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Archaeological excavations carried out in the vicinity of the 19th-century iron ore reduction kiln/furnace at Zimbru, Arad County

Victor Sava, Ioan Cristian Cireap, Daniel Preda, Raluca R. Rusu, Alex Ciobotă, Adrian Cristian Ardelean, Adriana Sărășan, Maria Tămășan

Abstract: The technical documentation for the restoration of the 19th century furnace at Zimbru required archaeological excavations. During 2022, two small trenches were excavated, targeting the buildings near the monument. The trenches were located according to geophysical measurements, digital elevation model and on site observations. The investigations had the limited aim of identifying some of the buildings in the immediate vicinity of the furnace, which are also illustrated on the Franciscan Topographical Survey. Only in one trench, S1, was the stated objective achieved, locating a building with stone foundations and walls built of stone and brick.

Keywords: furnace; Modern period; building; archaeological excavation; restoration; pre-industrial heritage; landscape.

Introduction

During 2019 the smelting iron furnace located north of Zimbru, com. Gurahonț, Arad County was transferred to the patrimony of Arad County Council. It should be noted that this monument included in the list of historical monuments of Romania, updated during 2015, approved by OMC 2828/2015, with code AR-II-m-B-00661, was built in the mid-19th century¹. As a result of the above mentioned process, the furnace was secured over the course 2021, initiative coordinated by the Ambulance for Monuments-Arad. Taking into account the historical potential of the monument, the Arad Museum, the institution that manages it, has started the preparation of a documentation on the basis of which the monument in question can be restored and introduced into the tourist circuit of the area.

The furnace is situated in the administrative territory of Gurahonț commune, Arad County (Fig. 1–2), about 1.3 km north of the village of Zimbru (Fig. 3). Zimbru is located on the southern frame of Codru Moma Mountains, at approximately 100 km north-east of Arad city.

The archaeological investigations carried out in June 2022 had the limited aim of identifying any possible buildings around the furnace. At the same time it was planned to evaluate the historical and archaeological



Fig. 1. Administrative map of Romania and Arad County with the indication of the administrative territorial unit of Gurahonț (in grey) (by the authors).

¹ Construction period 1844–1865, after Volker Wollmann, 2017, 239–241.

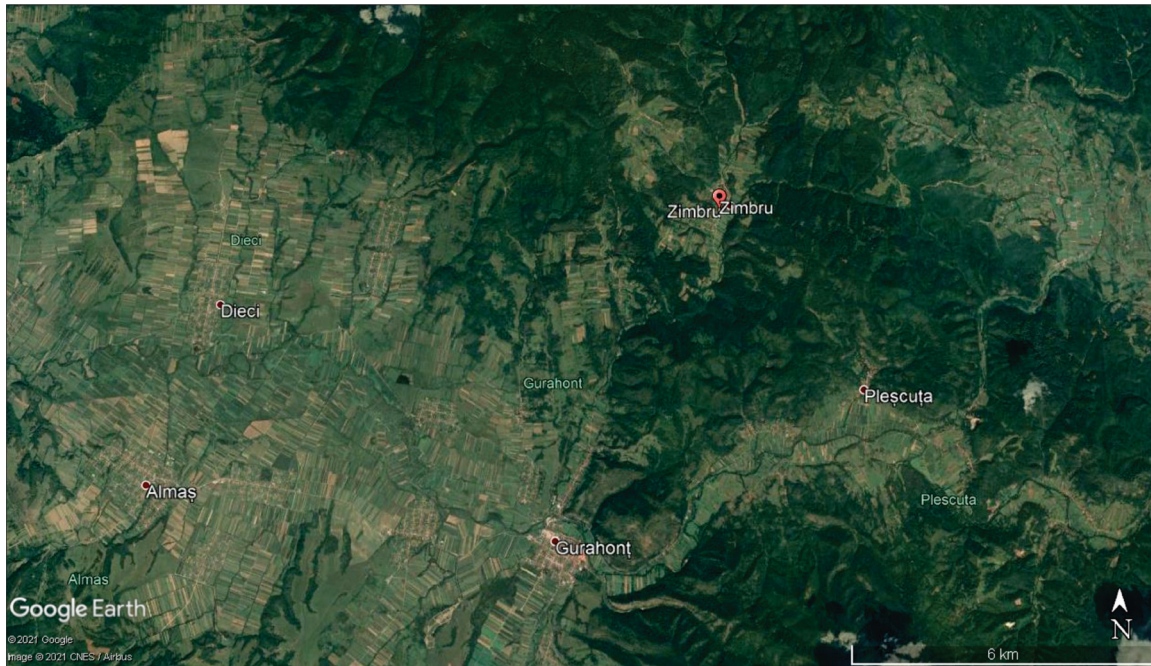


Fig. 2. Satellite photo with the location of Zimbru village (source: Google Earth).

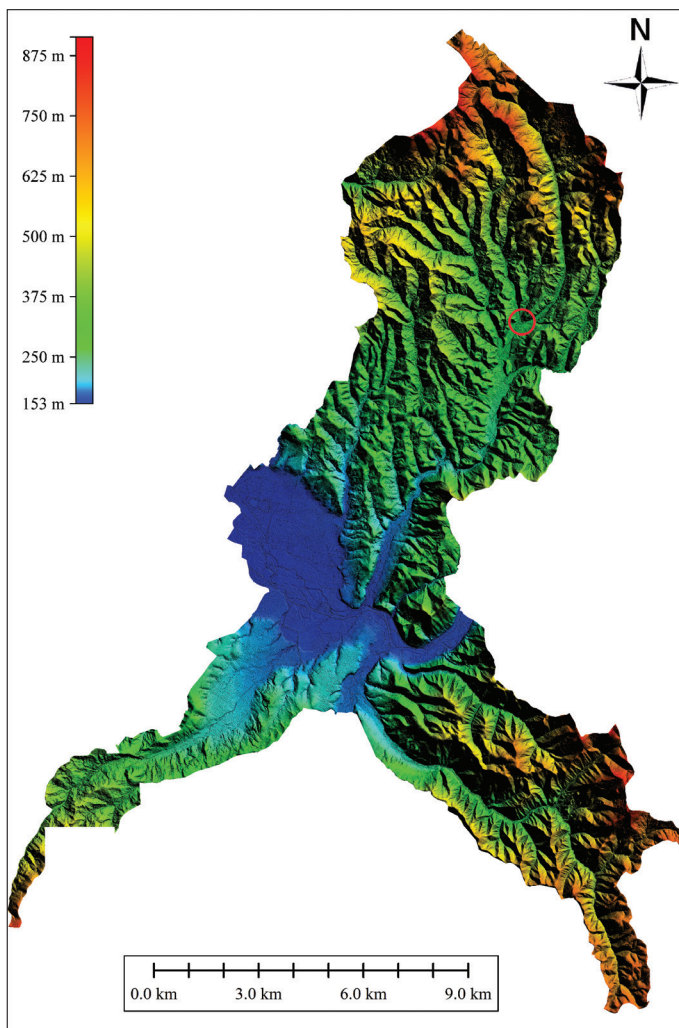


Fig. 3. Digital elevation model of the administrative territorial unit of the Gurahont commune, locating the furnace (red circle) (by the authors).

potential of the area surrounding the monument itself.

In addition to the archaeological excavations, which are the subject of this report, the need to obtain prior factual data materialised through non-invasive research. These consisted of a digital elevation model, an orthophoto plan and geophysical measurements where the terrain allowed. Consequently, the archaeological excavation was undertaken with a substantial input from the surveys listed above.

The archaeological excavation undertaken in the immediate area of the blast furnace consisted of two trenches measuring 5×1 m. The two archaeological units were laid out to discover any buildings illustrated on the Franciscan Topographical Survey. Trench S2 located in the immediate vicinity of the furnace did not uncover any buildings. In contrast, S1, placed on the north-east side of an elevation, led to the identification of the expected building. Some information was thus obtained concerning its dating, construction method and its compartmentalisation.

Archaeological and historical data of the area

Across time the Gurahonț area, where the Zimbru village is located, was less investigated archaeologically. The oldest human traces discovered in the area, date to the Paleolithic. The Cluj-based archaeologist Márton Roska carried out a series of investigations in the interwar period, when he identified a series of stone tools² in different locations around Gurahonț, Valea Mare and Zimbru villages.

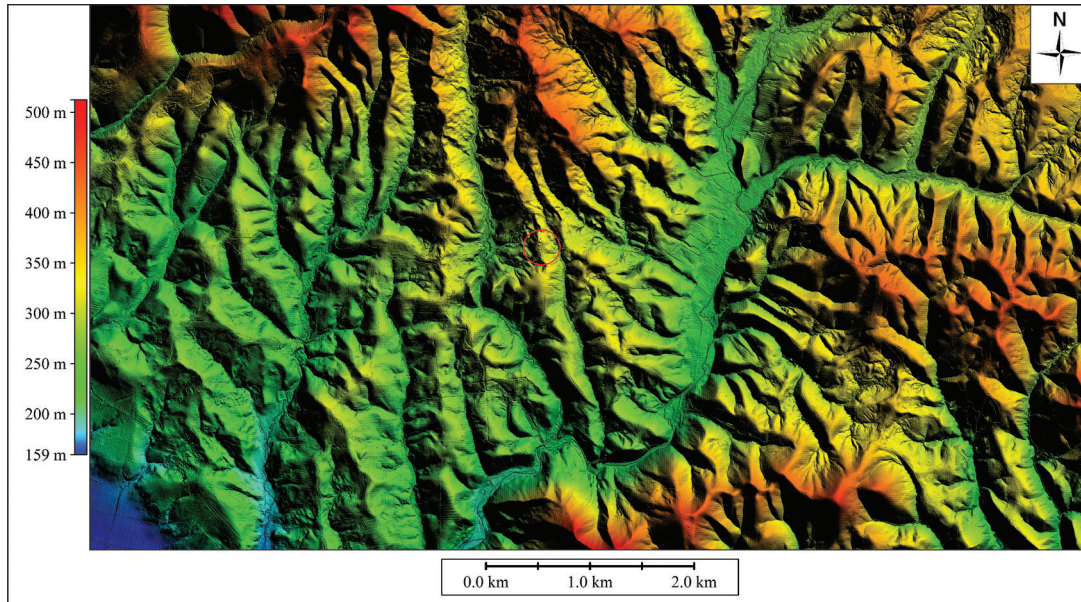


Fig. 4. Digital elevation model of the area, locating the burial mounds (red circle) (by the authors).

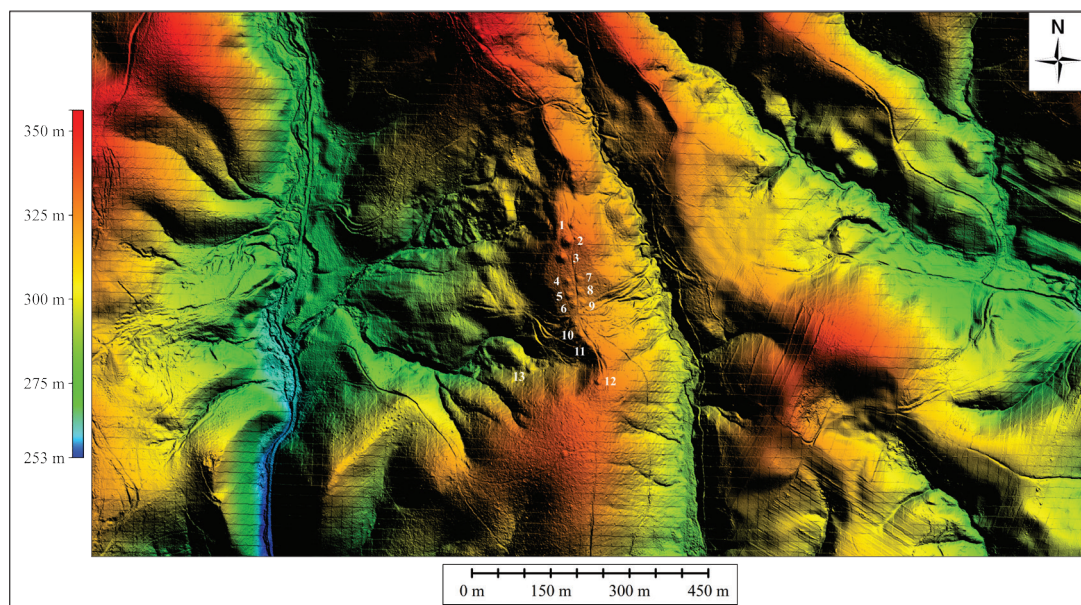


Fig. 5. Digital elevation model of the area, locating the burial mounds (white Arabic numbers) (by the authors)

Another period, with certain traces of human activity, is the late Eneolithic and the early Bronze Age. Nearby Hontșor village, the archaeological literature records a stone mantle mound³, a burial monument specific to early Bronze Age communities. The LiDAR scanning identified other similar burial mounds in the area. The recently identified mounds were located on a relatively narrow ridge, set on approximately a north-south axis, between the Zimbru and Valea Mare villages (Fig. 4). The 13 mounds lay in the narrowest section of the ridge, the majority being set longitudinally (Fig. 5). Their

² Vasiliev 1999, 73–74, pct. 1, 4, 6–10; Bărbulescu 1999, 140, pct. 1–2, both with previous bibliography.

³ Vasiliev 1999, 75, pct. 11.

diameters vary between 10 and 20 m (Fig. 6). It is impossible to state their chronology for the lack of archaeological excavations, however based on their construction manner, location and given the studied region, one may assume they may date to the early Bronze Age⁴. Near Valea Mare village was discovered an axe with cross-section socket hole of Fajsz type, likely made in copper, specific to the early Bronze Age (Fig. 7)⁵. The artifact could be contemporary with above mentioned mounds⁶.

In the Gurahonț village, a Roman imperial denarius of Nero and one of Traian⁷ were discovered by chance, which indicates some human activity also during the first part of 1st millenium AD.

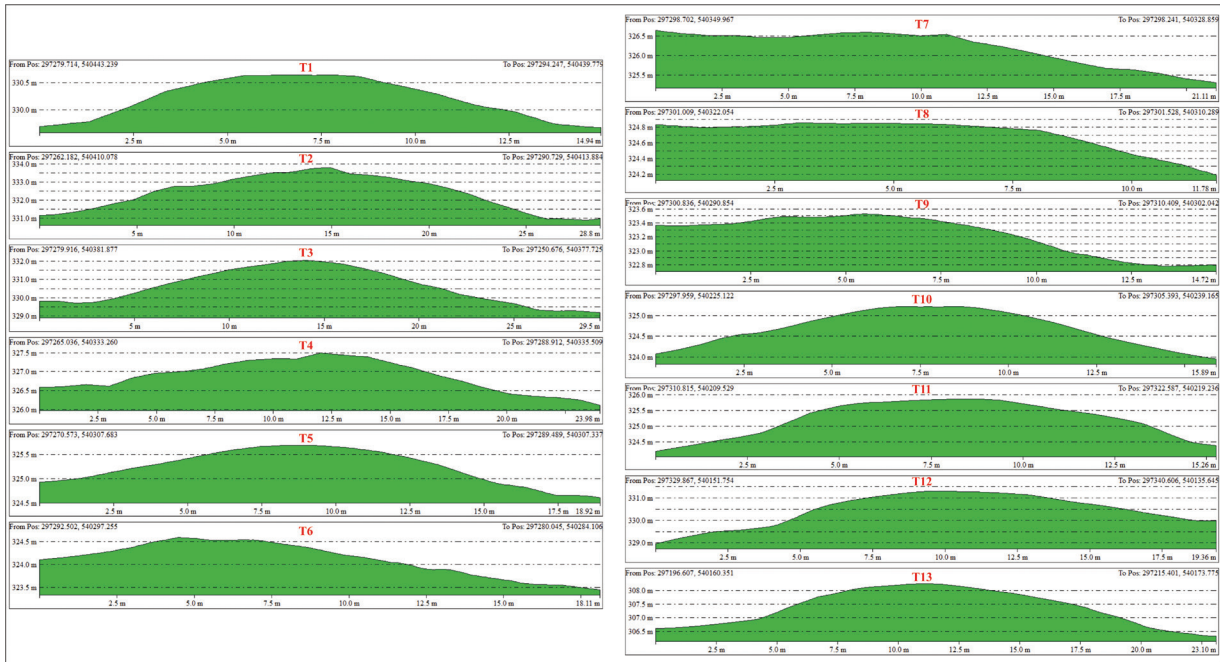


Fig. 6. Profiles of the burial mounds (by the authors)

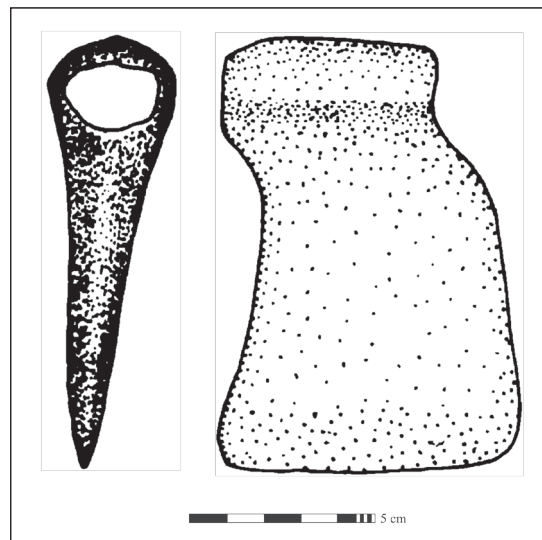


Fig. 7. Copper? axe discovered at Valea Mare (source: Pădureanu 2002).

Having passed over the brief presentation on the distant past of the area, where during the 19th century the blast furnace was built, in the following lines we will focus our discussion on some data regarding the more recent history. As the furnace was constructed at the interflow of three valleys,

⁴ For similar monuments, see for instance Ciugudean 1996; Diaconescu, Tincu 2016.

⁵ Pădureanu 2002, 63, pl. II/1.

⁶ Dani 2013.

⁷ Dudaș 1975, 136, points 22–23; Vasiliev 1999, 74, points 2–3.

access to the site could be made from three villages: Brusturescu (Brusztureszk), Dulcele (Dolczin, Dulcsin, Edeslak) and Zimbru (Zombró, Zombrud, Zembrul). In order to give an overview of our objective, we will outline a number of historical data concerning the evolution of the mentioned villages.

The three villages are first documented during the 16th century, when they appear to be in the possession of noble families. More consistent information is obtained starting with the 18th century, when the first conscriptions were initiated.

Tables 1–3 clearly show that during the 18th–19th century, the most densely populated village was Zimbru. Moreover, the demographic evolution of the area followed the ascending curve of positive economic developments of the 18th and 19th centuries. According to 1787 Josephine conscription, all inhabitants of the three villages are of Romanian origin and belong to the Christian Orthodox cult.

Table 1. Demographic evolution of village Brusturescu, during the 18th–19th centuries (source: Faur 2016 and Bulboacă 2020).

| Village | Brusturescu | | | | | | | | |
|----------------------|-------------|---------|---------|----------|----------|----------|----------|----------|------|
| | Year | 1766 | 1800 | 1828 | 1858 | 1869 | 1880 | 1890 | 1900 |
| Families/inhabitants | 5 fam. | 17 fam. | 38 fam. | 147 loc. | 152 inh. | 168 inh. | 150 inh. | 166 inh. | |

Table 2. Demographic evolution of village Dulcele, during the 18th–19th centuries (source: Faur 2016 and Bulboacă 2020).

| Village | Dulcele | | | | | | | | | | | | | |
|----------------------|---------|--------|--------|--------|---------|---------|-----------|----------|----------|----------|----------|----------|----------|------|
| | Year | 1715 | 1720 | 1742 | 1746 | 1766 | 1771–1786 | 1828 | 1851 | 1857 | 1869 | 1880 | 1890 | 1900 |
| Families/inhabitants | 5 fam. | 5 fam. | 3 fam. | 3 fam. | 10 fam. | 10 fam. | 28 fam. | 283 inh. | 240 inh. | 239 inh. | 233 inh. | 275 inh. | 254 inh. | |

Table 3. Demographic evolution of village Zimbru, during the 18th–19th centuries (source: Faur 2016 and Bulboacă 2020).

| Village | Zimbru | | | | | | | | | | | | | |
|----------------------|--------|--------|---------|---------|---------|---------|---------|----------|----------|----------|----------|----------|----------|------|
| | Year | 1715 | 1720 | 1742 | 1747 | 1771 | 1800 | 1828 | 1851 | 1857 | 1869 | 1880 | 1890 | 1900 |
| Families/inhabitants | 2 fam. | 4 fam. | 10 fam. | 16 fam. | 28 fam. | 59 fam. | 59 fam. | 540 inh. | 775 inh. | 735 inh. | 603 inh. | 774 inh. | 732 inh. | |

In addition to written sources, cartographic sources are also worthy of discussion in this context, from which important issues emerge. Titled in German *Josephinische Landesaufnahme*, the first military survey of the Habsburg Empire was made during 1764–1785. A preliminary observation that may be drawn from the study of this cartographic source is that the entire area was heavily wooded, the villages being situated in clearings (Fig. 8). The villages of Dulcele and Brusturescu are located on upland plateaus, while Zimbru is situated on a lower area along the valley bearing the same name. Based on the Josephine topographical survey, the village of Dulcele was laid out in two nuclei, without a church, the houses being grouped according to a road leading to Zimbru. The same is the case of Brusturescu village, where households are organized in two nuclei, arranged towards the edges of the plateau. The road that ran along the southern side of the plateau gave access to the villagers of Brusturescu to both Zimbru and Poiana. Brusturescu did not have its own church either. In the case of Zimbru, it was laid out in several groups of households, arranged longitudinally, from south to north, along a valley. In the most prominent nucleus, located at the southern end, the church was also built. At the confluence of the Seci and Zimbrul valleys, where the furnace was later built, there was another significant nucleus, in addition to a water mill (Fig. 9). A similar mill operated downstream.

Due to the military requirements of the Habsburg Empire, Emperor Francis I commissioned a new series of maps in 1806, which became known as the *Franzische Landesaufnahme*. Measurements would continue until 1869. Unlike the first topographical survey, this one is much better done. By examining the Franciscan survey (Fig. 10) we can see that during the 19th century the settlements increased in size, a fact also noted above in Tables 1–3. Another observation that can be made is that during the 19th century, the multi-nuclear organisation of the villages was abandoned. Villages are now orderly arranged around a central group. The only exception is the nucleus built around the furnace called Jumelț by the locals (Fig. 11). If we study Fig. 11 in detail, we can see that in the proximity of the

furnace there were three wooden buildings and four other stone buildings, each with its own garden. To the east, on the road to Brusturescu there used to be a mill served by a stone building with a garden.



Fig. 8. Illustration of villages Zimbru, Dulcele and Brusturescu on the Josephine survey (source: DVD Az Első Katonai Felmérés. A Magyar Királyság Teljes Területe 965 Nagyfelbontású Színes Térképszelvényen 1782–1785).



Fig. 9. Details of the northern part of Zimbru village on the Josephine survey (source: DVD Az Első Katonai Felmérés. A Magyar Királyság Teljes Területe 965 Nagyfelbontású Színes Térképszelvényen 1782–1785).

We know from other historical sources that until 1867, when the nowadays Orthodox parish church was built, there had functioned a wooden church in Zimbru. In the first half of the 19th

century, 23 pupils attended the school in Zimbru. Later a school was built, where pupils from Zimbru, Brusturescu and Dulcele were receiving education.

Under the same Austrian military requirements, another series of new maps of both the Habsburg Empire and neighbouring countries were elaborated. So work on the third topographical survey called *Franzisco-Josephinische Landesaufnahme* or *Dritte Landesaufnahme* began in 1868 and continued until the First World War. A new feature on this map is the illustration of a railway line that went from the centre of Zimbru, passing by the furnace and up the Dry Valley to the Suta Hill. Most probably it is marked the narrow-gauge forest railway Gurahont-Zimbru, which was put into service in 1887–1894⁸.

As far as the Jumelț furnace is concerned, up to now we do not really know many historical data. The name Jumelț is a corruption of the German term *Schmelze*, which means to melt (*Schmelzwerke* = melting pot). This furnace was probably built in the mid-19th century. The present historic monument was built of stone on the outside, the inside was built of brick. The base is rectangular and made of shaped blocks, and the upper part has a truncated cone-shaped chimney.



Fig. 10. Illustration of villages Zimbru, Dulcele and Brusturescu on the Franciscan survey (source: DVD *Die Hochauflösenden Fardigen Kartenprofilen des Königreichs Ungarn und Banat von Temes*).

At present, the furnace finds itself in a precarious state of ruin overgrown by vegetation, but from the in situ study, the literature, the historical documents and by analogy it is possible to deduce the original volumetry, its functioning and its structural logic. Thus, from a construction point of view, the furnace is composed as follows:

- exterior of codstone and limestone masonry with sand lime mortar
- on the inside, a foundation of stone blocks of approx. 50 cm wide and 150 cm high, on the inside of which rests the partially burnt brickwork (a kind of clay plaster which probably burnt out with the operation of the kiln), laid in a single row in the form of a truncated cone-shaped chimney. The resulting gap between the brick 'shell' and the stone masonry was filled with clay mixed with gravel/clay for thermal insulation. It is possible that below the level of the ironing there are still elements of cast iron.
- there are partially damaged burnt brick channels on the furnace facades, which probably accommodated supporting elements of the furnace charging system.

As regards the organisation of the technical operating assembly of the furnace, the Cultural Landscape Study⁹ indicates the location of these types of pre-industrial technical monuments in areas favourable to the development of the technological process: the existence of useful resources/iron

⁸ Bellu 2007, 189–191.

⁹ Rusu *et al.* 2022. The cultural landscape study was aimed towards mapping the technological process of iron ore mining



Fig. 11. Detail of the blast furnace and the surrounding area as depicted on the Franciscan Topographical Survey (source: DVD Die Hochauflösenden Fardigen Kartenprofilen des Königreichs Ungarn und Banat von Temes).

ore, combustion/charcoal and human resources, but also in the proximity of a watercourse that could be adapted/deviated towards the construction of hydraulic installations to drive the blowers. The location of the technical assemblies was chosen close to the settlement nuclei (Zimbru, Brusturescu, Dulcele, Răschirata) and in some cases with the development of specialised settlements (Moneasa, Dezna Nouă), with direct access to the useful resource, which developed exploitation routes: Ponoraş, Grajdur, Tautz (Vaşcăului Plateau)-Zimbru (Valea Răului), Ponoraş-Răşchirata (Valea Zugăului) and most probably Ponoraş-Moneasa (Valea Lungă) (Fig. 12).

Regarding the layout of the monument, we obtained some data by studying the LiDAR scans (Fig. 13–16). It can easily be seen that it was built in the triangle formed by the confluence of two active valleys, being located at the base of the hill called Kapatu, as it is called on the Franciscan topographic survey. It also lies on the left side of the road connecting the villages of Zimbru and Brusturescu. The terrain is slightly higher than the immediate area. Approximately 30 m south of the furnace there is an elevation with a diameter of 20×14 m, which stands out both on the above-mentioned scans and to the naked eye.

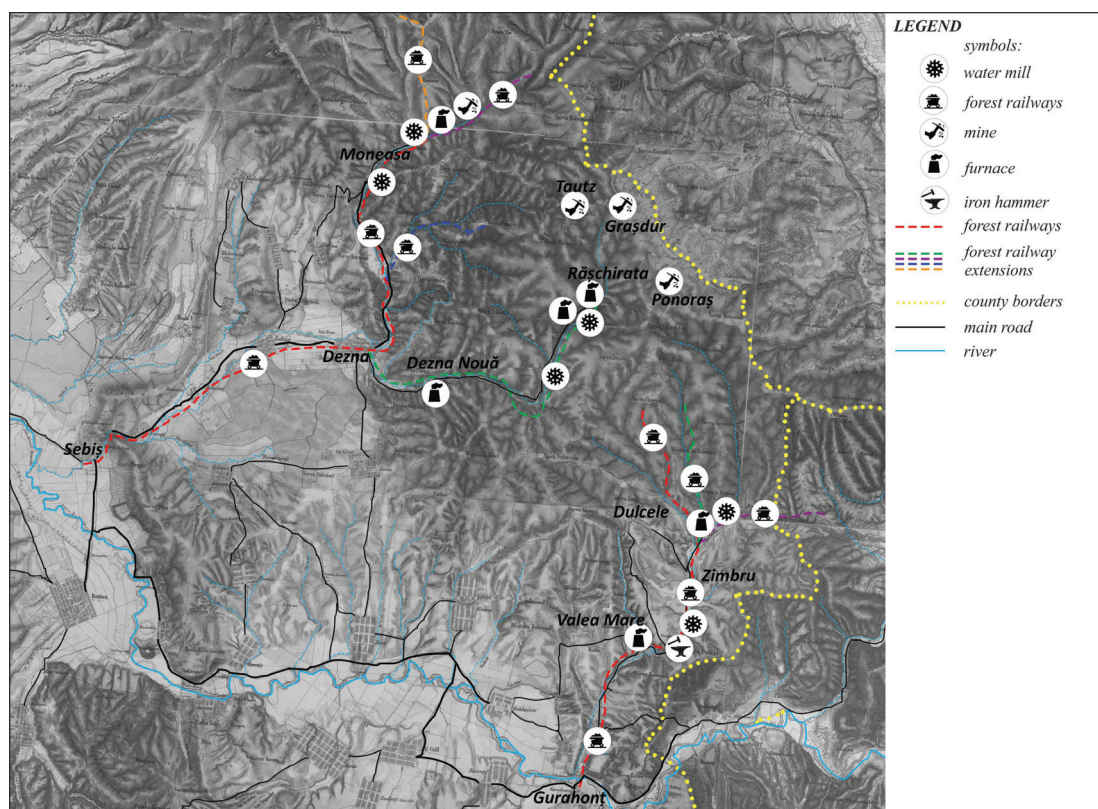


Fig. 12. Interpretation of the siderurgical landscape of the Moneasa-Dezna/Răschirata-Zimbru area in the 19th century, processing after the Franciscan Topographical Survey and the Third Military Survey (extract from the Landscape Study – Rusu *et al.* 2022).

in the Moneasa-Dezna/Răschirata-Zimbru area in the 18th–19th centuries, with the identification of major components (ex. natural resources, technical installations, settlements, etc.).

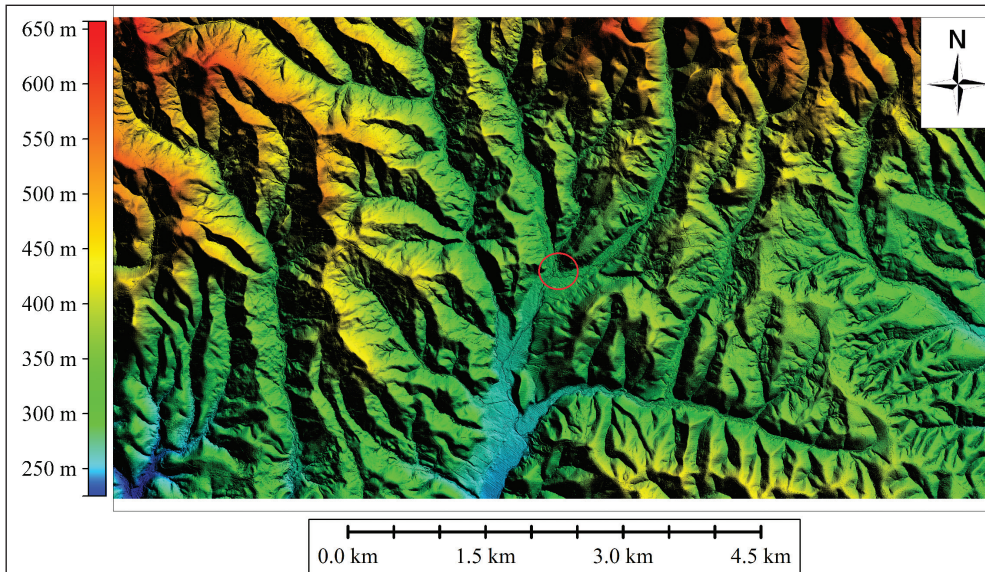


Fig. 13. Digital elevation model of the area, locating the furnace (red circle) (by the authors)

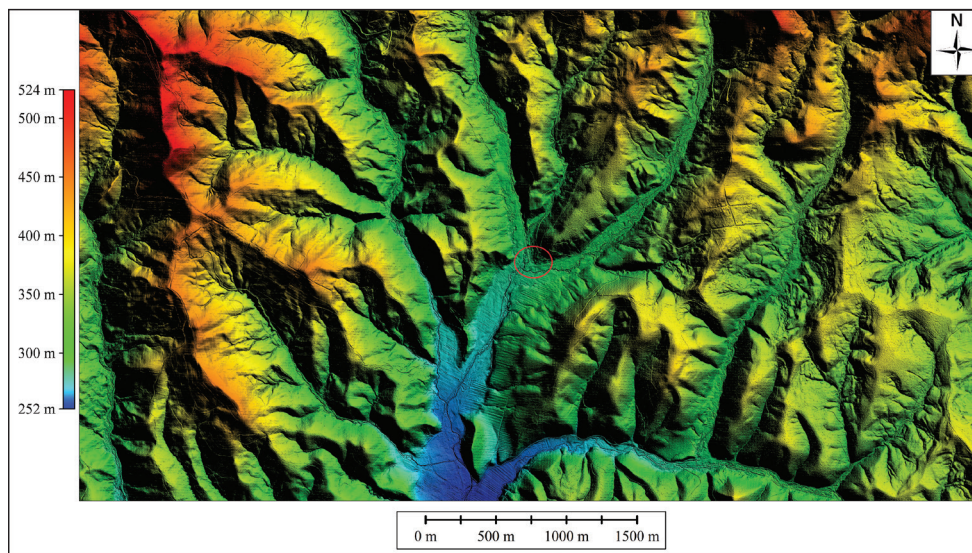


Fig. 14. Digital elevation model of the area, locating the furnace (red circle).

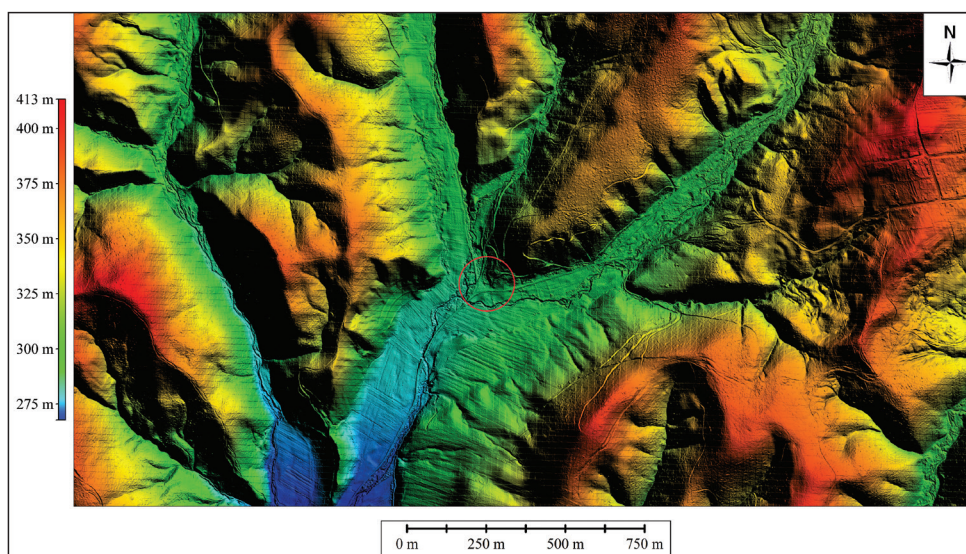


Fig. 15. Digital elevation model of the area, locating the furnace (red circle) (by the authors).

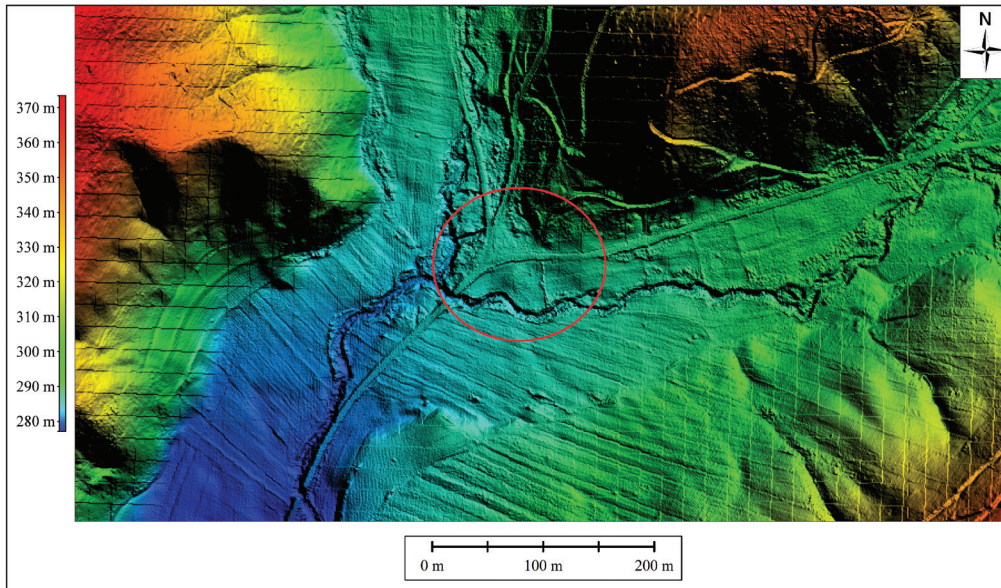


Fig. 16. Digital elevation model of area, locating the furnace (red circle) (by the authors).

Presentation of the excavation and the main finds

Prior to excavation, a series of non-invasive investigations were undertaken, covering both the blast furnace and the surrounding area. These included the preparation of a digital elevation model (Fig. 17) and geophysical surveys (Fig. 18). These were useful both in placing the trenches more accurate and in gaining a better understanding of the monument.

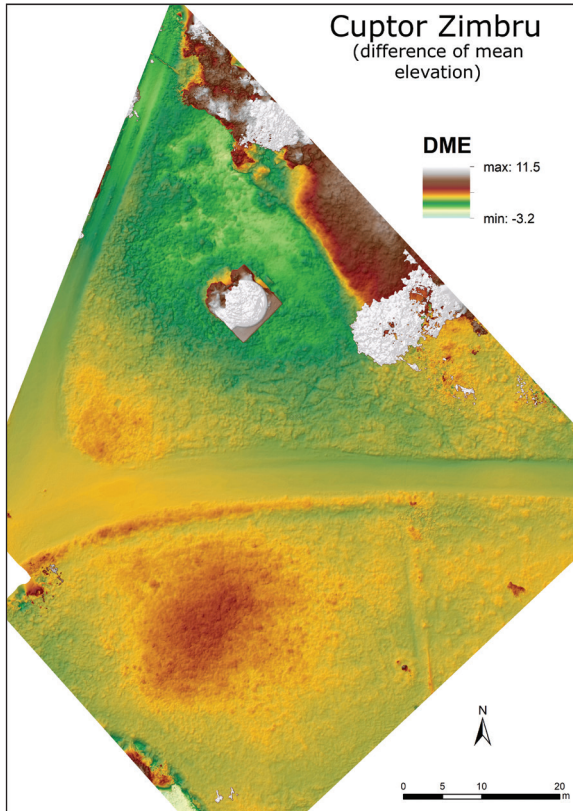


Fig. 17. Digital elevation model around the furnace (by the authors).

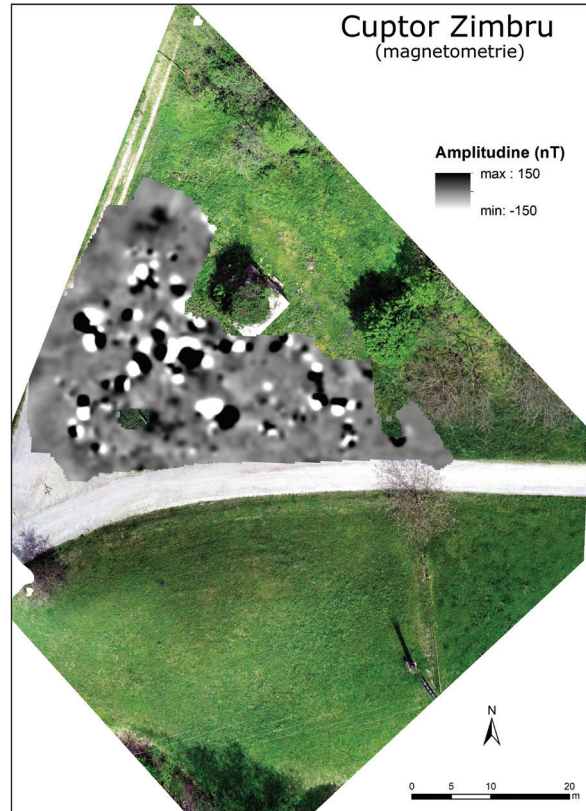


Fig. 18. Overlapping geophysical measurements, and the orthophotoplan (by the authors).

Two archaeological trenches (S1 and S2) have been excavated in order to achieve the objectives

already outlined. Their dimensions were 5 × 1 m. Trench S1 was positioned on the upper east side of a presumed building, south of the blast furnace and the road leading from Zimbru to Brusturescu (Fig. 19). As mentioned above, the remains of the building in question are visible both on the digital elevation model and to the naked eye. Thus, trench S1 was intended to reveal part of the interior of the building, the wall, as well as its exterior. Trench S2 was located to the south-west of the furnace, in the triangle formed by the two roads and the southern side of Kapatu Hill (name taken from the Franciscan Topographical Survey) (Fig. 19–22).

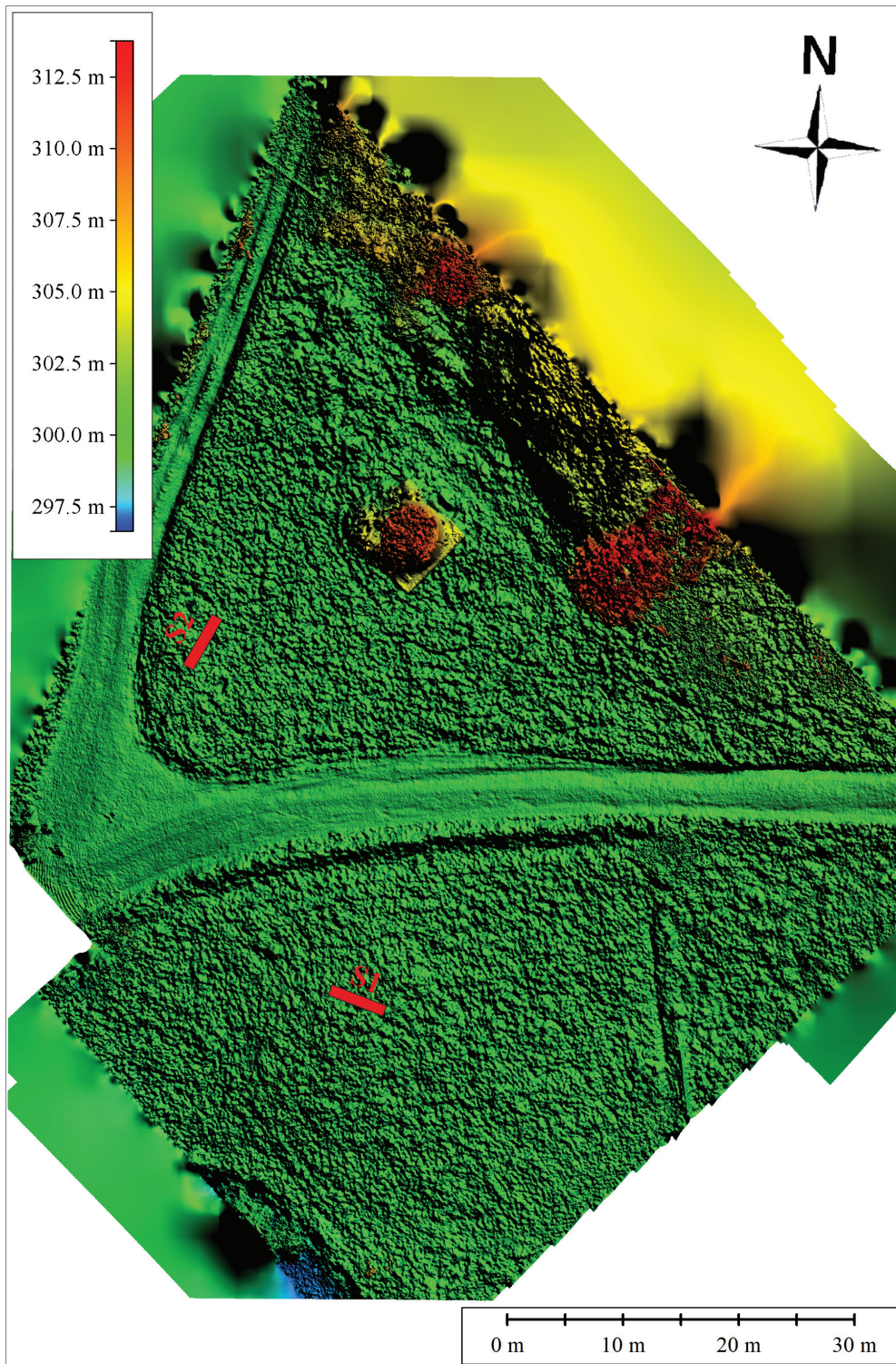


Fig. 19. Digital elevation model of the furnace surroundings, locating the archaeological units (in red) (topographic survey by Robert Ille, DEM by the authors).

After clearing the topsoil, obvious traces of a building were identified in trench S1. In the central and western part of the trench a cluster was identified consisting of a large slab of dressed stone, other stones arranged roughly in a north-south alignment, yellow clay, brick rubble and burnt debris. Obvious traces of burning were outlined on the exterior of the building: charcoal, ash, burnt stones and bricks (Figs. 23–25; 35). Among these on the exterior, pieces of fish scale tile were identified, and inside the building some modern potsherds and iron nails. At the same time a consistent layer of iron slag was identified inside the building. In the western corner of the trench, part of a partition wall was revealed, a conclusive indication that this building was compartmentalised. After the removal of the debris the layout of the outer, north-eastern wall was outlined. The stone and probably brick wall was built on a solid foundation of 0.5 m thick brownstone. Two stone slabs were found on the outside, which formed the steps leading to the interior of the building (Fig. 26–33).



Fig. 20. Aerial photo of the furnace and the excavation units (photo by the authors).



Fig. 21. Aerial photo of the furnace and the excavation units (photo by the authors).



Fig. 22. Aerial photo of the furnace and the excavation units (photo by the authors).



Fig. 23. 1st plan of the S1 trench, outlining the building debris (photo by the authors).



Fig. 24. 1st plan of the S1 trench, outlining the building debris (photo by the authors).



Fig. 25. 1st plan of the S1 trench, outlining the building debris; view from exterior (photo by the authors).



Fig. 26. 2nd plan of the S1 trench, outlining the south-eastern wall and the steps (photo by the authors).



Fig. 27. 2nd plan of the S1 trench, outlining the south-eastern wall (photo by the authors).



Fig. 28. 2nd plan of the S1 trench, outlining the south-eastern wall; view from the interior (photo by the authors).



Fig. 29. 2nd plan of the S1 trench, outlining the south-eastern wall; view from the exterior (photo by the authors).



Fig. 30. 2nd plan of the S1 trench, outlining the south-eastern wall; view from the exterior (photo by the authors).



Fig. 32. 2nd plan of the S1 trench, outlining the south-eastern wall; view from the exterior (photo by the authors).



Fig. 31. 2nd plan of the S1 trench, outlining the south-eastern wall and the steps (photo by the authors).



Fig. 33. 2nd plan of the S1 trench, outlining the south-eastern wall and building steps; View from interior (photo by the authors).



Fig. 34. Trench S2 (photo by the authors).

In the second trench, positioned near the furnace, a substantial layer of debris resulting from the use of the furnace was discovered. These comprised pieces of iron slag, burnt ash, ashes, small fragments of brick, yellow clay (Fig. 34).

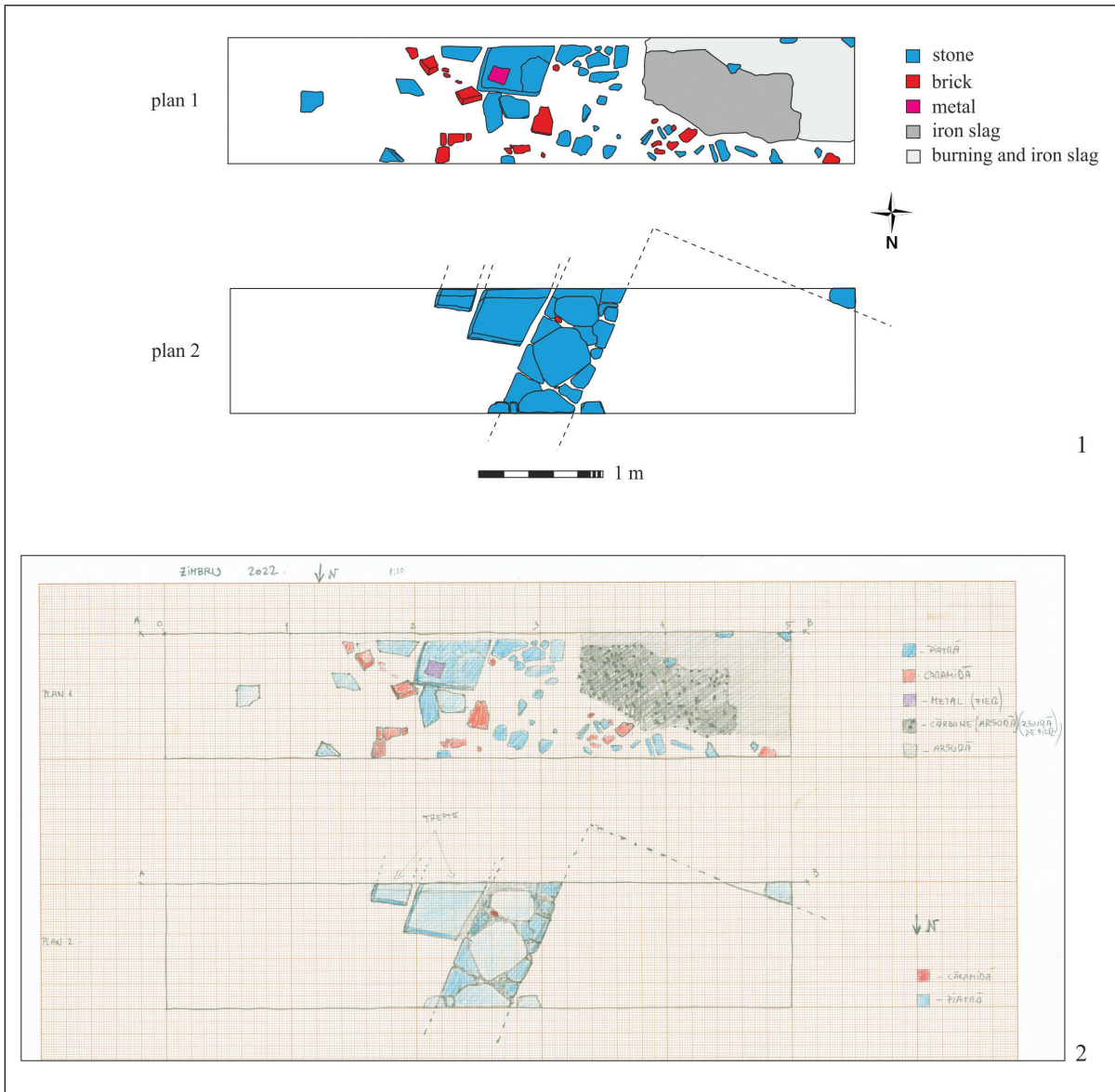


Fig. 35. Drawings of the trench S1 (drawing and digitalizing by the authors).

Conclusions

The Zimbru furnace, although interesting by its building manner and picturesque location, is not a unique cultural monument in the 19th century landscape of western Romania (Fig. 12). Similar technical installations are preserved, for example, in Moneasa (Arad County), a town located about 15 km north-west of the Zimbru furnace, and in Răschirata¹⁰, a now extinct town located 5 km from Zimbru, as well as in Hunedoara, Caraş-Severin and Alba Counties. The landscape study indicates the value of these pre-industrial monuments in the context of the cultural landscape of the steel industry in Arad in the 18th–19th centuries¹¹.

The excavation of the two archaeological units near the Zimbru furnace provided additional data on the monument and the surrounding area. Interesting data were obtained mainly from trench S1, which concerned the remains of a building, which functioned during the 19th century. The building, located south of the furnace, was constructed of stone and brick, as illustrated on the Franciscan Topographical Survey. Inside, in addition to the usual inventory, an impressive amount of iron slag was discovered.

Although the archaeological research carried out fulfilled the objectives for which we started the investigation, the limited nature of the excavation did not allow us to formulate any answers regarding the dimensions and compartmentalisation of the building or its purpose. In order to provide additional data related to these new challenges in the research of the Zimbru furnace and the surrounding area, both geophysical measurements and archaeological excavations need to be extended.

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¹⁰ Wollmann, 2017, p. 239–241.

¹¹ Rusu, Ciobotă, Postolache, Timuț, 2022

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Abbreviations

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| AB | Analele Banatului, I-IV 1928–1931; S.N. I 1981-, The Museum of Banat/The National Museum of Banat, Timișoara. |
| ACTA | Yearbook of the Székely Museum in Csík and the Székely National Museum, Miercurea Ciuc – Sepsiszentgyörgy. |
| ActaArchHung | Acta Archaeologica Academiae Scientiarum Hungaricae, Budapest. |
| AÉ | Archaeologiai Értesítő, Budapest. |
| Acta Historica | Acta Universitatis Szegediensis (Szeged). |
| ArchHung | Archaeologia Hungarica. |
| ArhMed | Arheologia Medievală. |
| AM | Mitteilungen des Kaiserlich Deutschen Archaeologischen Instituts, Athenische Abteilung (Athenische Mitteilungen), Athen, (1876-). |
| AMM | Acta Moldaviae Meridionalis (Vaslui). |
| AMN | Acta Musei Napocensis, The National History Museum of Transylvania, Cluj – Napoca. |
| AMP | Acta Musei Porolisensis, County History and Art Museum of Zalău. |
| ArhMold | Arheologia Moldovei, Iași. |
| BCH | Bulletin de Correspondence Hellénique, Paris, 1 (1877-). |
| BerRGK | Berichte der Römisch-Germanischen Kommission. Roman-Germanic Commission. Frankfurt am Main. |
| EphNap | Ephemeris Napocensis, Cluj-Napoca. |
| CCA | Cronica Cercetărilor Arheologice din România, Ministry of Culture. |
| CCCA I | M. J. Vermaseren, Corpus cultus Cybelae Attidisque (CCCA), I. Asia Minor, Leiden, New York, København, Köln, 1987. |
| CIG | Corpus Inscriptionum Graecarum, I-IV, (ed. A. Boeckh), Berlin, 1828–1877. |
| CIL | Corpus Inscriptionum Latinarum, consilio et auctoritate Academiae litterarum regiae Borussicae editum. (1863-). |
| Dacia | Dacia. Recherches et découvertes archéologiques en Roumanie, S.V. I-XII; N.S. Revue d'archéologie et d'histoire ancienne, I. 1957 și urm., Vasile Pârvan Institute of Archaeology, Bucharest. |
| DAGR | Dictionnaire des Antiquités grecques et romaines, I-X, sous la direction de Ch. Daremberg et E. Saglio, Paris, 1877–1929. |
| DolgSzeged | Dolgozatok a Szegedi Josef Tudományegyetem Archaeologiai Interzetbol (I, 1925...XIX, 1943). |
| IGB V | Inscriptiones Graecae in Bulgaria repertae, (ed. Georgi Mihailov), vol. V: Supplementum, addenda et corrigenda. Sofia, 1997. |
| IGDOP | Inscriptions grecques dialectales d'Olbia du Pont, (ed. L. Dubois), Genève, 1996. |
| IGRR IV | Inscriptiones Graecae ad Res Romanas Pertinentes, IV (ed. G. Lafaye), Paris, 1927. |
| ISM I, II | Inscriptiones Scythiae Minoris – Inscrupțiile din Scythia Minor, I: Histria și împrejurimile (ed. D. M. Pippidi), Bucharest, 1983; II: Tomis și teritoriul său, (ed. Iorgu Stoian), Bucharest, 1987. |
| LIMC | Lexicon Iconographicum Mythologiae Classicae, I–VIII + index vol., (eds. J. Ch. Balty, E. Berger, J. Boardman, Ph. Bruneau, F. Canciani, L. Kahil, V. Lambrinoudakis, E. Simon), Zürich, München, Düsseldorf, 1981–1999. |
| LSJ | Liddell H. G., Scott R., Jones H. S., A Greek-English Lexicon, with a revised supplement. Oxford, 1996. |
| MAA | Monumenta Avarorum Archaeologica. |
| OM | <i>Orbis Mediaevalis</i> . |
| PBF | Prähistorische Bronzefunde, München. |

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| RA | Revue Archéologique, Paris (1844-). |
| RAC | Rivista di archeologia cristiana, Rome (1924-). |
| RevBistr | Revista Bistriței, Bistrița-Năsăud Museum Complex, Bistrița. |
| RH | Revue historique, Paris, (1876-). |
| RIG | Recueil d'inscriptions grecques, par Ch. Michel, Bruxelles, 1900. |
| Sargetia | Sargetia. Acta Musei Devensis, Deva. |
| SCIV(A) | Studii și Cercetări de Istorie Veche, tom 1–25, Bucharest, 1950–1974; începând din 1974 (tom 25): Studii și Cercetări de Istorie Veche și Arheologie, Bucharest. |
| SCN | Studii și Cercetări de Numismatică, Bucharest. |
| SEG | Supplementum epigraphicum graecum, Lugdunum Batavorum, Leiden, 1923–1971; Alphen aan den Rijn 1979–1980; Amsterdam, 1979–2005; Boston, 2006-. |
| StCl | Studii Clasice, Bucharest. |
| Syll ³ | Sylloge inscriptionum Graecarum, (3rd edition), (ed. W. Dittenberger), 1915–1924. |
| Terra Sebus | Terra Sebus, Sebeș. |
| ThesCRA | Thesaurus Cultus et Rituum Antiquorum, I–V + index vol., (eds. J. Ch. Balty, J. Boardman, Ph. Bruneau, R. G. A. Buxton, G. Camporeale, F. Canciani, F. Graf, T. Hölscher, V. Lambrinoudakis, E. Simon), Basel, Los Angeles, (2004–2006). |
| UPA | Universitätsforschungen zur Prähistorischen Archäologie, Institut für Ur-und Frühgeschichte der Universität Kiel. |
| ZSA | Ziridava. Studia Archaeologica, Arad Museum, Cluj-Napoca. |