen zur Prähistorische Archäologie 78. Bonn: Habelt, 311-318.

Šimek, M. 2004. Grupa Martijanec – Kaptol, In: D. Balen Letunić (ed), *Ratnici na razmeđu istoka i zapada, Starije željezno doba u kontinentalnoj Hrvatskoj*, Archaeological Museum in Zagreb, 79-130.

Šimek, M. 2004a. Naseljavanje u prapovijesti i ranoj povijesti, In: A. Bregović (ed.) *Život uz Dravu nekad i sad*, katalog izložbe, GMV, Varaždin, 23-92.

Škoberne Ž. 1999. Budinjak: kneževski tumul, Muzej grada Zagreba, Zagreb.

Teržan, B., 1990. *Starejša železna doba na slovenskem Štajerskem. The Early Iron Age in Slovenian Styria*, Catalogi et monographiae, 25, Ljubljana: Narodni Muzej.

Teržan, B. 1998. Auswirkungen des skythisch geprägten Kulturkreises auf die hallstattzeitlichen Kulturgruppen Pannoniens und des Ostalpenraumes. In: B. Hänsel and J. Machnik (eds.), *Das Karpatenbecken und die osteuropäische Steppe: Nomadenbewegungen und Kulturaustausch in den vorchristlichen Metallzeiten (4000–500v.Chr.)*. Südosteuropa-Schriften, 20, Prähistorische Archäologie in Südosteuropa, 12. München: Verlag Marie Leidorf, 511-560.

Teržan, B. 2019. Štajersko-panonska halštatska skupina. Uvodnik in kratek oris, *Arheološki vestnik* 70, 319-334.

Tiefengraber, S. and Tiefengraber, G. 2019, Landscape studies of the micro-region Strettweg (Aichfeld/Murboden) in Austrian Styria in the framework of the Iron-Age-Danube project, In: M. Črešnar and M. Mele (eds.) *Early Iron Age Landscapes of the Danube Region*, Budapest – Graz, 75-108.

Vejvoda, V. and Mirnik, I. 1971. Istraživanja prethistorijskih tumula u Kaptolu kraj Slavonske Požege. *Vjesnik Arheološkog muzeja u Zagrebu* 5 (1), 183-210.

Vinski-Gasparini, K. 1961. Iskopavanje kneževskog tumulusa kod Martijanca u Podravini, *Vjesnik Arheološkog muzeja u Zagrebu, 3. s. 2*, 39-66.

Vinski-Gasparini, K. 1978. Osvrt na istraživanja kasnog brončanog i starijeg željeznog doba u sjevernoj Hrvatskoj, In: Ž. Rapanić (ed.) *Arheološka istraživanja u sjeverozapadnoj Hrvatskoj*, Izdanja Hrvatskog arheološkog društva, sv. 2, znanstveni skup, Varaždin, 22. – 25. X. 1975., Zagreb, 129-146.

Vinski-Gasparini, K. 1987. Grupa Martijanec-Kaptol, Grupa Martijanec-Kaptol. In: A. Benac (ed.) *Praistorija jugoslavenskih zemalja, 5. Željezno doba*. Akademija nauka i umjetnosti BiH, Centar za balkanološka istraživanja, Sarajevo, 182-231.