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THREE IN ONE: THE PRUT FLINT

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Keywords: *Prut, Dniester, Volhyno-Podolian, flint, chert, Palaeolithic, Neolithic, Romania, Petroarchaeology*
Abstract: *In the late 1950s and early 1960s, the term Prut flint was established as an archaeological raw material category for the Palaeolithic assemblages in the Bistrița Valley (Ceahlău Basin, north-eastern Romania). This was based on visual characteristics and a handwritten petrographic note by the geologist Th. Joja. Since then, the Prut flint has been recognised and mentioned in other archaeological sites in Romania, Ukraine and Hungary, at distances of over 600 km from the occurrence area. In this contribution, the petrographic descriptions of Prut flint, published in archaeological and petroarchaeological papers from Romania, were reviewed and compared with the new data about this raw material. The most frequently mentioned information regarding the Prut flint is its range of colours (from black to grey-brownish) and its occurrence area along the Middle Prut Valley between Rădăuți-Prut and Liveni/Ștefănești. However, most papers featuring microscopic investigations on the Prut flint proved to contain insufficient information for a consistent characterisation and comparison between archaeological and geological samples, and hence a reliable provenience. Recent microscopic analyses of archaeological materials from Ceahlău Basin demonstrated that at least two distinct types were hidden within the Prut flint category. This contribution also brings fresh geological and petrographic data derived from new research carried out in the Middle Prut Valley (Botoșani County, north-eastern Romania) and the Middle Dniester Valley (Ocnița-Șoldănești districts, Republic of Moldova). Based on the new data, a petrographic classification of siliceous materials from the Prut and Dniester valleys is proposed.*

Cuvinte-cheie: *Prut, Nistru, Volhyno-Podolian, silex, silicolit, paleolitic, neolitic, România, petroarheologie*
Rezumat: *La sfârșitul anilor 1950 și începutul anilor 1960, termenul de silex de Prut a fost stabilit drept categorie de materie primă arheologică pentru ansamblurile paleolitice de pe Valea Bistriței (Bazinul Ceahlău, Nord-estul României). Aceasta s-a bazat pe caracteristici vizuale și pe o notă petrografică scrisă de mână de geologul Th. Joja. De atunci, silexul de Prut a fost recunoscut și menționat în alte situri arheologice din România, Ucraina și Ungaria, la distanțe de peste 600 km de aria sa de ocurență. În această contribuție, descrierile petrografice ale silexului de Prut, publicate în lucrări arheologice și petroarheologice din România, au fost examinate și comparate cu noile date despre această materie primă. Cele mai frecvente informații menționate despre silexul de Prut sunt gama sa de culori (de la negru la gri-maroniu) și arealul său de ocurență de-a lungul Văii Prutului mijlociu, între Rădăuți-Prut și Liveni/Ștefănești. Cu toate acestea, majoritatea lucrărilor care prezintă investigații microscopice asupra silexului de Prut s-au dovedit a conține informații insuficiente pentru o caracterizare și o comparație consistentă între probele arheologice și cele geologice și, prin urmare, pentru o proveniență credibilă. Analizele microscopice recente ale materialelor arheologice din Bazinul Ceahlău au demonstrat că în cadrul categoriei silex de Prut erau ascunse cel puțin două tipuri distincte. Această contribuție aduce, de asemenea, date geologice și petrografice proaspete derivate din noile cercetări efectuate pe Valea Prutului mijlociu (județul Botoșani, Nord-estul României) și pe Valea Nistrului mijlociu (raioanele Ocnița-Șoldănești, Republica Moldova). Pe baza noilor date, se propune o clasificare petrografică a materialelor silicioase din văile Prutului și Nistrului.*

1. PRUT FLINT[1]!

You've probably heard of this term, used by archaeologists to designate the raw material associated with knapped lithics from Palaeolithic and Neolithic sites in north-eastern Romania. If you've heard of it, then you know Prut flint has a long research history, but here's what I have to say about it[2].

The presence of this material was first noticed in the late 1950s by the archaeologists who discovered and excavated the Palaeolithic sites from the Middle (Nicolăescu-Plopșor, Petrescu-Dîmbovița 1959, p. 52; Nicolăescu-Plopșor *et alii* 1961a, p. 38–39; Nicolăescu-Plopșor *et alii* 1966, p. 23–24; Păunescu 1970a, p. 88)

[1] In this paper, all raw material names mentioned are understood in their original connotations as referenced in relation to a researcher's work. If applicable, their particular meaning can be derived, while reading, from the context. To put them in brackets or write them with italics each time they are mentioned would overburden the text. In the literature cited (written both in Romanian and French), the archaeologists use the term *silex* and this was translated as flint because it was associated with the material from the Prut. In Section 5 of the paper, the term flint is understood as a nodular chert from chalk deposits. For more information regarding this subject, see Ciornei 2023, p. 28, note 4.

[2] This contribution contains a review of archaeological and petroarchaeological publications in which the Prut flint is mentioned and described (Sections 1–4), followed by a petrographic comparison of the flint and chert types occurring on the Middle Prut and Dniester valleys (Section 5). The information from previous publications is also contrasted with the new data on the Prut flint (Annex A), while the comparison in Section 5 is based on the petrographic data presented in: **Annex A**, regarding the geological materials collected from the Middle Prut Valley between Darabani and Ripiceni (MidPrut research perimeter, Botoșani County, north-eastern Romania); **Annex B**, regarding the geological materials collected from the Middle Dniester Valley between Naslavcea and Vadul Rașcov (MidDn research perimeter, Ocnița-Șoldănești districts, Republic of Moldova); **Annex C**, regarding the origin control samples from origin sites in the Khotyn area of the Middle Dniester Valley (MidDn research perimeter, Chernivtsi Oblast, Western Ukraine). Annexes A–C were written as stand-alone texts, containing all the information derived from the new field and laboratory work. The research strategy is briefly described in Sections 1–2 of Annexes A–C, an in more detail in **Appendix I**.

and Lower (Nicolăescu-Plopșor *et alii* 1961b, p. 24) Bistrița Valley. There is no doubt that Nicolăescu-Plopșor is the one who coined the term Prut flint.

However, "at home", *i.e.* Palaeolithic assemblages found along both banks of the Middle Prut Valley, this material was initially described as a Cretaceous flint from the Cenomanian deposits outcropping at Mitoc and Șerpenița (Moroșan 1938, p. 16, 21, 41, 54, 67, 71). Even after the term Prut flint was already in use for the Palaeolithic assemblages in the Bistrița Valley, the predominant raw material at Mitoc – *Malul Galben* was called flint (Nicolăescu-Plopșor, Zaharia 1959, p. 14; Chirica 1975, p. 7–13) or black quarry flint and bluish-whitish flint (Nicolăescu-Plopșor *et alii* 1959, p. 36), at Mitoc – *Valea Izvorului* it was called bluish Cretaceous flint (Bitiri 1965a, p. 10; Bitiri 1965b, p. 435–436), and at Ripiceni – *La Izvor* it was called good quality flint (from black to grey or dark blue to whitish) gathered from the gravels of the Prut (Păunescu 1964, p. 325; 1965, p. 7).

The name Prut flint was also used to designate the main raw material found in Neolithic (Comșa 1968, p. 29–30; Păunescu 1970a, p. 54, 62; Comșa 1975, p. 113; Comșa 1976, p. 244) and Bronze Age (Păunescu 1970a, p. 80) sites from Moldavia, while the raw material from Mitoc – *Valea Izvorului* was eventually called bluish Prut flint (Bitiri, Cârciumaru 1978, p. 469). However, by the time of this last mention, the name Prut flint was already associated with the geological flint originating from the Cretaceous deposits between Rădăuți-Prut and Ștefănești in the Middle Prut Valley (Comșa 1975, p. 109).

In addition to its presence in Palaeolithic sites along the Bistrița Valley (Ciornei 2023, Tabs. 1A, 1B), Prut flint is also mentioned in other archaeological sites in Romania, Ukraine and Hungary (see Tab. 1), at distances of over 600 km from the presumed occurrence area. However, of 32 reviewed mentions regarding Prut flint in various prehistoric assemblages (Tab. 1), only seven of them were based on microscopic analyses or other investigation techniques. For some of these sites (Săcăluşeşti, Palaeolithic sites in Oaș and Maramureș areas, Esztergom – Gyurgyalag), the presence of the Prut flint is doubtful or unproven (see Tab. 1 and the discussion in the footnotes). Although the macroscopic confirmations were made by archaeologists very familiar with Prut flint, they should be considered with caution, because in some of the respective assemblages, other types of flint were confirmed by subsequent microscopic investigations (such as for Erbiceni or Cremenea sites, see Tab. 1 and the discussion in the footnotes).

In fact, the term Prut flint (as an archaeological raw material category) has a long history of being misused, as its petrographic content was stretched beyond its body (*i.e.*, the petrographic content as a geological material) and its home (*i.e*., the occurrence area associated with the name). This statement will be proven in the following lines (Sections 2–4).

2. THE HOME OF THE PRUT FLINT

As already mentioned, the Prut flint originates from the Upper Cretaceous (Cenomanian) chalky limestones, but also from a Miocene (Badenian) conglomerate sitting on top (see various accounts in Tab. 2 and Annex A/Section 1). These deposits outcrop on a limited area along the Middle Prut Valley between Rădăuți-Prut and Liveni/Ștefănești. These are the most frequently cited locations, but alternative (between Rădăuți-Prut/Miorcani and Mitoc) or more detailed descriptions of the occurrence extent are encountered in the archaeological (Tab. 2) and geological (Annex A/Section 1) accounts. In the reviewed literature there is no consensus regarding the exact outcrop area. In the archaeological literature of the late 1970s and mid-1980s, the Prut flint is considered to be of Buglovian age (Bitiri, Cârciumaru 1978, p. 469; Marinescu-Bîlcu *et alii* 1981, p. 24; Marinescu-Bîlcu *et alii* 1985, p. 658; Marinescu-Bîlcu *et alii* 1984, p. 43; Muraru 2000, p. 59–60; Cucoș, Muraru 1985, p. 607–608) and even the name Buglovian Prut flint is used (Bitiri 1981, p. 333). As it can be seen, this Buglovian age is associated with Ad. Muraru's work (and the archaeologists who collaborated with him), but was dropped after he analysed geological materials from Miorcani (Muraru 1990, p. 150–151).

In addition to the "primary" occurrence, the reviewed literature mentions that Prut flint can also be found in the gravels of the Prut River in the same area (Tab. 2 and Annex A/Section 1), while several archaeological accounts mention that Prut flint pebbles can be found up to Iași and even Galați (but see Tab. 3 and the discussion in the footnotes).

Based on data collected from field research in the Middle Prut Valley between 2021 and 2024 (see Annex A), some clarifications need to be made regarding the home of the Prut flint: 1) the Cenomanian deposits with flint described as limestones, marly limestones or chalky marls (see Tab. 2 and Annex A/Section 1) are in fact genuine chalk deposits; 2) the so-called Badenian conglomerate with flint nodules is actually an eluvium (a decalcified chalk deposit in which the nodules ended-up supporting each other without transport by water); 3) the outcrop area of these deposits can be pinpointed between Rădăuți-Prut/Miorcani (on the right side / Șerăuți on the left side) and Mitoc (on the right side / Viișoara on the left side); 4) at Ripiceni, flint can only be found in the gravel deposits of the Prut, as subrounded or subangular elements of pebble to cobble size.

Site	Archaeological period	County	Country	Raw material***	Examination	Distance from the source*	Direction**	References
Udești – *Poiana*	Palaeolithic	Suceava	Romania	Buglovian Prut flint	macroscopic	75 km	SW	Bitiri 1981, p. 333
Dolhasca – *Dealul Viei*	Palaeolithic	Suceava	Romania	Prut flint	macroscopic	80 km	SSW	Chirica, Tănăsache 1981, p. 270
Topile – *Dealul Catargii*	Palaeolithic	Iași	Romania	Prut flint	macroscopic	99 km	SSW	Păunescu 1970b, p. 543–544
Topile – *Dealul Stoicii*	Palaeolithic	Iași	Romania	Prut flint	macroscopic	99 km	SSW	Păunescu 1970b, p. 546
Movileni – *În Răzășie*	Palaeolithic	Iași	Romania	Prut flint	macroscopic	>100 km	SSW	Păunescu 1966, p. 327
Târgu Frumos – *Baza Pătule*	Neolithic	Iași	Romania	Moldavian flint	microscopic (thin sections)	>100 km	S	Crandell, Vornicu 2015, p. 92
Erbiceni – *Sub Budăi în Fânațul de pe Șes*	Mesolithic	Iași	Romania	good quality flint gathered from Prut's gravels	macroscopic	100 km	SSE	Păunescu 1964, p. 325
				Prut flint[3]	microscopic (thin sections)			Țurcanu 2009, p. 189–190
Valea Lupului	Neolithic	Iași	Romania	Prut flint	macroscopic	110 km	SSE	Comșa 1991, p. 18
Topolița – *La Ilioi*	Neolithic	Neamț	Romania	Moldavian flint	macroscopic / microscopic (thin sections)	115 km	SSW	Crandell 2012a, p. 151–152
Săcălușești – *Dealul Valea Seacă*	Neolithic	Neamț	Romania	Moldavian flint[4]		115 km	SSW	
Ceahlău Basin sites (*Dârțu*, *Podiș*, *Cetățica*)	Palaeolithic	Neamț	Romania	Prut flint	macroscopic	>130 km	SW	Nicolăescu-Plopșor, Petrescu-Dîmbovița 1959, p. 51–52
Bistricioara – *Lutărie III* and *La Mal*, Ceahlău – *Dârțu*	Palaeolithic	Neamț	Romania	Moldavian flint	macroscopic / microscopic (thin sections)	>130 km	SW	Crandell *et alii* 2013, p. 39
Isaiia – *Balta Popi*i	Neolithic	Iași	Romania	Prut flint	macroscopic	>150 km	SSE	Vornicu 2017, p. 193
Buda – *Dealul Viilor*	Palaeolithic	Bacău	Romania	Prut flint	macroscopic	>160 km	SSW	Nicolăescu-Plopșor *et alii* 1961b, p. 22, 24
Măluțeni – *Măluțeni IV*	Palaeolithic	Vaslui	Romania	Prut flint	macroscopic	>225 km	SSE	Brudiu, Păpușoi 1971, p. 28
Puricani – *Poarta Bâzanului*	Palaeolithic	Galați	Romania	Cretaceous Prut flint	macroscopic	>230 km	SSE	Brudiu 1969, p. 8; 1970, p. 6
Berești – *Dealul Taberei*	Palaeolithic	Galați	Romania	Prut flint	macroscopic	>230 km	SSE	Brudiu 1971, p. 365
Berești – *Dealul Bulgarului*	Neolithic	Galați	Romania	Prut flint	macroscopic	>230 km	SSE	Dragomir 1983, p. 74
Călinești-Oaș – *Călinești I*	Palaeolithic	Satu Mare	Romania	bluish flint with white patina similar to the Cretaceous Prut flint / Cretaceous bluish flint (whiteish patina) from the Prut and Dniester[5]	macroscopic	>270 km	W	Bitiri 1969, p. 526; Bitiri 1972, p. 46
* The distance was measured in a straight line from a midpoint between Cotu Miculinți and Mitoc villages to the approximate location of each site included in this table.								
** The direction is from the source of Prut flint to the sites.								
*** The terms and descriptions from this column were taken from the authors cited in the Reference column, but it was not always possible to put them in quotations marks.								

Table 1. *Selected mentions of Prut flint at archaeological sites from Romania and other countries.*

[3] The author (Țurcanu 2009, p. 190) mentions that many of the artefacts considered to be flint from the Erbiceni assemblage turned out to be other types of cherts (after the examination of thin sections).

[4] The illustrated artefacts of Moldavian flint from Săcălușești – *Dealul Valea Seacă* (Crandell 2012a, fig. 5) are in fact Volhyno-Podolian bioclastic flint.

[5] Samples of Prut flint from the Upper Palaeolithic sites in Oaș and Maramureș areas (north-western Romania) were analysed in 2018 and all of them turned out to be Dniester Globotruncanidae flint (Ciornei, Mariș 2020, figs. 2/9–10, 6/7–8).

Site	Archaeological period	County	Country	Raw material	Examination	Distance from the source	Direction	References
Cremenea – *Malu Dinu Buzea*	Palaeolithic	Harghita	Romania	good quality bluish flint (resembling the Prut one)[6]	macroscopic	>280 km	SSW	Păunescu 1966, p. 322-note 8
Budureasca – *Vadu Săpat*	Palaeolithic	Prahova	Romania	Prut flint	macroscopic	>340 km	SSW	Păunescu 1970a, p. 20
Mălăiești de Jos	Neolithic	Prahova	Romania	"silex de la Vallée du Prut"	macroscopic	>340 km	SSW	Frînculeasa, Niță 2006–2007, p. 133
Limba	Neolithic	Alba	Romania	Miorcani (Prut River) flint	microscopic (thin sections)	>340 km	SW	Crandell 2008, p. 42
Miercurea Sibiului – *Petriș*	Neolithic	Sibiu	Romania	Volhynian or Prut flint	macroscopic	>345 km	SW	Biagi 2015, p. 245–246
Taraschina	Neolithic	Tulcea	Romania	"silex B et C pourrait provenir du Prut"	macroscopic	>360 km	SSE	Furestier, Mihail 2011, p. 367–368; Furestier *et alii* 2017, p. 216; Furestier, Mihail 2022, p. 379
Tărtăria – *Gura Luncii*	Neolithic	Alba	Romania	Miorcani type Moldavian flint	microscopic (thin sections)	>360 km	SW	Crandell 2016, p. 191
Bodrogkeresztúr-Henye	Palaeolithic	Borsod-Abaúj-Zemplén	Hungary	Prut-Dniester flint	macroscopic by comparison to geological reference samples from the Lithoteque	>400 km	W	Lengyel 2015, p. 299
				Volhynian Cretaceous flint		>400 km	W	Lengyel 2018, p. 35
Cunești – *Măgura Cunești*lor	Neolithic	Călărași	Romania	Oltenian flint (dark grey to blackish, translucent) resembling the Prut flint[7]	macroscopic	>430 km	S	Comșa 1986, p. 55; Niță, Ștefan 2011, p. 196
Polgár Csőszhalom	Neolithic	Hajdú-Bihar	Hungary	Volhynian/Prut flint	macroscopic	>430 km	W	Faragó 2017, p. 87
Hódmezővásárhely-Gorzsa	Neolithic	Csongrád-Csanád	Hungary	Volhynian/Prut flint	macroscopic	>540 km	SW	Starnini *et alii* 2015, p. 112
Mira	Palaeolithic	Zaporizhzhia	Ukraine	apospiculate chalcedonolites of Lower Cenomanian age from Prut Valley	microscopic	>600 km	ESE	Stepanchuk, Petrougne 2005, p. 44
Esztergom-Gyurgyalag	Palaeolithic	Komárom-Esztergom	Hungary	(possibly) Prut silex[8]	macroscopic and geochemical analyses (neutron activation analysis)	>600 km	W	Dobosi, Kövecses-Varga 1991, 248–250; Varga 1991, p. 269
				Transcarpathian Prut River flint		>600 km	W	Dobosi 2009, p. 118
				similar to Volhynian flint	macroscopic	>600 km	W	Lengyel 2018, p. 92
Ságvár	Palaeolithic	Somogy	Hungary	"flints of river Prut region"	macroscopic by comparison to geological reference samples from the Lithoteque	>650 km	WSW	Lengyel 2011, p. 95

Table 1. *Continued.*

[6] The two pieces mentioned by Păunescu (1966, p. 322, note 8) were analysed in 2018 (Cr-MDB [03], Cr-MDB [04]) and they turned out to be Prut-Dniester spiculite flint and Dniester Globotruncanidae flint (Ciornei, Mariș 2020, figs. 2/11, 5/7, 6/1). In current terminology, Prut-Dniester spiculite flint corresponds to Prut flint types TDG and TLG (see Annex A).

[7] Comșa (1986, p. 55) only makes the remark that the so-called Oltenian flint has visual traits similar to those of the Prut flint. Thus, the presence of this material at Măgura Cunești*lor* is doubtful and unchecked.

[8] At Esztergom-Gyurgyalag, the Prut flint lithics (n = 1029) amount to 93.6% of the assemblage at more than 600 km from the presumed source (Dobosi, Kövecses-Varga 1991, 248). However, the geochemical study concluded that the analysed samples are definitely not Volhynian flint, but could be (equal possibility) either Prut or Nagytevel flint (Varga 1991, p. 269). The Prut flint lithics were considered by Lengyel (2018, p. 92) macroscopically more similar to the Volhynian flint from the Dniester Valley.

Denomination	Geological context	Geological stage/age	Primary source area	Secondary deposits	References
silex crétacé	-	Cénomanien (Crétacé)	le long du Prut, à Șerpenița et à Mitoc	en abondance dans les dépôts des terrasses des environs	Moroșan 1938, p. 21,
blue cretaceous flint	limestone deposits	-	at the base of „Piscul Ghirenilor”	in the alluvium of the Prut	Bitiri 1965a, p. 8, 10
flint	-	Cenomanian	between Rădăuți-Prut and Mitoc	-	Păunescu 1970a, p. 83–84
silex “de Prut”	calcaires crayeux avec divers accidents siliceux	Cénomanien-Sénonien	“le long de la rive du Prut et de quelques petites vallées qui y débouchent, entre les localités Rădăuți-Prut et Ștefănești (dép. de Botoșani)”	-	Comșa 1975, p. 109–111
-	sables agglomérés avec des éléments de silex	Tortonienne	Rădăuți-Prut et Miorcani	-	Comșa 1975, p. 109–111
Prut blue flint	limestone	Buglovian	near Mitoc	-	Bitiri, Cârciumaru 1978, p. 469
flint	flint in limestones deposits	Buglovian	valleys of the Prut and Dniester	-	Marinescu-Bîlcu *et alii* 1981, p. 24, 29; Marinescu-Bîlcu *et alii* 1985, p. 658, 663
flint	-	Buglovian	on the right bank of the Prut between Rădăuți and Liveni	-	Marinescu-Bîlcu *et alii* 1984, p. 43; Muraru 2000, p. 59–60
flint	sandy horizon, microconglomerate	Buglovian	on the right bank of the Prut between Rădăuți and Liveni	-	Cucoș, Muraru 1985, p. 607–608
silex de la vallée du Prut / silex de la Plate-forme Moldave	“calcaires crayeux (épaisseur de 1 a 6 m) avec des concrétions de silex”	Cénomanien finale	“dans la vallée de la rivière de Prut entre les localités Rădăuți et Liveni”	-	Muraru 1990, p. 150–151
	“horizon conglomératique (épaisseur de 2–6 m) avec d’éléments arrondis de silex pris dans une matrice sableuse”	Badenien	-	-	
so-called Prut flint	-	Cenomanian	on the banks of the Prut River between Rădăuți-Prut, Mitoc, Ripiceni and Ștefănești	in the gravels of the Prut’s terrace near Ripiceni	Păunescu 1993, p. 179
Prut Flint	-	Cretaceous	in the middle Prut area, Liveni, Rădăuţi-Prut, Ștefănești, Ripiceni, Mitoc	-	Boghian 1995, p. 10
so-called Prut flint	greyish-whitish marly limestones (1–6 m to 10 m thick) with a chalky appearance with flint concretions	Cenomanian	on the banks of the Prut River between Rădăuți and Liveni	-	Păunescu 1999, p. 45
-	conglomerates with flints (2–6 m thick)	Tortonian	on the banks of the Prut River between Rădăuți and Liveni	-	
Only Romanian texts were translated into English.					
The terms and descriptions from this table were taken from the authors cited in the Reference column, but it was not always possible to put them in quotations marks.					

Table 2. *Mentions regarding the primary occurrence area of the Prut flint in archaeological and petroarchaeological papers from Romania.*

Denomination	Geological context	Geological stage/age	Primary source area	Secondary deposits	References
Miorcani (Prut River) flint	-	-	along the Prut River near the border between Romania and the Republic of Moldova	-	Crandell 2008, p. 40
Prut Flint	whitish-grey marly limestones (1–6 m thick) with a chalky appearance, in which flint concretions are found	Cenomanian	Rădăuți-Prut-Liveni	-	Țurcanu 2009, p. 184
	conglomerates with flints (2–6 m thick)	Tortonian			
so-called Prut flint	-	Cenomanian and Buglovian	along the middle Prut (between Liveni, Rădăuți-Prut, Mitoc, Ripiceni and Ștefănești)	-	Boghian 2008, p. 43–44; 2009, p. 120
Moldavian flint	flint nodules in limestones (chalky marl)	Upper Cretaceous	along the Upper Prut and Dniester Rivers	pebbles and cobbles in the alluvial sediments of the same rivers	Crandell 2012a, p. 71, 73
	chalky marl	Cenomanian	throughout the Moldavian plateau between the Upper Prut and Upper Dniester rivers	fluvial deposits south of this area	Crandell 2012b, p. 147–148
	flint nodules in chalky marl	Cenomanian	along the Upper Prut and Dniester Rivers	pebbles and cobbles in the alluvial sediments of the same rivers and the surface between them	Crandell 2013, p. 127
	cobbles in conglomerates	Badenian	near these rivers outcropping	-	
	-	-	-	-	Crandell *et alii* 2013, p. 39
	limestones (chalky marl to be precise) with flint	Cenomanian	along the Upper Pruth River and as far away as the Răut and Dniester Rivers	pebbles and cobbles in the alluvial sediments of the same river	Crandell, Vornicu 2015, p. 89–92
Miorcani type Moldavian flint[9]	flint nodules in chalky marl	Cenomanian	along the Upper Prut and Dniester Rivers	pebbles and cobbles in the alluvial sediments of the same rivers and the surface between them	Crandell 2016, p. 189
	cobbles in conglomerates	Badenian	along the Upper Prut and Dniester Rivers	-	Crandell 2016, p. 189
Prut flint	-	Cretaceous	on the right side of the Prut between the nowadays localities of Miorcani and Mitoc and on the left side of the same river between the localities Lipcani and Bădragi	-	Vornicu 2017, p. 193
For a detailed review of the geological data regarding the occurrence of the Prut flint, see Văleanu (2015a; 2015b).					

Table 2. *Continued.*

[9] On the map illustrating the source area of the Prut flint (Comșa 1975, fig. 1), gravel deposits with this material are represented along the Prut up to Iași. On maps in Crandell's papers (Crandell 2012a, fig. 1; 2013, fig. 2; 2016, fig. 7; Crandell, Vornicu 2015, fig. 1), the source of the Miorcani type of Moldavian flint is represented along the Prut all the way almost to Galați! But see discussion in Tab. 3 and the footnotes.

No.	"Rolling on the river"	References
1	"[…] Au S de Ripiceni, les grandes concrétions de silex deviennent de plus en plus rares. Elles y sont réduites à de petits morceaux dans le gravier arrondi, provenant des régions au les dépôts cénomaniens à silex affleurent dans le lit du Prut ou de ses tributaires ; […]"	Moroșan 1938, p. 60
2	"A l'extrémité N du bourg de Sculeni, au point dit La Izvoare, là où le Prut attaque la rive gauche, on observe une coupe dont la succession des couches est la suivante : […] m) 0,50 m de conglomérat de gravier de terrasse. La plupart des éléments de quartzite et de silex atteignent la grosseur d'un œuf de poule."[10]	Moroșan 1938, p. 62–63
3	"[…] non loin des villages de Gherman et de Dumeni. La stratigraphie des dépôts de bas en haut est la suivante : […] b) Les dépôts de terrasse […] sont formés d'une couche épaisse de 4,20 m de gravier, a petits éléments de silex et de gravier carpatique, mélangés avec beaucoup de sable."	Moroșan 1938, p. 65
4	"[…] les eaux du fleuve ont charrié de ces blocs de silex, de différentes tailles, vers le sud, en aval de la localité de Sculeni."	Comșa 1975, p. 109
5	"[…] we specify that larger or smaller lumps of such flint were found – and are still found – in the gravel of the Prut, rolled by the waters, along the river, up to approximately the city of Iași."[11]	Comșa 1991, p. 18
6	"On the left bank of the Prut, the well-known archaeologist [N.N. Moroșan] observed in the terrace deposits at Sculeni (at the Izvoare point), as well as in those located about 5–6 km north of it (at Gherman-Dumeni), gravels containing quartzites and flints reaching the size of a bird's egg. Both points are located approximately 90–95 km and 100 km (as the crow flies) respectively south-southeast of Mitoc."	Păunescu 1999, p. 46-note 18
7	"[…] The flints were transported and are found in the alluvium of the Prut River, near the city of Galați, the pebbles measuring up to 5–6 cm in diameter, sometimes even larger."	Văleanu 2003, p. 16
8	"[…] on the Prut River, where flint pebbles transported from the north, from the Mitoc area, can be found in alluvium, up to near Galați."	Văleanu 2003, p. 197
9	"[…] Small and medium-sized rolled pebbles of Prut flint were carried downstream by the river's waters, found, in varying proportions, in its pebbles, all the way to Galați."	Boghian 2009, p. 120
10	"Larger or smaller lumps of such flint were, and are still found today, in the gravel of the Prut River, rolled by the waters along the river to approximately near Galați."[12]	Țurcanu 2009, p. 185
11	"[…] the flint nodules displaced by the Prut River can be found in the alluviums downstream, as far as in the vicinity of Galați town, near the place where the Prut flows in the Danube."[13]	Vornicu 2017, p. 194
12	"[…] les silex dénommés B et C pourrait provenir du Prut (Boghian 2008), et déposés jusqu'aux alentours de la ville de Galați. Mais cette hypothèse doit être confirmée."[14]	Furestier *et alii* 2017, p. 216
13	"[…] Pour la moyenne vallée du Prut, les galets originaires des dépôts crétacés de la plateforme de Moldavie (Vornicu, 2017) ont pu être transportés jusqu'aux environ de la ville de Galați […]"[15]	Furestier, Mihail 2022, p. 379
Only Romanian texts were translated into English.		

Table 3. *Mentions in archaeological papers regarding the Prut flint in gravels further afield from the main occurrence area.*

[10] This is the original information about flint in the Prut's gravels at Sculeni (on the Moldovan side), about 20 km N of Iași, which is only mentioned by Păunescu (1999, p. 46) in relation with flint occurrences downstream from Ripiceni. There is one thing that needs to be underlined her**e: the flint elements in the gravels from Sculeni are as small as a chicken e**gg!

[11] Comșa (1975, p. 109; 1991, p. 18) did not quote any paper on this information, nor did he mentioned seeing with his one eyes or collecting flint from the gravel deposits around Iași. The same holds true for Văleanu (2003, p. 16, 197) and Boghian (2009, p. 120) regarding Galați.

[12] Țurcanu (2009, p. 185-note 22) refers to the works by Comșa (1991, p. 18) and Văleanu (2003, p. 197). Țurcanu (2009, p. 185) quoted, almost word for word, the paragraph from Comșa (1991, p. 18) and changed the name of the city Iași with that of Galați (following the information from Văleanu 2003, p. 197).

[13] Vornicu (2017, p. 194-note 22) refers to the work by Văleanu (2003, p. 16). Based on a wrong interpretation of the cortex appearance of three small nodules from Isaiia-*Balta Popii*, Vornicu (2017, p. 194) considers that they were most probably gathered from "[...] the shores of the Prut River, which now runs at about 5 km from the site [...]". The characteristics of the cortex for the three small nodules are not those of siliceous materials transported by waters on long distances (see Annex A/Pls. A23–24 and compare with Vornicu 2017, pl. II/1–3).

[14] Furestier *et alii* (2017, p. 216) refer to a work by Boghian (2008), which is an Italian version of Boghian (2009).

[15] And this is how unchecked information circulated by Văleanu (2003, p. 16, 197) reached beyond Galați, all the way in Northern Dobrudja at Taraschina. If the flint elements at Sculeni are as small as a chicken egg, how large would they be at Galați? Would they still be usable as raw material for knapping?

3. THE BODY OF THE PRUT FLINT

The Prut flint was established as an archaeological raw material category for the Palaeolithic assemblages in the Bistrița Valley based on visual characteristics and a handwritten petrographic note by the geologist Th. Joja, dated to March 1956 (Ciornei 2023, tab. 1A and p. 34–35/note 41). This handwritten note states that the microscopic traits seen in thin sections of flint artefacts with white-bluish patina (brown-orange in fresh surface)[16] are very similar to those of flint from Miorcani village on the Prut Valley. This statement is partially true, as my diagnoses of these thin sections showed that there are two types of flints and other chert types represented (see Ciornei 2023, p. 38 and tabs. 2–5).

When E. Comșa (1975, p. 109) associated the archaeologically derived denomination of Prut flint to the geological material from the Middle Prut Valley, he also incorporated the petrographic descriptions made by the geologist working in the Rădăuți-Miorcani area (see Comșa 1975, p. 111).

The bulletins of petrographic analysis published by Păunescu (1970a, p. 217–227) were issued in the late 1950s and early 1960s by C. Papacostea and C. Voiculescu from the Prospecting and Laboratories Enterprise of the Geological Committee (see Ciornei 2023, p. 34). These bulletins describe archaeological samples from various sites (Ripiceni – *La Izvor*, Ceahlău – *Podiș*, Ceahlău – *Scaune*, Traian – *Dealul Viei*, Larga – *Jijia*, Hăbășești, Traian – *Dealul Fântânilor*, Horodiștea, Molodova). Still, Al. Păunescu did not employ these microscopic determinations when discussing the raw materials used for knapped tools in the cultural entities depicted in his book (Păunescu 1970a, p. 11–82). The bulletins of petrographic analyses are mentioned only when the raw material sources are described (Păunescu 1970a, p. 84). Nevertheless, you must keep in mind that Păunescu was not a petroarchaeologist and that the focus of his book was on the chronological evolution of knapped tools. For a long time, these bulletins remained in obscurity. They resurfaced in the monography of Ripiceni – *La Izvor* site (Păunescu 1993, p. 179), but again the microscopic information remained just a footnote.

Subsequent petrographic analyses of the Prut flint, published in archaeological and petroarchaeological works, can be separated into those performed: a) only on archaeological samples (nos. 1–7, 16 in Tab. 4); b) both on archaeological and geological samples (nos. 8–15 in Tab. 4); c) only on geological samples (no. 6 in Tab. 4). Viewed from a chronological perspective, these petrographic analyses are divided into: a) those carried between 1980 and 1990, comprising a group of papers centred on Ad. Muraru's work (nos. 1–6 in Tab. 4); b) those performed since the late 2000s, covering works by various researchers (nos. 7–16 in Tab. 4). The papers featuring microscopic investigations on the Prut flint (see Tab. 4) vary in both quality and consistency. In many of them, the microscopic description is actually missing (nos. 3–4, 7–10, 12, 15 in Tab. 4), and in some of them, even the macroscopic description (nos. 3, 12–13 and 15 in Tab. 4).

Muraru's earlier works (nos. 3–4 in Tab. 4) included only general descriptions of flint, taken from petrography textbooks, and colour inventories for the artefacts. This changed after he analysed geological materials from Miorcani (no. 6 in Tab. 4). This was the first petrographic description of the geological Prut flint made by a researcher involved in the characterisation of archaeological materials. It was and still is a very good petrographic analysis. It was his last petrographic account and, because he disappeared from the emerging petroarchaeological framework, it remained ignored by many researchers. Before moving on, I have one observation to make regarding the macroscopic description: the flint samples analysed by Muraru range in colour from ash to brown (no. 6 in Tab. 4). Comparing this with the macroscopic description of the Prut flint from Neolithic sites (no. 5 in Tab. 4) shows that the colour black is missing from the geological account. This means he did not analyse geological samples from the black flint. And, based on my own experience, there is a lot of black flint on the Prut Valley (see Annex A/Sections 2–3). So, the obvious conclusion is that Muraru did not analyse flint samples covering the entire geological sequence.

Looking at the second batch (nos. 7–16 in Tab. 4), the prolific work of O. Crandell is promptly noted, as he analysed both geological and archaeological samples of Prut flint. Nevertheless, compared to the microscopic descriptions of other authors (nos. 1–2, 5–6 in Tab. 4) or my own (Subsection 2.1 in Annex A), those made by Crandell (nos. 11, 12–13 in Tab. 4) are particularly devoid of any information that could be used to characterise this material and differentiate it from others with similar visual traits. Therefore, all his diagnoses regarding the Prut flint (or, as he calls it, Miorcani flint), and implicitly the presence of this material in various archaeological sites (see Tab. 1), should be considered with great caution, and the materials reanalysed!

In archaeological and petroarchaeological papers from Romania (Tabs. 1 and 4), the most frequently mentioned characteristic of the Prut flint is its range of colours. The petrographic reality of the Prut flint, embodied by this range of colours, can be grouped into five types (from black to light grey) that have a strict vertical distribution in the flint sequence of the Middle Prut Valley between Rădăuți-Prut/Miorcani and Mitoc (see Annex A/Sections 2–3).

[16] Later, one of the original excavators (Păunescu 1998, p. 47) restricts the use of the name Prut flint from the Palaeolithic assemblages in Bistrița Valley exactly to the flint with white-bluish patina (brown-orange in fresh surface).

No.	Macroscopic traits	Microscopic traits	References
1	"Dark bluish to black rock, compact and finely crystalline; glassy lustre, conchoidal, angular or straight break."	"The groundmass of the sample is made up of cryptocrystalline quartz, with a transparent silty-pelitic appearance, with very small areas of clay and ferromanganese minerals arranged in a dendritic manner. Small fragments of organisms and sponge spicules, foraminifera filled with opal are observed. The areas of chalcedony and opal are arranged in the cryptocrystalline mass in an accidental manner. Sporadically, muscovite flakes and grains of recrystallized quartz and detrital quartz with irregular edges appear."	Păunescu 1970a, p. 217–bulletin no. 1; Păunescu 1993, p. 179
2	"White rock with bluish-grey hues, cryptocrystalline structure, conchoidal break."	"The groundmass of the sample is made up of cryptocrystalline quartz with small deposits of transparent fibrous chalcedony and slightly yellowish coloured opal. Sporadically appear fragments of radiolarians, detrital quartz with rolling extinction and irregular contours and silicified foraminifera that attest the presence of an initially calcareous rock."	Păunescu 1970a, p. 217–bulletin no. 2; Păunescu 1993, p. 179
3	-	-	Marinescu-Bîlcu *et alii* 1981, p. 24; Marinescu-Bîlcu *et alii* 1985, p. 657–658
4	"[…] the specimens evidenced a wide chromatic range, with gradual transition from milky-white to black, through greyish white, yellowish, greyish brown and brown."	-	Marinescu-Bîlcu *et alii* 1984, p. 43; Muraru 2000, p. 59;
5	"[…] our pieces have a wide chromatic range, with visible gradual transitions from milky white, greyish white, yellowish, brown, grey, to black. […]"	"Microscopic analysis of thin sections of the flint also revealed a banded structure of the larger nodules, as well as the presence of numerous remains of microscopic fossil organisms, especially foraminifera, but also sponge spicules. Among these, the genus *Globotruncana* could be determined. The rock mass is made up of an association of fine grains of chalcedony and opal between which the fossil remains are trapped. From place to place, fine stripes of micritic limestone can be observed, suggesting some banding."	Cucoș, Muraru 1985, p. 606–607
6	"[…] La couleur du silex va d'habitude du cendre jusqu'au brun, avec une gamme étendue de nuances intermédiaires. La couleur peut être uniforme mais il y a aussi des variations de nuances plus ou moins soudaines, sur un même échantillon."	"Vu au microscope, le silex se présente comme une masse compacte de calcédoine a aspect granulaire. Les dimensions des granules vont de 0.01 à 0.05 mm. Ils sont constitués de fibres disposées de manière radiale ou irrégulière. L'opale n'apparait que de façon secondaire représentant tout au plus 5% de la composition minéralogique. Des granules opaques à contour irrégulier apparaissent fréquemment. Des bioclastes reliques de calcite ne sont observés que rarement. Les restes fossiles sont particulièrement nombreux et sont représentés par des grains de spores et de pollens, par des tests de foraminifères, de radiolaires et par des spicules de spongiaires. La calcédoine peut se présenter sous forme de sphérulites à contour circulaire parfait et net par rapport à la masse générale. Par endroits, les concentrations de sphérulites donnent naissance à des structures a aspect perlitique."	Muraru 1990, p. 151
7	"A) a variety of flint that in the alteration surface has a colour that varies from ashy-grey to almost black or even black;"	-	Țurcanu 2009, p. 184–185, 190
	„B) a variety of black flint, speckled with whitish spots;"		
	"G) a variety of grey-ash flint."		
Only Romanian texts were translated into English; all papers included in this table specifically mention that microscopic investigations were being performed.			

Table 4. *Petrographic traits of Prut flint reflected in some archaeological and petroarchaeological papers from Romania.*

No.	Macroscopic traits	Microscopic traits	References
8	"[…] It is light brown to black, translucent to highly translucent, dull to satiny, with a very fine grained surface, and often contains relics of its parent rock (chalk). […]"	-	Crandell 2008, p. 40
9	"[…] sub-opaque, light grey, sub-translucent light brownish-grey, or a highly translucent dark brown (coffee-coloured). […]"	-	Crandell 2012b, p. 73
10	"[…] Based on the samples of this material, there did not appear to be any macroscopic or microscopic differences between flint from the Prut or the Dniester."	-	Crandell 2012b, p. 73
11	"[…] Visually this material varies from an off-white or tan colour to almost black with possible whitish spots. It breaks with a conchoidal fracture and has a smooth surface. […]"	"[…] This material is composed almost entirely of very fine, equigranular quartz (Figure 3.a.)."	Crandell 2012a, p. 147–148
12	-	-	Crandell 2013, p. 127
13	-	"This flint is very fine grained and with the exception of occasional small Fe oxide and hydroxide particles and possible areas of calcium carbonate, this material is devoid anything but quartz (Figure 6 a. & b.). […]"	Crandell *et alii* 2013, p. 39
14	"[…] sub-opaque, light grey, sub-translucent light brownish-grey or a highly translucent dark brown (coffee colored). […]"	"[…] almost completely composed of very fine, equigranular quartz. Other than where the quartz is mixed with calcite, Fe oxide or Fe hydroxide, both are relatively devoid of other minerals. Occasional larger quartz crystals (25µm being common, and up to 50µm) or opals appear. […]"	Crandell, Vornicu 2015, p. 92
15	-	-	Crandell 2016, p. 189
16	Upper Cretaceous nodular chert from the Middle Prut Valley (Prut flint)		Ciornei 2015, p. 51–53
	bluish dark grey/blackish, translucent	bioclastic chert (microfacies [05a], sample Le-Lu [15]), wackestone, very fine sand, bioclastic-peloidal siliceous cementstone (cryptocrystalline quartz)[17]	
	clear greyish brown, very translucent	spiculite chert (microfacies [05cd], Le-Lu [19]), wackestone, fine sand, bioclastic siliceous cementstone (cryptocrystalline quartz)[18]	
	clear black, very translucent	Globotruncanidae chert (microfacies [05bc], sample Le-Lu [17]), wackestone, fine sand, planktonic foraminifera siliceous cementstone (cryptocrystalline quartz)[19]	
	very dark grey, very translucent	cementstone chert (microfacies [05b], sample Le-Lu [16]), mudstone, very fine sand, siliceous cementstone (cryptocrystalline quartz)[20]	

Table 4. *Continued.*

[17] In current terminology this corresponds to Prut flint type FB (see Annex A).

[18] In current terminology this corresponds to Prut flint type TLG (see Annex A).

[19] It was designated under the Prut flint based on its similar macroscopic traits with Prut flint materials published by Crandell (2012a, fig. 5), even if this sample was microscopically different from the others in this grouping. In current terminology this corresponds to Volhyno-Podolian bioclastic flint (see Annex C).

[20] This sample contained no fossils, but it was erroneously assigned as Prut flint. In fact, this is a hydrothermal chert.

4. THE SPIRIT OF THE PRUT FLINT

In addition to the Prut flint, E. Comşa presents two lesser-known materials that appear in Neolithic sites in Moldavia: 1) Ibăneşti flint (Silex "d'Ibăneşti"), a translucent material, dark brown or dark brown-coffee in colour, observed in assemblages in the Siret-Prut area and considered to originate from the hilly landscape around Ibăneşti locality in Botoşani County (Comşa 1968, p. 30–31; 1975, p. 114; 1976, p. 244); 2) Central-Moldavian flint (Silex "de Moldavie centrale"), a translucent light brown material speckled with white (or light coffee-brown with small white spots) noticed in assemblages from the central part of Moldavia (Comşa 1968, p. 29; 1975, p. 114; 1976, p. 244–245). These terms did not make a career, most probably because, as E. Comşa remarked about the Ibăneşti flint, they have similar visual traits to and could be "lost" among Prut flint artefacts in a given lithic assemblage. The field data from 2021 suggests there are no deposits that could bear flint in the hilly landscape from Darabani-Ibăneşti area (see Annex A/Section 1).

Also, E. Comşa (1976, p. 245) mentions the use of a dark grey flint in Neolithic sites from the Middle Dniester valley, in the north-eastern part of the Republic of Moldova. Notable is the fact that E. Comşa didn't brand this material with a specific name. However, the Romanian archaeological literature from the same period mentions the sporadic presence of Dniester flint in some Palaeolithic sites from Moldavia, but more frequent in Neolithic sites in the same area (Tab. 5). The Dniester flint was described as a siliceous material with colours such as dull milky whitish, "dirty" white, greyish-white, light grey or whitish-bluish. This material was presumed to originate from Cenomanian deposits in the Middle Dniester Valley (between Ataki and Naslavcea). The new data from the Middle Dniester Valley suggests that the situation of the siliceous materials encountered in this area is more complex than considered by previous archaeological accounts, as several types ca be differentiated based on petrographic traits and stratigraphic position (see Annex B).

Recent microscopic analyses (Ciornei, Mariş 2020, p. 47; Ciornei *et alii* 2022, p. 32–33; Ciornei 2023, p. 38 and Tabs. 2–5) of archaeological materials from Ceahlău Basin sites demonstrated that at least two distinct types were hidden within the Prut flint category: 1) Dniester Globotruncanidae flint[21] (from Turonian chalks outcropping on the Upper Dniester Valley in Dubivitsi area), a dark grey-smoky of brownish-smoky very translucent flint; 2) Prut-Dniester flint (from Cenomanian chalks outcropping on the Middle Prut and Middle Dniester valleys), a black/dark grey to light grey semi-opaque to translucent flint. This last denomination (Prut-Dniester flint) was derived from the fact that a similar type of flint was recognised in the archaeological samples from Ripiceni (on the Prut) and Oselivka (on the Dniester). Although I still maintain my petrographic diagnoses (see Subsection 2.1 in Annex C), I must admit that I forced this designation: beyond the petrographic data and against my meticulous nature; by assuming that it was procured locally by the Palaeolithic people of both sites, which might not be true for Oselivka (but this needs to be proven first).

However, the term Prut-Dniester flint was originally proposed by D. Boghian (2008, p. 45; 2009, p. 121), who claimed that the same type of Cenomanian flint can be found in both Prut and Dniester valleys. This claim was based on bibliographic accounts and, by the photographs he published (Boghian 2009, fig. 4), visits made to outcrops in both areas. Going along the same lines, Crandell has used the terms Miorcani (Prut River) flint, Moldavian flint or Miorcani type Moldavian flint to designate the material found in the chalky marls of Cenomanian age and the Badenian conglomerates that crop out in the Prut and Dniester valleys and in the interfluve between these two rivers (see Tab. 2). This researcher also noted that there are no macro- and microscopic differences between the flint from these two valleys (see no. 10 in Tab. 4). Nonetheless, he presented no direct evidence for this latter claim, relying only on geological accounts that described the two areas as having similar geological sequences, which also included flint.

It is no secret that the Cenomanian deposits with flint extend towards the Middle Dniester Valley in the Republic of Moldova and Ukraine (for an extensive list of geological papers, see Păunescu 1999, p. 47; Văleanu 2015a; 2015b[22]). It is also no secret that geologists give a different importance to chert in their accounts, compared to archaeologist and petroarchaeologists. Therefore, the geological accounts of flint from the Middle Prut and Middle Dniester valleys should be considered as a starting point for further research, not as a *datum*, which is why, I invite you to read, in the next section, about the new data regarding the siliceous materials from the Middle Prut and Middle Dniester valleys.

[21] In current terminology, Dniester Globotruncanidae flint corresponds to Volhyno-Podolian bioclastic flint (see Annex C). Although it was not recognized in Palaeolithic sites from Romania until recently (Ciornei, Mariş 2020, p. 47), the Volhynian flint has been mentioned in Neolithic sites from Moldavia since the beginning of the 1970s (Spinei 1970, p. 38–39; Spinei 1971, p. 101–104).

[22] Although published as two separate papers in two different journals, one in English and one in Romanian, make no mistake, they are one and the same thing. Besides the extensive review of the geological literature regarding the flint materials found on the Middle Prut and Middle Dniester valleys, Văleanu's papers contain a comprehensive account of the field research carried by him on the Middle Prut Valley (1997–1998, 2013, 2014–2015) and his visit to the outcrops from the Middle Dniester Valley in Naslavcea area (2015). Most of the locations presented by Văleanu were used as a starting point in my research (see Annex A). However, Văleanu's papers do not contain a microscopic analysis of the Prut flint, while the macroscopic description of the materials is presented unsystematically, for each point along the outcropping area. He made no comments regarding the similarities or differences between the materials from the Prut and Dniester, despite he had a direct and personal experience with both areas and despite the fact he illustrated both the outcrops and the materials from Naslavcea (Văleanu 2015a, figs. 40–41, 43; 2015b, figs. 40–41, 43).

No.	Dniester flint	References
1	"[...] Both at Ripiceni and at Erbiceni, a very small number of tools (1.40 –1.50%) were discovered, especially blades, made of dull white flint. We believe that such pieces came here through exchange relations from the Upper Dniester region."	Păunescu 1964, p. 325–328
2	"[...] dans le gravettien et le tardenoisien, quelques pièces en silex pour la plupart typiques, taillées dans un silex mat-blanchâtre, dont la provenance devrait être recherchée dans la région de Dniestr supérieur ou moyen."	Păunescu 1965, p. 8
3	"The white-bluish flint is characteristic of the large quarries found along the Middle Dniester. It was intensively exploited for a long time, occurring hundreds of kilometres from the mines from which it was extracted. [...]"	Spinei 1970, p. 44; Spinei 1971, p. 93
4	"[...] or the whitish-bluish one, brought from the Middle Dniester area. [...]" [Cucuteni culture]	Păunescu 1970a, p. 54
5	"The pieces are made [...] as well as from white or white-bluish flint, so-called from Dniester [...]" [Horodiștea cultural complex]	Păunescu 1970a, p. 62
6	"The raw material is the same whitish or whitish-bluish flint, so-called from Dniester [...]" [Globular Amphora culture]	Păunescu 1970a, p. 64
7	"In many settlements from Moldavian region belonging to the Cucuteni culture, from all phases of its evolution, various objects made of whitish Dniester flint have been discovered."	Spinei 1971, p. 97
8	"White flint axes were found [...] also on the territory of Moldova in the Gorodsk-type settlements of Horodiștea and Erbiceni. [...]"	Spinei 1971, p. 98
9	"[...] a single piece [...] of Dniester flint [...]" [Dolhasca – *Dealul Viei*]	Chirica, Tănăsache 1981, p. 270
10	"The Dniester flint has the same Cretaceous age as the Prut flint, but it differs from it by a special mineralization, which gives it a non-transparent light grey or milky white (even dirty white) colour, sometimes with whitish dots due to calcareous micro-concretions."	Boghian 1995, p. 10
	"An important flint "industry" developed in the settlements on the Middle Dniester, due to the proximity and richness of the local deposits. Thus, a series of flint extraction and exploitation workshops near Komarov, Germani, Ojevo (Cernăuți region) can be mentioned. [...]"	
11	"[...] The so-called Dniester flint, with alteration surfaces generally of a whitish-brown colour, is present in some Gravettian and Tardenoisian industries such as those at Ripiceni – *Izvor* and Erbiceni – *Sub Budăi* in the hayfield on the plain."	Păunescu 1999, p. 47
12	"[...] the flint which in the alteration surface has a whitish-matte colour (flint D), its provenance is, [...], the area of the Middle Dniester and its tributaries. It has a slightly larger granulation than that of the so-called Prut flint [...]"	Țurcanu 2009, p. 185
Only Romanian texts were translated into English.		

Table 5. *Selected mentions of Dniester flint in archaeological papers from Romania.*

5. (NOT) JUST A PETROGRAPHIC COMPARISON

The materials used for this comparison are represented by: 1) geological samples from the surveyed areas along the Middle Prut Valley between Darabani and Ripiceni (MidPrut research perimeter, Botoșani County, Northeastern Romania; for details see Annex A); 2) geological samples from the surveyed areas along the Middle Dniester Valley between Naslavcea and Vadul Rașcov (MidDn research perimeter, Ocnița-Șoldănești districts, Republic of Moldova; for details see Annex B); 3) origin control samples from origin sites in the Khotyn area of the Middle Dniester Valley (MidDn research perimeter, Chernivtsi Oblast, Western Ukraine; for details see Annex C). The methodological approach and information regarding the samples used in the analysis are provided in Annexes A–C and Appendix I. This extended study area covers the space between the Middle Prut and the Middle Dniester valleys (Pl. I). Before passing to the petrographic comparison, a few observations regarding the geological context of the materials are in order.

In this study, the information regarding the Volhyno-Podolian flint is derived from petrographic data on origin control samples with a presumed secondary geological context (see Annex C). The geological and petroarchaeological literature considers Volhyno-Podolian flint as derived from chalk deposits of Turonian age in the Volhynian and Podolian uplands.

MidDn research perimeter is far larger in terms of the area (sq. km) covered by field surveys than the MidPrut research perimeter (Pl. I). However, the body of data is in favour of the MidPrut research perimeter, from field research duration (four field campaigns vs one), number of field surveys (19 vs 5), number of collected samples (355 vs 138), number of samples analysed macroscopically (355 vs 200) and microscopically (100 vs 49). The limited number of field surveys for the MidDn research perimeter and the large area covered by them (Annex B) resulted in partial observations regarding the stratigraphic sequence (*i.e.*, the observed profiles do not allow their correlation in such a way as to generate a complete stratigraphic column, as is the case with the Prut flint sequence). Observations regarding the geological deposits for the Khotyn area in the MidDn research perimeter are missing completely.

Within the surveyed areas, there are three geological sequences containing flint and chert (see Tabs. A6, B5–B6; Pls. A2, B2–B3). Although it may seem otherwise, these sequences cannot be directly correlated based on geological data from literature (cronostratigraphically, these were framed differently) or field surveys (because of the partial observations made in MidDn research perimeter). So, what is their common ground? All three of them have a succession of Upper Cretaceous chalk with flint and eluvium with chert/flint (deposits resulted from the decalcification of chalk/limestone), followed by a Miocene sand/gravel with rounded chert/flint elements. All three contain a Cenomanian chalk layer with black flint at the base: Prut flint type B in Miorcani-Mitoc area, Dniester flint type BF in Naslavcea area, and Dniester flint type BFF in Cureșnița-Vertiujeni area. All three sequences show a gradual change in colours of the siliceous materials, from black at the bottom to light grey/grey-brownish at the top. What sets them apart? In Cureșnița-Vertiujeni area, the chalk with black flint (type BFF) is followed by a chalk deposit without flint, a chalk deposit with medium grey flint (types PSCN and OMG), and then the eluvium with the medium grey (type OMG) and light grey-brownish flint (type TMB). In Naslavcea area, above the chalk with black flint lies an eluvium with dark grey flint (type FFB), followed by an eluvium with medium-grained chert (types GDG and GLG). Based on their geological contexts and microfossils, the flint and chert types from these three areas can be considered to cover the entire stratigraphic interval of the Upper Cretaceous, but the real geological age of the materials in the eluvium is unknown[23]. For the Prut and Dniester materials (Annexes A–B) there is sufficient evidence (from petrographic traits to geological contexts and occurrences) to consider them as separate types within this Upper Cretaceous sequence.

The petrographic analysis of 254 geological and origin control samples from the study area (Tab. 6; Pl. I) allowed the distinction of four categories and 20 types of Upper Cretaceous flint and chert (Tabs. 7–9; Pls. II–III). Detailed characterisations of these types and their geological contexts are presented in Annexes A–C.

When their visual characteristics and microfacies are considered, the Volhyno-Podolian flint, on one hand, and the Prut flint/Dniester flint/Dniester chert on the other hand, are very easy to distinguish from each other (Tabs. 7–9; Pls. 2–3). All macro- and microscopic traits suggest that the Volhyno-Podolian flint is very different from the Prut and Dniester black and dark grey flint types (with which it can be confused by an untrained eye). You don't need any geochemical analyses or other high-tech investigation equipment to come to this conclusion. Volhyno-Podolian flint is composed of *Pithonella* and bioclastic detritus, while the Prut and Dniester flints are composed of phytoplanktonic remains and bioclastic detritus (for more details, see Annexes A–C).

More problematic are the visual similarities of the other Cretaceous flint and chert types from the study area:

[23] *Nota bene*, in all three areas the deposits here called eluvium have been considered as Miocene conglomerates containing little or not at all rounded flint nodules, and presumed to be eroded from the underlaying deposits with flint. However, the flint nodules have no real signs of water transport (in all cases the cortex is as fresh as that of the flint from the chalk), the flint nodules support each other, small flint/chert splinters are present in the clayey or powdery-siliceous matrix (which should not be possible given the presumed genesis of these deposits, as they would be swept by the waters), enormous sandstone lenses are present in the eluvium at Naslavcea, and, more importantly, the colour of the flint/chert nodules changes upwards in the sequence (which again would not be possible in a deposit derived from water transport, they should be mixed).

1) there are four black flints (Prut flint type B, Prut flint type FB, Dniester flint type BFF, and Dniester flint type BF) that share the same visual traits (Pl. IV/1). Prut flint type B and Dniester flint types BFF and BF represent different physiographic variants associated with the Cenomanian chalk from the Middle Prut and Middle Dniester valleys. Prut B and Dniester BFF have an almost identical fabric (Pl. IV/6–9), but they can be differentiated based on their cortical-subcortical area (Pl. IV/6 vs. 4/8) and nodule shape and size: the BFF type occurs as rod-like or finger-like concretions (2–5 cm in diameter and from a few cm to more than 20 cm in length) and irregularly shaped nodules (around 10 cm in diameter), while the B type as branchy or irregular shaped nodules (around 10–15 cm in diameter, but also larger than 30 cm in diameter, more rarely as finger-like concretions). Field observations suggest type BFF has a lower abundance than type B in their respective landscapes. Dniester BF has a more bioclastic fabric, which is closer to Prut FB, but it lacks the phytoplanktonic component and they have different cortical-subcortical areas (Pl. IV/10–11 vs. IV/2–3). The type defined as similar to Prut flint type FB (Oselivka origin site) has the same fabric and visual traits as the Prut type FB (Pl. IV/1–5), and they are most probably the same type of flint[24];

2) there are four dark grey siliceous materials (Prut flint type TDG, Dniester flint type FFB, Dniester flint type TGB, and Dniester chert type GDG) that share the same visual traits (Pl. V/1). Prut flint type TDG and Dniester flint types FFB and TGB have a spiculitic character, but they are differentiated by their sponge spicules abundance, size, and fragmentation degree (Pls. V/10–11 vs V/4–5 and 5/8–9). Dniester detrital-rich spiculitic chert (Oselivka origin site) has a similar microfacies and visual traits as the Dniester chert type GDG (Pl. V/1) from Naslavcea area, but is less spiculitic and more bioclastic-intraclastic (Pls. V/4–5 vs. V/2–3);

3) there are three medium-light grey/brownish siliceous materials (Prut flint type TLG, Dniester flint type TMB, Dniester chert type GLG) that share general visual traits (Pl. VI/1). Prut flint type TLG and Dniester flint type TMB have a spiculitic character. Nevertheless, they differ in the abundance, size, and fragmentation degree of the sponge spicules and have different traits of the cortical-subcortical areas (Pls. VI/10–11 vs. VI/6–9). Dniester bioclastic-intraclastic chert (Molodova origin site) has a different microfacies and visual traits by comparison to the Dniester chert type GLG (Pl. VI/1) from Naslavcea area, which is very spiculitic (Pls. VI/4–5 vs. VI/2–3).

The presence at Oselivka and Molodova of siliceous materials similar to those from the Middle Prut and Middle Dniester valleys suggests that the geological deposits from these two areas might extend to the N and NW. Oselivka is only 32 km NW from Va-Ca 03 (Botoșani County, Romania), more or less the point from which the chalk and eluvium with flint start to crop out on Prut Valley (see Annex A), while Molodova is 35 km WNW of Bir 05a (Naslavcea village, Ocnița District, Republic of Moldova), the most western sampling location with Dniester chert in the MidDn research perimeter (see Annex B). However, the geological context from Oselivka and Molodova is only known from bibliography (see Annex C).

As already pointed out, the three sequences cannot be stratigraphically correlated, either based on geological information from literature, or based on direct field observations. Yes, the sequences with flint and chert exhibit some general traits such as colour and fabric. But no, attempting a stratigraphic correlation of the flint and chert types based on their colour and microscopic traits would be unwisely, as the microfossil content was not determined to species level and thus their geological age/stage cannot be accurately estimated.

The "grainy" materials from Molodova (Dniester bioclastic-intraclastic chert), Oselivka (Dniester detrital-rich spiculitic chert) and Naslavcea (Dniester chert types GDG and GLG) correspond to what has been called in the Romanian archaeological literature as Dniester flint (see above, Section 4 and Tab. 5). The black flint from chalk (Prut flint type B, Dniester flint types BFF and BF) is the most obvious link between Prut and Dniester valleys.

In short, the Upper Cretaceous flint and chert types occurring on the Middle Prut and Middle Dniester valleys have overlapping visual and microscopic traits. The careful microscopic investigations, correlated with stratigraphic observations, have shown that these can be petrographically differentiated into several categories and multiple subcategories. The Volhyno-Podolian flint is a whole different cookie.

6. P(R)UT FLINT IN PERSPECTIVE: WHAT COMES NEXT?

For the Prut flint and associates. The current characterisation and classification are limited by an unbalanced number of samples between the two research perimeters and partial or missing direct stratigraphic observations for the Middle Dniester Valley. The terminology of the types presented here (*i.e.*, Prut, Dniester, Volhyno-Podolian, B, BFF, etc.) is biased in many ways, but at least the petrographic content associated with them is clear.

The use of topographical-geographical terms, such as Prut, Dniester and Volhyno-Podolian, implies a given physiographically defined occurrence area, which in reality might not correspond with the occurrence area of the geological deposits containing the respective materials.

[24] The material called here similar to Prut flint type FB from Oselivka was recognised in an Upper Palaeolithic assemblage, while the geological data from the literature is not sufficient to establish if it has a natural occurrence in the Middle Dniester Valley and, hence, introduced to the site by the Palaeolithic inhabitants. It is also possible that this material was brought to the site from the Middle Prut Valley.

Rock categories and subcategories		MidPrut				MidDn				Origin sites			
		MA	**MiA**	*Stm*	*Pol*	**MA**	**MiA**	*Stm*	*Pol*	**MA**	**MiA**	*Stm*	*Pol*
Prut flint	Prut flint type M	8	3	*4*	*3*	0	0	*0*	*0*	0	0	*0*	*0*
	Prut flint type TLG	93	24	*26*	*15*	0	0	*0*	*0*	0	0	*0*	*0*
	Prut flint type TDG	35	9	*10*	*6*	0	0	*0*	*0*	0	0	*0*	*0*
	Prut flint type FB	51	15	*18*	*6*	0	0	*0*	*0*	0	0	*0*	*0*
	Prut flint type B	67	24	*30*	*15*	0	0	*0*	*0*	0	0	*0*	*0*
?	similar to Prut flint type FB	0	0	*0*	*0*	0	0	*0*	*0*	6	1	*2*	*1*
Dniester chert	Dniester detrital-rich spiculitic chert	0	0	*0*	*0*	0	0	*0*	*0*	10	1	*1*	*1*
	Dniester bioclastic-intraclastic chert	0	0	*0*	*0*	0	0	*0*	*0*	6	1	*2*	*1*
	Dniester chert type GLG	0	0	*0*	*0*	24	8	*10*	*0*	0	0	*0*	*0*
	Dniester chert type GDG	0	0	*0*	*0*	6	4	*4*	*0*	0	0	*0*	*0*
Dniester flint	Dniester flint type FFB	0	0	*0*	*0*	13	4	*4*	*0*	0	0	*0*	*0*
	Dniester flint type BF	0	0	*0*	*0*	2	2	*3*	*0*	0	0	*0*	*0*
	Dniester flint type TMB	0	0	*0*	*0*	22	6	*6*	*0*	0	0	*0*	*0*
	Dniester flint type OMG	0	0	*0*	*0*	19	5	*6*	*0*	0	0	*0*	*0*
	Dniester flint type PSCN	0	0	*0*	*0*	11	5	*5*	*0*	0	0	*0*	*0*
	Dniester flint type BFF	0	0	*0*	*0*	28	5	*5*	*0*	0	0	*0*	*0*
	Dniester flint type TGB	0	0	*0*	*0*	2	2	*2*	*0*	0	0	*0*	*0*
Volhyno-Podolian flint	Volhyno-Podolian bioclastic flint	0	0	*0*	*0*	0	0	*0*	*0*	13	3	*4*	*3*
	Volhyno-Podolian pithonellid-bioclastic flint	0	0	*0*	*0*	0	0	*0*	*0*	9	1	*2*	*1*
	Volhyno-Podolian striped flint	0	0	*0*	*0*	0	0	*0*	*0*	2	0	*0*	*0*
		254	**75**	***88***	***45***	**127**	**41**	***45***	***0***	**46**	**7**	***11***	***7***

MA – number of samples in the macroscopic analysis; MiA – number of samples in the microscopic analysis; Stm – number of subsamples analysed with a stereomicroscope; Pol – number of subsamples (thin sections) analysed with a polarizing microscope.

Table 6. *Flint and chert types from geological deposits and origin sites in the study area.*

Rock category and type		Occurrence area	Geological context	Microfacies	Grain-size	Sorting	Particles		Groundmass	Depositional setting
							%			
Prut flint	Prut flint type M	Middle Prut Valley, between Miorcani and Mitoc	conglomerate, Miocene	phytoplanktonic-bioclastic wackestone	coarse silt	moderate-well	15–25	PhyPla, Bio, PlaFo, Qd, mica	silicified matrix (Qcc-Qm)	Deep shelf
	Prut flint type TLG		eluvium, (?)	spiculitic-phytoplanktonic wackestone	very fine to fine sand	moderate	15–25	SpoSpi+Bio, PhyPla, PlaFo, BenFo, rare Radio, Qd, mica	silicified matrix (Qcc-Qm)	Deep shelf
	Prut flint type TDG		eluvium, (?)	spiculitic-phytoplanktonic wackestone	very fine to fine sand	moderate	15–25	SpoSpi+Bio, PhyPla, PlaFo, BenFo, rare Radio, Qd, mica	silicified matrix (Qcc-Qm)	Deep shelf
	Prut flint type FB		eluvium, (?)	bioclastic-phytoplanktonic wackestone	very fine to fine sand	moderate-well	15–35	Bio, PhyPla, PlaFo, BenFo, rare Radio, Qd, mica	silicified matrix (Qcc-Qm)	Deep shelf
	Prut flint type B		chalk deposits, Cenomanian	phytoplanktonic-bioclastic wackestone	coarse silt	moderate-well	15–25	PhyPla, PlaFo, BenFo, Bio, rare Radio, Qd, mica	silicified matrix (Qcc-Qm)	Deep shelf
BenFo – benthic foraminifera; PlaFo – planktonic foraminifera; Pith – *Pithonella*; SpoSpi – siliceous sponge spicules; Radio – radiolarians; Bio – mixed quantities of bioclasts recognisable as derived from echinoderms, algae, sponge spicules, mollusc and bivalve shells, or other biota; IntCla – intraclasts; PhyPla – phytoplanktonic organisms and/or remains (coccolithophores, dinoflagellates, planktonic cyanobacteria); Qd – detrital quartz clasts.										
Qcc – cryptocrystalline quartz (1-4 µm); Qm – microcrystalline quartz (4-20 µm).										

Table 7. *Petrographic characteristics of the flint types defined for the MidPrut research perimeter.*

Rock category and type		Occurrence area	Geological context	Microfacies	Grain-size	Sorting	Particles		Groundmass	Depositional setting
							%			
Dniester chert	Dniester chert type GLG	Middle Dniester Valley, Naslavcea sector	eluvium, (?)	detrital-rich spiculite packstone / packed wackestone	fine to medium sand	moderate	>60	SpoSpi, Bio, IntCla, PlaFo, PhyPla, Qd	interparticle siliceous cement and silicified matrix	Slope / Deep shelf
	Dniester chert type GDG		eluvium, (?)	detrital-rich spiculite packstone / packed wackestone	fine to medium sand	moderate	>60	SpoSpi, Bio, IntCla, PlaFo, PhyPla, Qd	interparticle siliceous cement and silicified matrix	Slope / Deep shelf
Dniester flint	Dniester flint type FFB		eluvium, (?)	spiculitic wackestone	very fine to fine sand	moderate	30–40	SpoSpi, Bio, PlaFo (3%), PhyPla	silicified matrix	Deep shelf
	Dniester flint type BF		chalk deposits, Lower Cenomanian	bioclastic wackestone	very fine sand	moderate	20–30	Bio, PhyPla, PlaFo, BenFo, rare Radio	silicified matrix	Deep shelf
	Dniester flint type TMB	Middle Dniester Valley, Cureșnița-Vertiujeni sector	eluvium, (?)	spiculitic-phytoplanktonic wackestone	fine sand	moderate	25–40	SpoSpi, PhyPla, Bio, PlaFo, BenFo	silicified matrix	Deep shelf
	Dniester flint type PSCN		eluvium, (?)	spiculitic-pithonellid wackestone	coarse silt to very fine sand	moderate-well	40–50	Pith, SpoSpi, PhyPla, PlaFo (5%), rare BenFo	silicified matrix	Deep shelf
	Dniester flint type OMG		eluvium, (?)	spiculitic-pithonellid wackestone	coarse silt to very fine sand	moderate-well	40–50	Pith, SpoSpi, PhyPla, PlaFo (5%), rare BenFo	silicified matrix	Deep shelf
	Dniester flint type BFF		chalk deposits, Lower Cenomanian	phytoplanktonic-bioclastic wackestone	coarse silt	moderate-well	20–30	PhyPla, Bio, PlaFo, BenFo, rare Radio	silicified matrix	Deep shelf

BenFo – benthic foraminifera; PlaFo – planktonic foraminifera; Pith – *Pithonella*; SpoSpi – siliceous sponge spicules; Radio – radiolarians; Bio – mixed quantities of bioclasts recognisable as derived from echinoderms, algae, sponge spicules, mollusc and bivalve shells, or other biota; IntCla – intraclasts; PhyPla – phytoplanktonic organisms and/or remains (coccolithophores, dinoflagellates, planktonic cyanobacteria); Qd – detrital quartz clasts.

Table 8. *Petrographic characteristics of the flint and chert types defined for the MidDn research perimeter.*

Rock category and type		Microfacies	Grain-size	Sorting	Particles		Groundmass	Depositional setting
					%			
Volhyno-Podolian flint	Volhyno-Podolian bioclastic flint	bioclastic wackestone	fine to medium sand	moderate	20–45	Bio, PlaFo, Pith, BenFo	silicified matrix	Deep shelf
	Volhyno-Podolian pithonellid-bioclastic flint	pithonellid-bioclastic packed wackestone	very fine sand	well	40–50	Pith, PlaFo, Bio, BenFo	silicified matrix	Deep shelf
?	similar to Prut flint type FB	bioclastic-phytoplanktonic wackestone	very fine to fine sand	moderate-well	15–35	Bio, PhyPla, PlaFo, BenFo, rare Radio, Qd, mica	silicified matrix (Qcc-Qm)	Deep shelf
Dniester chert	Dniester detrital-rich spiculitic chert	detrital-rich spiculitic-intraclastic packstone	medium sand	moderate-poor	>60	SpoSpi, Bio, IntCla, BenFo, Qd	interparticle siliceous cement and silicified matrix	Slope/Deep shelf
Dniester chert	Dniester bioclastic-intraclastic chert	bioclastic-intraclastic packed wackestone / packstone	fine sand	moderate-well	>60	Bio, IntCla, PlaFo, BenFo, Qd	interparticle siliceous cement and silicified matrix	Slope/Deep shelf

BenFo – benthic foraminifera; PlaFo – planktonic foraminifera; Pith – Pithonella; SpoSpi – siliceous sponge spicules; Radio – radiolarians; Bio – mixed quantities of bioclasts recognisable as derived from echinoderms, algae, sponge spicules, mollusc and bivalve shells, or other biota; IntCla – intraclasts; PhyPla – phytoplanktonic organisms and/or remains (coccolithophores, dinoflagellates, planktonic cyanobacteria); Qd – detrital quartz clasts.

Table 9. *Petrographic characteristics of the flint and chert types defined for the origin sites in the MidDn research perimeter.*

The use of letters, which are acronyms for macroscopic traits (such as translucency, texture, and colour), instead of the defining microscopic traits (such as predominant particles, microfacies, etc.), has the advantage of being short enough and easy to retain, especially when contrasted whit names derived from the microscopic content (*e.g*. Dniester bioclastic-intraclastic chert, which is a bit of a mouthful). The downside of this terminology comes from the abundance of types with acronyms that only change a letter and thus open the window for confusion.

If Prut flint and associates should be called something else, their names should be derived from: 1) the names of the geological formations in which they occur, but such names are not mentioned in the Romanian and Moldovan geological literature for the deposits with flint and chert from the Prut-Dniester area; 2) the name of the locality where their stratigraphic context can be observed best (similar to a type section for geological formations). By this last criterion, Prut flint should be named Cotu Miculinți flint, the Dniester chert and flint types should be named Naslavcea chert/flint and Cureșnița flint. Yet, naming chert or flint types in such a way would require using the same rules applied by geologist in designating geological formations, but the petroarchaeology in Romania is not ready for this. So, we have what we have, *i.e.* not enough information to make the change, and we go with it and sort things out as they come.

For those of you who consider the geological and petrographic data presented here to be archaeologically irrelevant or better suited to a geological journal. I have placed the geological and petrographic data in the annexes so that you do not need to go through or get bored while reading them. Besides, I don't get paid (now, even less) to be a geologist or to publish in geological journals. From the review of the archaeological and petroarchaeological literature regarding the Prut flint (see discussion above, Sections 2–4), it is clear that the geological and petrographic data presented here were extremely necessary in order to better understand what this geological material is and what is not in the archaeological record. Yes, this paper does not contain any bling-bling data on the provenience or amounts of Prut flint and associates in Palaeolithic or Neolithic sites from Romania. Does this make it archaeologically irrelevant? Or, maybe, there is something wrong with the way you understand archaeology?!

For those of you interested in knowing (or involved in) the provenience of archaeological lithic raw materials. Forget everything you know about Prut flint from previous research. Clean slate. Start from the information presented above (Section 5 and Annexes A–C). The petroarchaeological framework of Romania is growing and, as mentioned above (Section 4), the reality of the Prut flint as an archaeological raw material category has already changed and it's only a matter of time before corroborating new information sees the light of publication.

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***This paper is accompanied by supplementary material, made available by the author, based on FAIR criteria. You can access the supplementary material in the dedicated section on the journal's website, within the Archive, under the *Supplementary Material* heading.

LIST OF SUPPLEMENTARY INFORMATION

Annex A. Flint and siliceous rock types from the Middle Prut Valley, Romania

Annex B. Flint and chert types from the Middle Dniester Valley, Republic of Moldova

Annex C. Flint and chert types the from Khotyn area (Chernivtsi Oblast), Ukraine

Appendix I. Methodological approach

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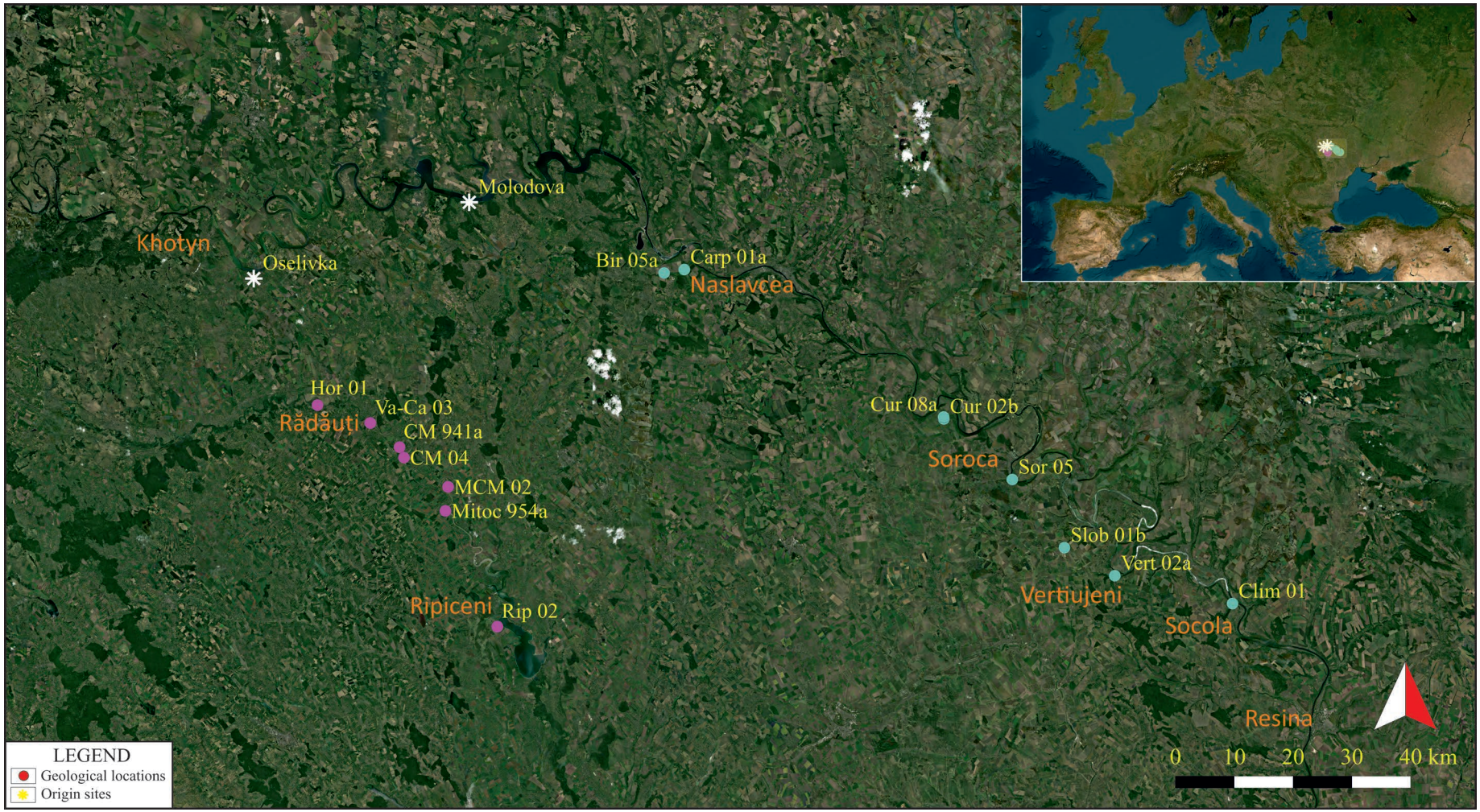


Plate I. *Distribution map of geological locations from the MidPrut (Romania) and MidDn (Republic of Moldova) research perimeters and origin sites from the MidDn research perimeter (western Ukraine). Map created in QGis (projection is latitude-longitude WGS-84).*

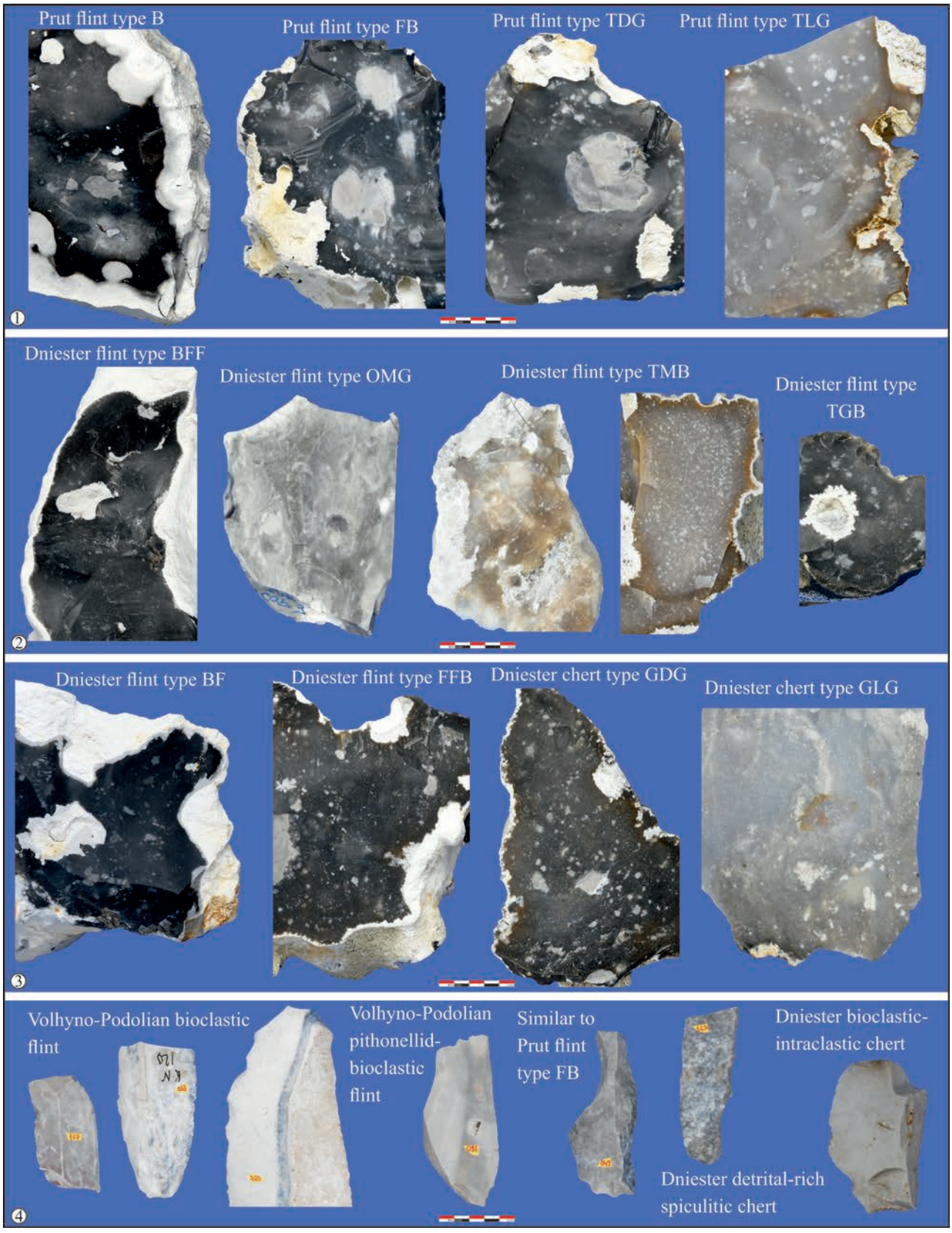


Plate II. *Macroscopic views of samples from geological deposits (1–3) and origin sites (4) in the study area:* ***1.*** *Cretaceous flint from the Middle Prut Valley;* ***2–4****. Cretaceous flint and chert from the Middle Dniester Valley; all scale bars are 2.5 cm long (photographs by Al. Ciornei 2018, 2024–2025).*

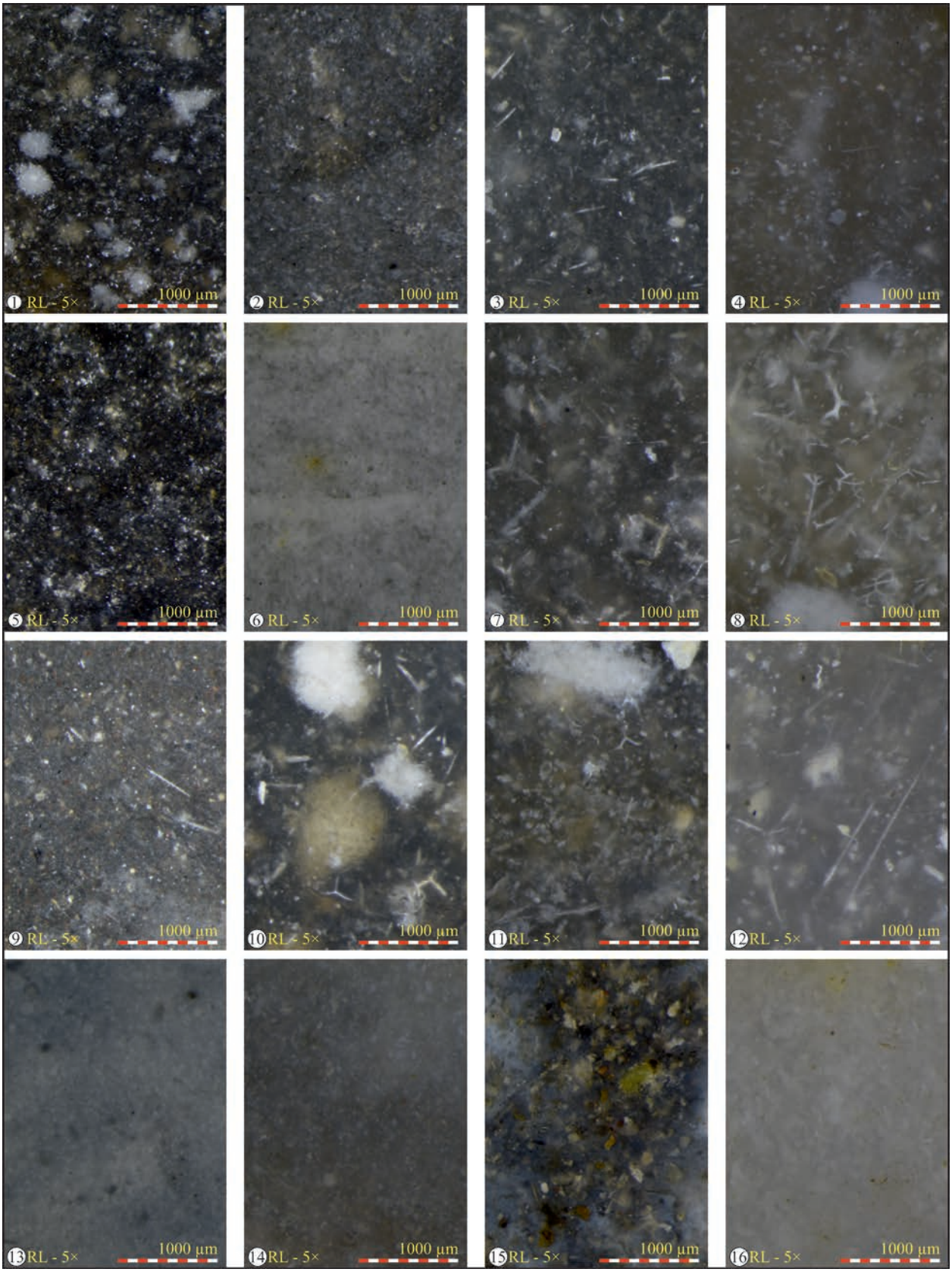


Plate III. *Microscopic views of samples from geological deposits (1–12) and origin sites (13–16) in the study area:* ***1.*** *Prut flint type B;* ***2.*** *Prut flint type FB;* ***3.*** *Prut flint type TDG;* ***4.*** *Prut flint type TLG;* ***5.*** *Dniester flint type BFF;* ***6.*** *Dniester flint type OMG;* ***7.*** *Dniester flint type TGB;* ***8.*** *Dniester flint type TMB;* ***9.*** *Dniester flint type BF;* ***10.*** *Dniester flint type FFB;* ***11.*** *Dniester chert type GDG;* ***12.*** *Dniester chert type GLG;* ***13.*** *Volhyno-Podolian bioclastic flint;* ***14.*** *Volhyno-Podolian pithonellid-bioclastic flint;* ***15.*** *Dniester detrital-rich spiculitic chert;* ***16.*** *Dniester bioclastic-intraclastic chert; RL - reflected light (photographs by Al. Ciornei 2024–2025).*

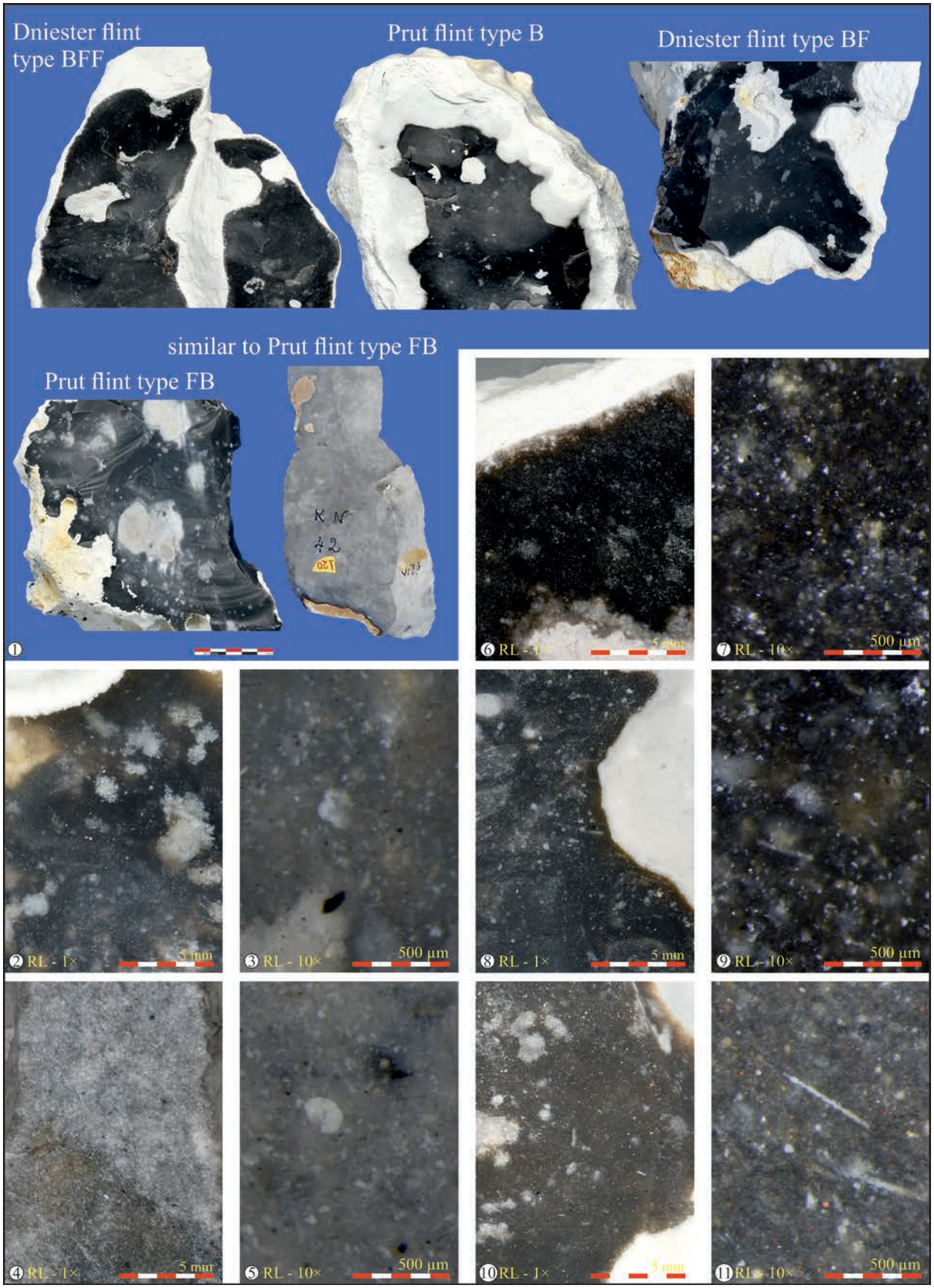


Plate IV. *Black flint types from the study area:* ***1.*** *Macroscopic views (scale bar is 2.5 cm long);* ***2–3.*** *Prut flint type FB;* ***4–5.*** *Similar to Prut flint type FB;* ***6–7.*** *Dniester flint type BFF;* ***8–9.*** *Prut flint type B;* ***10–11.*** *Dniester flint type BF; 2–11 - photomicrographs of water immersed samples; RL - reflected light (photographs by Al. Ciornei 2024–2025).*

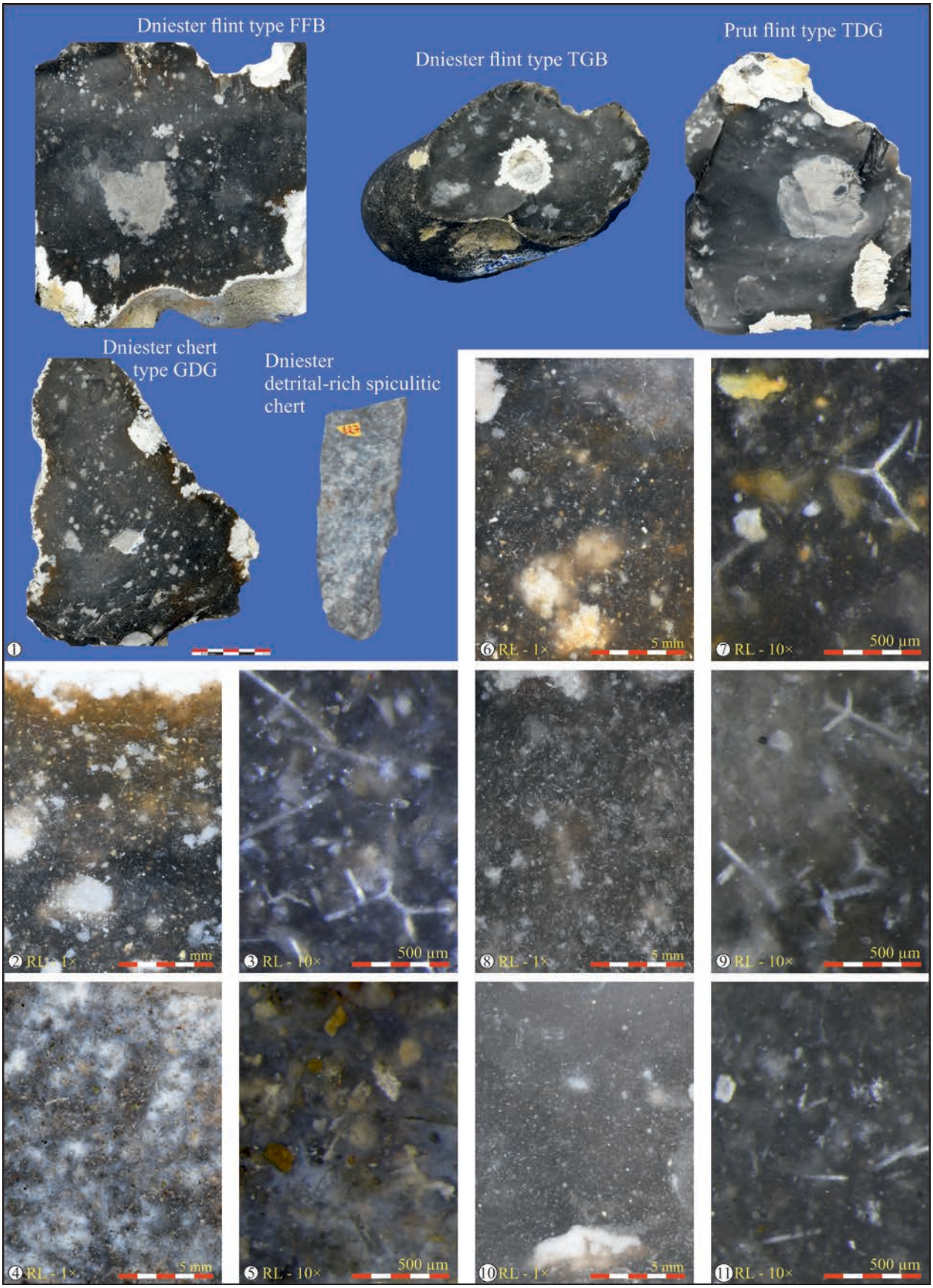


Plate V. *Dark grey flint and chert types from the study area:* ***1.*** *Macroscopic views (scale bar is 2.5 cm long);* ***2–3.*** *Dniester chert type GDG;* ***4–5****. Dniester detrital-rich spiculitic chert;* ***6–7.*** *Dniester flint type FFB;* ***8–9.*** *Dniester flint type TGB;* ***10–11.*** *Prut flint type TDG; 2–11 - photomicrographs of water immersed samples; RL - reflected light (photographs by Al. Ciornei 2024–2025).*

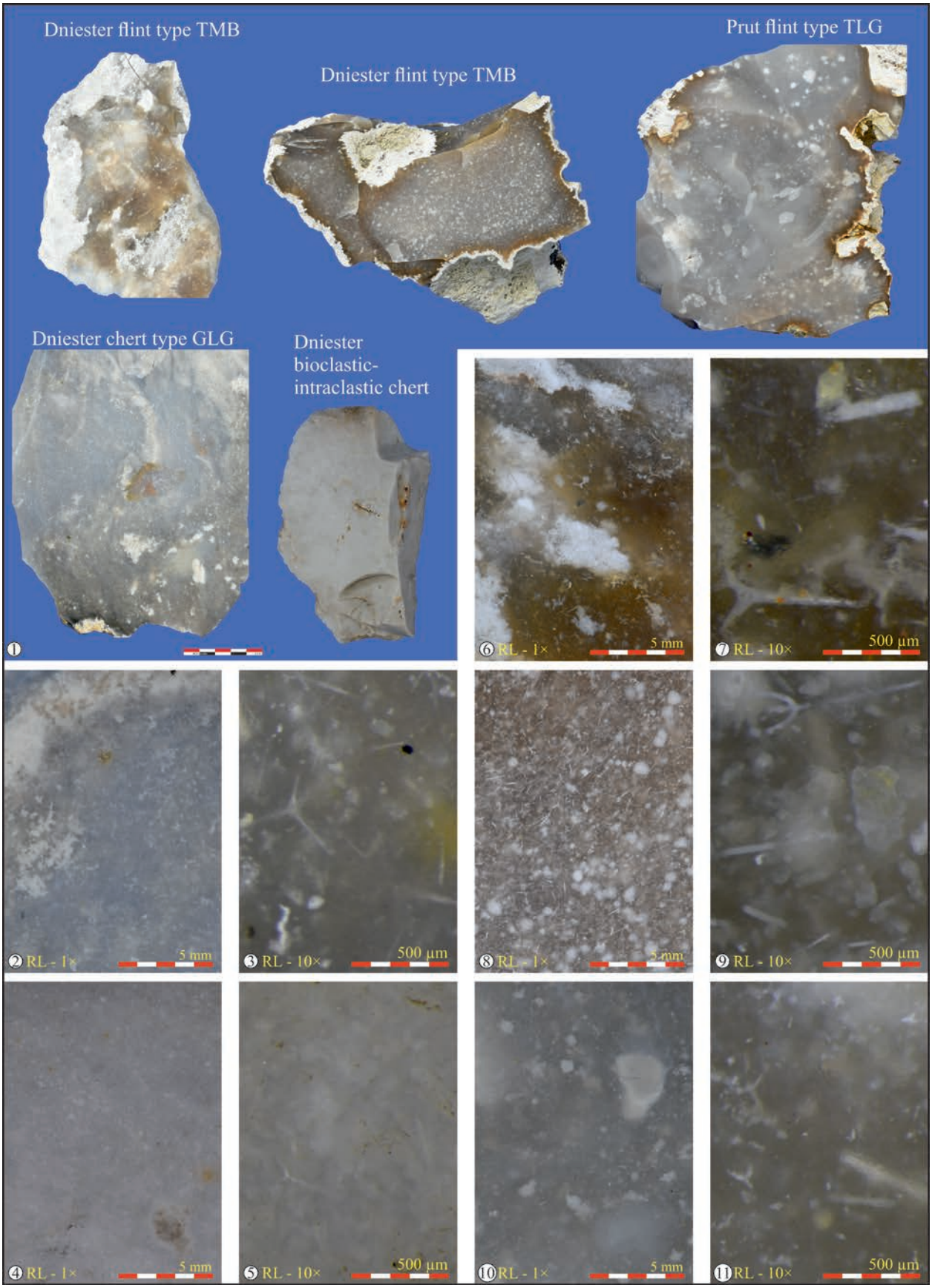


Plate VI. *Medium-light grey flint and chert types from the study area:* ***1.*** *Macroscopic views (scale bar is 2.5 cm long);* ***2–3.*** *Dniester chert type GLG;* ***4–5.*** *Dniester bioclastic-intraclastic chert;* ***6–7.*** *Dniester flint type TMB;* ***8–9.*** *Dniester flint type TMB;* ***10–11.*** *Prut flint type TLG; 2–11 - photomicrographs of water immersed samples; RL - reflected light (photographs by Al. Ciornei 2024–2025).*

A STUDY OF THE POTTERY ASSEMBLAGE FROM DÜDEN HÖYÜK, KARAMAN PROVINCE, TÜRKİYE

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Keywords: *Central Anatolia, Neolithic, Chalcolithic, Early Ceramic Production, Konya Plain*

Abstract: *Düden Höyük is a prehistoric settlement located in the Ayrancı District of Karaman Province in south-central Anatolia, Türkiye. The settlement, locally known as Düden, was first identified in 2022 during the Karaman Prehistoric Survey Project, which aims to document prehistoric occupations in the region. Surface investigations at the site revealed pottery assemblages displaying Neolithic and Chalcolithic characteristics, together with chipped stone artefacts and other cultural remains. This study focuses on the pottery assemblage from Düden Höyük, which was examined in two main groups representing Neolithic and Chalcolithic traditions. A total of 24 handmade pottery sherds were analysed for fabric, surface treatment, and morphological characteristics. Comparative evaluations with stratified and well-dated assemblages from Central Anatolia and the Antalya-Burdur and Beyşehir-Suğla Lakes regions, including Çatalhöyük and Erbaba, suggest that part of the assemblage dates to the Late Neolithic period. In addition, a radiocarbon date obtained from a charred organic sample collected at the settlement yielded a calibrated age range of 4725–4536 BC (94.7% probability), supporting the proposed chronological framework. The results contribute new data for understanding the Neolithic and Chalcolithic occupation history of Karaman Province and provide important comparative evidence for evaluating cultural interactions and settlement patterns in south-central Anatolia.*

Cuvinte-cheie: *Anatolia centrală, neolitic, chalcolitic, producție ceramică timpurie, Câmpia Konya*

Rezumat: *Düden Höyük este o așezare preistorică situată în Districtul Ayrancı al Provinciei Karaman din Anatolia central-sudică, Turcia. Așezarea, cunoscută local sub numele de Düden, a fost identificată pentru prima dată în 2022 în cadrul Proiectului de Cercetare Preistorică Karaman, care urmărește documentarea ocupațiilor preistorice din regiune. Investigațiile de suprafață din sit au relevat ansambluri ceramice cu caracteristici neolitice și chalcolitice, împreună cu artefacte din piatră cioplită și alte rămășițe culturale. Acest studiu se concentrează pe ansamblul ceramic de la Düden Höyük, care a fost examinat în cadrul a două grupe principale reprezentând tradițiile neolitice și chalcolitice. Un număr total de 24 de cioburi ceramice lucrate cu mâna au fost analizate din perspectiva pastei, a tratamentului suprafeței și a caracteristicilor morfologice. Evaluările comparative cu ansambluri stratificate și bine datate din Anatolia Centrală și din regiunile lacurilor Antalya-Burdur și Beyşehir-Suğla, inclusiv Çatalhöyük și Erbaba, sugerează că o parte din ansamblu datează din perioada neoliticului târziu. În plus, o datare radiocarbon obținută dintr-un eșantion organic carbonizat colectat din așezare a furnizat un interval de vârstă calibrat de 4725–4536 î.Hr. (probabilitate 94,7%), susținând cadrul cronologic propus. Rezultatele contribuie cu date noi la înțelegerea istoriei ocupației neolitice și calcolitice a provinciei Karaman și oferă dovezi comparative importante pentru evaluarea interacțiunilor culturale și a tiparelor de așezare din Anatolia central-sudică.*

INTRODUCTION

Central Anatolia[1] lies at the strategic crossroads between eastern and western Türkiye and the Mediterranean coastal zone. This strategic location has enabled the region to host many archaeological settlements since prehistoric times. Systematic excavations conducted in settlements such as Çatalhöyük[2], Canhasan[3], Tepecik-Çiftlik[4], Köşk Höyük[5], Aşıklı Höyük[6], Musular[7], Erbaba[8], and Suberde[9], located in the triangle formed by the Konya Plain and Volcanic Cappadocia provinces (*i.e.*, Niğde, Aksaray, Nevşehir, and Kayseri provinces), as well as surveys conducted in the mountainous area north of the Central Taurus Mountains[10], provide essential data on the region's Neolithic and Chalcolithic periods. Furthermore, the settlements of Bademağacı[11], Hacılar,[12] and Kuruçay[13] in the Antalya-Burdur region are among other centres that shed light on the region's early periods. However, our knowledge of the region's early periods remains insufficient beyond these major settlements. To this end, the Karaman Prehistoric Survey Project (KAPYAP) was launched in 2022 and continues to this day[14]. During fieldwork in the districts

[1] The central part of modern Türkiye.

[2] Mellaart 1961, p. 159–184; Last 1996, p. 15–172.

[3] French 1964, p. 125–137; French 1965, p. 87–94; French 1967, p. 165–178; French 2005.

[4] Bıçakçı *et alii* 2012, p. 89–134; Godon 2005, p. 1–13.

[5] Silistreli 1989, p. 361–374; Öztan 2002.

[6] Özbaşaran 2012, p. 135–158.

[7] Özbaşaran 1999, p. 119–128; Özbaşaran 2000, p. 129–151; Özbaşaran 2012, p. 159–180.

[8] Bordaz, Alpers-Bordaz 1976, p. 40–44; Bordaz, Alpers-Bordaz 1982, p. 85–93.

[9] Bordaz 1969, p. 43–71.

[10] Hacar 2017, p. 12–23.

[11] Duru, Umurtak 2019.

[12] Mellaart 1970, p. 8–10.

[13] Duru 1994.

[14] As a result of archaeological fieldwork along the northern part of the survey area, stone tool finds that probably belong to the Lower and Middle Palaeolithic periods, according to their techno-typological

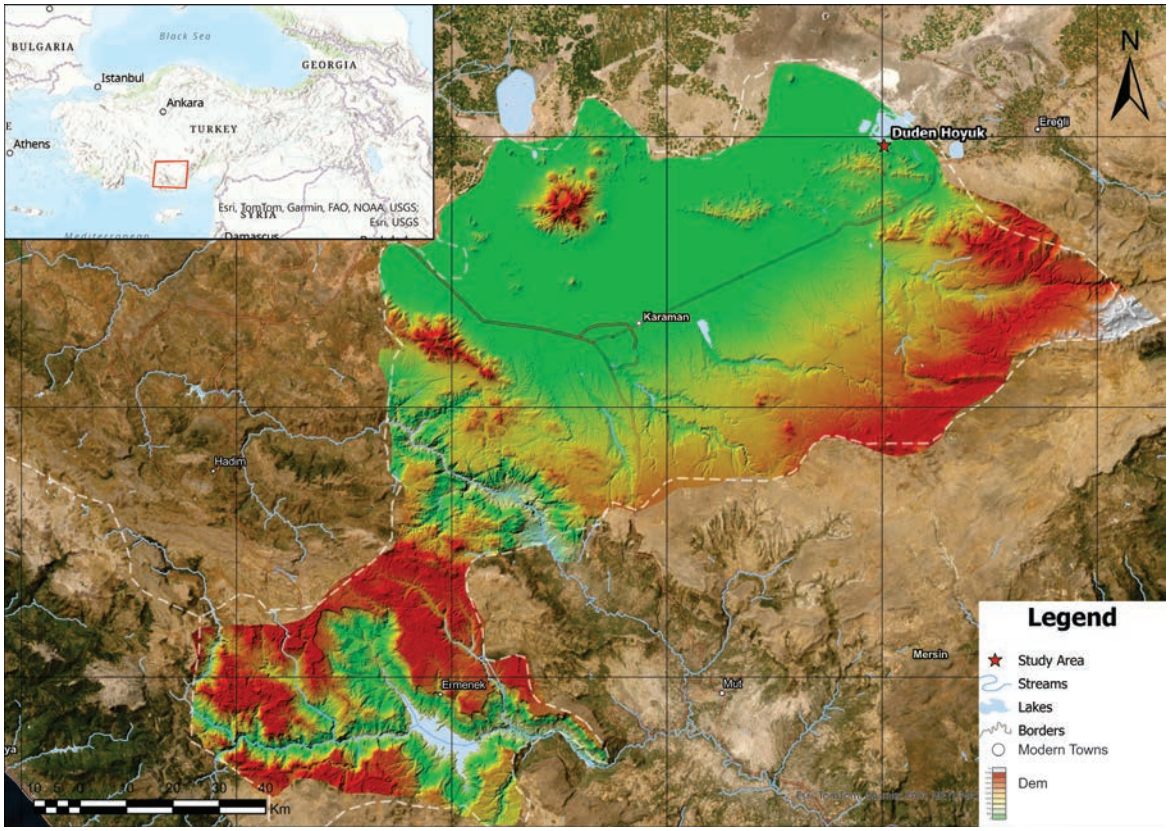


Figure 1. *The map shows the location of Düden Höyük and Karaman Province, where the archaeological surveys have been conducted.*

and villages of Karaman Province, more than 70 previously unknown prehistoric settlements and open-air localities have been identified, yielding numerous prehistoric finds, mostly lithic implements dating from the Palaeolithic to the Chalcolithic periods[15]. Moreover, Düden Höyük[16] stands out for its pottery assemblages, which reflect characteristics of the Neolithic and Chalcolithic periods of the Konya Plain (Fig. 1, 2). It is also noted that the settlement is situated on the periphery of the contemporary Akgöl Marsh, initially occupying a lakeside setting, thereby offering invaluable insights into Neolithic and Chalcolithic settlement patterns and resource exploitation in wetland environments (Fig. 3).

Düden Höyük[17] stretches over an area of 700 × 300 square metres. Investigations along the surface of the settlement, which covers a relatively large area, have yielded approximately 35 pottery sherds. The initial examinations indicate that all pottery sherds date to the Neolithic and Chalcolithic periods. However, only 24 of them, which preserved a profile, have been discussed in this study. Most of the pottery sherds, all of which are handmade, belong to coarse and medium-coarse wares, with fine wares being quite rare. Coarse wares contain mineral additives comprising lime, stone chips, and a small amount of grog, along with dense plant inclusions of coarsely chopped straw. Medium-coarse wares also contain plant inclusions, but they are more sparsely distributed. All pottery finds have a light grey or blackish core. The core observed in the cross-sections of early-period pottery, and the discolouration on the surfaces of some pottery sherds, indicate that firing occurred in the open air and was uncontrolled.

NEOLITHIC POTTERY

Among the pottery finds in the surface materials collected from Düden Höyük, seven samples exhibit Neolithic characteristics. Three distinct groups of wares were identified on the basis of form, fabric features, the size of tempering materials, and surface colours. The wares classified as the first group consist of coarse productions with a light-coloured surface. This group is notable for its

characteristics, were identified in the area known as the Çakıllı Güney Yamaçları near Berendi village, located in the Ayrancı district of Karaman. On the other hand, stone tool artefacts attributed to the Lower, Middle, and Upper Palaeolithic periods have also been identified around the Taşkale Reservoir area, between the villages of Taşkale and Pınarkaya. These finds have been documented, particularly in areas near freshwater sources (*e.g.*, rivers and creeks) at altitudes of 1600–1700 metres. These constitute rare Palaeolithic finds for both the survey area and Central Anatolia. Notably, the stone tools attributed to the Upper Palaeolithic period constitute the only documented evidence for this region (Karakoç *et alii* 2024, p. 42).

[15] Karakoç *et alii* 2024, p. 42.

[16] Karakoç 2025.

[17] *Höyük* means *mound* or *tell*, and *Düden* means *sinkhole* in Turkish.



Figure 2. *A pottery sherd found on the surface of Düden Höyük.*



Figure 3. *A general view of Düden Höyük from the southeast.*

abundant straw and plant temper, as well as the presence of lime, small matte greyish stone inclusions, and a small amount of chamotte. The surfaces of these vessels are mostly wet-smoothed and unpolished, although one example displays a light slip. The second group of wares has a light-coloured surface like the first group, but is of medium coarse quality, and a beige-coloured slip is observed on their surfaces. The surface colours of both groups are light buff to beige tones (7.5YR 7/4, 10YR 7/3, 10YR 8/3). The third group, referred to as medium-quality wares, bears a matte red slip (10R 5/6) and contains dense inclusions of plant remains, small stones, and lime.

The vessel forms attributed to this period are divided into two types: closed and open. Closed forms mainly consist of round-bodied pots with an inverted, simple rim (Pl. I/a–d) and "S"-shaped profiled pots, with bulging bellies and everted rims (Pl. I/e–f). Open forms are represented by a deep bowl with straight walls and a simple, flat rim (Pl. I/g). Rim diameters of pots range from 20 to 28 cm, while the deep bowl has a diameter of 26 cm.

The pots shown in Pl. I/a–b have the surface smoothed while wet, whereas those in Pl. I/c–d are slip-coated. On the vessels shown in Pl. I/a–c, the dense straw and plant temper in the clay, along with small stone and lime inclusions, are clearly visible on the surface, resulting in a porous texture. The closest parallels to the examples in Pl. I/a–b are found in the Early Neolithic (Early Tradition) pottery from the Çatalhöyük XII–VIII/VII[18] and Suberde III–I[19] layers, as well as in the Bademağacı Höyük EN I/7 layer[20]. However, the early-tradition pottery at the Çatalhöyük and Suberde settlements was produced from much coarser materials than the Düden examples, with wall thicknesses ranging from approximately 1 cm to 2.5 cm. Nevertheless, inverted-mouth pots, such as the open-surfaced wares from Düden Höyük, are also present in Layer VII at Çatalhöyük and in Layer III at Erbaba. Özdöl[21] has noted that the grog-tempered ware group (Group 4), which belong to the Middle Neolithic period (Middle Tradition) at Çatalhöyük, first appear in Layer VI. However, the combination of plant, lime, small grey matte stone, and grog temper observed in Pl. I/a–b resembles the Group 5 wares, known as the "standard wares" at Çatalhöyük.

Based on this, the examples in Pl. I/a–b can be considered contemporary with the Çatalhöyük VIII/VII–IV/III and Erbaba III layers in terms of both material composition and form characteristics. They can therefore be attributed to the Middle Neolithic period (ca. 6600–6400 BC). On the other hand, similar examples of open-faced and slipped pots and deep bowls (Pl. I/c–d and g) are also known from the Middle Neolithic at Çatalhöyük VII–IV[22], Erbaba III[23], and Keçiçayırı[24]. Comparable examples of the "S"-shaped, everted, bulbous-bellied, red-slip pottery (Pl. I/e–f), represented here by two specimens and classified as Neolithic, are also attested in the Çatalhöyük VII–IV layers[25].

THE POTTERY OF THE CHALCOLITHIC PERIOD

The pottery sherds from Düden Höyük include 17 pieces that exhibit Chalcolithic characteristics. All are handmade, with most being of medium quality and a smaller number representing fine-quality ceramics. Five distinct material groups have been identified based on surface colours and temper size: buff/beige clay with cream slip, red-slipped and polished ware, mottled ware, striped ware, and dark-faced ware. All contain chaff, lime, small stone, sand, and a small amount of grog as temper. Surface colours include buff/beige (10YR 8/3), red (2.5YR 6/8, 10R 4/6, 10R 5/8), brown (7.5YR 4/2, 7.5YR 5/3, 7.5YR 6/4), and grey (10YR 3/1) tones.

The open forms of the period comprise outward-facing, conical-bodied bowls with flared rims (Pl. II/a–e); upright-rimmed, hemispherical-bodied bowls (Pl. II/f–j); and inward-facing, simple-rimmed, globular-bodied bowls (Pl. III/a–c). The closed forms include neckless vessels (Pl. III/d–e) and vessels with upright necks (Pl. III/f–g). The mouth diameters of the pots range from 16 to 36 cm. With one exception (Pl. III/e), all examples are monochrome.

Among these, Pl. II/a represents a single embossed example. Despite the dense limestone remnants on its surface, the vessel appears to have a buff-coloured base (10YR 8/3), although it is unclear whether the surface was polished. Just below the rim, a stylised animal relief resembling a dragonfly with a thin, elongated body and two wing-like protrusions on each side is depicted. Animal-decorated vessels are known from the Early Chalcolithic layers at Çatalhöyük[26], Canhasan I[27] in the Konya Plain; at Tepecik-Çiftlik and Köşk Höyük in volcanic Cappadocia; and at Höyücek[28], Kuruçay,[29] and Hacılar[30] in the Antalya-Burdur region. Additionally, comparable examples have been reported from the Middle Chalcolithic layers of the Güvercinkayası settlement[31], and from the late Neolithic (Layer V) levels at Ulucak Höyük[32] in western Anatolia.

The other conical-bodied bowls (Pl. II/b–e) have outwardly flaring and pointed rims. All are red-slipped and

[18] Özdöl 2012, p. 19, fig. 3.4.–3.5.
[19] Özdöl 2012, p. 25.
[20] Duru, Umurtak 2008, pl. 16.
[21] Özdöl 2012, p. 27.
[22] Özdöl 2012, p. 34, fig. 3.33 (second from top left).
[23] Özdöl 2012, p. 34, fig. 3.33 (top right); p. 38, fig. 3.37 (first two from left).
[24] Sarı, Akyol 2019, p. 154, pl. 2/17.
[25] Özdöl 2012, p. 35, fig. 3.34 (second from the left).
[26] Yüksel, Çilingiroğlu 2021, p. 25–26, fig. 5, 9.
[27] French 2005, p. 105, fig. 026/2.
[28] Duru 1992, pl. 13.
[29] Duru 1988, pl. 31/7.
[30] Mellaart 1970, p. 116.
[31] Gülçur 2004, p. 163–164, fig. 23, 26.
[32] Çilingiroğlu 2009, p. 202, fig. 4.29.

polished, forming the most common group of materials among Düden pottery. Of these, only the example in Pl. II/d can be identified by its nipple-shaped handle. Both the vessel form and the handle type closely parallel examples recovered from the settlements of Höyücek[33] and Yumuktepe[34]. Numerous similar examples without handles, such as those illustrated in Pl. II/b, c, and e, are known from Canhasan I 2B[35], Hacılar IIA–IIB[36], Bademağacı[37], Karain Cave Phase 1[38], surface finds of Yaka Köşk Höyük[39], Asmainler[40], Orman Fidanlığı[41], Çukurkent[42], and Boğazköy Büyükkaya[43]. Considering these assemblages, outward-facing, conical-bodied bowls first appeared toward the end of the Neolithic period, but their standard production occurred during the Early Chalcolithic and continued into the Middle and Late Chalcolithic periods. Similar examples from the Middle Chalcolithic levels at Mersin Yumuktepe (Layer XVI) differ from the Düden Höyük specimens in their dark-brown surfaces and relatively higher-quality polishing. Indeed, it is evident that the quality of the slip and burnish of the Düden Höyük pottery is comparatively low. Based on the available data, the vessels illustrated in Pl. II/a–e are attributed to the transition from the Late Neolithic to the Early Chalcolithic (ca. 6200/6000–5700 BCE).

Another group of forms examined in this study comprises simple, straight-rimmed bowls with hemispherical bodies (Pl. II/f–j). Among these, Pl. II/f–i display size variants of the same form, all with rounded, simple rims, whereas Pl. II/j has a thickened, rounded rim. All are slipped and polished, with rim diameters ranging from 16 to 36 cm. Their surface colours are red (2.5YR 6/8, 10YR 4/6), reddish yellow (2.5YR 5/6), and reddish brown (5YR 5/3, 5YR 5/4). The closest parallels to the vessels in Pl. II/f–h in terms of both form and material are reported at Canhasan 2A[44], Güvercinkayası[45], Büyük Deller[46], Karain Cave[47], Kuruçay (10th–9th building levels)[48], and Aslanapa[49]. Painted examples occur at Çatalhöyük West[50], while a form comparable to Pl. II/j is also reported in Layer II at Tepecik-Çiftlik[51]. This form, represented in Early Chalcolithic assemblages from Çatalhöyük West and Kuruçay, continues into the transitional phase between the Early and Middle Chalcolithic periods at Tepecik-Çiftlik and Aslanapa, and the Middle Chalcolithic (ca. 4900/4800 BCE) in other settlements.

Among the Chalcolithic pottery from Düden Höyük, several simple-mouthed bowls with inverted rims and spherical bodies were identified. For instance, among these bowls, Pl. III/a has a straight-cut rim, while Pl. III/b and III/c have rounded rims. A sharp turn in the body of Pl. III/c is particularly noteworthy. The mouth diameters of all three range between 18 and 22 cm. On the other hand, Pl. III/a has a red-slipped, mottled surface in red (2.5YR 4/6) and grey (Gley 1/3N), with a yellowish to reddish-brown interior (7.5YR 6/6). Both surfaces are polished. The closest parallel to Pl. III/a occurs among the pottery assemblages of Canhasan 2B–2A (?) layers[52], which are attributed to the transition from the Early to the Middle Chalcolithic. Pl. III/b finds its counterpart in the Middle Chalcolithic assemblages of Canhasan 2A and Büyük Deller, while Pl. III/c corresponds to Late Chalcolithic ribbed bowls known from Canhasan[53] and other settlements in the Konya plain[54] as mentioned above.

The closed forms collected from the mound include two distinct types of pottery: neckless vessels (Pl. III/d–e) and vessels with necks (Pl. III/f–g). Their mouth diameters range from 15 to 18 cm. Pl. III/d–e have thickened, everted, rounded mouth rims. In Pl. III/d, the outer surface and inner rim are red-slipped and polished, while the inner surface was left wet-smoothed. No exact parallel of this form has been found; however, examples with similar material characteristics are observed among the Early Chalcolithic red-slipped and polished wares from Kaynarca Höyük (Niğde–Bor Plain)[55] and Gelveri (Aksaray province)[56].

Pl. III/e is particularly notable for combining a painted and a scored (or swept) surface treatment. In this technique, applied while the vessel was still moist before firing, the outer surface was scraped with a robust object to remove excess clay, leaving regular or irregular scratches[57]. Such vessels, known as "*Coba* Bowls"[58] after the site where they were first identified, are primarily associated with settlements in northern Mesopotamia, eastern Anatolia, and northern Syria, within the Ubaid Culture's distribution area, particularly during the Late Ubaid phase[59]. Although this technique was applied only to the outer surfaces of bowls in its region of origin, many examples are also known from Central Anatolia. For instance, the earliest incised vessels in the survey area appear at Canhasan 2B[60]

[33] Duru 1992, pl. 17/10.
[34] Palumbi 2019, p. 93, pl. 8/c.
[35] French 2005, Fig. 075/3–4.
[36] Mellaart 1970, p. 331, illustration 26.
[37] Duru 2004, pl. 33, Fourth illustration from the top.
[38] Seeher 1987, p. 229, fig. 4.9.
[39] Özsait, Efe 2012, p. 45, pl. VI/9, 11.
[40] Efe 1990, p. 51, illustration 2.
[41] Efe 2001, illustration 8.
[42] Özkan, Erdalkıran 2014, fig. 3, illustration 3.
[43] Schoop 2005, p. 27, fig. 1, illustration 7.
[44] French 2005, p. 194 (fig. 115/13).
[45] Çaylı 2018, p. 75, pl. 10, cat. no. 27, 79, cat. no. 336.
[46] Çaylı 2025, p. 61 (fig. 8/b).
[47] Seeher 1987, p. 229, fig. 4, illustration 21; Aykurt, Ayengin 2022, p. 29, fig. 1, illustration 5.
[48] Duru 1994, pl. 120, illustration 2.
[49] Efe 1993, p. 27, fig. 4, illustration 4.
[50] Mellaart 1965, p. 148, fig. 11, illustration 5; Arslan 2021, p. 128, illustration 1/ 5.
[51] Özbudak 2016, p. 210, illustration 141; Godon, Özbudak 2019.
[52] French 2005, p. 228, fig. 149, illustration 1, 7.
[53] French 2005, p. 263, fig. 184, illustration 2, 9.
[54] Mellaart 1963, p. 202, fig. 2, illustration 13.
[55] Türk 2022, p. 10–43, fig. 3.
[56] Godon, Özbudak 2019.
[57] Demirtaş 2018, p. 4.
[58] Taylor *et alii* 1950, p. 92–93.
[59] Parker 2010, p. 339; Kopanias 2017, p. 28; D'Anna *et alii* 2023, p. 36, fig. 10.
[60] French 2005, p. 21, fig. 87/2–6.

and Gelveri[61], during the transition from the Early to the Middle Chalcolithic. Similar grooved vessels have been identified in the Güvercinkayası I–II and III layers[62], the Yumuktepe XVI and XV layers[63], and Tarsus Gözlü Kule (in the Ubaid Phase)[64], as well as during the surface surveys at Pınarbaşı Bor Höyük[65], Çıplaktepe[66], Isparta Yaka Köşk Höyük[67], Bekçitepe, and Adıyaman I[68]. Most examples of the striped or wavy motifs seen on Pl. III/e, painted in matte dark brown descending irregularly from the neck, come from the Middle Chalcolithic layer (2A) of Canhasan and Aşağı Bağbaşı[69]. Considering these data and given that Pl. III/e exhibits both painted and incised decoration, the vessel can be dated to the late Middle to the early Late Chalcolithic periods (ca. 4600 BCE and later).

The final form group in the Chalcolithic assemblage comprises pots with necks (Pl. III/f–g). These red-slipped and polished vessels have tall, upright necks and straight-cut rims. Their mouth diameters range from 15 to 17 cm. In Pl. III/f, irregular polishing marks are visible on the red slip of the exterior, while the interior is slipped only up to a certain height. Plant temper is clearly visible on the vessel's back surface. The pot with a neck in Pl. III/f has close parallels in both form and material among the Middle Chalcolithic pottery from Layers I–II at Güvercinkayası[70], where several similar examples, both with and without handles, have been identified. Accordingly, Pl. III/f may be considered contemporary with Güvercinkayası Layers I–II (ca. 5200–4750 BCE).

The pot with a neck illustrated in Pl. III/g also bears red slip with traces of polishing in some areas, but it differs from Pl. III/f in that it has comb marks beneath the slip and on the vessel's reverse. Similar forms are known from the Middle (2B–2A?) and Late Chalcolithic levels of Canhasan I[71], although no exact parallel with comparable material properties and finishing quality has been identified. Nevertheless, based on the evidence provided by the finely finished ceramics illustrated in Pl. III/e, it can be tentatively proposed that Pl. III/g may likewise be assigned to the late Middle Chalcolithic to the Early Late Chalcolithic period.

GENERAL EVALUATION AND CONCLUSION

Central Anatolia occupies a key position in the study of early sedentary lifeways at the onset of the Holocene, roughly during the 9th and 8th millennia BC. The Konya Plain, located in the southern part of Central Anatolia, has yielded a series of Early Neolithic settlements, including Boncuklu[72], Çatalhöyük[73], Suberde[74], Canhasan[75], and Pınarbaşı[76], whose excavations have provided invaluable insights into the emergence of sedentary communities, the development of early agriculture, and the social and economic organisation of prehistoric populations.

Several excavated sites located within the volcanic provinces of Cappadocia, including Tepecik-Çiftlik[77], Köşk Höyük[78], Musular[79], Erbaba[80], Sofular[81], and Aşıklı Höyük[82], provide valuable comparative data for understanding obsidian procurement strategies, technological practices, architecture, and subsistence strategies in Central Anatolia. Collectively, these settlements constitute a critical body of evidence that not only elucidates the prehistoric dynamics of Central Anatolia but also sheds light on broader processes of Neolithisation, cultural interaction, and socio-economic transformation across Anatolia as a whole. The Neolithic and Chalcolithic pottery assemblage from Düden Höyük[83], which forms the focus of this study, represents a material group identified through archaeological survey. In this context, pottery assemblages from stratified and securely dated Neolithic settlements in Central Anatolia and the Lakes Region provide an important comparative framework for assessing the chronology and cultural affiliations of the Düden Höyük material.

The analysis of 24 handmade pottery sherds[84], collected from the surface of Düden Höyük, indicates that seven samples date to the Neolithic period. These specimens comprise coarse and medium-coarse wares. The coarse wares contain abundant inclusions of chaff and mineral temper, such as small stone fragments, lime, and sand, and their surfaces were generally wet-smoothed. In contrast, the medium-coarse vessels bear a thin, cream-coloured slip and exhibit traces of surface polishing. All samples contain small stone fragments and lime as tempering agents and show close similarities to pottery assemblages from Çatalhöyük (Layers VIII/VII–IV/III) and Erbaba (Layer III)[85]. The vessels display limited morphological variation and consist mainly of simple inverted rims and round-bodied pots. A radiocarbon analysis of a charcoal sample collected from a section exposed by illicit excavations at Düden Höyük, carried out at the TÜBİTAK Marmara Research Centre (MAM; Lab No. TÜBİTAK-4743), yielded a date of 5987 ± 39 BP.

[61] Özbudak 2010, p. 51–71, fig. 19.
[62] Demirtaş 2018, p. 28, fig. 5.
[63] Caneva *et alii* 2012, p. 389 and pl. II, fig. a–e.
[64] Goldman 1956, p. 75–76 (fig. 224/17, 340/1).
[65] Kalkancı 2022, p. 96.
[66] Kalkancı 2022, p. 167–216.
[67] Özsait, Efe 2012, p. 52, pl. XIV/1.
[68] Hacar 2020, fig. 4–8.
[69] Eslick 1980, p. 10, illustration 4.
[70] Çaylı 2018, p. 79, cat. no. 338, 88, cat. no. 304.
[71] French 2005, p. 249, fig. 170, Ill. 9; p. 271, fig. 192, Ill. 11, 12, 16.
[72] Baird 2012b; Spataro *et alii* 2017.
[73] Boyer *et alii* 2006; Özdöl 2007.
[74] Bordaz 1969; Özdöl 2007.
[75] Baysal 2022; French 2005; 2010.
[76] Baird 2012a.
[77] Bıçakçı 2004.
[78] Öztan 2012.
[79] Özbaşaran *et alii* 2012.
[80] Bordaz, Alpers-Bordaz 1982; Özdöl 2012.
[81] Karakoç *et alii* 2023.
[82] Özbaşaran *et alii* 2018.
[83] Karakoç 2025.
[84] See also the tables provided in the Appendix.
[85] Last 1996; Bordaz, Alpers-Bordaz 1976.

The calibrated age range of the sample corresponds to 4725–4536 BC (94.7% probability). This date generally supports the chronological attribution suggested by the pottery assemblage and indicates that the settlement was occupied during the Late Neolithic/Chalcolithic periods.

During the Chalcolithic period, an increase in the use of slip and surface polishing on ceramics is observed[86]. Plant inclusions remain visible on vessel surfaces, though less prominently than in the Neolithic period. Red-slipped and polished vessels constitute the most common group at Düden Höyük. Comparative analysis of the conical-bodied bowls with everted rims in this group, considering their form, surface, and fabric characteristics, indicates that the examples illustrated in Pl. II/b–e can be dated to the transition from the Late Neolithic to the Early Chalcolithic period (ca. 6200/6000–5700 BC). A shallow bowl decorated with a dragonfly-like relief, represented by a single specimen, finds parallels at Çatalhöyük, where similar forms first appear in the Late Neolithic levels (ca. 6400/6300–6000/5900 BC). Moreover, comparable examples from settlements in Konya, Aksaray, and Niğde provinces (*e.g.*, Çatalhöyük, Canhasan, Tepecik-Çiftlik, Köşk Höyük, Musular) as well as from settlements in the Antalya-Burdur region, also known as the Lakes district (*e.g.*, Kuruçay, Höyücek, and Hacılar) suggest that the embossed shallow bowl from Düden Höyük may likewise be assigned to the Late Neolithic–Early Chalcolithic horizon.

Bowls with straight rims and hemispherical bodies are considered to have appeared during the Early Chalcolithic period and to have become widespread in the Middle Chalcolithic. The presence of comparable examples, in both form and fabric characteristics, at sites such as Canhasan 2A, Güvercinkayası, Tepecik-Çiftlik (Layer II), Büyük Deller, Karain Cave, Kuruçay (Layers 10–9), and Aslanapa allows these vessels to be attributed to the transition from the Early to Middle Chalcolithic, or to the Middle Chalcolithic period (ca. 5200–4750 BC).

Morphological comparison of the simple-mouthed, globular-bodied bowls with inverted rims indicates that Pl. III/a corresponds to ceramics from the transition between the Early and Middle Chalcolithic, Pl. III/b aligns with Middle Chalcolithic ceramics, and Pl. III/c parallels Late Chalcolithic examples. Among the two pots without necks, Pl. III/d is attributable to Early Chalcolithic red-slipped and polished ware. In contrast, Pl. III/e exhibits a local style entirely distinct from regional traditions, combining painted and incised decoration on both interior and exterior surfaces. This vessel is tentatively assigned to the late Middle Chalcolithic–early Late Chalcolithic period (ca. 4600 BC and later). Finally, the Chalcolithic form group represented by pots with necks shows that the vessel on Pl. III/f is contemporary with the Middle Chalcolithic layers at Güvercinkayası (ca. 5200–4750 BC), while the example in Pl. III/g may be dated to the late Middle Chalcolithic–early Late Chalcolithic, based on the traces of incisions observed on the slip and the vessel's inner surface.

In conclusion, the surface materials at Düden Höyük indicate that the settlement was occupied during the Middle and Late Neolithic periods and throughout the Early and Middle/Late Chalcolithic periods, suggesting a long-term, multi-phase pattern of occupation. A radiocarbon date obtained from a charcoal sample collected from the settlement, calibrated to 4725–4536 BC, further supports the proposed chronology of the site.

[86] French 2005.

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APPENDIX 1: POTTERY CATALOGUE

The tables below provide an inventory of Neolithic pottery and outline their principal diagnostic characteristics.

No	Fabric	Form	Diameter	Inner Color	Outer Color	Clay Color	Temper	Surface Feature
1/ e	Handmade	Bowl	12 cm	2.5YR 6/3	10R 5/6	Gley 1/4N	Straw and fine plant, lime, small stones, sand, mica	Slip-coated
No	**Fabric**	**Form**	**Diameter**	**Inner Color**	**Outer Color**	**Clay Color**	**Temper**	**Surface Feature**
1/ f	Handmade	Bowl	18 cm	10YR 6/3	10YR 4/6	Gley 1/3N	Straw and fine plant, lime, small stones, sand, mica	Slip-coated
No	**Fabric**	**Form**	**Diameter**	**Inner Color**	**Outer Color**	**Clay Color**	**Temper**	**Surface Feature**
1/ g	Handmade	Bowl	26 cm	10YR 8/3	10YR 8/3	10YR 4/1	Straw and fine plant, lime, small stones, sand, mica	Slip-coated

Table 1.1. *Neolithic Pottery.*

No	Fabric	Form	Diameter	Inner Color	Outer Color	Clay Color	Temper	Surface Feature
1/ a	Handmade	Pot	25 cm	2,5YR 6/3	10R 5/6	Gley 1/4N	Coarse straw, fine plant, lime, small stones, sand, mica	Wet smoothing
1/ b	Handmade	Pot	20 cm	10YR 7/3	10YR 7/3	Gley 1/4N	Coarse straw, fine plant, lime, small stones, sand, mica	Wet smoothing
1/ c	Handmade	Pot	28 cm	10YR 7/3	10YR 7/3	Gley 1/4N	Coarse straw, fine plant, lime, small stones, sand, mica	Slip-coated
1/ d	Handmade	Pot	24 cm	10YR 7/3	10YR 7/3	Gley 1/4N	Coarse straw, fine plant, lime, small stones, sand, mica	Slip-coated

Table 1.2. *Neolithic Pottery.*

No	Fabric	Form	Diameter	Inner Color	Outer Color	Clay Color	Temper	Surface Feature
2/ a	Handmade	Bowl	37 cm	5YR 6/6	5YR 6/6	5YR 4/1	Straw and fine plant, lime, small stones, sand, mica	Slip-coated
No	**Fabric**	**Form**	**Diameter**	**Inner Color**	**Outer Color**	**Clay Color**	**Temper**	**Surface Feature**
2/ b	Handmade	Bowl	27 cm	5YR 4/4	2.5YR 5/8	5YR 3/1	Straw and fine plant, lime, small stones, sand, mica	Burnished slip
No	**Fabric**	**Form**	**Diameter**	**Inner Color**	**Outer Color**	**Clay Color**	**Temper**	**Surface Feature**
2/ c	Handmade	Bowl	25 cm	2.5YR 6/8	2.5YR 6/8	Gley1/4N	Straw and fine plant, lime, small stones, sand, mica	Burnished slip
No	**Fabric**	**Form**	**Diameter**	**Inner Color**	**Outer Color**	**Clay Color**	**Temper**	**Surface Feature**
2/ d	Handmade	Bowl	21 cm	7.5YR 5/3	7.5YR 6/4	Gley1/4N	Straw and fine plant, lime, small stones, sand, mica	Burnished slip
No	**Fabric**	**Form**	**Diameter**	**Inner Color**	**Outer Color**	**Clay Color**	**Temper**	**Surface Feature**
2/ e	Handmade	Bowl	26 cm	5YR 5/4	5YR 5/4	5YR 4/1	Straw and fine plant, lime, small stones, sand, mica	Burnished slip

Table 2.1. *Chalcolithic Pottery.*

No	Fabric	Form	Diameter	Inner Color	Outer Color	Clay Color	Temper	Surface Feature
2/ f	Handmade	Bowl	37 cm	5YR 5/3	5YR 5/3	5YR 4/1	Straw and fine plant, lime, small stones, sand, mica	Burnished slip
No	**Fabric**	**Form**	**Diameter**	**Inner Color**	**Outer Color**	**Clay Color**	**Temper**	**Surface Feature**
2/ g	Handmade	Bowl	29 cm	2.5YR 6/8	2.5YR 6/8	2.5YR 5/1	Straw and fine plant, lime, small stones, sand, mica	Burnished slip
No	**Fabric**	**Form**	**Diameter**	**Inner Color**	**Outer Color**	**Clay Color**	**Temper**	**Surface Feature**
2/h	Handmade	Bowl	20 cm	5YR 5/6	5YR 5/6	5YR 5/1	Straw and fine plant, lime, small stones, sand, mica	Burnished slip
No	**Fabric**	**Form**	**Diameter**	**Inner Color**	**Outer Color**	**Clay Color**	**Temper**	**Surface Feature**
2/ i	Handmade	Bowl	16 cm	7.5YR 5/6	10R 4/6	Gley1/4N	Straw and fine plant, lime, small stones, sand, mica	Burnished slip
No	**Fabric**	**Form**	**Diameter**	**Inner Color**	**Outer Color**	**Clay Color**	**Temper**	**Surface Feature**
2/ j	Handmade	Bowl	20 cm	5YR 5/4	5YR 5/6	5YR 5/6	Fine plant, lime, sand, grog, mica	Burnished slip

Table 2.2. *Chalcolithic Pottery.*

No	Fabric	Form	Diameter	Inner Color	Outer Color	Clay Color	Temper	Surface Feature
3/ a	Handmade	Bowl	22 cm	7.5YR 6/6	2.5YR 4/6	Gley1/3N	Straw, fine plant, lime, small stones, sand, mica	Burnished slip
No	**Fabric**	**Form**	**Diameter**	**Inner Color**	**Outer Color**	**Clay Color**	**Temper**	**Surface Feature**
3/ b	Handmade	Bowl	18 cm	5YR 5/3	5YR 5/3	5YR 4/1	Fine plant, lime, sand, grog, mica	Burnished slip
No	**Fabric**	**Form**	**Diameter**	**Inner Color**	**Outer Color**	**Clay Color**	**Temper**	**Surface Feature**
3/ c	Handmade	Bowl	19 cm	10R 5/8	10R 5/8	10R 4/1	Fine plant, lime, sand, grog, mica	Burnished slip
No	**Fabric**	**Form**	**Diameter**	**Inner Color**	**Outer Color**	**Clay Color**	**Temper**	**Surface Feature**
3/ d	Handmade	Pot	15 cm	10YR 7/4	10R 5/6	5YR 4/1	Coarse straw, fine plant, lime, sand, grog, mica	Burnished slip

Table 3.1. *Chalcolithic Pottery.*

No	Fabric	Form	Diameter	Inner Color	Outer Color	Clay Color	Temper	Surface Feature
3/ e	Handmade	Pot	19 cm	10YR 6/3	7.5YR 4/2	7.5YR 4/1	Coarse straw, fine plant, lime, sand, grog, mica	Slip-coated
No	**Fabric**	**Form**	**Diameter**	**Inner Color**	**Outer Color**	**Clay Color**	**Temper**	**Surface Feature**
3/ f	Handmade	Pot	17 cm	2.5YR 6/8	2.5YR 6/8	2.5YR 5/1	Coarse straw, fine plant, lime, sand, grog, mica	Burnished slip
Plate No	**Fabric**	**Form**	**Diameter**	**Inner Color**	**Outer Color**	**Clay Color**	**Temper**	**Surface Feature**
3/ g	Handmade	Pot	15 cm	10YR 7/4	2.5YR 6/6	Gley1/5N	Coarse straw, fine plant, lime, sand, grog, mica	Burnished slip

Table 3.2. *Chalcolithic Pottery.*

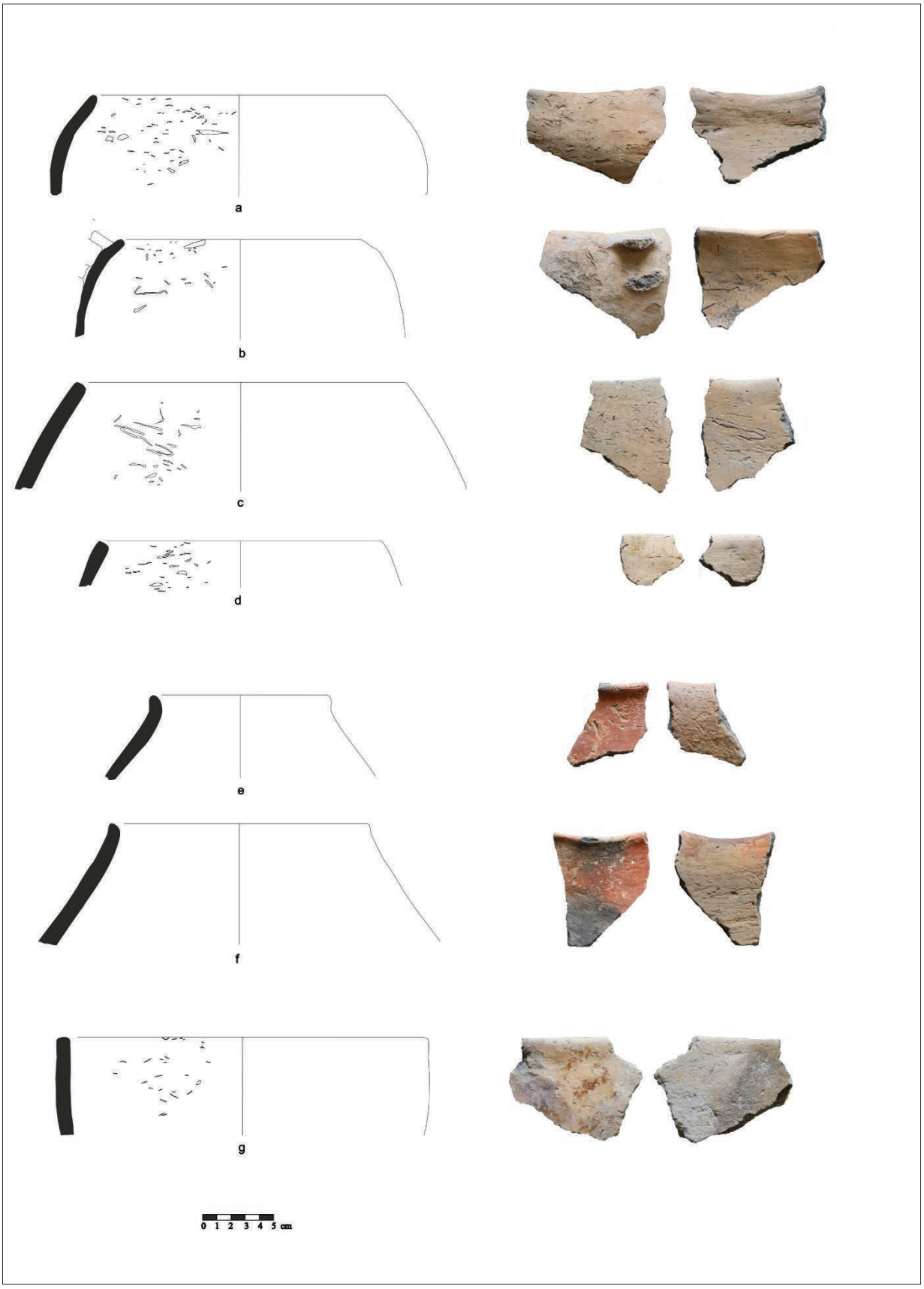


Plate I. *Neolithic Pottery sherds.*

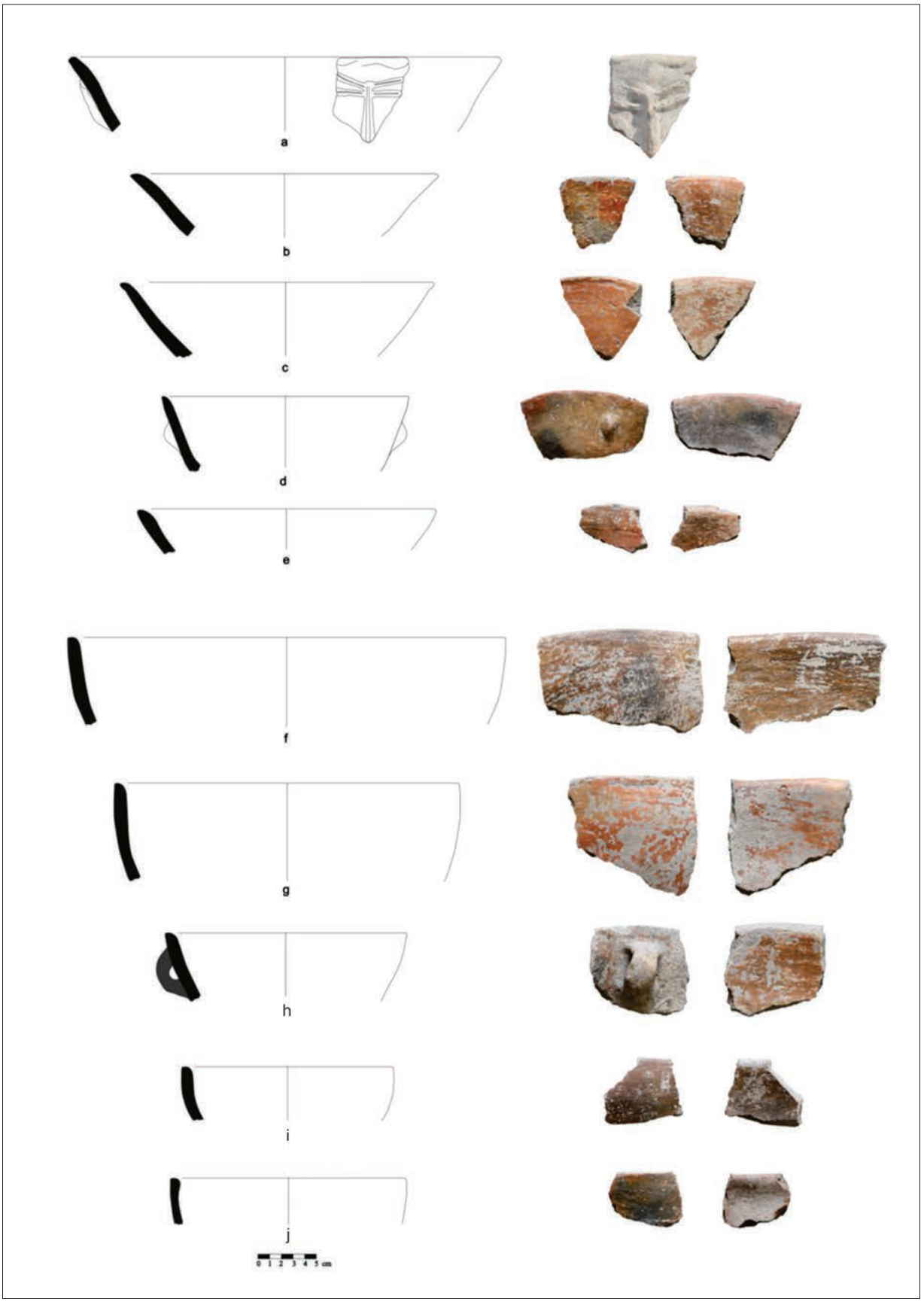


Plate II. *Chalcolithic Pottery sherds, first group.*

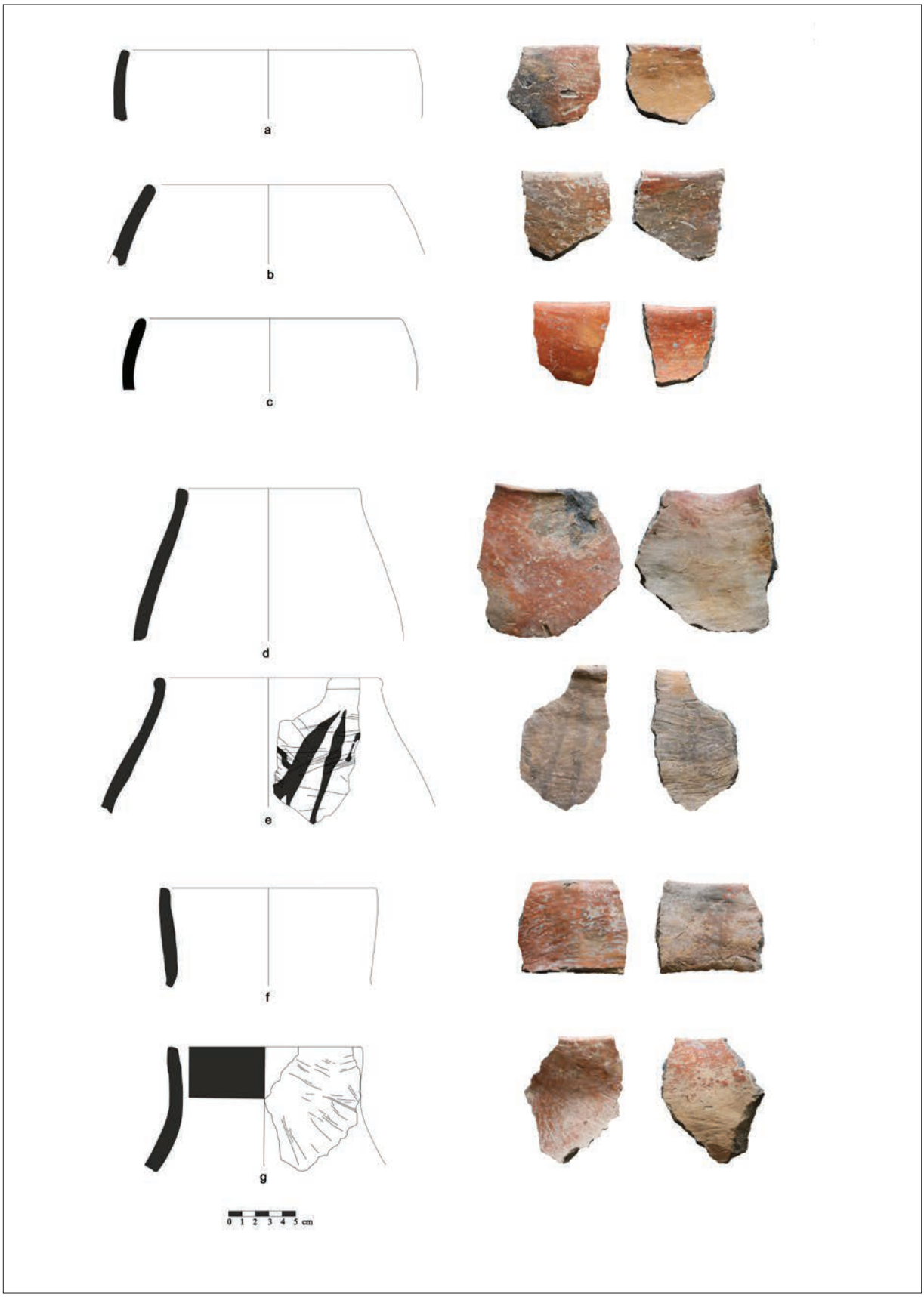


Plate III. *Chalcolithic Pottery sherds, group 2.*

OSSEOUS PROJECTILE POINTS AT THE GUMELNIȚA TELL SETTLEMENT FROM CĂSCIOARELE – *OSTROVEL* (ROMANIA)

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Keywords: *Chalcolithic, tell settlement, projectile points, raw materials, operational scheme*
Abstract: *The tell settlement from Căscioarele –* Ostrovel *is located in the south of Romania. Three main cultural levels have been identified (c. 5000–3900 cal BC): the first is chronologically framed within the Boian culture, and the other two are contemporary with the Gumelnița culture. A total of 39 preforms of projectile points and 264 finished pieces made from antler were inventoried, compared to 16 pieces made from bone. I divided these pieces into 10 typological subcategories, the main element of discrimination was the hafting system. These pieces were predominantly found in the Gumelnița B1 level. The analytical criteria for the technological and functional interpretation of the marks were established based on comparisons with publications about projectile points over time from various areas of the world. The analysis indicates the importance of red deer antler (*Cervus elaphus*) as a raw material for their manufacturing, while bone was rarely used. The technological advantages of choosing this raw material are obvious. According to specialists, of all the osseous raw materials, antlers are the hardest and most elastic bones, making them best suited for the manufacture of weapons. In level B1, hunting constitutes the primary activity for food procurement, likely as an adaptation to environmental conditions that created difficulties for domestic animal husbandry. The economic reality is evidenced by the high proportion of wild mammal remains, among which red deer constitutes more than half of the osteological material. It cannot be ignored the cultural constraints either. Ethnographic examples point out that weapons made from certain species might have been used to hunt particular species. Thus, it may be concluded that both determinants (economical and technological) complement each other and define the predominant use of* Cervus elaphus *antler as a raw material by the Chalcolithic communities of Căscioarele (Romania).*

Cuvinte-cheie: *Calcolitic, tell, vârfuri de armă, materii prime, schemă operațională*
Rezumat: *Tell-ul de la Căscioarele –* Ostrovel *este situat în sudul României. Au fost identificate trei niveluri culturale principale (cca. 5000–3900 cal BC): primul este încadrat cronologic în cultura Boian, iar celelalte două sunt contemporane culturii Gumelnița. Au fost inventariate 39 de preforme de vârfuri de proiectil și 264 de piese finite confecționate din coarne de cerb, comparativ cu 16 piese confecționate din os. Am divizat aceste piese în 10 subcategorii tipologice, principalul element de discriminare fiind sistemul de prindere. Aceste piese provin preponderent din nivelul Gumelnița B1. Criteriile analitice pentru interpretarea tehnologică și funcțională a stigmatelor au fost stabilite pe baza comparațiilor cu publicații despre vârfurile de armă utilizate de-a lungul timpului, din diverse zone ale lumii. Analiza indică importanța cornului de cerb (*Cervus elaphus*) ca materie primă pentru confecționarea acestora, în timp ce osul a fost rar utilizat. Avantajele tehnologice ale alegerii acestei materii prime sunt evidente. Conform specialiștilor, dintre toate materiile prime osoase, coarnele sunt cele mai dure, dar și mai elastice, ceea ce le face cele mai potrivite pentru realizarea armelor. În nivelul B1, vânătoarea este principala activitate pentru obținerea hranei, probabil ca o adaptare la condițiile de mediu care au generat dificultăți în creșterea animalelor domestice. Realitatea economică este evidențiată de proporția mare de resturi de mamifere sălbatice, din care cele de cerb constituie mai mult de jumătate din materialul osteologic. Nu pot fi ignorate nici constrângerile culturale. Exemplele etnografice arată că armele confecționate din anumite materii prime ar fi putut fi folosite pentru vânătoarea anumitor specii. Astfel, se poate concluziona că ambele determinante (cea economică și cea tehnologică) se completează și definesc utilizarea predominantă a cornului de* Cervus elaphus*, ca materie primă, de către comunitățile calcolitice de la Căscioarele (România).*

INTRODUCTION

The earliest evidence of the use of osseous points by human communities appears to date back significantly in time, to specimens from Katanda in Africa (c. 90,000 BP)[1]. In Europe, bone spear points are documented for the first time in association with another human species, the Neanderthals[2]. Beginning with the emergence of *Homo sapiens*, such artifacts appear with increasing frequency all over the world, leading to an exceptional diversification in shapes and raw materials, including ivory, bone, antler, tooth, and shell[3].

In the Lower Danube region, there is evidence of activity during early prehistory. The earliest attestations date to the Aurignacian period[4]. During the Epigravettian, osseous projectiles are more prominently represented, being crafted from reindeer antler, ivory or bone[5]. This tradition continues throughout the Mesolithic, with spear points made from bone and deer antler, some of which are decorated with geometric motifs[6]. The situation changes drastically during the Early and Middle Neolithic, when the use of projectile points for hunting becomes sporadic, replaced by points with domestic utility. This shift reflects

[1] Yellen *et alii* 1995; Brooks *et alii* 2006; Langley 2016.
[2] Mateo-Lomba *et alii* 2024.
[3] See Liolios 1999; Pétillon 2006; Langley 2013, 2015; Tejero 2014, 2016; Allen *et alii* 2016; Langley *et alii* 2016; Goutas, Tejero 2016; Lowery *et alii* 2017; Doyon 2020; Scharlotta, Daniels 2020.
[4] Păunescu 1996; Chirica 2001; Beldiman 2005.
[5] Brudiu 1987, 1994; Păunescu 1999; Cârciumaru *et alii* 2008; Mărgărit *et alii* 2023a.
[6] Boroneanț V. 2000; Boroneanț A. 2012; Mărgărit 2008; Mărgărit *et alii* 2017a, b, 2022a.

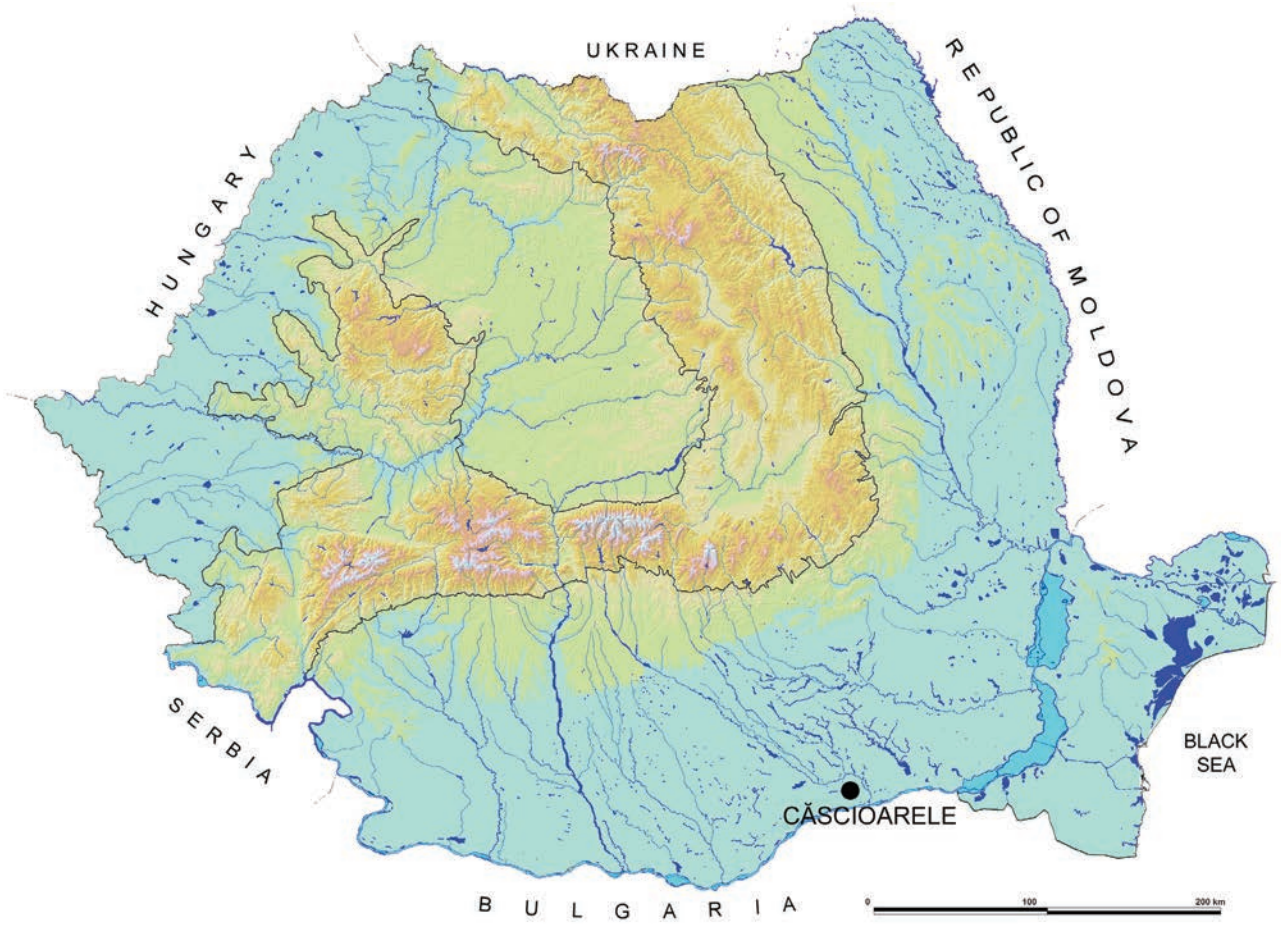


Figure 1. *Location of the Căscioarele tell settlement.*

the economic reality, as the proportion of domestic taxa (primarily ovicaprids and cattle) in the faunal assemblages of the Early and Middle Neolithic exceeds 70%[7].

After the second half of the 5th millennium BC, within the Kodjadermen-Gumelnița-Karanovo VI cultural complex, the number of finds increases significantly, both in terms of sites and artifacts. Again, this situation can be linked to a growing interest among populations in hunting, fishing, gathering, as well as the existence of a diverse wild faunal spectrum. Hunting reaches unexpectedly high frequencies in certain locations, with some sites where remains of wild animals constitute or even exceed 50% of the faunal assemblage[8] and these are the sites in which projectile points appear. Conversely, there are tell settlements such as those at Hârșova and Borduşani (Gumelnița A2), where wild mammals account for only a quarter of the total mammal remains. However, no osseous projectile points have been identified at either sites[9].

In this very varied picture of adaptations of hunting strategies in the different Gumelnița tell settlements, I aim to analyse, under multiple aspects (raw materials, typology, technology, use-wear) the projectile points found at the Căscioarele tell settlement and to see if they can be correlated with intense hunting activities.

ARCHAEOLOGICAL CONTEXT

The Gumelnița tell settlement at Căscioarele – *Ostrovel* (Călărași County) (Fig. 1) was situated on an island within Cătălui Lake. It was located in a bay protected on three sides by the elevated slopes of the Danube terrace, covering an area of approximately 57 by 103 meters[10]. The initial archaeological excavations were conducted in 1925 by Gh. Ștefan[11], who identified two cultural levels. The author dated these levels to the late Neolithic and the transitional period towards the Bronze Age. Subsequent excavations were carried out by a team led by Vl. Dumitrescu between 1962 and 1968[12]. The archaeologist documented three main stratigraphic layers: Layer I, ranging from 4.20 to 5 meters deep, attributed to the Spanțov phase of the Boian culture; Layer II, between

[7] Bălășescu *et alii* 2005.
[8] Bălășescu *et alii* 2005.
[9] Mărgărit, Bălășescu 2025.
[10] Marinescu-Bîlcu 2001.
[11] Ștefan 1925.
[12] Dumitrescu 1965; 1986.

2.60 and 3 meters, associated with the Gumelnița culture, phase A2; and Layer III, between 0.40 and 0.70 meters, assigned to the Gumelnița culture, phase B1.

The tell settlement at Căscioarele – *Ostrovel* covered an area of approximately 3,400 square meters during the later phase of the Gumelnița culture. A total of 16 dwellings and an annex were documented. S. Marinescu-Bîlcu[13] posits that, based on the orientation of the structures, not all the constructions were contemporaneous; this view is also supported by other specialists[14]. Notably, according to data published by Vl. Dumitrescu[15], some dwellings appear to have had specialized functions, serving the needs of the community within the settlement. For instance, dwelling no. 2 seems to have functioned as a flint processing workshop, while dwelling no. 4 yielded 100 weights of clay, which could be associated with several looms.

House no. 8 appears to have had a specialized function as well, as it contained osteological remains alongside red deer antlers, some of which had been transformed into artifacts. According to the conclusions of A. Bolomey[16], this house likely was used as the settlement's „abattoir." The presence of over twenty vessels suggests they may have been used for the chopping and distribution of meat products. Alternatively, Vl. Dumitrescu[17] proposed that this house functioned as an antler processing workshop, based on the discovery of red deer antlers in various stages of processing, including finished pieces.

Radiocarbon data have been published for Boian contexts (5207–4909 cal BC[18] and 4786–4488 cal BC[19]) and Gumelnița contexts (4450–4264 cal BC and 4353–4246 cal BC[20]).

Based on the published information regarding the cultural stratigraphy, the attribution of the projectile points is extremely difficult. Many artifacts lack an indicated depth at which they were found, with this being the only reference provided by archaeologists for delineating the cultural levels. However, for the pieces for which this information is available, most are found at depths not exceeding 2 meters, which has led us to classify them within the Gumelnița B1 level. Under these circumstances, we have chosen to analyze the assemblage as a cohesive whole.

METHODOLOGY

Initially, projectile points were examined macroscopically in order to identify the technological operations involved in the processing of the items. Moreover, it was important to make an accurate characterization of the morphology of the technological marks and of their succession, especially for the subsequent stage of the study. Artefacts were examined and photographed with a Keyence VHX-600 digital microscope with an embedded camera (magnifications from 30x to 200x). The manner in which the use-wear traces developed, including the deformation of the initial volume and the erasure of previous technological marks, was analysed using an Olympus BX53M metallographic microscope (magnifications ranging from 100x to 200x), equipped with an EOS 1200D Canon camera. The analytical criteria for the technological and functional interpretation of the marks were established based upon comparisons with publications on projectile points over time from various areas of the world[21].

ARCHAEOLOGICAL ASSEMBLAGE

Preforms

A series of artifacts appears to represent projectile points in various stages of processing. Their dimensions and morphology correspond to finished pieces found at the site. In this context, they become extremely significant for reconstructing the sequence of technological procedures within the operational chain. The type of blank from which the points could have been made is illustrated by an item (Fig. 2/a) that represents a splinter from the compact tissue of the antler obtained through percussion. Segmentation also seems to have been performed using the same technique. It is already a preform, as the debitage edges have been regularized through cutting.

A fragment of an unfinished piece (Fig. 2/b) is a splinter whose edges were shaped by cutting but was abandoned at this stage. At the ends, segmentation was achieved through bending. The blank, being too narrow, allowed only for the transformation into a projectile point.

Following are seven preforms of rectangular shape (Fig. 2/c). They are at a more advanced stage of processing, with finishing likely to be achieved rapidly through edge sharpening. Within the studied assemblage, there are several pieces that may originate from the transformation of such preforms. For the longitudinal debitage procedures, percussion was exclusively used, while for transverse debitage, both percussion (a few parasitic marks are visible, especially on the shorter edges) and sawing (parasitic cuts on the segmentation edge) were employed (Fig. 2/d). Laterally, the shaping was performed through longitudinal scraping (Fig. 2/e), and the rounded ends were obtained by abrasion (Fig. 2/f). These represent an important stock of preforms that could quickly replace broken or lost projectile points.

A fragment of a beam (Fig. 2/g) is a splinter from the compact tissue, for which the longitudinal splitting procedure could not be identified, as the debitage edges

[13] Marinescu-Bîlcu 2001; 2002.
[14] Ilie 2016.
[15] Dumitrescu 1965.
[16] Marinescu-Bîlcu 2002.
[17] Dumitrescu 1965.
[18] Lazăr *et alii* 2013.
[19] Bréhard, Bălășescu 2012.
[20] Lazăr *et alii* 2018.
[21] See Pétillon, Letourneux 2006; Pétillon 2008; Lozovski *et alii* 2013; Cristiani, Borić 2016; Langley *et alii* 2016; Langley 2019; Zhilin, Savchenko 2020; Dekker *et alii* 2021; David *et alii* 2022.

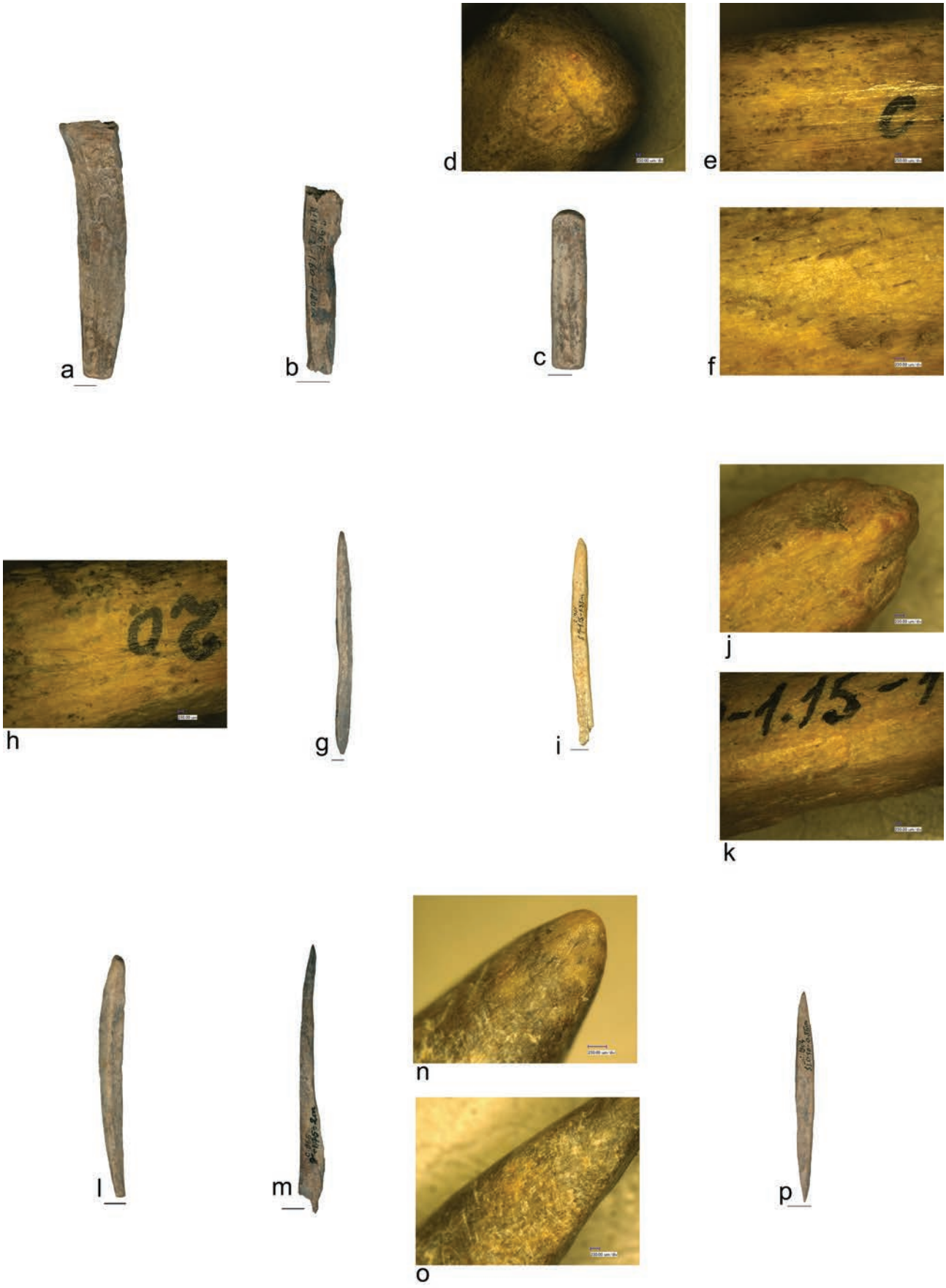


Figure 2. *a, b, c, g, i, l, m, p. Antler preforms; d. Sawing marks; e, h, n. Scraping marks; f, o. Abrasion marks; j–k. Cutting marks.*

have been regularized through longitudinal scraping (Fig. 2/h). Another preform (Fig. 2/i) is at the same stage of processing. The edges (Fig. 2/k) and the preserved end (Fig. 2/j) have been regularized through cutting. In addition to the previous piece, the lower side was shaped by abrasion. For another specimen (Fig. 2/l), the end's regularization was performed through longitudinal scraping applied at the distal level, around the entire circumference. Three additional fragments represent distal fragments of future points. They are in the same stage of shaping, with the distal end created through scraping.

A more advanced procedure is the shaping of the ends observed for six preforms (Fig. 2/m, p). Based on the preserved marks, it is evident that these are splinters from the compact tissue of the antler obtained through longitudinal percussion. The shaping of the edges was initiated by longitudinal scraping. At both ends, a longitudinal scraping was applied around the entire circumference (Fig. 2/n), in some cases overlapped by abrasion (Fig. 2/o). These pieces could have been transformed into double points.

The most numerous preforms are those of future stemmed arrow points (no. 14) (Fig. 3/a–e). They exhibit similar procedures for obtaining the blank, as seen in the previously described pieces, after which the splitting edges were rigorously regularized through scraping. The proximal and distal areas were individualized through procedures of delineation by sawing. According to some specimens (Fig. 3/a), the extremities were sharpened by scraping in the subsequent technological stage. The pieces were not finished, exhibiting a coarse appearance and lacking use-wear.

One of the pieces could be a preform (Fig. 3/f) for the points of the second category (see below), which is characterized by several grooves marked through sawing on the proximal end. The blank is flat, made from compact tissue, but the debitage procedures could not be identified, as a convergent longitudinal scraping was applied (Fig. 3/h). In the medial area, the shaping procedure was initiated by creating two grooves through sawing (Fig. 3/g). Another method of transforming the proximal end appears at a preform (Fig. 3/i) where, on the medial surface, two bilateral grooves were cut through sawing. The remaining technical details are similar to those of the previous pieces.

Finally, a possible preform for a point with a straight base and a hole was also identified (Fig. 3/j). It is a fragment of a *Capreolus capreolus* antler segmented through sawing applied with a flint piece around the entire circumference (Fig. 3/k), followed by bending. The entire surface of the piece was sharpened by longitudinal scraping.

Finishes projectile points

I. The most important category is that of stemmed arrow points (Fig. 3/l, 4/a, h; 5/a), comprising 232 pieces made from antler and nine from bone (Fig. 5/h), which is characterized by a thicker circular/rectangular active area and a thinner shaft. Morphological features and aspects related to the operational chain support grouping these pieces into a single category; however, no morphometric standardization regarding the ratio between the length of the distal and proximal parts could be identified. This ratio exhibits significant variation, likely depending on how the processing was initiated (as was most accessible to the artisan). The blank is flat, made from compact tissue, and the procedures used to produce it could not be identified, as the entire surface was shaped through longitudinal scraping.

Starting from the preforms, I can suppose that percussion was used to obtain the blanks. The hafting system was created through a delineation procedure with sawing (Fig. 3/p; 4/e, l; 5/e, l), applied around the circumference, followed by further scraping (Fig. 3/m–n; 4/d, f–g, k, m-n; 5/d, f–g, k, m–n), deepened to create two sharp-ended extremities. Use-wear marks on the pieces are indicated by a rounded distal end with flattened area that eliminates scraping marks, with polish and fine striations (Fig. 3/o; 4/b–c, i–j; 5/b–c, i–j; 6/b–c).

A subvariant of this category (Fig. 6/a) involves shaping the entire surface of the piece through longitudinal scraping. To ensure the hafting system, the scraping was deeper, creating a thinner proximal area. The delineation groove disappeared.

II. Several projectile points (no=7) with morphology similar to those in the previous category, exhibit at the base of the distal area a series of grooves whose function I cannot determine, whether decorative or intended to facilitate the attachment system (Fig. 6/d, i). The blank is flat, made from compact tissue, and the procedures used for its production could not be identified, as the entire surface of the pieces was shaped through longitudinal scraping (Fig. 6/f, p).

At the medial level, three or four grooves were made through sawing at a distance of approximately 1.2 mm (Fig. 6/e, j). For two specimens (Fig. 6/m), four deep grooves were created using a different procedure: sawing followed by longitudinal cuts (Fig. 6/s-t) for carving the medial area. In all specimens, the pointed end is heavily rounded, with small flattened areas (Fig. 6/h, l, o). The proximal area shows minor signs of compaction and polishing, localized only near the end (Fig. 6/r).

III. Double points (no=11) (Fig. 7/a) represent another important category of weapons. They were made from compact tissue, but the procedures used for producing the blank could not be identified, as the entire surface was shaped through longitudinal scraping (Fig. 7/c, g). At both extremities, the scraping was deeper, resulting in both ends being thinner than the rest of the shaft. Sometimes, depending on the piece, an abrasion was also applied. Unlike the previous category, there are no differences in thickness between the proximal and distal areas. However, some pieces have the proximal part demarcated from the distal part (Fig. 7/e). The hafting system was created



Figure 3. *a–e, f, i–j. Antler preforms; g, k, p. Sawing marks: h, m–n. Scraping marks; l. Antler stemmed arrow point; o. Use-wear marks at the distal end.*

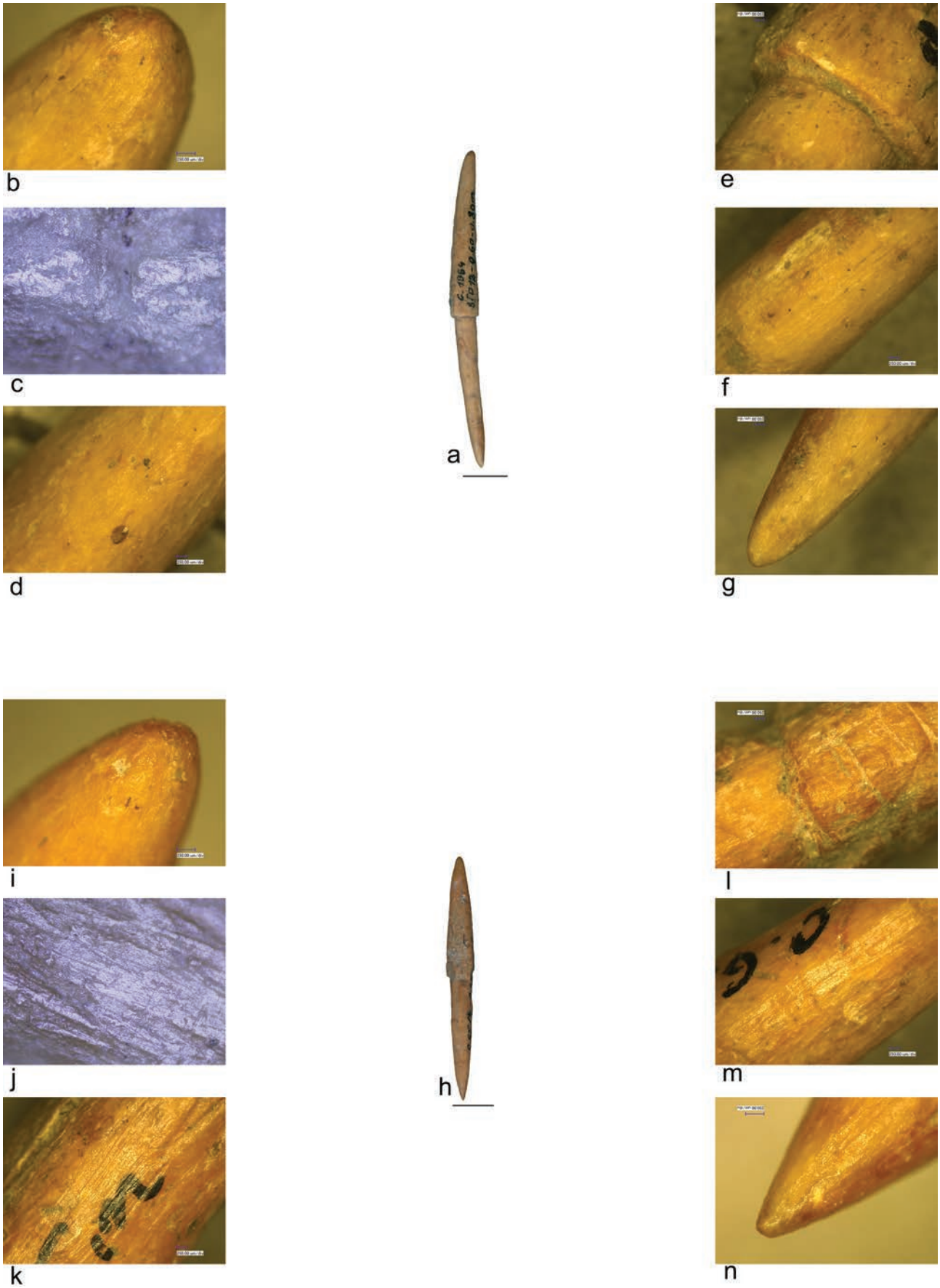


Figure 4. *a, h. Antler stemmed arrow points; b, i. Details of the distal end; c, j. Use-wear marks at the distal end; d, f–g, k, m–n. Scraping marks; e, l. Sawing marks.*

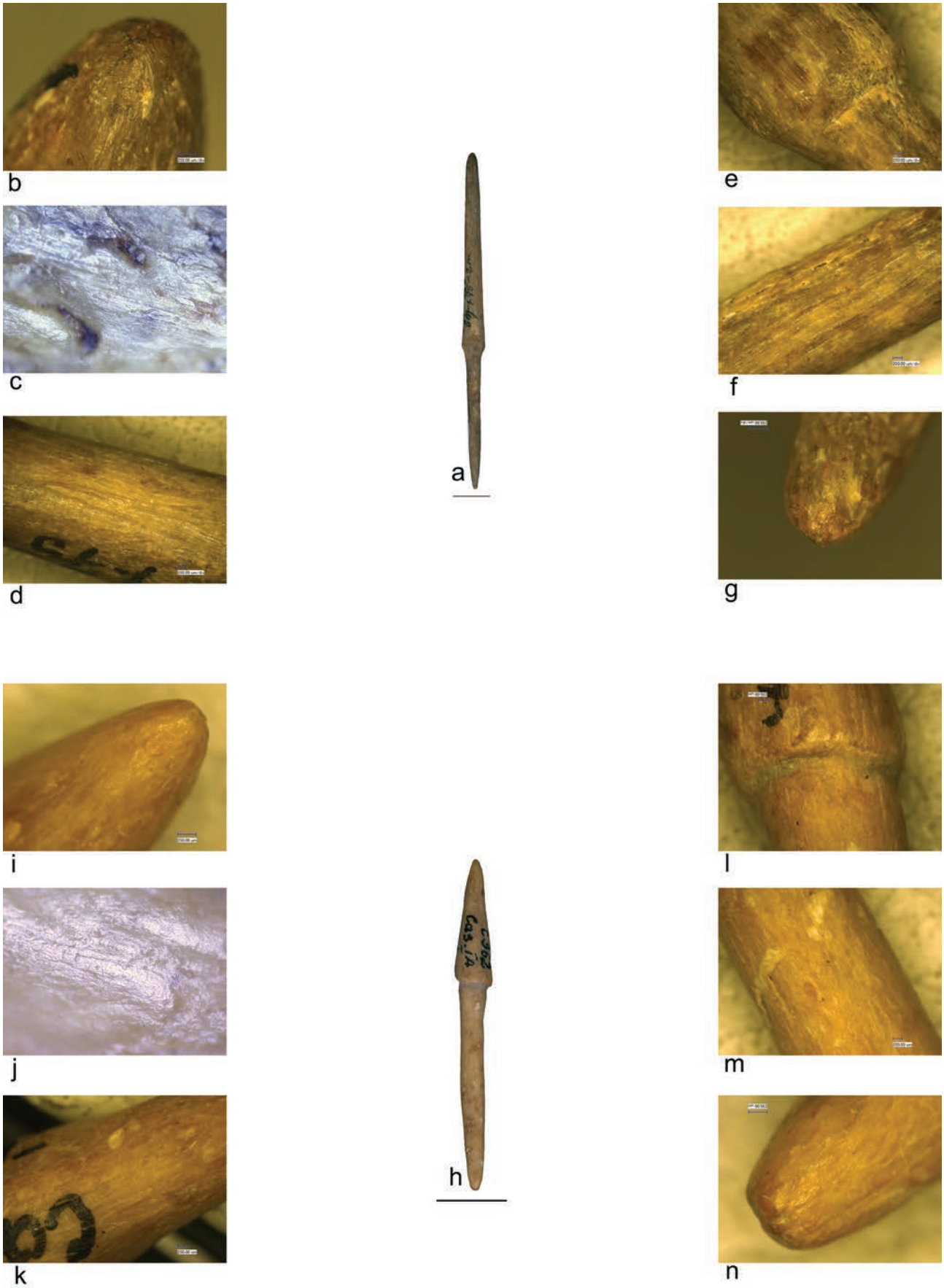


Figure 5. *a. Antler stemmed arrow point; b, i. Details of the distal end; c, j. Use-wear marks at the distal end; d, f–g, k, m–n. Scraping marks; e, l. Sawing marks; h. Bone stemmed arrow point.*

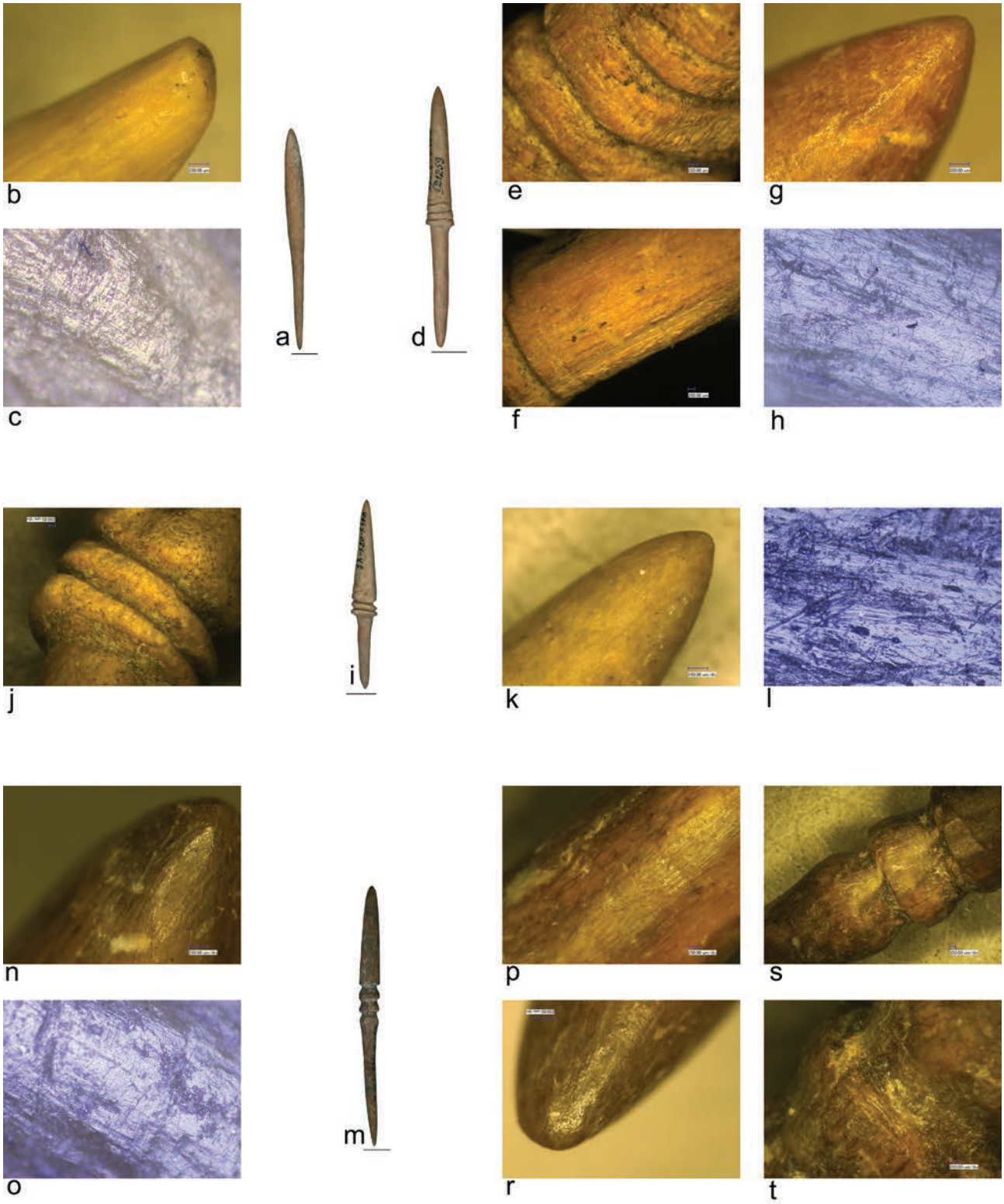


Figure 6. *a, d, i, m. Antler stemmed arrow points; b, g, k, n. Details of the distal end; c, h, l, o. Use-wear marks at the distal end; e, j, s–t. Sawing marks; f, p. Scraping marks; r. Proximal end detail.*

through sawing applied as two bilateral grooves (Fig. 7/h), without encompassing the entire circumference. The proximal area generally appears compressed, with a small straight surface and localized polish only at the end (Fig. 7/d). The active end is heavily rounded, with a radical change in the initial volume, characterized by an invasive polish (Fig. 7/b, f).

Two artifacts are atypical but bear similarities to preforms. The first is a flat blank (Fig. 7/i) made from compact tissue, and the procedures used could not be



Figure 7. *a, e, i, m. Antler double pointes; b, f, j. Details of the distal end; c, g. Scraping marks; d. Detail of the proximal end; h, p. Sawing marks; k, n-o. Abrasion marks; l. Use-wear marks at the distal end.*

identified, as the entire surface is covered by abrasion (rectangular cross-section shaft – Fig. 7/k). The second piece (Fig. 7/m) was crafted in an identical manner (Fig. 7/n–o). At the proximal end, two grooves were marked through sawing (Fig. 7/p). Use-wear is strongly localized on the active end. It is characterized by rounding, polish, disappearance of traces of abrasion and the development of longitudinal striations (Fig. 7/j, l).

Seven such points were crafted from bone (Fig. 8/a). The blank is flat, made from the diaphyseal wall of long bones originating from large mammals, and the procedures used for its production could not be identified, as the entire surface was shaped through longitudinal scraping. In the second stage of the shaping process, the whole surface was abraded (Fig. 8/d). At one of the specimens (Fig. 8/e), the debitage operation appears to have involved grooving as well (Fig. 8/h), which is difficult to determine definitively. The entire surface was shaped through longitudinal scraping (Fig. 8/g). The pointed end was shaped by abrasion applied around the entire circumference. Grooving was also applied at another specimen (Fig. 8/i): this involved a longitudinal debitage using a *quadri*-partition procedure that included grooving (Fig. 8/l) and percussion. The debitage edges were shaped through abrasion (Fig. 8/k).

Another atypical piece in the assemblage (Fig. 8/m) features a convex proximal part, on which abrasion was applied (Fig. 8/p) to form the rounded end. As the only example of its kind, it raises the question of whether it might originate from the repair of a fractured point. The active front shows similar evolution due to usage, characterized by a rounded appearance, without significant fractures, with flattened areas bearing fine functional striations (Fig. 8/b-c, f, j, n-o).

IV. Two pieces are barbed points. The first item (Fig. 9/a) features three bilateral, biconvex barbs positioned close to the shaft. These barbs were detached through alternating bifacial cutting (Fig. 9/c). The extremities exhibit a sharp morphology, achieved by applying scraping (Fig. 9/b, g) around the entire circumference. The distal end shows a fracture that initiated longitudinally, splitting the tip into two (Fig. 9/e).

The second point (Fig. 9/h) has two bilateral, biconvex barbs near the shaft, produced by alternating bifacial cutting (Fig. 9/j). From the barbs, a scraping was used around the entire circumference, applied divergently so that, at the base of the active part, the width remains consistent with that at the level of the barbs. The distal area was ultimately shaped by abrasion (Fig. 9/i). At the beginning of the proximal area, a delineation procedure by sawing (Fig. 9/n) was applied circumferentially, from which a convergent scraping was used to create a sharp proximal end (Fig. 9/o). The proximal end is slightly fractured.

The morphology of both ends is rounded, with micro-striations caused by use-wear, running longitudinally relative to the axis of the items (Fig. 9/e–f, l–m). These are elongated and somewhat oblique in orientation. Use-wear is evident on the barbs and is characterized by a gradual change in the surface appearance – tending to flatten – as the technological marks gradually disappear. Only a few micro-striations are visible, arranged obliquely (Fig. 9/d, k).

V. Two items are points with wings (Fig. 10/a). The hafting system was created through bilateral, alternating grooving (Fig. 10/d), a process continued until the two wings were detached (Fig. 10/f). Subsequently, the entire surface was shaped by scraping (Fig. 10/e). Use-wear was observed at the distal area, consisting of the development of long, parallel striations aligned with the major axis of the piece, along with polish and rounding of the end (Fig. 10/c). Additionally, at the level of the hafting system, there is a radical modification of volume, alternating depressions and flattened areas, with fine, sparse and oblique striations (Fig. 10/g).

VI. A single piece (Fig. 10/h) belongs to the next morphological category. The blank is also flat in this case, made from compact tissue, and the procedures used for its production could not be identified, as the entire surface was shaped through convergent longitudinal scraping, which resulted in a pointed tip. The hafting system consists of a perforation created by bifacial rotation, heavily worn, with the rotation striations no longer visible (Fig. 10/i). At this level, the piece is fractured, so the exact shape of the proximal part is unknown. The tip has undergone a radical volume change, featuring a small straight surface (Fig. 10/k), along with use-wear, small flattened areas and fine longitudinal striations (Fig. 10/l). Additionally, at the periphery of the perforation, use-wear is characterized by areas of flattening that tend to merge, with polish and fine oblique striations on the opening (Fig. 10/j).

VII. Seven projectile points were processed from blanks in volume (Fig. 11/a, f, k), featuring proximal perforations made through bifacial rotation (Fig. 11/c, g, m). The pieces are generally broken at the level of the hafting system. In cases where the proximal part was preserved, it can be seen that segmentation was performed through percussion (Fig. 11/h). The end was sharpened by longitudinal scraping (Fig. 11/b, j) applied around the entire circumference. One of the pieces (Fig. 11/n) illustrates a recycling process. All the technological details previously described remain valid, with the only difference that after fracturing the perforation, a second perforation was made using the same technique. The active end is heavily smoothed, free of fractures, with micro-depression areas and fine functional striations (Fig. 11/d–e, i, l).

VIII. A second variant of blanks in volume (Fig. 12/a, f) (no=2) differs from the previous one by the presence of a peduncle (Fig. 12/j). I question whether some of the pieces from the previous category also had this peduncle, given that they are broken at the perforation level. These are tines whose surfaces were shaped through

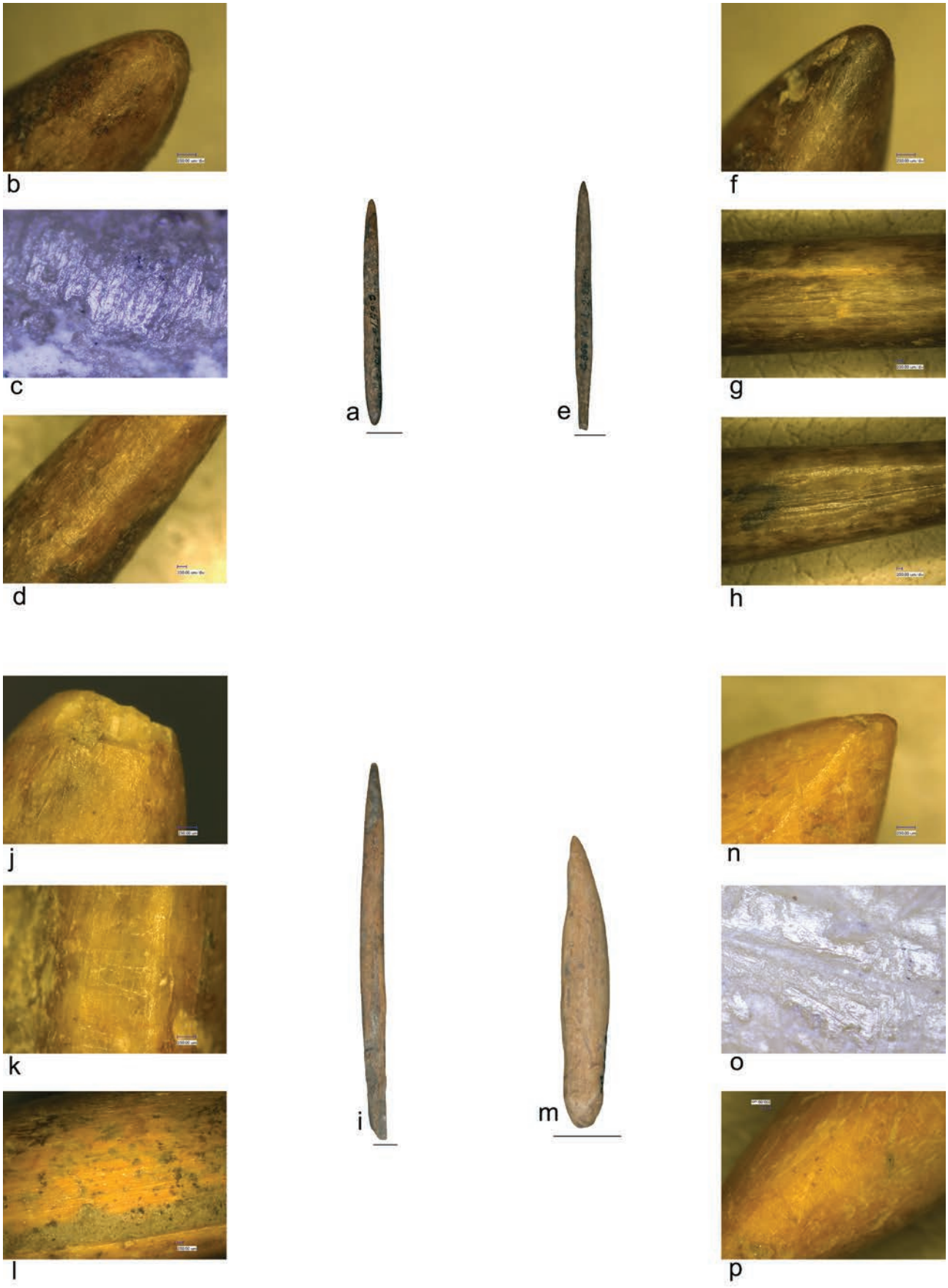


Figure 8. *a, e, i, m. Bone double pointes; b, f, j, n. Details of the distal end; c, o. Use-wear marks at the distal end; d, k, p. Abrasion marks; g. Scraping marks; h, l. Grooving marks.*

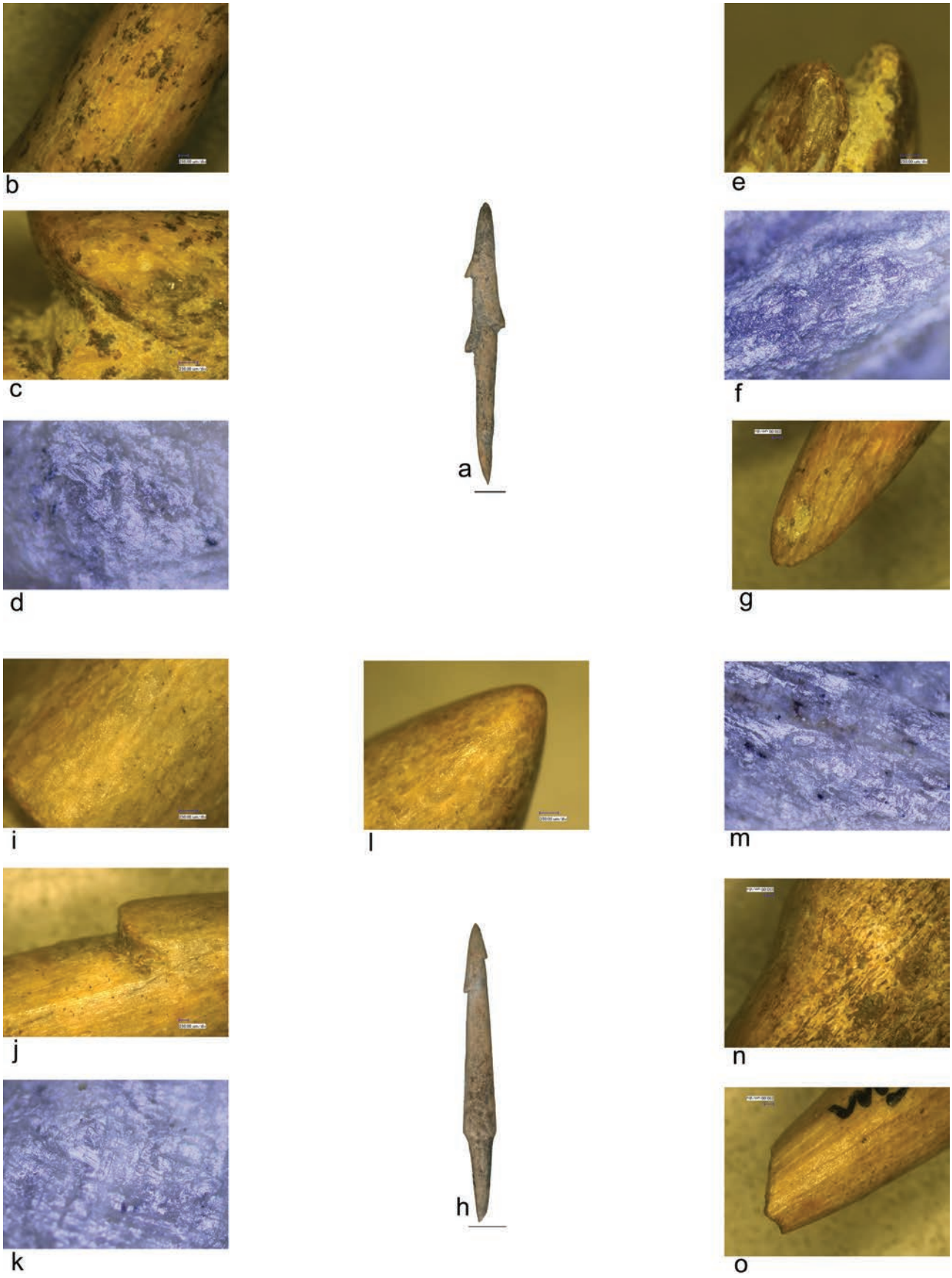


Figure 9. *a, h. Antler barbed points; b. Scraping marsk; c, j. Details of the barbs; d, k. Use-wear on barbs; e, l. Details of the distal ends; f, m.Use-wear at the distal end; g, o. Details of the proximal ends; i. Abrasion marks; n. Sawing marks.*

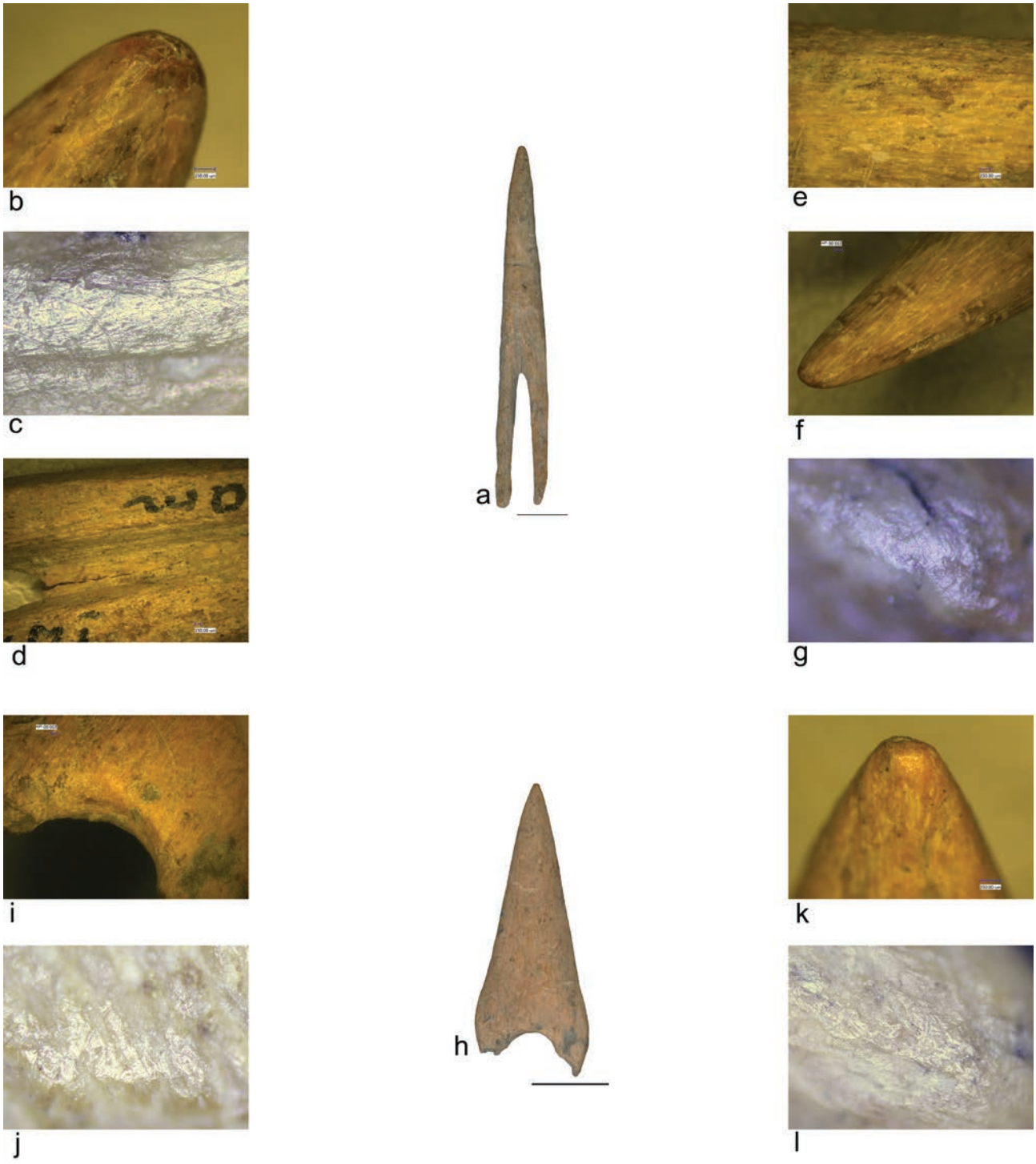


Figure 10. *a, h. Antler projectile points; b, k. Details of the distal end; c, l. Use-wear marks at the distal end; d. Grooving marks; e. Scraping marks; f. Detail of the proximal end; g. Use-wear marks at the proximal end; i. Perforation detail; j.Use-wear marks at the perforation level.*

longitudinal scraping (Fig. 12/b) applied around the entire circumference. Medially, a perforation was created by bifacial rotation (Fig. 12/c, h). At the proximal level, a peduncle was fashioned using a segmentation procedure through sawing (Fig. 12/d), applied on half of the diameter, after which the peduncle was shaped by cutting (Fig. 12/e).

In the second specimen, the cutting edge was regularized through scraping (Fig. 12/i). The spongy tissue was removed, ensuring a longitudinal hafting system. For the first item, the tip is recently fractured, but at the second specimen, a smoothed end is visible, with a significantly flattened area and macroscopic polish (Fig. 12/g).

IX. The next specimen is a point with a straight base and a hole (Fig. 12/k). The method used for sectioning is unknown, as the entire surface was regularized through longitudinal scraping (Fig. 12/l) around the entire circumference. A perforation was made in the spongy tissue (Fig. 12/m) for the hafting system. The end shows marked use-wear, with areas of flattening beginning to eliminate traces of scraping (Fig. 12/n-o).

X. Concerning the pieces processed from blanks in volume, the simplest shape includes a point made from a roe deer tine (Fig. 12/p). The segmentation was achieved through percussion, identifiable by several specific marks at the periphery of the segmentation edge. Abrasion applied in the next stage destroyed most of these percussion marks. The naturally sharp shape of the tine did not require any significant technological interventions.

DISCUSSION

Raw materials

Our analysis highlights the significance of red deer antler (*Cervus elaphus*) as a primary raw material for the production of projectile points, whereas bone was infrequently utilized. A total of 39 preforms and 264 finished pieces processed from antler were documented, compared to only 16 items made of bone. From a technological perspective, I can attribute this preference to the advantageous mechanical properties of antler – specifically its optimal elasticity-to-hardness ratio, which allows it to better absorb shocks and resist impact. Additionally, objects made from hard animal materials are generally easier to repair after fracturing[22]. R. D. Guthrie[23] concluded that antler was the best material for weapon points, as it is easily worked, shaped, or straightened when wet, resists breakage, is simple to sharpen, and is typically readily available.

However, the importance of cultural factors in raw material selection must not be overlooked. McGhee[24], citing various ethnographic examples, suggests that weapons crafted from specific species may have been used in hunting particular prey. Yet, especially in prehistoric contexts, there is rarely a strict dichotomy between cultural preference and technological suitability[25].

Cervid antler can be obtained either through collecting naturally shed specimens or as a by-product of hunting. At the site of Căscioarele, during level B1, the hunting activity is evidenced by the high proportion of wild mammal remains – accounting for 84.1% of the faunal assemblage[26]. The red deer was the primary hunted species[27]. Al. Bolomey[28] notes that deer remains constitute more than half of the total osteological material, with 1,193 fragments recorded from the Gumelnița B1 level. In stark contrast, at the Gumelnița A2 level, domestic animals predominate, and red deer remains are scarce, comprising only 84 fragments. This shift in faunal composition between the two levels is reflected in the technological domain, as projectile points are predominantly concentrated in level B1.

Analysis of the basal areas of antlers from the B1 level – only reliable indicators of the antler type used – reveals 32 shed antlers and 8 from hunted animals. The dominance of shed antlers indicates a good knowledge of their mechanical properties. Antlers grow from April to July, reaching maximum calcification, and are naturally shed at the end of winter (around March for adults)[29]. Once shed, they are subject to attacks by rodents, carnivores, and even red deer, followed shortly afterward by invertebrates[30]. At Căscioarele tell settlement, the presence of shed antlers suggests that expeditions specifically aimed at collecting these antlers were organized shortly after the deer shed them. This hypothesis is supported by two lines of evidence: first, zooarchaeological studies[31] confirm the presence of red deer (*Cervus elaphus*) in the surrounding environment; second, the recovery of antler waste from the site presents a very good state of preservation.

Technological transformation scheme

The operational chain for producing these projectile points involved a series of well-defined steps, reflecting a sophisticated understanding of material properties and tool design. The initial stage involved obtaining suitable blanks from antler or bone. For antler, the longitudinal debitage was achieved through percussion and the transverse one through percussion, sawing or bending. The specific methods for obtaining bone blanks are less clear, as subsequent shaping often obscured the initial debitage marks. However, in a few specimens, a *quadri*-partition procedure by grooving and percussion could be identified. The second stage involved shaping the blank into the desired preform or finished point. Longitudinal scraping was the dominant technique, used to regularize the edges, thin the piece, and create the overall shape. Abrasion was also employed, especially for smoothing surfaces, creating rounded ends, and refining the hafting system.

A variety of hafting systems were used, reflecting the diverse range of point types. Common procedures included: 1. sawing – used to delineate proximal and distal parts; 2. grooving – employed, particularly in the creation of wings; 3. bifacial rotation – used to create perforations for hafting; 4. a combination of sawing and cutting for peduncle creation.

[22] Guthrie 1983; Grégor 1985; Averbouh 2000; Currey 2002; Christensen, Valentin 2004.
[23] Guthrie 1983.
[24] McGhee 1977.
[25] Choyke, Daróczi-Szabó 2010; Margaris 2014.
[26] Bolomey 1964; Bălășescu *et alii* 2005.
[27] Bălășescu *et alii* 2005.
[28] Bolomey 1964, 1968.
[29] Provenzano 2001.
[30] Averbouh 2000; 2005.
[31] Bolomey 1968; Bălășescu *et alii* 2005.

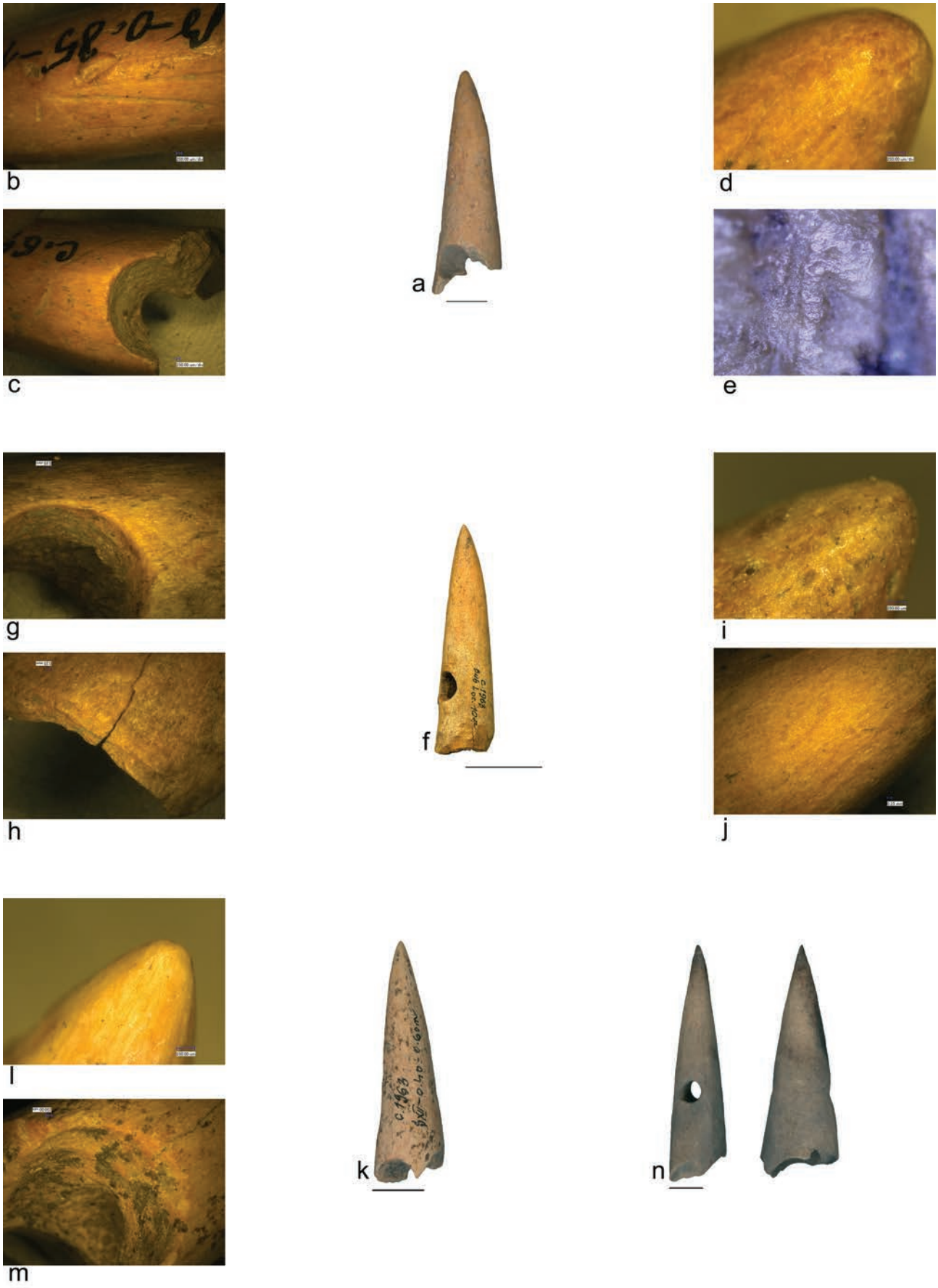


Figure 11. *a, f, k, n. Antler projectile points; b, j. Scraping marks; c, g, m. Perforation details; d, i, l. Details of the distal end; e. Use-wear marks at the distal end; h. Percussion marks.*

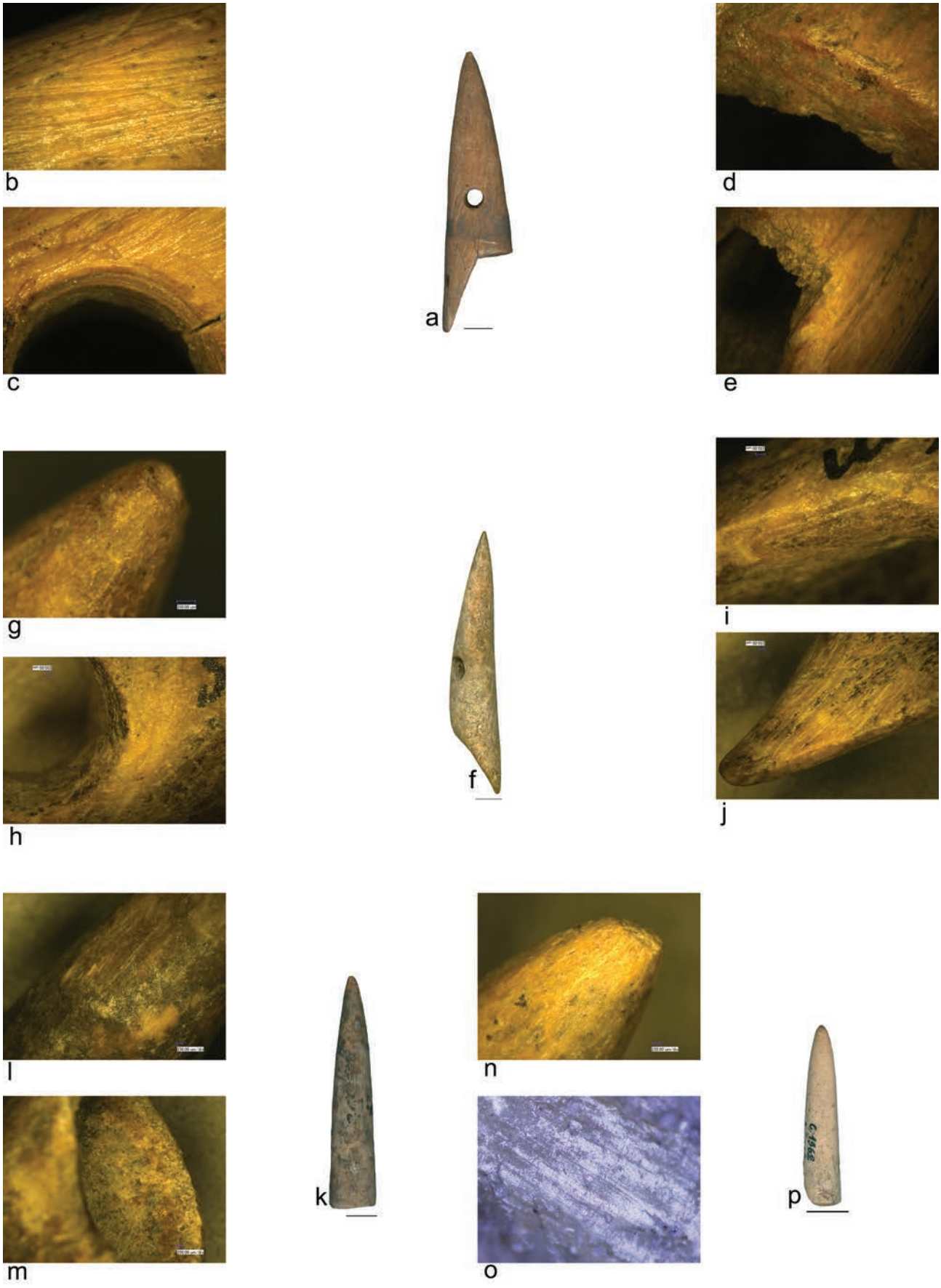


Figure 12. *a, f, k, p. Antler projectile points; b, i, l. Scraping marks; c, h. Perforation details; d. Sawing marks; e. Cutting marks; g, n. Details of the distal end; j, m. Details of the proximal end; o.Use-wear marks at the distal end.*

The presence of preforms at various stages of processing suggests a degree of planning and stockpiling, allowing for rapid replacement of broken or lost points. The recycling of broken points (e.g. the reworked perforated point) highlights an efficient use of resources.

Hypothetical function

Based on the morphological variations and use-wear patterns observed, several potential functions can be inferred for the projectile points. The supposed functions of various bone projectile points have been based mainly on ethnographic analogies. However, it must be taken into account that the form does not always provide indications about function, as there is a possibility of multiple or alternative uses and morphological variability within a class of weapons with the same function[32]. Even if these interpretations are quite speculative, it has been assumed, for example, that the stemmed arrow points, by their morphology (thicker distal end, thinner shaft) and use-wear (rounded tips, flattened areas with striations), suggest their use as arrowheads for hunting medium to small game, as well as for birds[33]. Barbed points or perforated points (especially those with peduncles, known in the literature as toggle harpoons) were likely used for fishing, having a mobile grip system, in which retaining the projectile was important, preventing the prey from escaping[34]. The careful detachment of the barbs through bifacial cutting indicates a specialized technique for creating this functionality. The function of double points is less clear, but their symmetrical design and presence of use-wear at both ends suggest they were used as transverse fish-hooks for fishing or hunting aquatic mammals[35].

The diverse range of projectile point types suggests a flexible hunting strategy, adapted to exploit a variety of game species and environments within the Gumelnița territory. The presence of points made from both antler and bone could reflect seasonal availability of resources, or specialization based on the intended target. Further research, including residue analysis and experimental archaeology, would be needed to refine these functional interpretations and provide a more comprehensive understanding of the role of these projectile points in the Gumelnița economy and culture.

A wider perspective about Gumelnița culture

A survey of projectile points from the Gumelnița tell sites reveals interesting information. According to the published data, similar artifacts with a significant contribution to the assemblage have been identified at the tell settlements of Vitănești and Pietrele.

At the Gumelnița levels at Pietrele, between 45–55% of the bone remains belong to wild animals, including wild boar, red deer, roe deer, aurochs, and wild horse. Fishing also played a significant role in the diet. Cyprinids appear to predominate, although large species such as pike and catfish are also present, which require the use of spears or harpoons. At Pietrele, such toggle harpoons have been documented, as well as stemmed arrows and double points, which are associated with hunting and fishing activities[36].

At the Vitănești tell settlement, wild mammals constitute 68.3% of the assemblage in the Gumelnița A2 layer and 48% in the Gumelnița B1 layer[37]. The projectile points are notably abundant in layer B1, comprising morphologically diverse antler and bone projectile points, including types also identified at Căscioarele – stemmed points, winged points, and points with a straight base and a hole[38].

A review of some Calcolithic sites south of the Danube reveals a similar situation. An increase in the number and a typological diversification of projectile points are evidenced, closely correlated with hunting. Osseous double points and stemmed points are present in numerous tell settlements (e.g., Smyadovo, Azmashka, Nevski, Golyamo Delchevo, Salvanovo, Vinitsa)[39].

This analysis of osseous projectile points from Căscioarele provides valuable insights into the hunting strategies and technological capabilities of the prehistoric communities. They are part of the category of projectile points specific to the Gumelnița culture, as the same morphologies are also reproduced in other tell settlements. The study of raw materials, technical transformation schemes, and potential functions reveals a complex and adaptive approach to resource utilization and weapon production. The diverse range of point types, the sophisticated operational chain involved in their production, and the insights into raw material selection all point to a complex and adaptive society capable of efficiently exploiting its environment. This study highlights the importance of analyzing archaeological artifacts from multiple perspectives to reconstruct past human behavior and provides a foundation for future research, including comparative studies with other Gumelnița sites.

ACKNOWLEDGEMENTS

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[32] Bradfield 2016.
[33] Ellis 1997.
[34] Park, Stenton 1996.
[35] Benecke *et alii* 2013.
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[37] Bălășescu, Radu 2003; Bălășescu *et alii* 2005.
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DE LA MATERIE PRIMĂ LA OBIECT FINIT: ECONOMIA ȘI TEHNOLOGIA MATERIILOR DURE ANIMALE ÎN LOCUINȚA W37 DIN AȘEZAREA GUMELNIȚEANĂ DE LA PIETRELE

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Keywords: *Chalcolithic, tell settlement, raw materials, technological analysis, functional analysis*

Abstract: *The archaeological site of Pietrele* – Măgura Gorgana *(Băneasa commune, Giurgiu County) is a tell settlement located in the Danube floodplain, near the Comasca stream, systematically investigated since 2004 through a collaboration between the German Archaeological Institute (Eurasia section), the "Vasile Pârvan" Institute of Archaeology of the Romanian Academy, and the Institute of Physical Geography of Goethe University, Frankfurt am Main, with funding from the Deutsche Forschungsgemeinschaft (DFG). The present study focuses on the worked osseous materials recovered from dwelling W37, a burned structure uncovered in trench W, excavated between 2017 and 2019 on the western slope of the tell settlement. The dwelling, oriented west–east, yielded an exceptionally rich archaeological inventory, including over 60 complete or reconstructible ceramic vessels, carbonized seeds, clay installations, and a grinding stone. Of particular note is the discovery of three human skeletons embedded within the northern wall – a child aged approximately 4–5 years and two adults shown by genetic analysis to be related (grandfather/nephew or uncle/nephew), with radiocarbon dates indicating a chronological gap of approximately 200 years between them. A total of 31 worked osseous material items were recovered from the dwelling, comprising finished objects, preforms, and blanks manufactured from bone (n=19), antler (n=10), and tooth (n=2). The typological repertoire includes pointed tools, bevelled tools, a weapon point, a harpoon, a flat figurine, a pendant, and a scraper. The technological analysis, conducted through a chaîne opératoire approach, examines raw material procurement strategies, blank production methods – including longitudinal splitting by percussion, groove-and-splinter technique, and transverse fracture – as well as shaping and finishing procedures such as longitudinal scraping and abrasion. This study contributes to a broader understanding of bone industry organisation and subsistence economy at the family household level within Gumelnița communities.*

Cuvinte-cheie: *Calcolitic, tell, materii prime, analiză tehnologică, analiză funcțională*

Rezumat: *Situl arheologic de la Pietrele* – Măgura Gorgana *(com. Băneasa, jud. Giurgiu) reprezintă o așezare de tip tell situată în lunca Dunării, cercetată sistematic din anul 2004 în cadrul unui proiect de colaborare între Institutul German de Arheologie (secția Eurasia), Institutul de Arheologie „Vasile Pârvan" al Academiei Române și Institutul de Geografie Fizică al Universității „Goethe" din Frankfurt am Main, cu finanțare din partea Deutsche Forschungsgemeinschaft (DFG). Studiul de față este dedicat analizei materiilor dure animale prelucrate descoperite în locuința W37, o structură incendiată identificată în suprafața W, cercetată între anii 2017 și 2019, pe panta vestică a* tell-*ului. Locuința, orientată vest–est, a furnizat un inventar arheologic deosebit de bogat, incluzând peste 60 de vase ceramice întregi sau întregibile, semințe carbonizate, instalații din lut și o râșniță din piatră. Un element remarcabil îl constituie descoperirea a trei schelete umane îngropate în peretele nordic – un copil de aproximativ 4–5 ani și doi adulți înrudiți genetic (bunic/nepot sau unchi/nepot), cu o diferență cronologică de circa 200 de ani confirmată prin datare radiocarbon. Din locuință, au fost recuperate 31 de piese din materii dure animale, reprezentând piese finite, preforme și suporturi, confecționate din os (n=19), corn (n=10) și dinte (n=2). Repertoriul tipologic cuprinde vârfuri, dălți, un vârf de armă, un harpon, o figurină plată, un pandantiv și un* racloir*. Analiza tehnologică, realizată prin abordarea lanțului operațional (*chaîne opératoire*), vizează strategiile de achiziție a materiei prime, metodele de debitaj – bipartiție longitudinală prin percuție, dublu* rainurage*, fracturare transversală – precum și procedeele de fasonaj prin* raclage *longitudinal și abraziune. Studiul aduce o contribuție importantă la cunoașterea organizării industriei osoase și a economiei de subzistență la nivelul unei gospodării familiale, în cadrul comunităților gumelnițene.*

CONTEXTUL ARHEOLOGIC ȘI CRONOLOGIC

Situl arheologic de la Pietrele – *Măgura Gorgana*, com. Băneasa, jud. Giurgiu este situat în lunca Dunării, lângă pârâul Comasca, fiind bine-cunoscut prin cercetările arheologice sistematice întreprinse începând cu anul 2004, ca urmare a colaborării dintre Institutul German de Arheologie, secția Eurasia, Institutul de Arheologie „Vasile Pârvan" al Academiei Române și Institutul de Geografie Fizică al Universității „Goethe", Frankfurt am Main (Fig. 1)[1].

Inițial, punctul de interes a fost cercetarea *tell*-ului, dar începând cu anul 2009 și așezarea exterioară din jurul *tell*-ului a beneficiat de o serie de investigații, finanțarea fiind susținută de către Deutsche Forschungsgemeinschaft (DFG). Dacă în anii precedenți au fost deschise mai multe suprafețe la nord, est și vest de *tell*, în anul 2017, în apropierea pantei vestice a *tell*-ului a fost deschisă suprafața W (Fig. 2/1). Complexitatea situației întâlnite a făcut ca cercetarea exhaustivă a acesteia să dureze trei campanii, până în anul 2019.

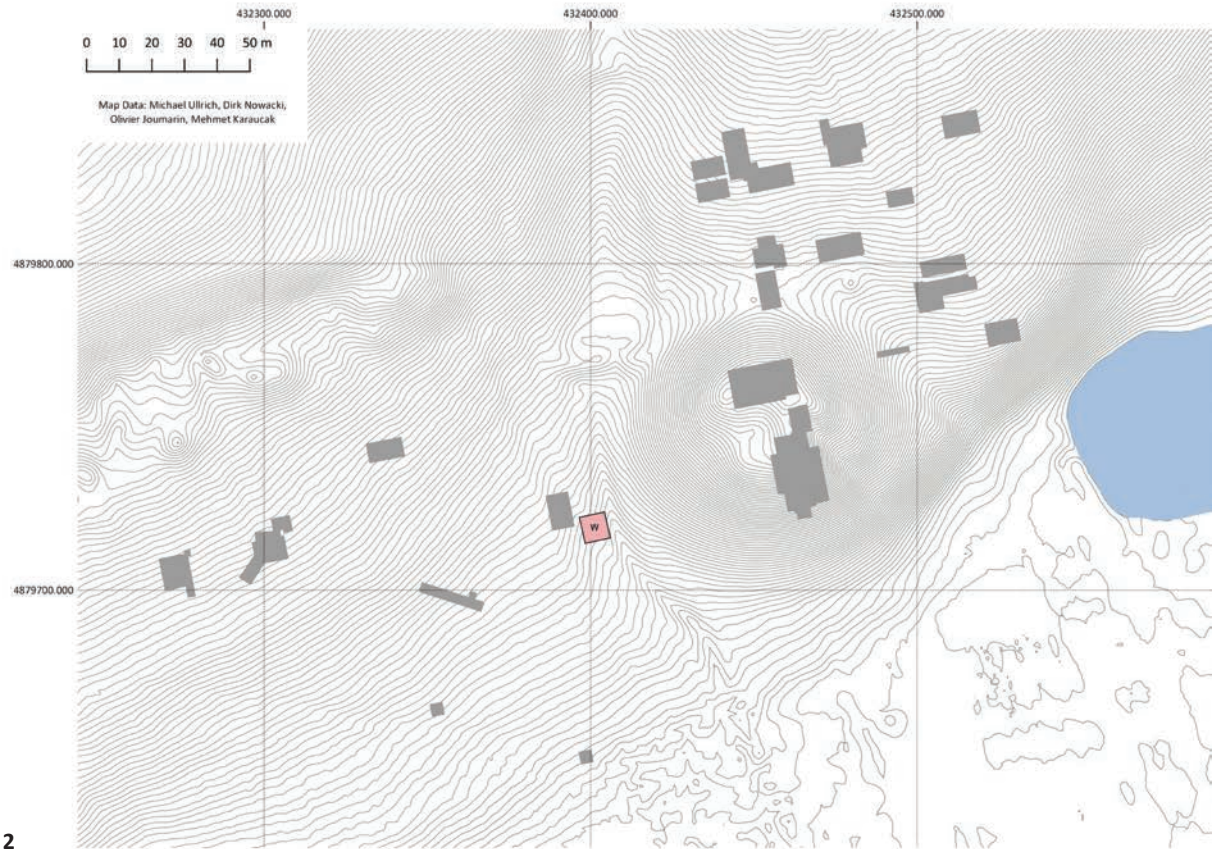
Așa cum am menționat și cu alte ocazii[2], în așezarea plană din jurul *tell*-ului, complexele arheologice se întâlnesc sub un strat de colluvium de o grosime considerabilă. Suprafața W nu face excepție, astfel că, sub stratul de colluvium ce atingea pe alocuri 1–1,20 m, a apărut o

[1] Hansen *et alii* 2006; 2007; 2010; 2011; 2012; 2017; Toderaș *et alii* 2009; Hansen, Toderaș 2010; 2012.

[2] Hansen, Toderaș 2010; 2012.



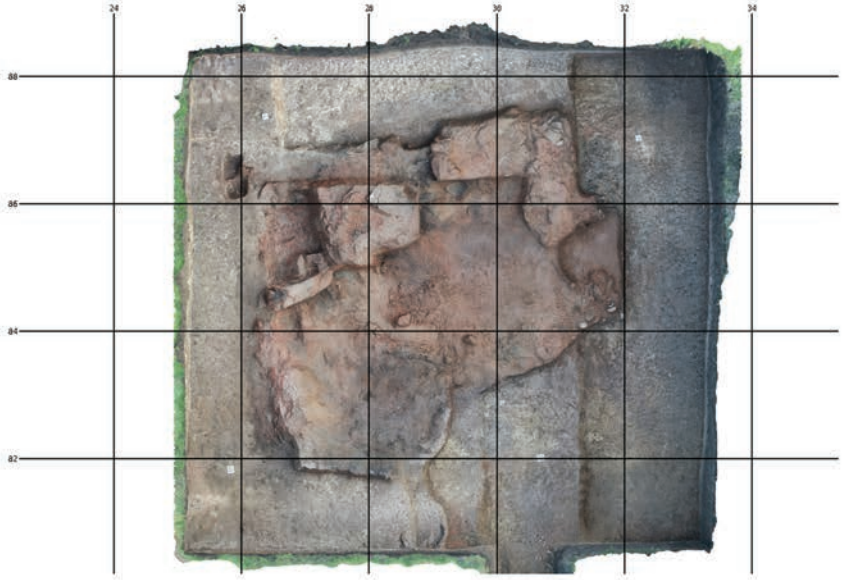
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Figura 1. *1. Pietrele. Vedere dinspre nord-vest (foto S. Hansen); 2. Dispunerea suprafețelor cercetate în așezarea de la Pietrele.*

Figure 1. *1. Pietrele. View from the North-West (photo by S. Hansen); 2. Layout of the surveyed areas at the Pietrele settlement.*



1



2

Figura 2. *1. Pietrele. Suprafața W. Locuința arsă W37. Vedere de ansamblu (model 3D realizat de M. Karaucak); 2. Suprafața W. Locuința arsă W37. Unelte din corn găsite pe podeaua locuinței (foto M. Toderaș).*

Figure 2. *1. Pietrele. Area W. Burnt house W37. Overall view (3D model made by M. Karaucak); 2. Area W. Burnt house W37. Antler tools found on the floor of the dwelling (photo by Meda Toderaș).*

concentrare mare de chirpici, provenind de la o locuință incendiată. Chirpicii, unii de mari dimensiuni, acopereau întreaga suprafață deschisă. Întreaga structură, orientată vest–est, prezintă o înclinare accentuată dinspre vest și nord. Printre chirpici a fost observată partea superioară a unui cuptor, parțial distrus și ușor înclinat spre sud.

Au putut fi urmărite clar traseele a trei dintre cei patru pereți (nord, vest, sud), pentru cel de-al patrulea, cel estic, fiind surprinsă doar zona unde face unghi drept cu peretele nordic. Cel mai probabil, acest perete a fost „dezintegrat" datorită unui izvor de apă sezonier, care curge chiar prin zona în care ar fi trebuit să fie surprins peretele respectiv. Pereții surprinși au fost construiți din pământ curat, bătut, nefiind observate gropi de pari în niciunul dintre traseele cercetate.

Peretele nordic se dezvoltă pe axa vest–est și a putut fi urmărit pe o lungime de aproximativ 7 m, grosimea

acestuia variind între 40–50 cm. De-a lungul peretelui, pe o suprafață de aproximativ 2 mp, sub o masă de chirpici, a fost cercetată o concentrare de vase de provizii, înclinată dinspre perete spre centrul locuinței. Dispersia vaselor în acest mod poate fi explicată de faptul că prăbușirea peretelui a avut loc în același fel și pe aceeași direcție.

Cuptorul prăbușit avea o latură de aproximativ 1 m și două niveluri de refacere. La vest de cuptor, lipit de acesta, a fost cercetată o instalație din lut cu două compartimente. În compartimentul mai mare a fost găsită o râșniță din piatră de mari dimensiuni, iar în cel mic, greutăți de lut ars și obiecte din piatră puternic distruse de foc. Pe toată lungimea, această instalație este adosată peretelui vestic care a putut fi urmărit pe traseul nord–sud pe o lungime de 6 m, grosimea acestuia variind între 40–50 cm.

De-a lungul acestui perete, sub bucăți masive de chirpici, au fost identificate concentrări de vase, unele de mari dimensiuni. Bucățile de chirpici indică o alunecare a acestora dinspre vest spre est. Însă, cel mai sugestiv pentru modul în care au căzut pereții casei, este prezența unui vas de tip *pithos* de mari dimensiuni, lângă instalația din lut ars, vas spart pe loc pe direcția nord–sud, complet acoperit de bucăți de chirpici. Putem afirma, astfel, că mai întâi a căzut peretele nordic, antrenând căderea *pithos*-ului, iar apoi peretele vestic. Pentru celelalte cazuri, nu avem indicii care să sugereze vreo ipoteză.

Ceea ce este surprinzător este faptul că, în capătul nordic al locuinței, efectiv îngropat în perete, a fost găsit scheletul unui copil, orientat sud–nord și chircit pe partea dreaptă. La demontare, imediat sub craniul copilului, au apărut alte fragmente osteologice umane, provenind de la un adult. Adultul a fost și el îngropat în perete; era puternic chircit pe partea dreaptă, orientat sud–nord. În celălalt capăt al peretelui, aproape de colțul pe care peretele vestic îl face cu cel sudic, a fost găsit, tot îngropat în perete, un alt adult, puternic chircit pe partea dreaptă și având aceeași orientare sud–nord.

Nu a fost găsit niciun alt fel de inventar asociat înhumaților. În urma analizelor genetice, a reieșit faptul că cei doi adulți erau înrudiți bunic/nepot sau unchi/nepot și nu au nicio legătură cu copilul, care este un băiat de aproximativ 4–5 ani. Conform datelor radiocarbon, există o diferență de 200 de ani între cei doi adulți și copil. Astfel, pentru cei doi adulți datele se prezintă astfel: 4341–4242 calBC (5421 ± 26 BP, MAMS – 47833), respectiv 4342–4242 calBC (5424 ± 27BP, MAMS – 47831), în timp ce rezultatul datării copilului este de: 4486–4355 calBC (5589 ± 26 BP, MAMS – 47832)[3]. Nu avem o explicație plauzibilă pentru situația prezentată, dar, pentru a elimina orice eroare, s-a procedat la efectuarea unui nou set de analize.

Peretele sudic a putut fi urmărit pe o lungime de aproximativ 7 m, dezvoltându-se pe traseul vest–est, și are o grosime de cca 50 cm. De-a lungul acestui perete au fost găsite concentrări de vase și resturile unei instalații de lut ars, foarte prost conservată, toate fiind ușor alunecate înspre nord.

Inventarul recoltat este foarte bogat, peste 60 de vase întregi sau întregibile. Au fost identificate resturi de semințe carbonizate. Podeaua de lut bătut a fost surprinsă doar pe lângă pereți, în centrul locuinței fiind observate resturile unor bârne din lemn, arse. Din această zonă au fost recuperate mai multe unelte din corn (Fig. 2/2) și două vase puse unul peste altul.

ANSAMBLUL ARHEOLOGIC

Din cadrul locuinței care face subiectul studiului de față, au fost recuperate 31 de piese (Tabel 1), aparținând celor trei produse rezultate din schemele tehnologice de prelucrare a materiilor prime (piese finite, preforme și suporturi). Cele mai numeroase sunt piesele finite, din care zece au fost confecționate din os, patru din corn și două din dinte. Se adaugă două preforme din os și cinci suporturi, din care patru sunt din corn și unul din os.

Os (n=19)

Vârfuri (n=5)

Primul vârf (Fig. 3/1) este puternic ars și cu depuneri pe suprafață. Suportul a fost obținut printr-un procedeu de bipartiție longitudinală care a implicat percuția. Laturile de debitaj au fost abrazate, cel puțin la nivel distal. Vârful are o lungime de 110 mm, o lățime medie de 25 mm și o grosime medie de 11 mm.

Cea de a doua piesă, deși fracturată mezo-distal (Fig. 3/2), ne lasă să intuim existența unui front activ ascuțit. Suportul plat a fost obținut, de data aceasta, printr-un procedeu mult mai complex: quadri-partiție în dublu *rainurage*. Nu se păstrează urme ale procedeului de fasonaj. La nivelul extremității proximale, micile fracturi periferice ne arată că era vorba despre un utilaj intermediar, folosit în percuție indirectă. În prezent, are o lungime de 66 mm, o lățime medie de 14 mm și o grosime medie de 7 mm.

Un alt exemplar este pe suport plat (Fig. 3/3), puternic afectat în suprafață, ceea ce a distrus urmele tehnologice și funcționale. Este o așchie din peretele diafizar, obținută prin percuție. La nivel distal, s-a aplicat un *raclage* longitudinal în jurul întregii circumferințe. Piesa are o lungime de 58,5 mm, o lățime medie de 9 mm și o grosime medie de 4,8 mm.

Prin același procedeu de debitaj longitudinal în percuție a fost obținut și următorul vârf (Fig. 3/4). Este o piesă puternic arsă și fracturată. Foarte puține urme tehnologice s-au păstrat. Doar la nivel distal, pe laturile de debitaj și pe ambele fețe, este vizibil un *raclage* longitudinal, menit să formeze convergența laturilor și morfologia ascuțită a extremității. Datele morfometrice actuale sunt următoarele: lungime = 91,2 mm, lățime medie = 26 mm, grosime medie = 14,8 mm.

[3] Penske *et alii* 2023.

Materia primă	Grad de prelucrare	Categorie tipologică	Număr piese
Os	Piesă finită	Vârf	5
		Daltă	3
		Figurină plată	1
		Pandantiv	1
	Preformă		2
	Suport		1
	Indeterminată		6
Corn	Piesă finită	Daltă	3
		Vârf de armă	1
		Harpon	1
	Suport		4
	Indeterminată		1
Dinte	Piesă finită	*Racloir*	1
	Indeterminată		1
TOTAL			**31**

Tabel 1. *Distribuția numerică a pieselor finite sau în curs de prelucrare, în funcție de materia primă, descoperite în W37.*

Table 1. *Numerical distribution of finished or under processing items, by raw material, found in W37.*

Un ultim exemplar (Fig. 3/5) este fracturat proximal, ars și cu multiple depuneri în suprafață. Prin urmare, multe dintre urmele tehnologice și de uzură nu mai sunt vizibile. Este o așchie din peretele diafizar al osului, obținută prin debitaj în percuție. Fața inferioară a fost regularizată prin abraziune. Spre partea distală, laturile au fost intens abrazate pentru a crea convergența laturilor. Vârful are o fractură dezvoltată pe fața superioară. Lungimea fragmentului este de 66 mm, lățimea medie de 14 mm, iar grosimea medie de 6,8 mm.

Dăltițe (n=3)

În ciuda fracturilor multiple, despre prima dăltiță (Fig. 3/6) putem spune că a fost confecționată pe suport în volum. Pentru amenajarea frontului activ specific, s-a dat o lovitură în percuție, cu o parte a planului de debitaj rămasă nefasonată. Pe o parte a laturilor de debitaj și pe fața superioară, la nivel mezo-distal, s-a aplicat un *raclage* longitudinal (Fig. 3/7). Frontul activ este tocit, cu lustru macroscopic și arii de aplatizare (Fig. 3/8). A fost prelucrat un material moale, pentru că frontul activ este lipsit de fracturi. Lungimea actuală a fragmentului este de 83 mm, iar diametrul mediu de 10,8 mm.

Cea de a doua dăltiță (Fig. 3/9) este o așchie din peretele diafizar al unui mamifer de talie mare, obținută prin partiții succesive în percuție (Fig. 3/10). Laturile de debitaj au fost parțial regularizate prin abraziune. Pe fața superioară, abraziunea a fost aplicată la nivel distal (Fig. 3/11). Uzura generală a piesei este avansată, cu lustru și striuri funcționale lungi, dese și dispuse perpendicular pe frontul activ (Fig. 3/12–13). Dăltița are o lungime de 72,5 mm, o lățime maximă de 25,2 mm și o grosime maximă de 5 mm.

A treia dăltiță (Fig. 3/14), puternic fracturată și afectată de multipli factori post-depoziționali, a fost prelucrată printr-o schemă tehnologică diferită. Provine de la un os de mamifer de talie mare care a fost transformat prin debitaj longitudinal în partiții succesive, cu amenajarea laturilor prin abraziune. Fața inferioară a fost riguros abrazată, iar cea superioară doar pe o bandă mediană longitudinală (Fig. 3/15). Frontul activ (Fig. 3/16) păstrează urme vizibile de *raclage* transversal, dezvoltate bifacial, ceea ce sugerează repunerea în formă repetată, pe măsură ce frontul se tocea și nu mai era eficient. Datele morfometrice actuale sunt următoarele: lungime = 55 mm, lățime maximă = 28,5 mm, grosime medie = 7 mm.

Figurină plată (n=1)

Pentru confecționarea unei figurine plate (Fig. 4/1) a fost folosit peretele diafizar al unui os lung, mamifer de talie mare. Nu știm procedeele de obținere ale suportului, datorită intervențiilor tehnologice complexe care au modificat radical forma inițială a suportului, deși în literatură s-a invocat extracția[4] drept metodă de debitaj. Capul are o morfologie hexagonală și o secțiune triunghiulară. În partea superioară, este vizibilă abraziunea (Fig. 4/2) cu ajutorul căreia au fost create cele două laturi ce se intersectează. Fața superioară a fost regularizată prin abraziune (Fig. 4/3). Ambele laturi au două perforații dispuse în linie verticală, realizate prin rotație bifacială.

[4] Averbouh, Zidarov 2014.

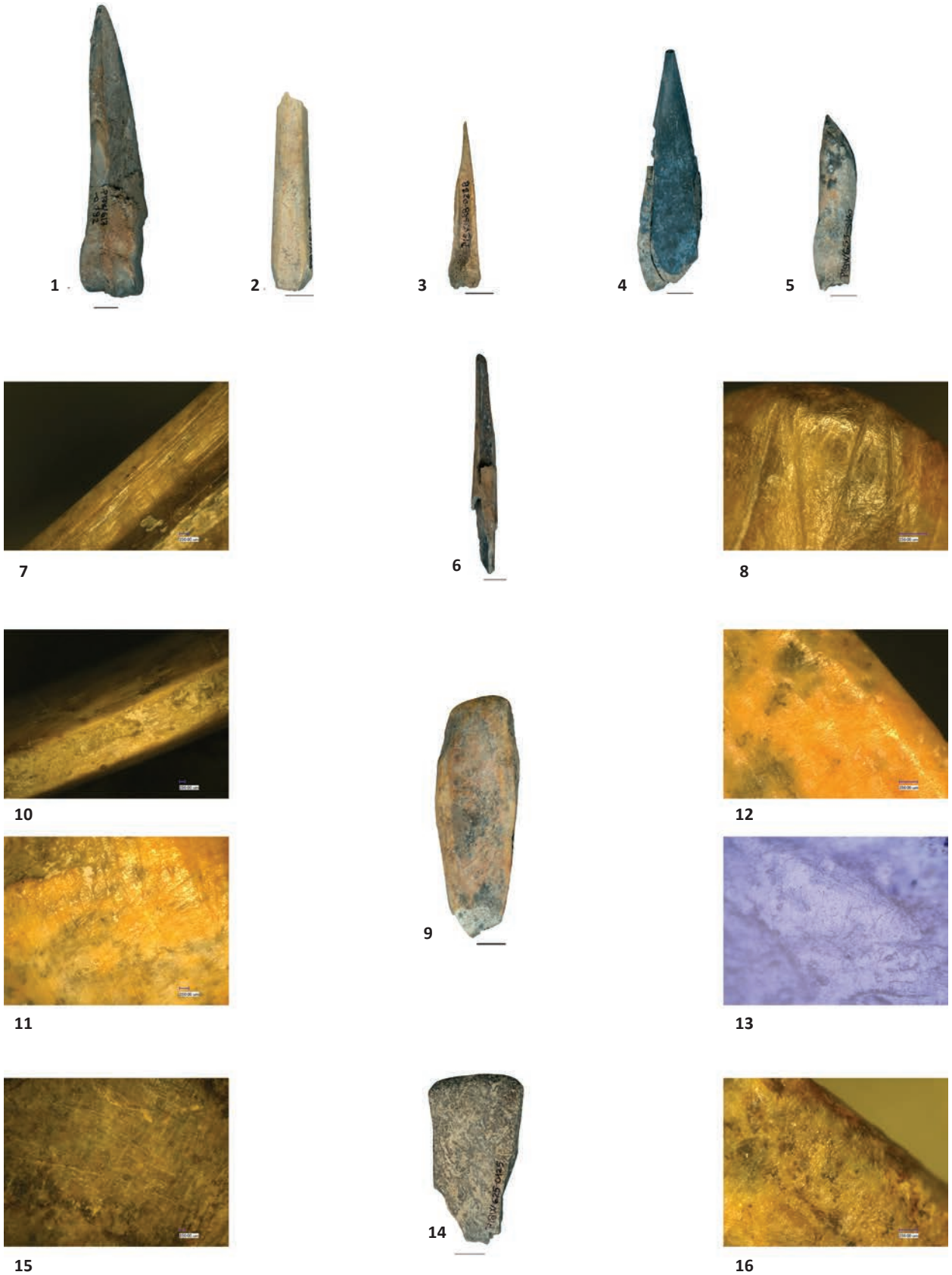


Figura 3. *1–5. Vârfuri din os; 6, 9, 14. Dăltițe din os; 7. Urme de* raclage*; 8, 12, 16. Detaliu front activ; 10. Urme de percuție; 11, 15. Urme de abraziune; 13. Uzură la nivelul frontului activ.*

Figure 3. *1–5. Bone pointed tools; 6, 9, 14. Bone bevelled tools; 7. Scraping marks; 8, 12, 16. Active end detail; 10. Percussion marks; 11, 15. Abrasion marks; 13. Use-wear at the active end.*

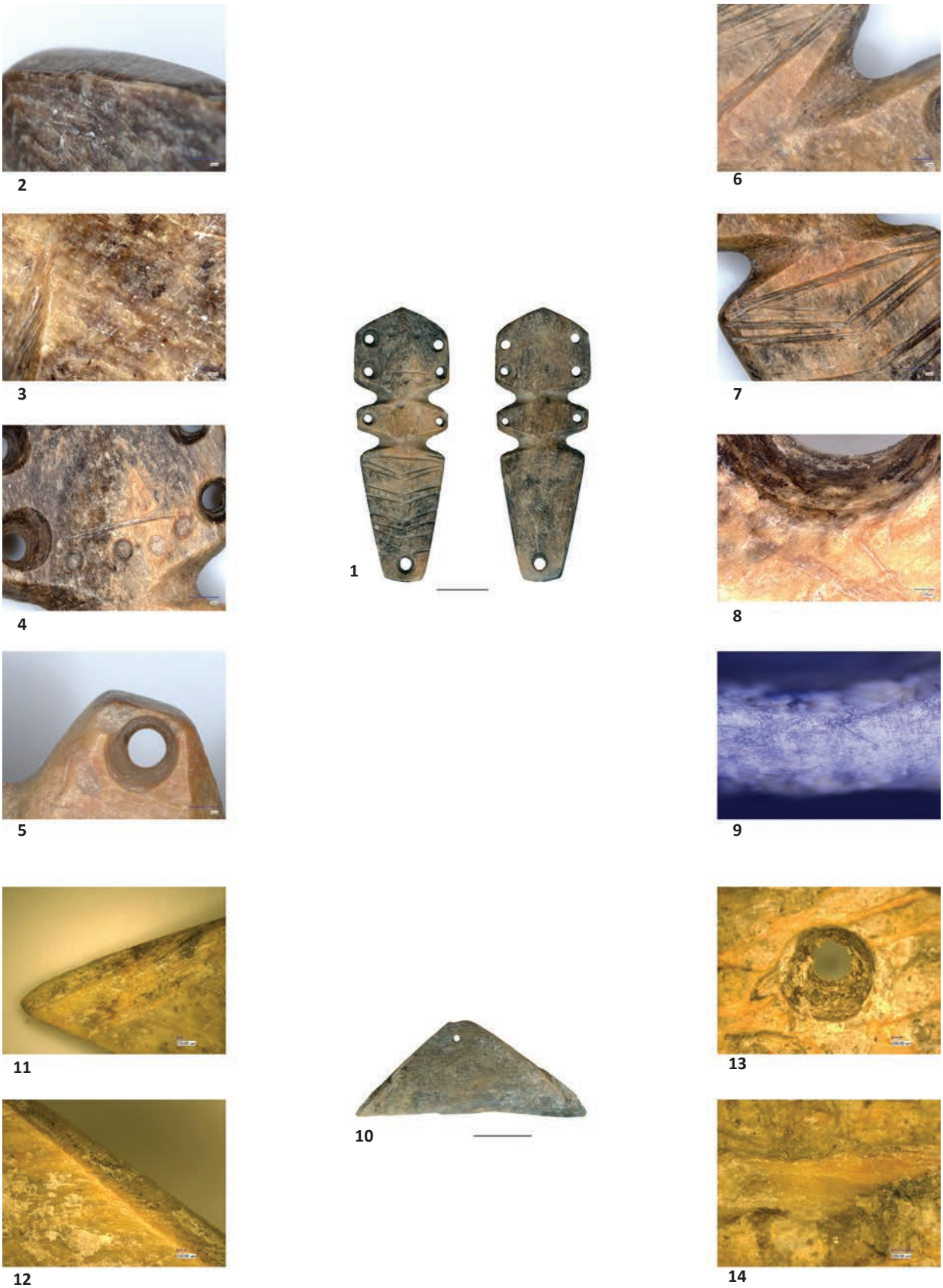


Figura 4. *1. Figurină plată din os; 2–3, 12, 14. Urme de abraziune; 4. Detaliu elemente decorative la nivelul capului; 5, 13. Detaliu perforație; 6, 11. Urme de* sciage*; 7. Detaliu elemente decorative la nivelul bazinului; 8–9. Uzură la nivelul perforației; 10. Pandantiv din os.*

Figure 4. *1. Bone flat figurine; 2–3, 12, 14. Abrasion marks; 4. Detail of decorative elements at the head; 5, 13. Detail of perforation; 6, 11. Sawing marks; 7. Detail of decorative elements at the pelvis; 8–9. Use-wear at the perforation; 10. Bone pendant.*

În zona superioară există două puncte dispuse simetric. Gura este marcată printr-o incizie transversală și realizată prin pasajul repetat al unei piese litice. Sub gură, sunt prezente patru puncte dispuse în linie orizontală (Fig. 4/4).

Gâtul este pus în evidență prin tăieturi în *sciage* alternativ bifacial și printr-un punct central. Zona trunchiului a fost separată de zona bazinului și a membrelor tot prin îngustarea bilaterală prin *sciage* (Fig. 4/6). Laturile de tăiere au fost fasonate și fiecare braț are acum o morfologie triunghiulară. Zona este marcată de două perforații create prin rotație bifacială (Fig. 4/5), prezente la nivelul brațelor.

Coborând la nivelul bazinului, acesta are o morfologie generală pentagonală. Triunghiul pubian este pus în evidență prin tăieturi în *sciage* (Fig. 4/7). Incizii similare realizate prin *sciage* apar pe aproape toată lungimea bazinului. Acestea sunt paralele cu cele două laturi de jos ale triunghiului pubian. Este o piesă la care membrele inferioare nu au fost sugerate.

În schimb, în zona inferioară a fost realizată o perforație prin rotație bifacială. Aceasta este puternic deformată spre extremitatea proximală, cu dispariția striurilor de rotație și o mică concavitate (Fig. 4/8–9). Acestea sunt indicii pentru a putea susține ipoteza utilizării piesei ca pandantiv cu ajutorul perforației de la nivel proximal. Celelalte perforații nu prezintă urme de uzură. În schimb, pe suprafața piesei, uzura este invadatoare, fiind caracterizată de lustru macroscopic, arii de aplatizare și striuri fine.

Datele morfometrice sunt următoarele: lungime piesă = 51,5 mm, lățime maximă = 18 mm, grosime maximă = 4 mm, diametru mediu perforații = 2,8 mm.

Pandantiv (n=1)

Un fragment de coastă (Fig. 4/10), provenind de la un animal de talie mare, a fost transformat într-un pandantiv cu morfologie triunghiulară. În sens longitudinal, debitajul s-a realizat prin bipartiția coastei în percuție (evidentă pe latura mai lungă). Forma triunghiulară i-a fost imprimată prin tăierea a două laturi oblice prin *sciage* (Fig. 4/11). Planul de debitaj a fost regularizat prin abraziune (Fig. 4/12), dar nu foarte riguros, ceea ce a permis identificarea cu ușurință a procedeului de *sciage*. Abraziunea a fost aplicată sumar și pe fața inferioară (Fig. 4/14), astfel că țesutul spongios nu a fost riguros eliminat. Perforația a fost realizată prin rotație bifacială (Fig. 4/13). Piesa nu a fost mult timp purtată, pentru că nu am putut pune în evidență uzura la nivelul perforației. Lungimea pandantivului este de 41 mm, lățimea de 16,5 mm, grosimea de 2,1 mm, iar diametrul perforației de 2 mm.

Preforme (n=2)

Prima piesă în curs de prelucrare (Fig. 5/1) urma să fie, cel mai probabil, un cârlig de pescuit. Nu este exclus să se fi fracturat în cadrul procesului de prelucrare și să fi fost abandonată. S-a folosit diafiza unui os lung, mamifer de talie mare care să furnizeze un suport suficient de lat din care să se extragă preforma viitorului cârlig de pescuit. Nu cunoaștem procedeele aplicate pentru debitajul longitudinal care au dus la obținerea unui suport plat, datorită intervențiilor tehnologice ulterioare. Conturul a fost fasonat prin *raclage* (Fig. 5/2), iar fețele prin abraziune (Fig. 5/3). La nivel proximal, a fost realizată o perforație prin rotație bifacială (Fig. 5/4). Pornind de la acea perforație, s-au trasat șanțuri bifaciale prin *rainurage* (Fig. 5/5), ce ar fi dus la extracția cârligului. Piesa este extrem de importantă pentru că permite reconstituirea schemei tehnologice de obținere a cârligelor de pescuit. În cazul pieselor finite, cele mai multe dintre urmele tehnologice ar fi ilizibile, datorită etapei finale de fasonaj și a utilizării. Lungimea fragmentului este de 30,2 mm, lățimea maximă de 21 mm, grosimea maximă de 3 mm, iar diametrul perforației de 4 mm.

Cea de a doua preformă (Fig. 5/6) a fost amenajată dintr-o coastă de mamifer de talie mare. Este un suport plat, obținut prin bipartiția coastei, fără a mai fi vizibilă nicio urmă de debitaj. Întreaga suprafață a fost abrazată. Nu este exclus să se fi intenționat amenajarea unui pandantiv triunghiular, similar celui prezentat mai sus. Lungimea preformei este de 20,2 mm, lățimea maximă de 18 mm, iar grosimea maximă de 2 mm.

Suport (n=1)

Unui fragment de os (Fig. 5/7) i-am atribuit funcția de suport, deoarece nu păstrează urme ale operației de fasonaj. Este un suport plat obținut prin bipartiția osului în dublu *rainurage*. Are o lungime actuală de 64 mm, o lățime medie de 18 mm și o grosime medie de 11 mm.

Indeterminate (n=6)

Un prim fragment (Fig. 5/8) este puternic ars. Nu putem exclude posibilitatea unui fragment de figurină plată. A fost confecționat dintr-o coastă de mamifer de talie mare, prin bipartiția longitudinală. Întreaga suprafață a fost regularizată prin abraziune, astfel că nu știm ce procedee au fost folosite pentru debitaj sau pentru a crea morfologia piesei. Fragmentul păstrat are o lungime de 29 mm, o lățime de 17 mm și o grosime de 1,8 mm.

Urmează un mic fragment (Fig. 5/9) provenind dintr-o diafiză de os. Pe fața inferioară sunt vizibile urmele unui *raclage* transversal. Una dintre laturi a fost regularizată prin abraziune. Datele morfometrice actuale sunt următoarele: lungime = 34 mm, lățime medie = 25 mm, grosime medie = 2,2 mm.

Un fragment mezial (Fig. 5/10) este un suport plat obținut prin partiții succesive în percuție. Planul de debitaj a fost regularizat prin abraziune. Abraziunea transversală a fost aplicată și pe fața superioară, cu scopul aplatizării convexității acesteia. Are o lungime de 118 mm, o lățime medie de 27 mm și o grosime medie de 5,5 mm. La un alt fragment mezial (Fig. 5/11), obținut prin aceeași metodă de debitaj, laturile de debitaj au fost regularizate prin *raclage* longitudinal. Lungimea sa este de 54 mm, lățimea medie de 31,8 mm și grosimea medie de 5,5 mm.

În cazul următorului fragment *(*Fig. 5/12), s-a folosit o așchie din peretele diafizar, obținută prin partiții succesive în percuție. Planul de debitaj a rămas în stare brută. Doar la nivel distal, a fost aplicată o abraziune grosieră pe ambele fețe. Datele morfometrice sunt următoarele: lungime = 66 mm, lățime medie = 17,4 mm, grosime medie = 7,5 mm.

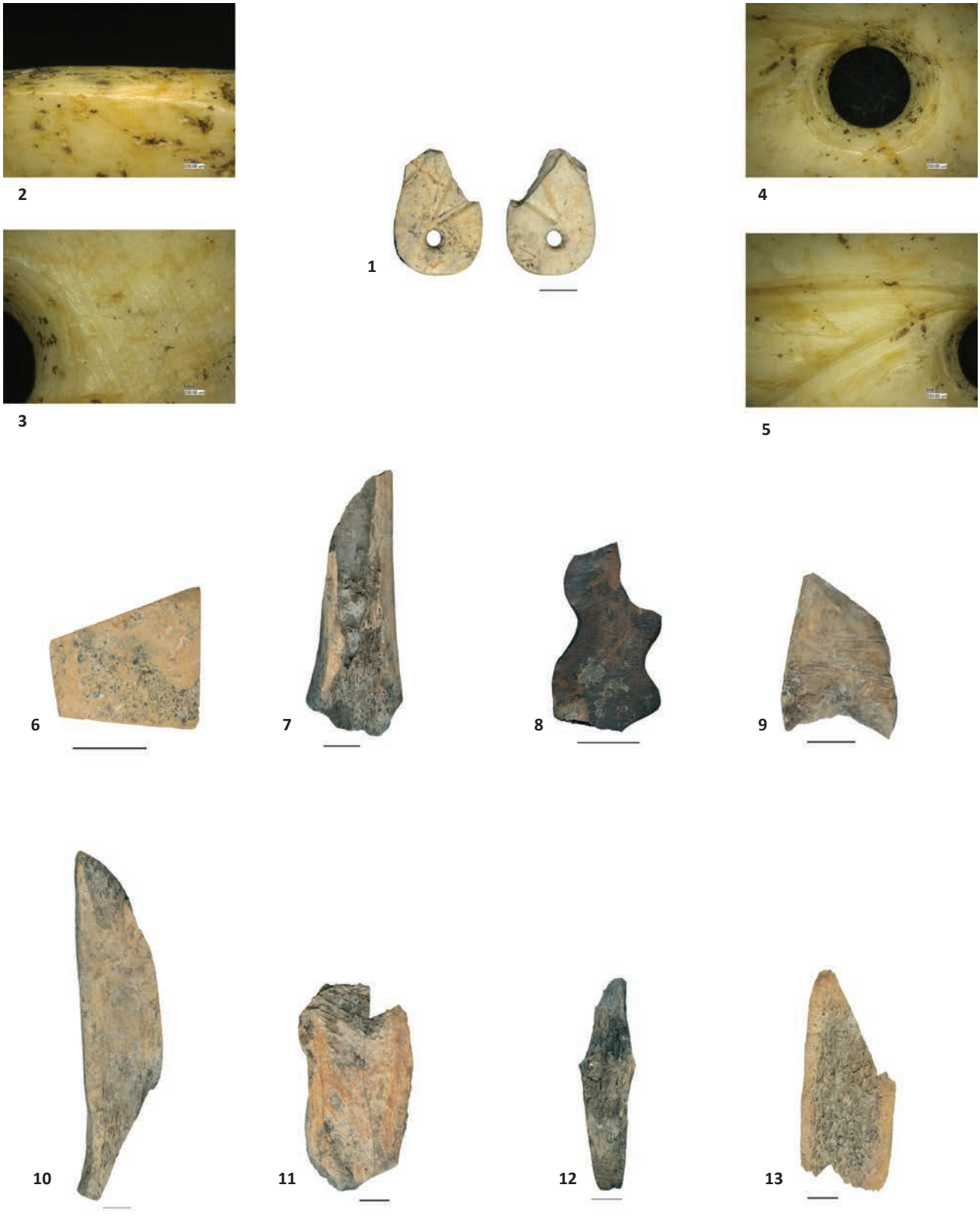


Figura 5. *1, 6. Preformă din os; 2. Urme de* raclage*; 3. Urme de abraziune; 4. Detaliu perforație; 5. Urme de* rainurage*; 7. Suport din os; 8–13. Piese din os cu funcție indeterminabilă.*

Figure 5. *1, 6. Bone preform; 2. Scraping marks; 3. Abrasion marks; 4. Perforation detail; 5. Grooving marks; 7. Bone blank; 8–13. Bone pieces with undetermined function.*

O coastă (Fig. 5/13), de la un mamifer de talie mare, a fost bipartiționată longitudinal, fără a ști procedeul deoarece fața inferioară a fost regularizată prin abraziune. Piesa s-a fracturat și nu-i putem reconstitui morfologia și nici gradul de prelucrare. Fragmentul are 65,5 mm lungime, 27 mm lățime medie și 3,5 mm grosime medie.

Corn (n=10)

Dălți (n=3)

Zona bazală a unui corn căzut (Fig. 6/1) a fost folosită pentru a crea o piesă masivă, de tipul dălților. Piesa prezintă multiple fracturi și este afectată de procese tafonomice, însă analiza microscopică ne-a oferit informații legate de urmele de utilizare. A fost conservat volumul anatomic al cornului. Zona rozetei a fost amenajată prin lovituri aplicate prin percuție în jurul întregii circumferințe. Raza bazală a fost eliminată, de asemenea, prin percuție. La acest nivel, a fost amenajată o perforație dispusă transversal, cu morfologie rectangulară, realizată prin tăiere (Fig. 6/3). Frontul activ a fost amenajat unifacial, prin percuție aplicată la nivel distal. Macroscopic, acesta are o morfologie puternic tasată (Fig. 6/2,4), cu fracturi dezvoltate longitudinal care au modificat radical volumul inițial. Frontul a fost folosit în percuție dură, iar utilizarea piesei a continuat și după ce au apărut fracturile funcționale deoarece, la microscop, sunt evidente striuri funcționale dese, paralele între ele, dispuse perpendicular pe frontul activ (Fig. 6/5), care sunt prezente inclusiv în ariile de fracturare. Dalta are o lungime de 197 mm, o lățime de 80 mm, o grosime de 63 mm, iar dimensiunile perforației sunt de 37,5 × 27 mm.

O axă (Fig. 6/6) a fost segmentată la nivel proximal prin percuție aplicată în jurul întregii circumferințe (Fig. 6/9), detașarea finală realizându-se tot prin percuție. La nivel distal, nu știm cum s-a realizat segmentarea, datorită intervențiilor tehnologice ulterioare. Nici în acest caz nu a intervenit un debitaj longitudinal, păstrându-se volumul anatomic. Este vizibilă o perforație cu morfologie rectangulară obținută prin tăiere aplicată bifacial alternativ (Fig. 6/8). La nivel mezo-distal, unifacial, a fost folosită percuția pentru a amenaja frontul activ (Fig. 6/7). Nu sunt vizibile urme ale procedeului de fasonaj, deoarece frontul este tasat, cu modificarea radicală a morfologiei inițiale. Pierderile de material succesive au dus la apariția unei concavități la nivel median (Fig. 6/10–12). Datele morfometrice sunt următoarele: lungime = 238 mm, lățime = 53,4 mm, grosime = 49 mm, dimensiuni perforație = 36,5 × 26 mm.

Cea de a treia daltă (Fig. 7/1) este confecționată, de asemenea, dintr-un segment de axă masivă. La nivel proximal, segmentarea din ramură a fost realizată prin percuție (Fig. 7/3). Pentru segmentarea razei, a fost folosit același procedeu. Perforația care asigura o înmănușare transversală a fost realizată prin percuție (Fig. 7/2) aplicată alternativ bifacial. La nivel distal, a fost amenajat un front de tip daltă prin percuție unifacială, cu fasonajul parțial al planului de debitaj. Este un front foarte tocit, cu pierderi semnificative de materie, cu o concavitate mediană, peste care se suprapune un lustru macroscopic extins în suprafață (Fig. 7/4–5). Lungimea piesei este de 338 mm, lățimea de 67 mm, grosimea de 62,8 mm, iar dimensiunile perforației de 36 × 29 mm.

Vârf de armă (n=1)

O singură piesă (Fig. 7/6), fragment mezial, a fost atribuită aceste categorii tipologice. În consecință, nu avem toate datele de natură tehnologică sau funcțională. S-a folosit o așchie din țesutul compact al cornului. Nu putem identifica tehnicile folosite în cadrul operației de debitaj. Zona de înmănușare este demarcată de corpul vârfului printr-un procedeu de deliniație în *sciage*. Apoi, întreaga suprafață a piesei a fost amenajată printr-un *raclage* longitudinal menit nu numai să regularizeze suprafața, ci să și creeze morfologia ascuțită a extremităților (care, din păcate, nu se păstrează). În prezent, fragmentul are o lungime de 34,5 mm și un diametru mediu de 6,8 mm.

Harpon (n=1)

Un mic fragment de piesă (Fig. 7/7) provine de la un harpon. Este ars și cu multiple depuneri pe suprafață. Secțiunea trunchiului este ovală, iar singura barbelură păstrată are o morfologie biconvexă. O parte a lanțului tehnologic poate fi reconstituit, pornind de la morfologia fragmentului și de la urmele tehnologice care sunt încă vizibile. În primul rând, a fost obținut un suport plat, prin bipartiția longitudinală a cornului. Desprinderea barbelurii s-a realizat prin *sciage* bifacial alternativ, cu urme specifice.

Suporturi (n=4)

Cele patru artefacte au fost atribuite categoriei suporturilor, deoarece pe suprafața lor sunt prezente doar urme din cadrul operației de debitaj, iar dimensiunile lor permiteau continuarea procesului de prelucrare și transformarea în piese finite.

Un fragment (Fig. 7/8) păstrează o parte dintr-o axă și o rază. Are multiple fracturi, dar este totuși vizibil că două extremități au fost segmentate prin percuție directă. Urmele sunt vizibile și nu au fost suprapuse de fasonaj. Lungimea suportului este de 195 mm, lățimea medie de 90 mm, iar grosimea medie de 42,5 mm. Un suport identic (Fig. 7/9) are multiple fracturi post-depoziționale. Doar la nivel proximal, se mai păstrează, pe una din fețe, urmele unei segmentări prin percuție. Datele morfometrice sunt următoarele: lungime = 269 mm, diametru mediu = 72 mm.

O rază bazală de corn (Fig. 7/10) a fost segmentată prin percuție aplicată în jurul întregii circumferințe, cu detașarea prin flexionare. Alte intervenții tehnologice nu există. Raza are o lungime de 423 mm, iar diametrul mediu de 34 mm. O altă rază (Fig. 7/11) a fost segmentată prin percuție, aplicată pe jumătate din diametru, după care s-a folosit flexionarea. Lungimea razei este de 237,4 mm, iar diametrul maxim de 29 mm.

Indeterminată (n=1)

Un fragment de axă (Fig. 7/12) prezintă urme tehnologice, dar datorită fracturării, nu putem spune în ce stadiu de prelucrare se afla artefactul. Este un suport în volum, segmentat la extremitatea conservată prin percuție aplicată

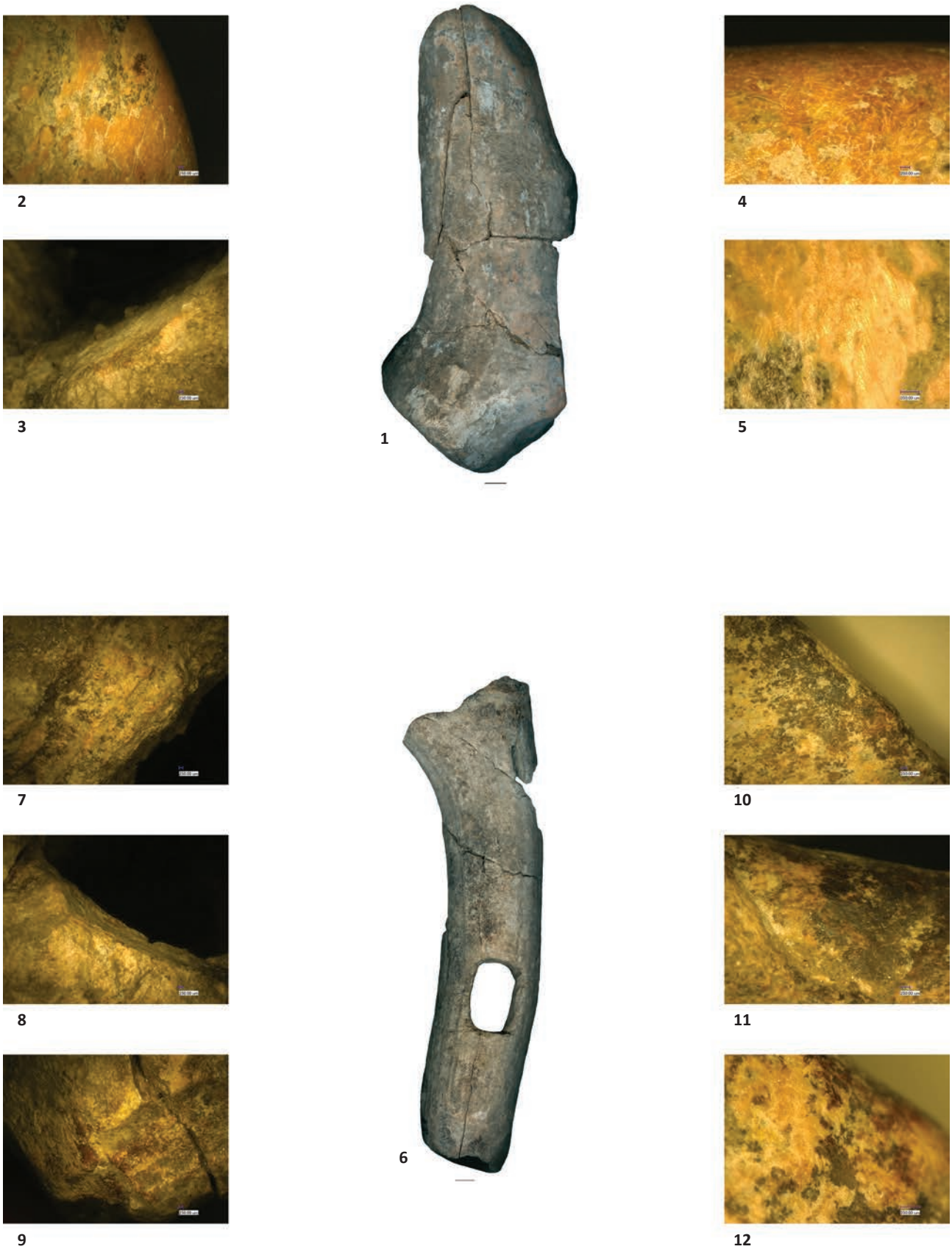


Figura 6. *1, 6. Dălți confecționate din corn; 2. Detaliu front activ; 3, 8. Urme de tăiere; 4–5, 10–12. Uzură la nivelul frontului activ; 7, 9. Urme de percuție.*

Figure 6. *1, 6. Bevelled tools made of antler; 2. Distal end detail; 3, 8. Cutting marks; 4–5, 10–12. Use-wear at the level of the active end; 7, 9. Percussion marks.*

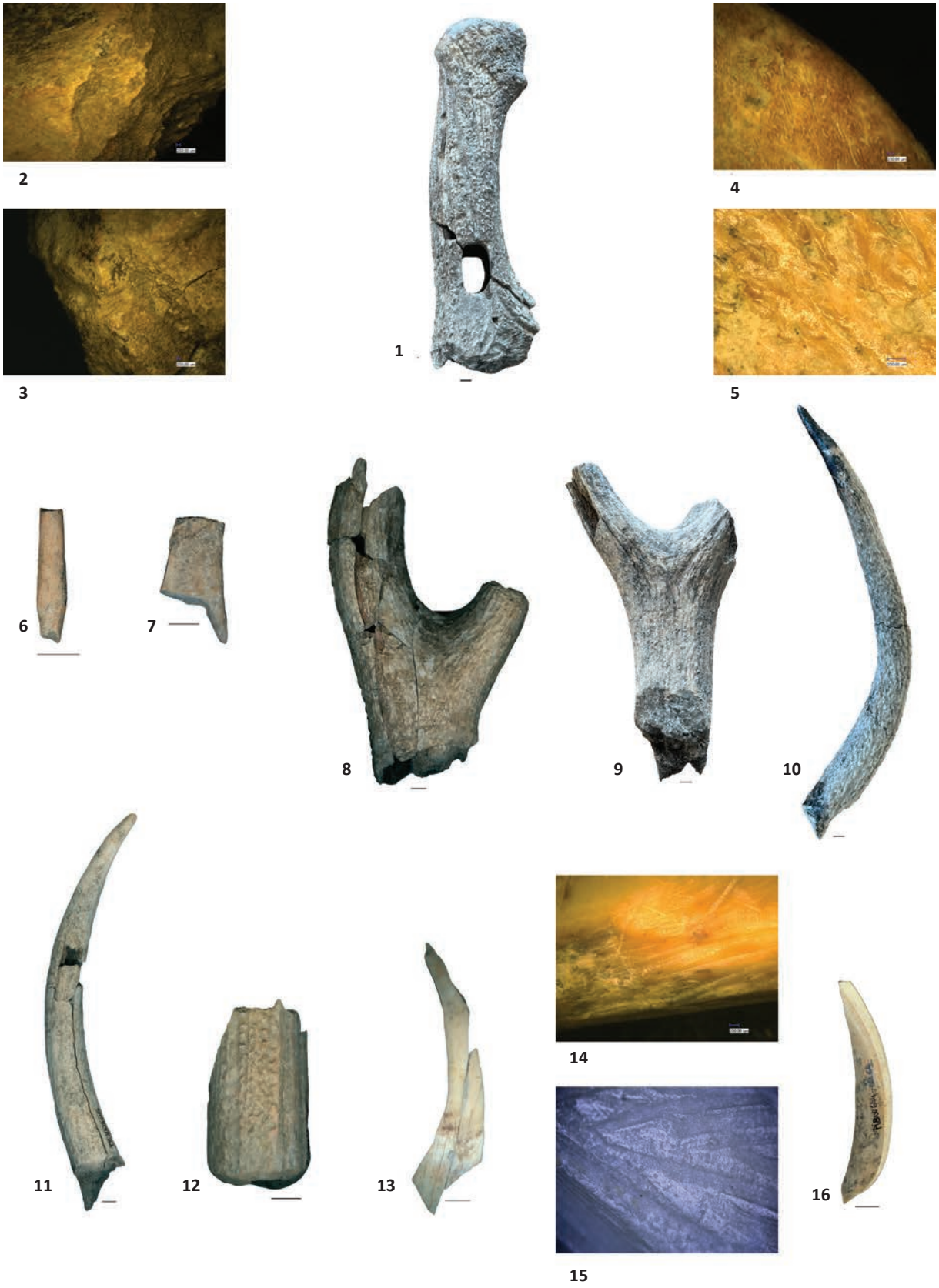


Figura 7. *1. Daltă confecționată din corn; 2–3. Urme de percuție; 4–5. Uzură la nivelul frontului activ; 6. Vârf de armă din corn; 7. Harpon din corn; 8–11. Suporturi din corn; 12. Piesă din corn cu funcție indeterminabilă; 13.* Racloir *din dinte; 14–15. Urme de* raclage*; 16. Piesă din dinte cu funcție indeterminabilă.*

Figure 7. *1. Bevelled tool made of antler; 2–3. Percussion marks; 4–5. Use-wear at the active end; 6. Antler weapon point; 7. Antler harpoon; 8–11. Antler blank; 12. Antler piece with undetermined function; 13. Tooth scraper; 14–15. Scraping marks; 16. Tooth piece with with undetermined function.*

în jurul întregii circumferințe. Lungimea fragmentului este de 66 mm, iar diametrul de 44 mm.

Dinte (n=2)

Racloir (n=1)

Zona dinspre vârf (Fig. 7/13) a unui canin inferior de *Sus scrofa* a fost utilizată pentru confecționarea unui *racloir*. Piesa are multiple fracturi. Într-o primă etapă, a fost obținut un suport plat, prin bipartiția longitudinală a dintelui în percuție. Fața inferioară și latura concavă au fost amenajate prin *raclage* longitudinal (Fig. 7/14). La microscopul metalografic (Fig. 7/15), în micile zone dintre striurile de *raclage*, se vede uzura caracterizată de aplatizarea suprafeței, ceea ce ne arată un procedeu de reascuțire periodică a laturii concave. Lungimea piesei este de 104,8 mm, lățimea medie de 17 mm, iar grosimea medie de 3 mm.

*Indeterminat*ă (n=1)

Un fragment de canin (Fig. 7/16) de *Sus scrofa*, din zona rădăcinii, poartă urmele unui debitaj longitudinal în percuție. Nu putem stabili gradul de prelucrare, datorită fracturării, dar, în mod cert, era măcar un suport.

DISCUȚII

Analiza ansamblului de artefacte provenind din unitatea cercetată permite conturarea unor observații relevante privind comportamentul economic și tehnologic al comunității, la scara unei singure gospodării. Deși eșantionul numeric (n=31) poate părea restrâns, diversitatea tipologică și tehnologică oferă indicii prețioase despre organizarea internă a activităților.

Unul dintre aspectele importante evidențiate de acest inventar este caracterul non-specializat al producției. Prezența simultană, în același spațiu locuit, a tuturor segmentelor lanțului operator (*chaîne opératoire*) – de la suporturi brute și preforme, până la piese finite cu un grad avansat de uzură, cu urme de reascuțire/repunere în formă sau epuizate/fracturate – pledează pentru ipoteza unei producții domestice la nivelul unei familii. Nu ne aflăm în fața unui atelier specializat care deservea comunitatea, ci în fața unei gospodării care își confecționa și își întreținea propriul echipament. Identificarea preformelor este foarte importantă pentru că ne oferă informații despre etapele incipiente ale schemei tehnologice de transformare a materiilor prime, în condițiile în care, în general, acestea sunt distruse de intervențiile tehnologice ulterioare.

Raportul dintre materiile prime utilizate [predominanța osului (n=19), urmat de corn (n=4) și dinte (n=2)] și gradul de prelucrare al pieselor sugerează o strategie complexă de management a resurselor. Identificarea a cinci suporturi în inventarul locuinței indică o stocare intenționată a materiei prime. Această acumulare de „rezerve" este un răspuns direct la constrângerile de mediu: în timp ce osul este o resursă disponibilă continuu (prin consumul alimentar cotidian al animalelor domestice), cornul de cerb este o resursă cu disponibilitate sezonieră (limitată la perioada căderii coarnelor)[5] sau dependentă de succesul vânătorii. Astfel, prezența suporturilor de corn în locuință demonstrează o planificare pe termen mediu: membrii comunității își asigurau stocuri pentru a putea înlocui rapid piesele rupte sau pierdute, eliminând dependența de sezonul anual de recoltare a cornului.

Urmele de uzură funcțională (lustru, striuri funcționale, arii de aplatizare) indică o utilizare intensă a utilajului. În cazul dăltițelor, urmele de *raclage* transversal pe frontul activ sugerează acțiuni repetate de reascuțire/repunere în formă. Același procedeu de reascuțire și întreținere a frontului activ este vizibil și pentru *racloir*-ul din dinte. Preocuparea constantă pentru menținerea eficienței uneltelor ilustrează valoarea pe care acestea o aveau pentru utilizatori; ele erau reparate și refolosite până la epuizarea totală, fapt ce se corelează cu stocarea materiilor prime necesare. Gama tipologică (vârfuri, dăltițe, *racloir*, harpon, cârlig de pescuit) acoperă un spectru larg de activități, de la achiziția hranei (vânătoare, pescuit), până la prelucrarea diverselor materiale (lemn, piele, vegetale) oferind imaginea unei familii care își putea asigura intern toate nevoile.

Dincolo de aspectele utilitare, inventarul locuinței include piese cu valoare simbolică și estetică, precum pandantivul din os (posibil, și o preformă), dar mai ales figurina plată din os. Complexitatea schemei tehnologice de confecționare a figurinei (modelare și decorare prin *sciage*, perforare prin rotație bifacială, abraziune pentru uniformizarea suprafeței) contrastează cu simplitatea uneltelor comune, sugerând un timp de investiție și o atenție superioară acordată obiectelor de prestigiu. Asocierea acestei piese cu restul inventarului utilitar, precum și gradul intens de uzură ne arată că nu era depusă în locuri speciale și nu era manipulată doar în cadrul unor momente importante, ci era purtată permanent sub forma unui pandantiv (desigur, funcția simbolică nu este exclusă).

În concluzie, ansamblul arheologic analizat reflectă o comunitate adaptabilă, care practica o economie a materiilor dure animale bazată pe autosuficiență la nivel de gospodărie, gestionând cu atenție resursele limitate sau sezoniere și integrând activitățile de producție, subzistență și manifestare simbolică în același spațiu domestic.

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[5] Averbouh 2000; Provenzano 2001.

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NEW INVESTIGATIONS AT GLINA TELL: 2025 FIELDWORK RESULTS AND PRELIMINARY INSIGHTS INTO MATERIAL AND ENVIRONMENTAL EVIDENCE

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Keywords: *Glina, prehistoric tell settlement, Boian culture, Gumelnița culture, Glina culture, multidisciplinary archaeology*

Abstract: *The prehistoric settlement of Glina Tell (Glina –* La Nuci*), located on the lower terrace of the Dâmbovița River near Bucharest, represents one of the key reference sites for the prehistoric archaeology of southern Romania, having played a major role in establishing the Boian–Gumelnița stratigraphic sequence and in defining the Glina culture of the Early Bronze Age. Despite its scientific importance, much of the archaeological documentation and material recovered during the twentieth-century excavations remained unpublished or was dispersed across several archives and collections. Systematic archaeological investigations were resumed in 2025 within a broader multidisciplinary research programme focused on the Glina – Bălăceanca archaeological landscape. The present paper constitutes a preliminary report on the first campaign and presents the excavation methodology, stratigraphic observations, and the main categories of archaeological and environmental data recovered during fieldwork. The investigations combined invasive and non-invasive methods, including micro-stratigraphic excavation, single context recording, spatial recording, geophysical surveys, sediment coring, flotation, and interdisciplinary analyses of artifacts and ecofacts. Although preliminary in character, the results demonstrate the exceptional research potential still preserved at Glina Tell and open new perspectives for the future campaigns.*

Cuvinte-cheie: *Glina, așezare preistorică de tip tell, cultura Boian, cultura Gumelnița, cultura Glina, arheologie multidisciplinară*

Rezumat: *Așezarea preistorică de tip tell de la Glina (Tell-ul Glina sau Glina –* La Nuci*), situată pe terasa inferioară a râului Dâmbovița, lângă București, reprezintă unul dintre siturile de referință pentru arheologia preistorică din sudul României, jucând un rol major în stabilirea secvenței stratigrafice Boian–Gumelnița și în definirea culturii Glina din epoca bronzului timpuriu. În ciuda importanței sale științifice, documentația și materialele arheologice recuperate în timpul săpăturilor din secolul al XX-lea au rămas în mare parte nepublicate sau au fost dispersate în mai multe arhive și colecții. Investigațiile arheologice sistematice au fost reluate în 2025, în cadrul unui program de cercetare multidisciplinară mai amplu, axat pe peisajul arheologic Glina – Bălăceanca. Această lucrare constituie un raport preliminar al primei campanii de săpături și prezintă metodologia de cercetare, observațiile stratigrafice și principalele categorii de date arheologice și de mediu recuperate în timpul lucrărilor de teren. Investigațiile au combinat metode invazive și non-invazive, inclusiv săpătura microstratigrafică, înregistrarea contextelor și cea spațială, prospecțiunile geofizice, carotajul sedimentelor, flotația și analizele interdisciplinare ale artefactelor și ecofactelor. Deși au caracter preliminar, rezultatele demonstrează potențialul excepțional de cercetare care încă se păstrează la Tell-ul Glina și deschid perspective pentru campaniile viitoare.*

1. INTRODUCTION

The Glina Tell (also known as Glina – *La Nuci*) is located in the Romanian Plain (Fig. 1), on a narrow extension of the high terrace bordering the right bank of the Dâmbovița River floodplain, between the modern settlements of Glina and Bălăceanca. Administratively, the site falls within the boundaries of the village of Bălăceanca, Cernica commune, Ilfov County. Together with several nearby terrace sites (Fig. 2), the tell forms part of a dense archaeological area referred to hereafter as the Glina – Bălăceanca archaeological landscape, situated at the southeastern outskirts of present-day Bucharest.

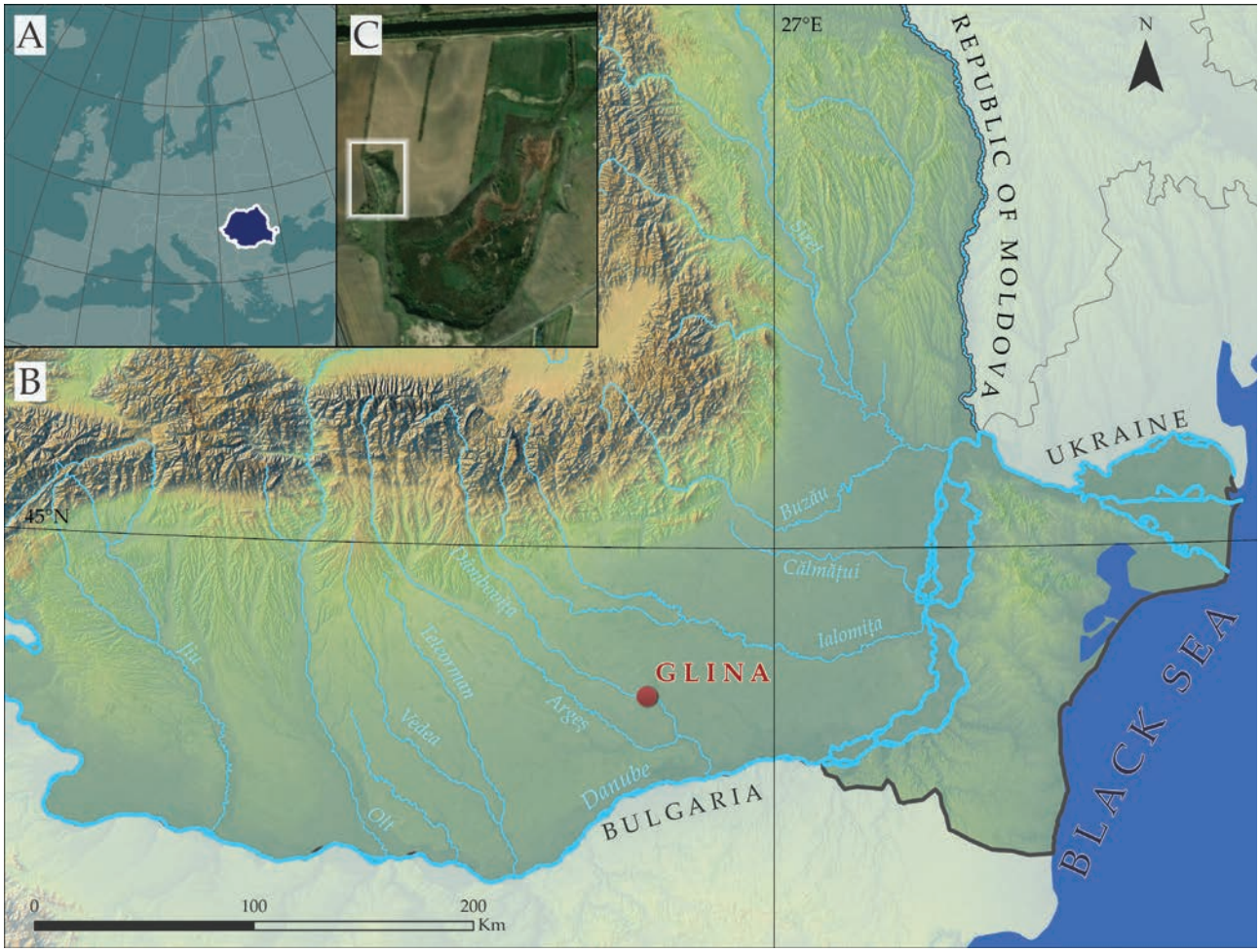


Figure 1. *Location of the Glina Tell site.*

The multilayered tell site (Bailey 1999) preserves deposits approximately 4 m thick, comprising successive occupation levels attributed to the Boian culture (Vidra phase and sporadically the Spanțov phase), the Gumelnița culture (A1 and A2 phases), and the Glina culture, as well as later materials (Tei culture, Early Iron Age, and Getic periods) in the upper levels (Nestor 1928; 1933; Ștefan 2016, p. 138). Despite its major scientific importance, however, a significant part of the excavation documentation and archaeological materials remained unpublished or only summarily presented, having been dispersed across several archives and museum collections.

The archaeological sequence of the site, its internal organisation, the relationship between the tell and the surrounding terrace occupations, as well as the environmental context of the settlement, remain insufficiently understood. Furthermore, the site's current state of preservation has been significantly affected by earlier excavations, erosion processes, and recent anthropogenic interventions (Moldoveanu, Andreescu 2012, p. 125; Opriș 2015).

The resumption of systematic archaeological research at Glina Tell in 2025 was initiated as part of the project "Prehistory at the southeastern gates of Bucharest. Multidisciplinary archaeological research in the prehistoric sites of Glina and Bălăceanca", implemented by the Bucharest Municipality Museum in partnership with the University of Bucharest, the "Vasile Pârvan" Institute of Archaeology of the Romanian Academy, and the National History Museum of Romania. The project was conceived as a long-term research programme aimed not only at the reinvestigation of the tell itself, but also at the reconstruction of the broader Glina–Bălăceanca archaeological landscape through the integration of archaeological, geophysical, geomorphological, palaeoenvironmental, and spatial data.

The 2025 campaign represents the first stage of this broader research programme and was primarily evaluative and methodological in nature. The main objectives were: (1) to assess the state of preservation and archaeological potential of the site through invasive and non-invasive investigations; (2) to establish a high-resolution stratigraphic and chronological framework for the newly investigated areas; (3) to implement an integrated recording and sampling strategy adapted to the complex depositional sequence of the tell; and (4) to initiate the systematic collection of environmental and archaeological

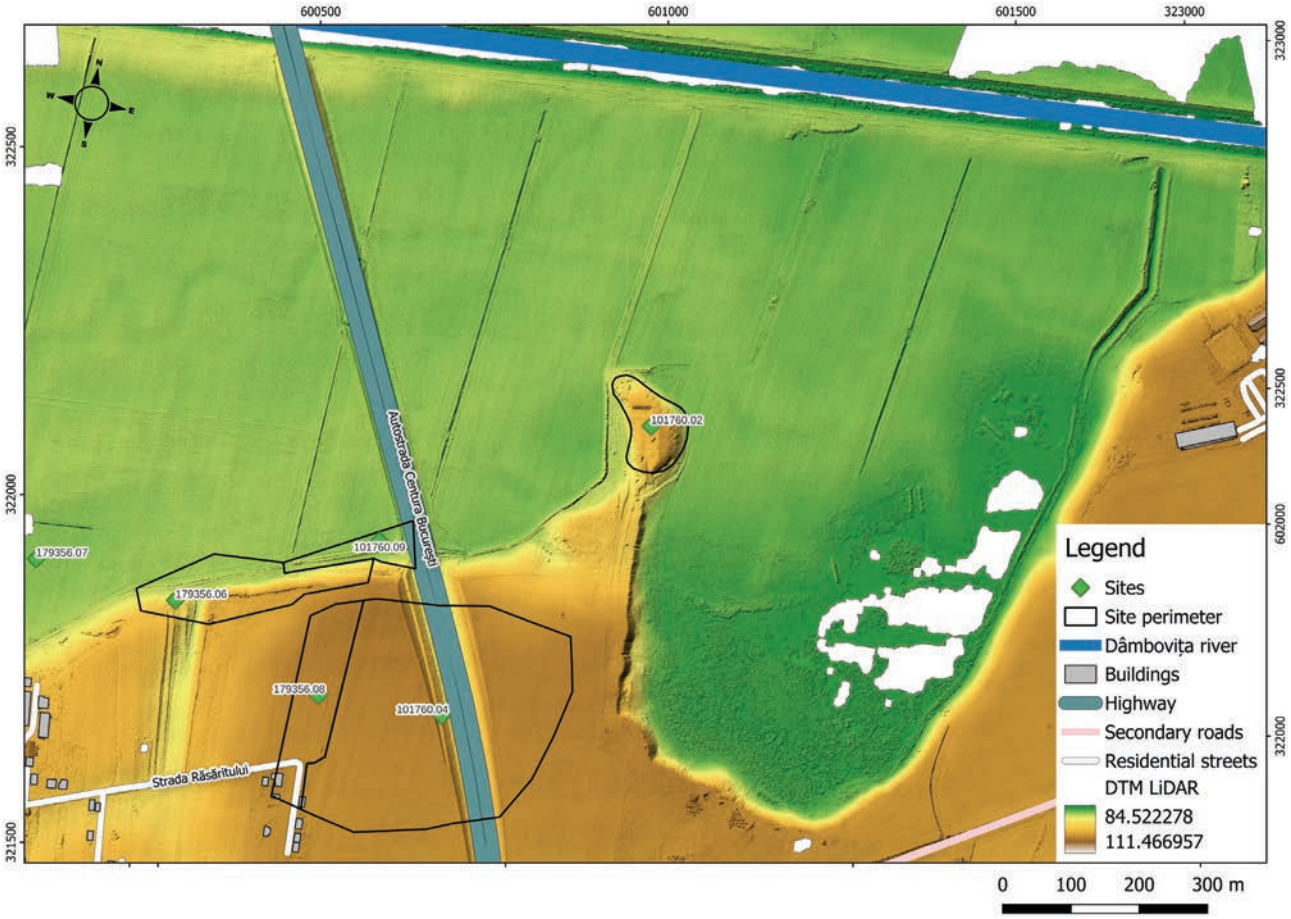


Figure 2. *Digital terrain model of the Glina – Bălăceanca area, with Glina Tell in the centre, obtained by LiDAR scanning. Black lines mark the sites as they currently appear in the National Archaeological Repertoire, together with their respective codes.*

data necessary for future interdisciplinary analyses and comprehensive studies.

Accordingly, the present contribution is intended as a preliminary fieldwork report. Rather than proposing definitive interpretations regarding the long-term evolution of the settlement or the cultural dynamics of the Boian, Gumelnița, and Glina occupations, the paper focuses on presenting the methodology employed during the 2025 campaign, the principal stratigraphic observations, and the first categories of archaeological and environmental data recovered during the excavations. These preliminary results nevertheless demonstrate the exceptional research potential still preserved at the site and provide the basis for the future development of an integrated, long-term investigation of one of the key prehistoric settlements from the Lower Danube region.

2. BRIEF RESEARCH HISTORY

Discovered by Radu Vulpe and investigated in 1926 and 1927 by Ion Nestor, the site holds major historiographical importance, as it was here that the Boian–Gumelnița stratigraphic sequence was first established and the Glina III culture was defined (Nestor 1928; 1933). The site thus became the eponymous type-site for this Early Bronze Age culture.

Excavations continued between 1943 and 1948 (Petrescu-Dîmbovița 1944) and again in 1969–1970 (Comșa, Petrescu-Dâmbovița 1996). Although a large portion of the settlement was excavated (Fig. 3), most of the documentation has remained unpublished. The excavation archives and archaeological materials are currently deposited in several institutions, including the "Vasile Pârvan" Institute of Archaeology in Bucharest, the Institute of Archaeology in Iași, the National History Museum of Romania, and the Bucharest Municipality Museum.

Several decades after the latest excavation, studies have begun to recover portions of this legacy data through the reassessment of archival records and old collections. These reassessed finds include an Early Chalcolithic grave containing ornaments (Ștefan 2022a), three dwellings dated to the Middle Chalcolithic period (Ștefan 2015), faunal remains (Haimovici 1997), stone knives (Ștefan 2022b) and ornaments (Ștefan 2016) from the Early Bronze Age, and a collection of flint artifacts (Vornicu, Minea 2025). The latter

study also presents a detailed history of the investigations conducted at the site.

Several sites yielding prehistoric finds are documented on the adjacent terrace (Chirică, Popovici-Baltă 1973). The most recent investigations were carried out during the construction of the A0 Bucharest Motorway, which led to the discovery of features dating to the Late Neolithic (Boian culture–Bolintineanu phase), the Chalcolithic (Gumelnița culture), the Bronze Age (Cernavodă II culture, Tei culture, and the Radovanu aspect), the Early Iron Age (Basarabi culture), Post-Roman period (Chilia–Militari and Ipotești–Cândești cultures), the Early Medieval period (Dridu culture), and the Late Medieval period (17th–18th centuries) (Ștefan 2021; Ștefan *et alii* 2020).

3. TOPOGRAPHIC AND AERIAL DOCUMENTATION

The documentation of the Glina – Bălăceanca archaeological landscape was carried out at two different scales: a macro-scale survey before the excavation, and a micro-scale recording during the fieldwork. In March 2025, an airborne LiDAR survey was undertaken to document the site and its surrounding landscape (Fig. 2). The main objective was to obtain a detailed terrain model suitable for archaeological interpretation and for future monitoring, considering the rapid modern development affecting the area.

The survey was performed using a Quantum Systems Trinity F90+ UAV equipped with a Qube240 LiDAR sensor. The flight was carried out at 120 m AGL and covered 204 ha in approximately 35 minutes. The resulting point cloud was processed using the GNSS trajectory correction (Applanix POSPac), point cloud adjustment and filtering (YellowScan CloudStation), followed by the classification into ground and non-ground points. Based on this dataset, a DEM, DTM, and DSM models were generated (Stal *et alii* 2024).

In addition, the tell was documented using UAV photogrammetry. A DJI Phantom 4 Pro UAV was flown in automatic mode, following a predefined grid to ensure full coverage of the mound. The flight altitude was approximately 60 m AGL, with 80% frontal and lateral overlap. Ground control points measured using RTK GNSS were used to improve positional accuracy. The images were processed in Agisoft Metashape, resulting in a high-resolution orthophoto and DEM of the tell (Fig. 3).

During the excavation, spatial recording was carried out using a Leica total station and UAV photogrammetry. The total station was used to record the absolute coordinates of archaeological features and significant finds in the Stereo 70 coordinate system, ensuring compatibility with the macro-scale dataset. Concurrently, a DJI Mavic 2 UAV was employed to document excavation surfaces and individual features from low altitude. The images were processed in Agisoft Metashape in order to generate orthophotos and detailed surface models. Ground control points measured with the total station ensured accurate georeferencing and consistency with the broader spatial framework.

3.1 RESULTS AND DISCUSSION – MACRO-SCALE SURVEY

Both LiDAR and UAV data provide a detailed representation of the micro-topography of the site and its surroundings, offering a solid basis for analysing both archaeological features and recent landscape modifications.

The tell is located on a terrace promontory, at the boundary between the higher terrace and the lower floodplain of the Dâmbovița River. The northern part of the mound is affected by erosion, while the central-western area shows traces of modern interventions. Nevertheless, the tell still occupies a dominant position in the landscape. This is primarily due to its location on the edge of the terrace, above the flat floodplain area.

North of the mound, the terrain becomes low and flat, typical of a floodplain. This pronounced elevation difference makes the tell easily identifiable in the terrain model. However, the present shape of the valley must be understood in the context of modern river regulation. Over the last two centuries, especially in the Bucharest area, the Dâmbovița River has been heavily modified through channel rectification, embankments, and reservoirs (Stematiu, Teodorescu 2014). As a result of these works, the current floodplain does not fully reflect the original flooding regime and natural river dynamics.

The terrain model also shows significant modern interventions around the site. The Bucharest ring motorway cuts across the terrace west of the tell and represents the most visible landscape change. South and west of the mound, large areas have been levelled for agricultural use. These areas have a regular and flat appearance, distinct from the more natural micro-relief preserved near the terrace edge. New residential areas and secondary roads further fragment the landscape.

In this context, the Glina Tell was originally established within a more dynamic river landscape. The generated models document a terrain that has already been modified by modern engineering works. This must be taken into account when discussing both the choice of location and the preservation of archaeological deposits at the terrace–floodplain boundary.

4. GEOPHYSICAL PROSPECTIONS

4.1. METHODOLOGY

The geophysical prospections were aimed at providing context to the targeted site and the main objectives were to gather information on the presence of archaeological features in the ground and their preservation state, and on the extent of the site where possible, considering the current field conditions.

The first site investigated in this project is Glina, where we targeted the northern and eastern parts of the tell, although a large part of the site was excavated in the

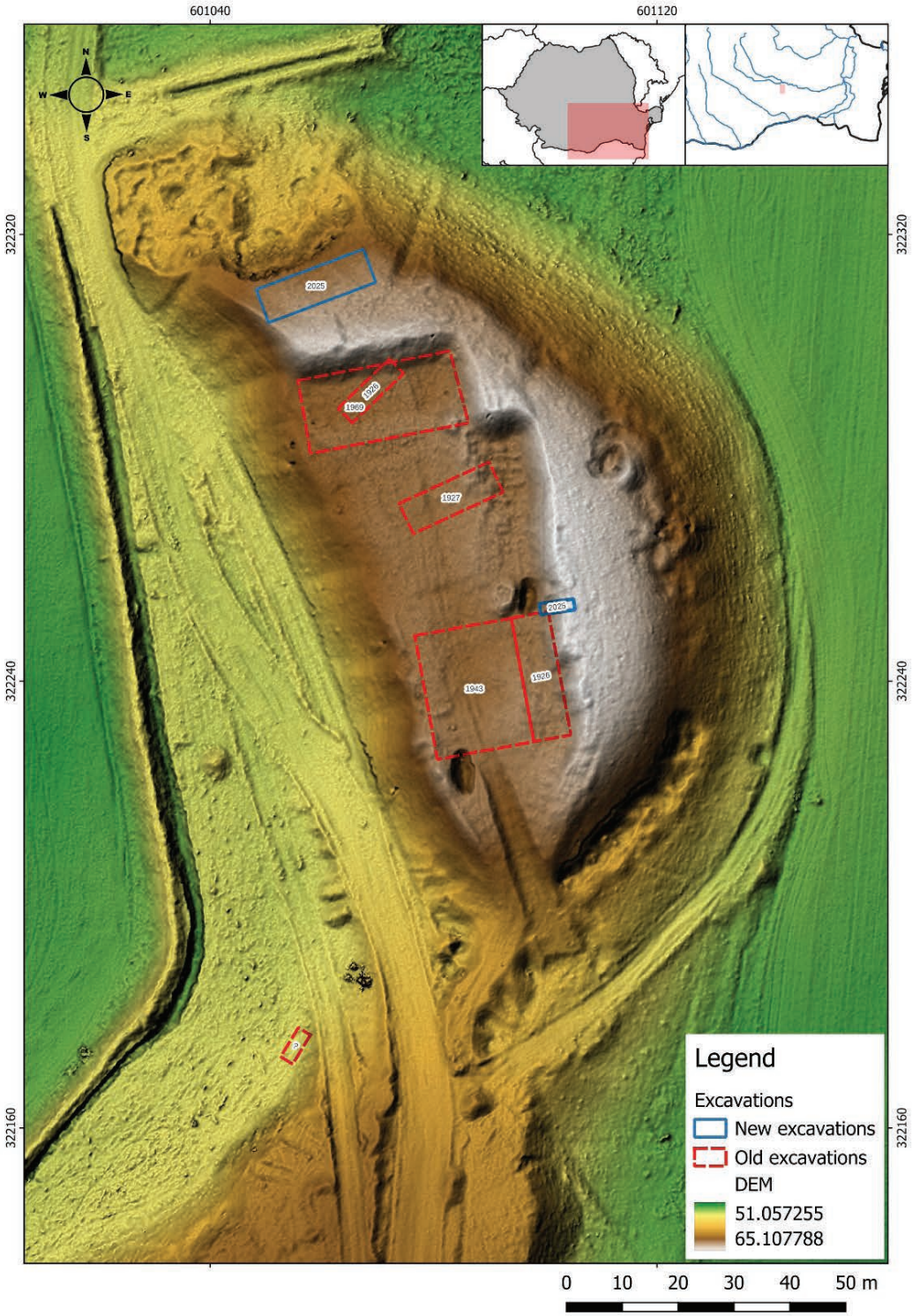


Figure 3. *Digital terrain model of the Glina Tell area, obtained by UAV photogrammetry. Red indicates the estimated limits of previous excavations along with their respective years of excavation, while blue marks the areas excavated during the 2025 campaign.*

second part of the 20th century. These areas that were less affected by modern interventions were investigated using Electrical Resistivity Tomography (ERT) as a first method of investigation (and the most suited to offer the information required in assessing the presence of archaeological features and the stratigraphy of the mound), while magnetometry was used to investigate part of the high terrace to the southwest of the tell (Fig. 4). Initially, in the spring of 2025, two relatively perpendicular ERT profiles were measured in the northern part of the site, while a



Figure 4. *ERT profiles and magnetometry surveyed area at Glina – Bălăceanca archaeological landscape (Glina Tell and the terrace SE of the tell).*

later profile was measured on a south–north direction on the unaffected part of the mound (Fig. 5). An ABEM Mala instrument with 64 electrodes was used. For the first two profiles, the electrode separation was 0.5 m, while for the latter, aimed at giving a broader view of the site and its stratigraphy, the separation was 1.5 m. The data were collected in a Double Dipole configuration.

During the summer of 2025, we also collected around one hectare of magnetic data on the high terrace located to the southwest of the tell. The instrument used was a Bartington Grad601-2 gradiometer and the data was collected in the classical manner of the instrument – 30 m grids with 1 × 0.25 m resolution (Fig. 6).

4.2. RESULTS AND PRELIMINARY OBSERVATIONS

The ERT profiles from the northern part of the Glina Tell show the stratigraphy and reveal several positive and negative anomalies related to prehistoric archaeological features and possibly later historical periods. Profile 1, oriented east–west, shows a large positive anomaly in the western part and several negative anomalies that could be related to pit- or ditch-type features. Profile 2 has a north–south orientation and reveals a very interesting structure centred around 10.5 to 12 m along the profile: a feature that presents a high resistivity anomaly at the bottom of the anthropic layer with a negative component

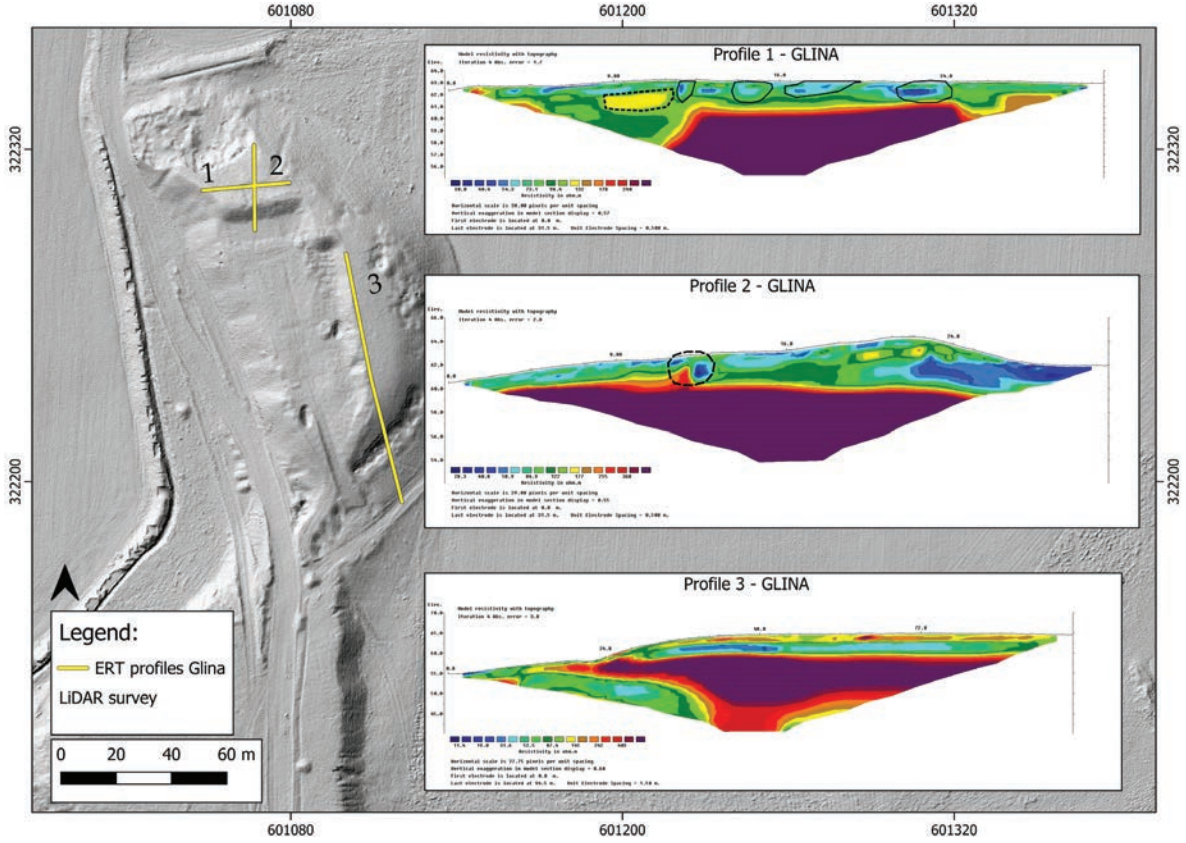


Figure 5. *ERT profiles at Glina Tell with identified features.*

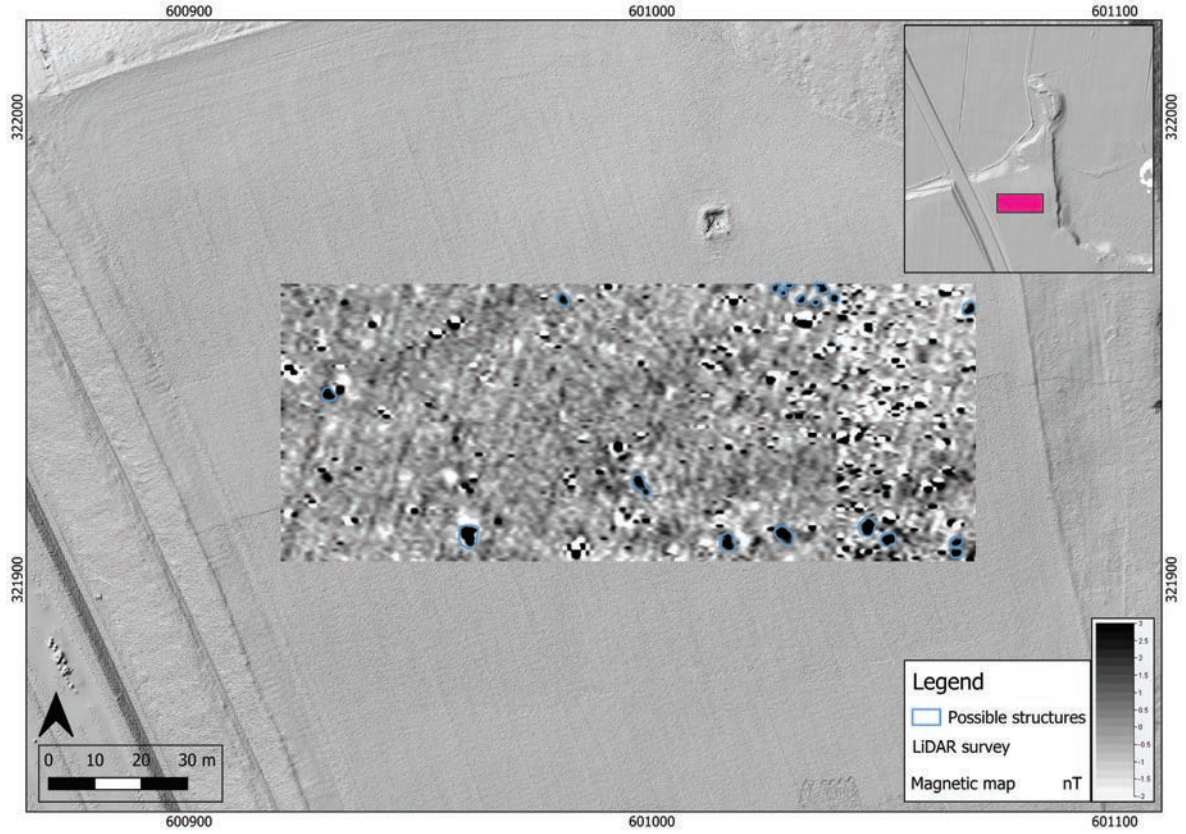


Figure 6. *Magnetometry survey on the Terrace area and interpretation of identified features.*

to the south. This is indicative of a wall/bank type feature with a possible ditch behind it. The orientation following the edge of the mound gives further motive to formulate this hypothesis. Thus, it might be a feature delimiting the settlement at one point in time. The third profile, oriented north-south, offers information on the structures present on the tell, but also some information related to the southward slope. The stratigraphy observed in this profile shows the highly resistive geology of the mound, as expected. The archaeological layers are c. 2.5 m deep thick and relatively even. Underneath, there is a conductive area of significant thickness. The likelihood that this feature is anthropogenic is low. It is more plausibly a natural layer where water accumulates, situated above a high-resistivity geological unit within the mound. Because this underlying material inhibits infiltration, water is retained in the overlying layer. The magnetic survey conducted on the terrace near the tell is not conclusive regarding possible off-tell activity during the period of interest, but there is a series of positive magnetic anomalies related to pit-type features that can be caused by past human activities. There is no clear pattern and further investigations, especially intrusive, would clarify whether they are prehistoric or more recent.

Overall, the ERT survey enabled us to delineate the anthropogenic layer and gain further insight into the archaeological features preserved within the tell. The potential ditch-and-bank feature provides evidence for the northern boundary of the settlement during a particular phase of its occupation, while the resistivity patterns observed in the pseudosections also allowed us to infer aspects of the underlying structural remains.

5. GEOARCHAEOLOGICAL INVESTIGATIONS

5.1. METHODOLOGY

5.1.1. Sediment Coring and Laboratory Analyses

Two sediment cores (GLB1 and GLB2) were recovered from the Dâmbovița floodplain, within a palaeomeander loop located in the Glina Tell site area, in order to investigate the alluvial stratigraphy and paleoenvironmental evolution of the floodplain–terrace system (Fig. 7). Coring was performed using an Eijkelkamp percussion coring system. Until now, detailed sedimentological and laboratory analyses have been completed only for core GLB2, which also provided the most continuous and informative sedimentary record. The core reached a total depth of 8 m and was analysed using multiple sedimentological and environmental proxies. For grain-size analysis, samples were collected at regular intervals and at each visible change in sediment texture; carbonates were removed using a 30% acetic acid solution, organic matter was oxidized with 10% hydrogen peroxide, and grain-size distribution was measured using a Laser Diffraction Particle Size Analyzer (Analysette 22, from the Fritsch; range: 0.005–3000 µm), with parameters calculated following Folk and Ward (1957) using GRADISTAT 9.1 (Blott, Pye 2001). Organic matter (OM) and inorganic carbonate (C_inorg) contents were determined by Loss on Ignition (LOI) using successive combustion steps at 550°C (6 h) and 950°C (2 h), following Heiri *et alii* (2001) and Wang *et alii* (2011). Additional proxies included magnetic susceptibility measurements and lithological descriptions performed during core opening and subsequently refined through laboratory observations.

Geochemical scanning was performed on the undisturbed half of the core, stored at a constant temperature of 4°C, using a Cox Analytical Systems ITRAX core scanner at 1 mm resolution. A chromium X-ray tube was set at 30 kV and 55 mA with a count time of 10 seconds per step, providing good excitation for a broad range of geochemically relevant elements (Croudace *et alii* 2006). Prior to scanning, cores were covered with a 6 µm Ultralene film to prevent desiccation and avoid contamination of the XRF detector.

5.1.2. Electrical Resistivity Tomography (ERT)

Electrical Resistivity Tomography (ERT) was applied to investigate the subsurface sedimentary architecture of the Dâmbovița floodplain–terrace system in the Glina study area. ERT is a well-established method for imaging subsurface structures, as contrasts in grain size, porosity, water content, and lithology generate distinct resistivity responses (Telford *et alii* 1990; Baines *et alii* 2002; Reynolds 2011). In general, coarse-grained and dry deposits display higher resistivity values, whereas fine-grained and water-saturated sediments are characterised by lower resistivities.

The measurements were carried out using an ABEM Terrameter LS 2 multielectrode system with a Wenner array configuration and 5 m electrode spacing. Two adjacent profiles were acquired and subsequently merged to obtain a continuous section exceeding the cable length limitations, yielding a cumulative profile approximately 385 m long with an investigation depth of ca. 35 m. The profile intersects the floodplain, the terrace front, and the terrace surface of the Dâmbovița valley, with approximately 260 m corresponding to the floodplain area, including the location of core GLB2. Data processing and inversion into a 2D resistivity model were performed using Res2DInv software, including standard error filtering and topographic corrections. The results were further validated through correlation with core stratigraphy, allowing for a refined interpretation of the subsurface sedimentary architecture.

5.2. RESULTS AND DISCUSSION

5.2.1. Floodplain Stratigraphy and Sedimentological Record

GLB2 core description: stratigraphy and sedimentological parameters

The basal part of the GLB2 sequence (800–740 cm) is dominated by relatively coarse deposits, including massive

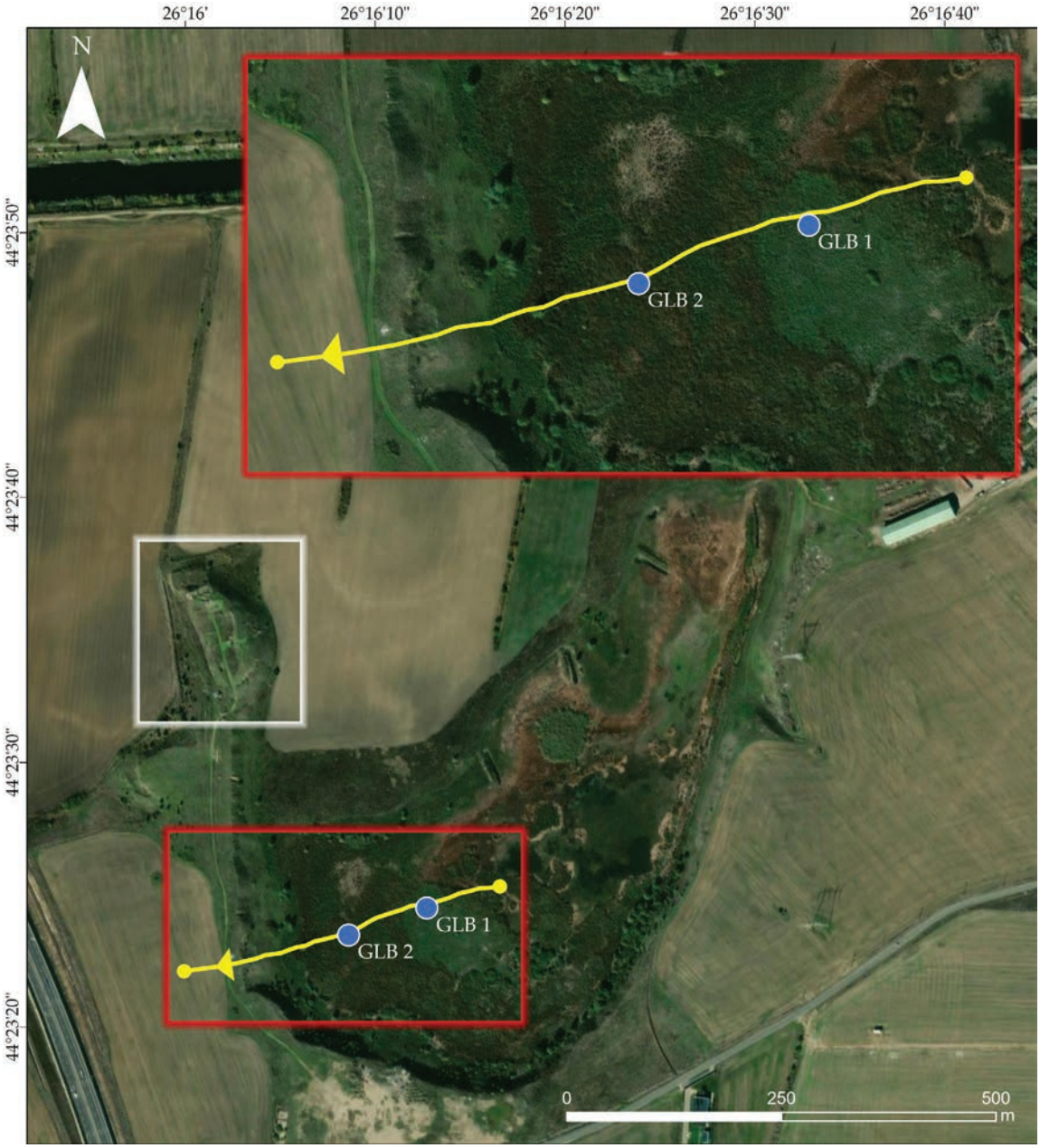


Figure 7. *Location of the study area and sampling sites. Satellite image showing the palaeomeander loop within the Dâmbovița floodplain near the Glina archaeological site (tell position is marked in white rectangle), with the positions of sediment cores GLB1 and GLB2 (blue dots) and the ERT profile (yellow).*

medium and fine sands with extremely low organic matter (OM ≤ 1%) and inorganic carbon (C_inorg) contents (Fig. 8). These sediments indicate medium and high-energy fluvial conditions and are interpreted as active channel deposits of the Palaeo-Dâmbovița.

Between approximately 740 and 590 cm in depth, they are overlapped by a gradual fining-upward sequence dominated by sandy and coarse silts (particularly between 740 and 670 cm), suggesting a progressive decoupling of this channel, though not yet complete. The top of this unit (600–590 cm) consists of coarse and medium silts with carbonate precipitates. Notably, this unit is capped by an 8 cm-thick (590–582 cm) well-sorted medium-sand layer comparable in texture to the basal unit (791–776 cm), suggesting a brief hydraulic reconnection with the main channel, most likely during a high-discharge event. A short transition from massive sands to silts occurs at 582–563 cm, above which the interval between 563 and 436 cm is characterised by medium and fine silts with high OM content (8–15%), indicative of lacustrine or semi-lacustrine depositional conditions. Further upward in the core, a gradual and continuous coarsening-upward trend is observed between 436 and 371 cm, corresponding to a transition from fine silts to very fine sands.

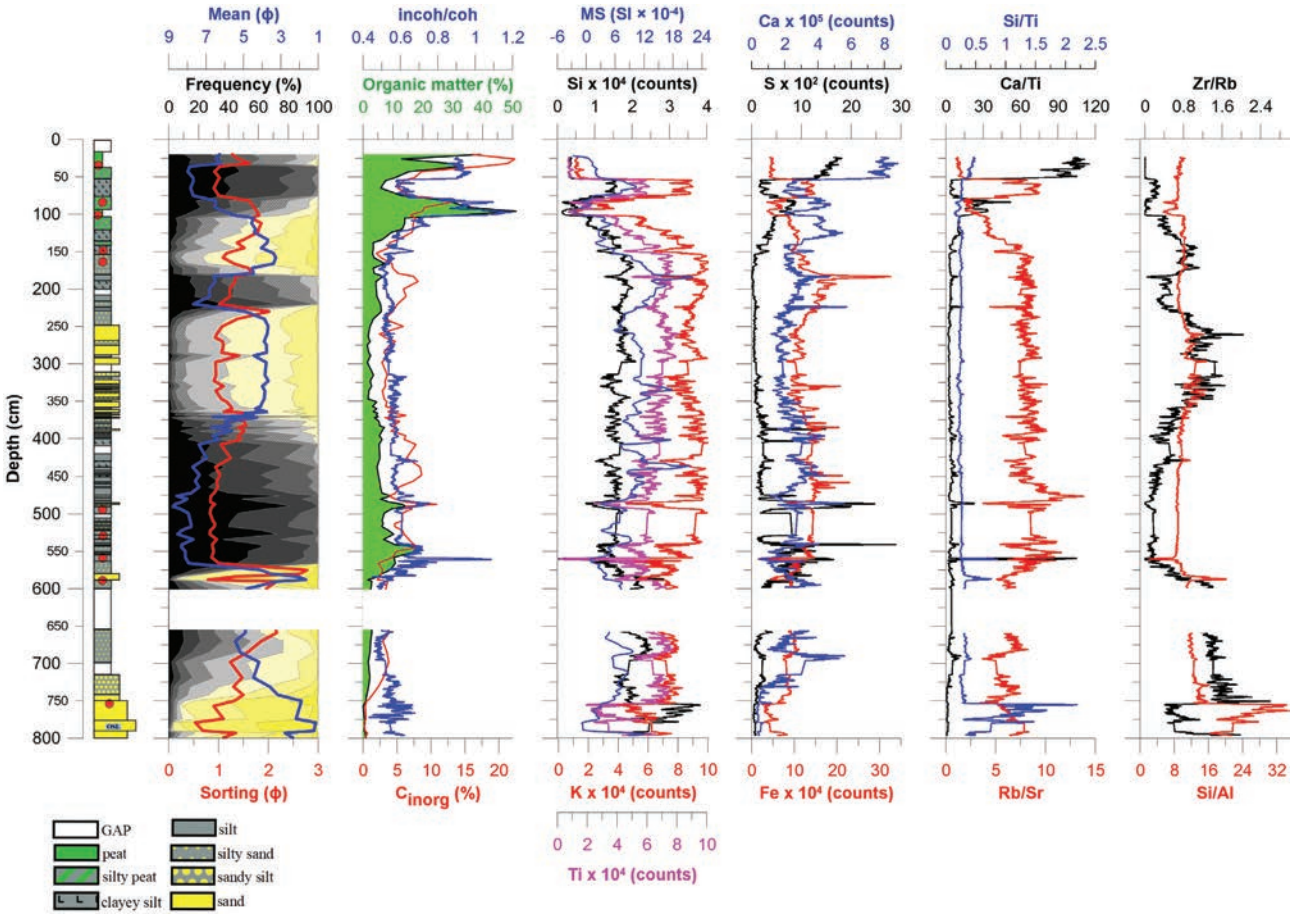


Figure 8. *Stratigraphy and multi-proxy sedimentological record of core GLB2. From left to right: lithological log; grain-size frequency distribution with mean grain size (blue line) and sorting (red line); OM (green) and C_inorg (blue) contents determined by LOI; magnetic susceptibility (MS); and XRF-derived elemental counts and ratios. The gap between 600 and 640 cm indicates a core recovery hiatus.*

From 371 to 248 cm, the sediment consists predominantly of poorly sorted fine and very fine sands intercalated with sandy silts, against a background of relatively low OM (2–3%) and C_inorg (3–4%) values. This interval likely indicates a final phase of flow reactivation within this palaeochannel, which probably functioned as a secondary channel receiving water from the main river only during high-discharge events.

Higher up in the sequence, the interval between 248 and 227 cm is characterised by clayey silts with carbonate concretions and oxidation mottles, indicating episodic exposure and pedogenic activity. A distinct chromatic transition from light bluish tones to dark brown-grey is recorded at 169–166 cm depth. A second, weaker coarsening episode is recorded between 176 and 152 cm, characterised by silty fine sands intercalated with clayey silts and moderately elevated C_inorg values, suggesting a brief return to higher-energy, minerogenically influenced conditions prior to the onset of peat formation. Above this, peaty silt appears at approximately 135 cm, gradually transitioning into peaty loam and then into classic peat at approximately 100 cm depth, where OM values reach ca. 50%. Between 100 and 50 cm, peat is interbedded with silts, while the uppermost interval (37–15 cm) consists of pure compacted peat. Both upper units indicate the transition toward a Typha-dominated wetland facies.

Geochemical proxies

The XRF-derived geochemical record broadly corroborates the sedimentological interpretation and provides additional insight into sediment provenance, redox conditions, and depositional energy changes throughout the GLB2 sequence.

In the basal sandy unit (800–740 cm), elevated Si and Zr counts, together with high Si/Ti and Zr/Rb ratios, reflect the dominance of coarse, poorly weathered, quartz- and zircon-rich sediments transported under high-energy fluvial conditions. Concurrently, low Ca/Ti and Rb/Sr values indicate minimal carbonate content and limited feldspar weathering, consistent with rapid, short-distance transport from upstream sources (Fig. 8).

The fining-upward interval between c. 740 and 590 cm is marked by a progressive decline in Si/Ti and Zr/Rb, accompanied by increasing K and Ti counts, pointing

to a shift toward finer, clay-rich sediments and reduced transport competence as the channel progressively decoupled from this sector.

A thin but geochemically distinctive layer at 590–582 cm warrants separate consideration. Despite its coarse texture and elevated Si and Si/Ti values, which are consistent with a brief fluvial input during a high-discharge event, the simultaneously elevated S and Ca counts suggest this records a sudden flood pulse into a semi-closed oxbow rather than a sustained channel reactivation: the elevated Ca likely reflects carbonate-rich material transported from upstream or precipitated in the disturbed lacustrine water column, while high S values indicate remobilisation of sulphides from the organic-rich lake sediments.

The lacustrine interval (563–436 cm) is characterised by the lowest Si/Ti and Zr/Rb values in the entire core, alongside a marked increase in Fe counts, indicative of reducing conditions in a low-energy, organically enriched depositional environment. Elevated Ca and Ca/Ti values within this unit likely reflect authigenic carbonate precipitation under low-energy, possibly hydrologically semi-closed conditions. The coarsening-upward transition between 436 and 371 cm is reflected geochemically by a gradual increase in Si/Ti and Zr/Rb, marking the progressive shift from lacustrine to fluvially influenced conditions prior to the first reactivation phase.

Two distinct reactivation phases are identified in the upper part of the sequence, each with a different geochemical signature. The first (371–248 cm) shows a clear increase in Si/Ti, Zr/Rb, and Si/Al, consistent with a return to coarser, more minerogenic inputs during secondary channel activity, most likely representing episodic inundation from the main Dâmbovița channel under high-discharge conditions. S counts display notable variability within this interval, possibly linked to fluctuating redox conditions at the sediment–water interface during repeated flood pulses.

The second reactivation phase (176–152 cm) shares some geochemical characteristics with the first — including moderately elevated Si and Si/Ti — but is distinguished by relatively higher Fe, K, and Ca values. This combination suggests a semi-lacustrine, semi-stagnant environment intermittently reconnected to the active Dâmbovița channel, rather than direct secondary channel deposition. The elevated Fe likely reflects reducing conditions in a poorly drained backswamp or floodplain pond, while the higher K and Ca may indicate a mixed input of fluvially transported clays and carbonate material into a persistently low-energy, waterlogged setting.

In the uppermost part of the core (above ca. 200 cm), sharply rising OM values and a concurrent decrease in minerogenic proxies (Si, K, Ti) mark the transition to peat-dominated facies. Elevated Ca counts between 135 and 50 cm may reflect shell fragments or carbonate-rich plant material within the wetland, while the uppermost compacted peat (37–15 cm) displays the lowest minerogenic signal in the entire sequence.

The magnetic susceptibility (MS) profile displays relatively constant moderate values from the base of the core to approximately 600 cm depth, followed by a generally increasing trend toward 340 cm, with notable peaks at approximately 540, 440, 400, 338, and 180 cm. These peaks broadly coincide with the reactivation phases and flood pulse events identified in both the lithological and geochemical records, likely reflecting episodic inputs of magnetically enriched minerogenic material from the Dâmbovița catchment.

5.2.2. Subsurface Architecture from ERT

The ERT section reveals a clear contrast between the floodplain and the terrace deposits. The floodplain is generally characterised by low resistivity values (<50 Ωm), reflecting the predominance of fine- to medium-grained sediments with high moisture content (Fig. 9). In contrast, the terrace sector displays significantly higher resistivity values (200–750 Ωm), mainly due to the presence of unsaturated loess and sandy deposits with low water content. A particularly important feature identified within the floodplain stratigraphy is a laterally extensive horizon with moderately elevated resistivity values (ca. 40–60 Ωm), located at depths of approximately 8–20 m. Toward the terrace front, this unit becomes both thicker (reaching ca. 8–25 m depth) and more resistive (45–80 Ωm). Correlation with the sedimentological information provided by core GLB2, especially the medium- to coarse-grained sandy deposits identified in its lower part, suggests that this horizon corresponds to coarse alluvial sediments, including sands and locally gravels, associated with former active Dâmbovița channel deposits (Fig. 9). These deposits most likely formed during the Early Holocene, although a Late Glacial age (possibly Younger Dryas) cannot be excluded at this stage.

The ERT profile also highlights a high-resistivity body located on the terrace slope. This anomaly is interpreted as a modern anthropogenic deposit composed predominantly of construction and demolition debris. Due to its high porosity and permeability, infiltrated water accumulates beneath this deposit, producing an underlying low-resistivity zone visible in the tomographic section. Overall, the ERT results provide relevant data about the internal structure of the floodplain and the terrace system, but most important is the detection of buried coarse-grained palaeochannel deposits at 8–20/25 m beneath the present-day floodplain surface.

6. FIELDWORK METHODOLOGY

To prevent the erosion of archaeological deposits in the northern part of the settlement, as well as to verify the stratigraphy in an area unaffected by earlier excavations, three 6 × 6 m areas (A, B, and C) were opened in 2025. They were separated by 1 m baulks and together formed area SI, oriented approximately E–W (Fig. 10).

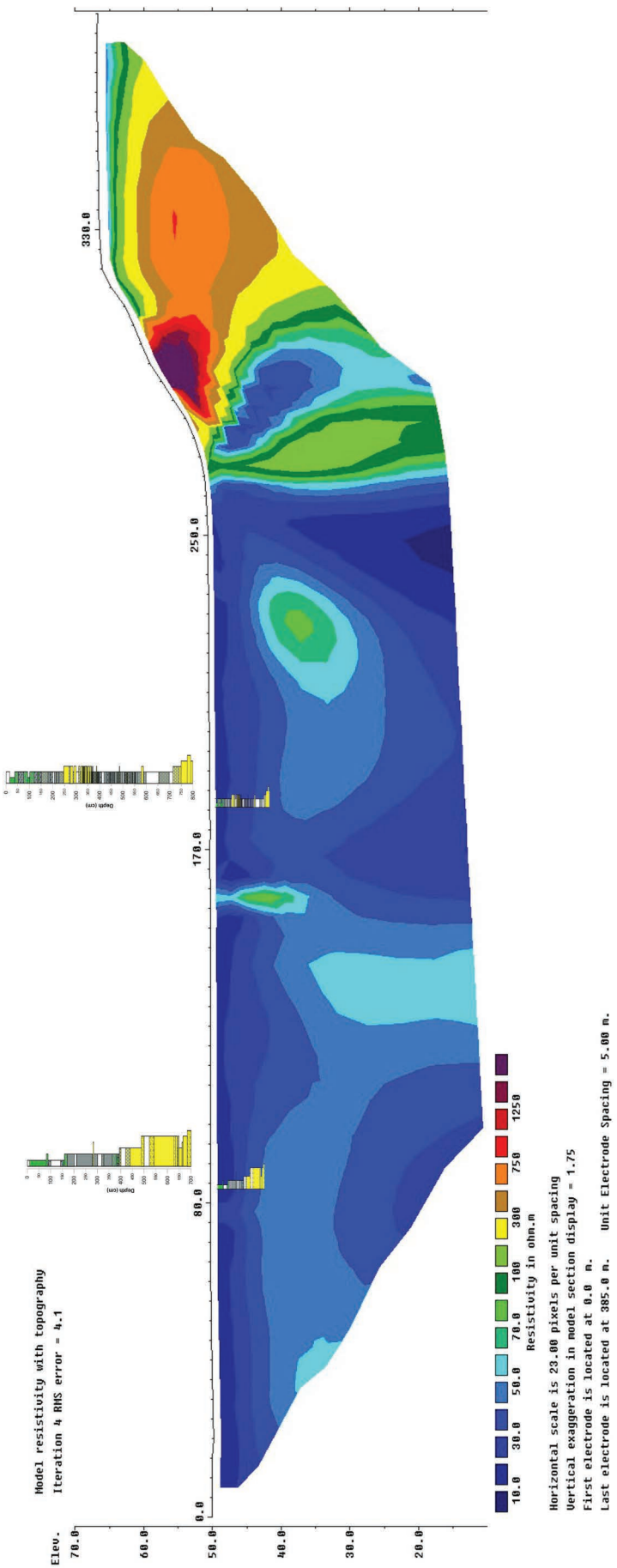


Figure 9. *Electrical Resistivity Tomography (ERT) profile across the Dâmbovița floodplain–terrace system at the Glina study site.*

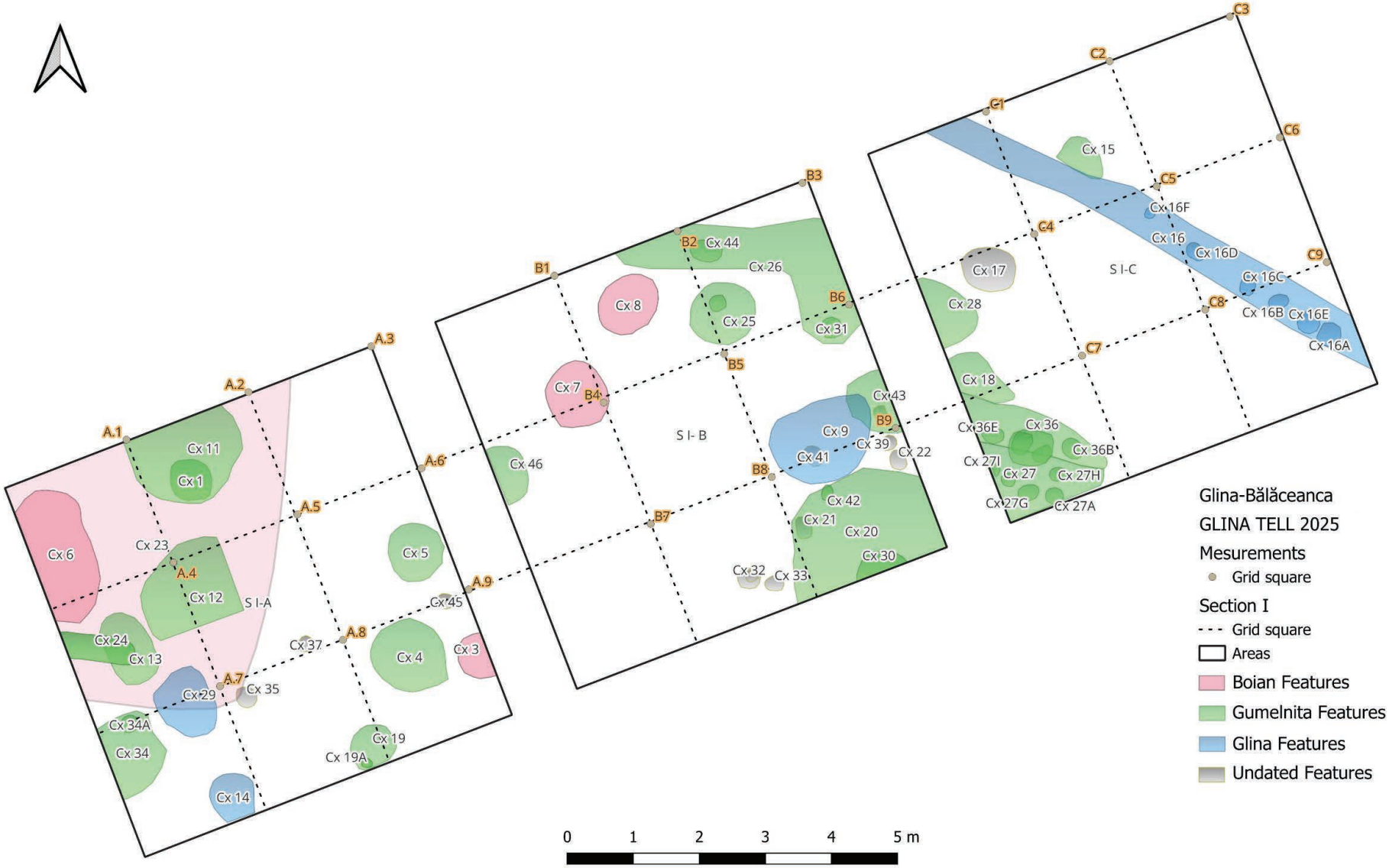


Figure 10. *General plan of the excavations in the SI area, with the dating of the archaeological features (S I-A left, SI-B centre and SI-C right).*

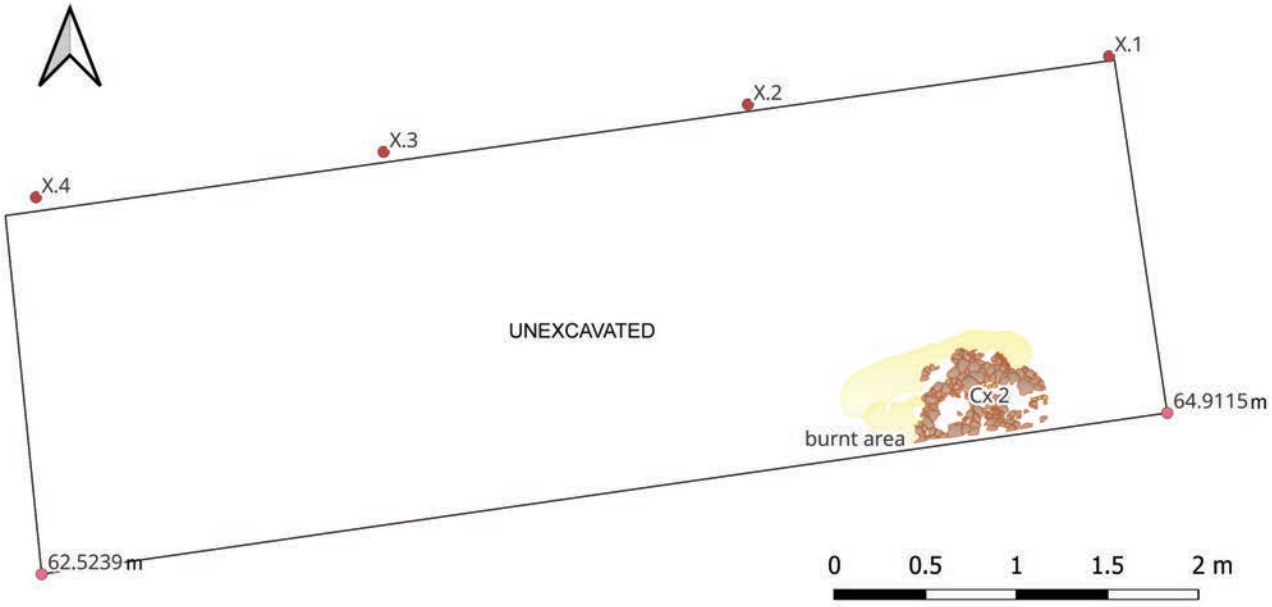


Figure 11. *General plan of the excavations in the SII area.*

Area SII was opened in the central part of the tell settlement, at the edge of an earlier one and adjacent to a relatively recent unauthorized intervention (Fig. 11), with the aim of verifying the stratigraphy and collecting samples for radiocarbon dating.

The excavation technique applied followed a micro-stratigraphic approach, with stratigraphic recording carried out using the single context system (Stratigraphic Units – SUs), documented on standardized recording sheets and in dedicated registers.

The acquisition of raw geospatial data for planimetric and altimetric recording was carried out using GNSS (Global Navigation Satellite System) receivers, complemented by a Leica TCR 407 Power total station. These data were further supplemented with information obtained from UAV-based surveys (LiDAR and multispectral), as well as through the integration of existing cartographic sources.

Non-intrusive surveys (ERT and magnetometry) were used to delimit the investigated areas according to the nature of the identified archaeological deposits, to define excavation sectors both on the tell and the flat settlement located on the platform south-southwest of the tell, as well as in the Glina–Bălăceanca wetland area, where two sediment cores of 7 m (GLB1) and 8 m (GLB2) in depth, respectively, were extracted.

Sediment samples from the investigated contexts were systematically collected contextually and subsequently sieved, allowing for the recovery of small-sized artifacts and ecofacts such as beads made of various materials, charred seeds, charcoal, and flint chips. Sediment samples were also collected for subsequent wet sieving and/or flotation. The final stage of the study will consist of sorting and analysing the recovered materials by category.

Twenty-five samples were collected from the investigated features for absolute (radiocarbon, ^{14}C) dating. Of the archaeological samples (animal bones), four were measured at the RoAMS laboratory in Măgurele, Romania (see Section 9.2), while 11 are currently under analysis at the LARA laboratory in Bern, Switzerland. Additional 10 organic samples were collected from sediment core GLB2 and are presently analysed at the RoAMS laboratory in Măgurele, Romania.

7. ARCHAEOLOGICAL EXCAVATIONS

This section outlines the principal archaeological features uncovered during the 2025 fieldwork at the Glina Tell. To document the stratigraphic sequence, all contexts and stratigraphic units are presented for each investigated area (SI-A, SI-B, SI-C, and SII). Each area is characterised individually, with descriptions arranged in chronological and stratigraphic order, from the earliest to the most recent.

Area SI (Fig. 10)

The defining characteristic of area SI (with the A, B, and C sectors) is the absence of consistent multi-layered occupation levels typical of Chalcolithic tell settlements. Most features (pits, ditches, pit-houses) reach the natural soil level (loess – SU2611) (Figs. 15, 16, 20), regardless of their chronology.

To the upper part, these contexts were partially affected by erosion due to the c. 15° south to north slope inclination. The latter triggered the formation of a colluvial layer (SU2501) right below the topsoil (SU2500). It contains mixed, fragmented finds (Pl. V/1–2) originating mostly from the spoil heaps of previous excavations. This layer overlies an earlier colluvial/abandonment level (SU2502), 15–20 cm thick in the southern part of SI, gradually disappearing towards the north due to slope erosion. It contains a lower density of archaeological material compared to SU2501, with areas of higher concentration only in SI-A, squares 8 and 9.

Fifty-six archaeological features were identified in SI, consisting of five ditches, one dwelling, one hearth, 23 pits with varied inventories and functions, and 26 postholes. Eleven pit features and all postholes were fully excavated. The latter were associated with habitation structures (Cx20), ditches (Cx26, Cx36, Cx27, Cx34), and pits (Cx19, Cx25, Cx43), but were also isolated, with no clear association with larger structures. This made their attribution to specific chronological sequences more difficult.

Nineteen other features were only partly investigated and are scheduled for complete excavation in future field campaigns. The following section describes each fully or partially investigated feature with a secure cultural attribution. These are organised according to the areas where they were identified and presented in chronological order.

7.1. SI-A (Fig. 10, 5.1)

7.1.1. Early Chalcolithic features (Boian culture) in SI-A

Feature Cx3 (Fig. 12) was a circular pit, partly excavated, with the remaining portion overlain by the eastern baulk of SI-A. The walls are straight, and the base is slightly concave. It has a diameter of approximately 0.60 m and a depth of 0.70 m from identification. Two infill layers were recorded (SU2509A and SU2509B). The lower infill, reddish-brown in colour, contained daub and ceramic fragments, spindle-shaped clay beads, faunal remains, and flint flakes, all more abundant towards the base of the pit. The upper infill consisted of compact grey soil containing fragments of burnt daub and very sparse, scattered ceramic sherds. Both ceramic typology and one radiocarbon date assign this feature to the Vidra phase of the Boian culture (see below, Section 9.2).

Feature Cx6 (Fig. 10): a partially excavated pit (eastern side), cut into the fill of Cx23. It is oval in plan, measuring approximately 2 m in length and 0.95 m in maximum observed width. Two fill layers were identified. The lower

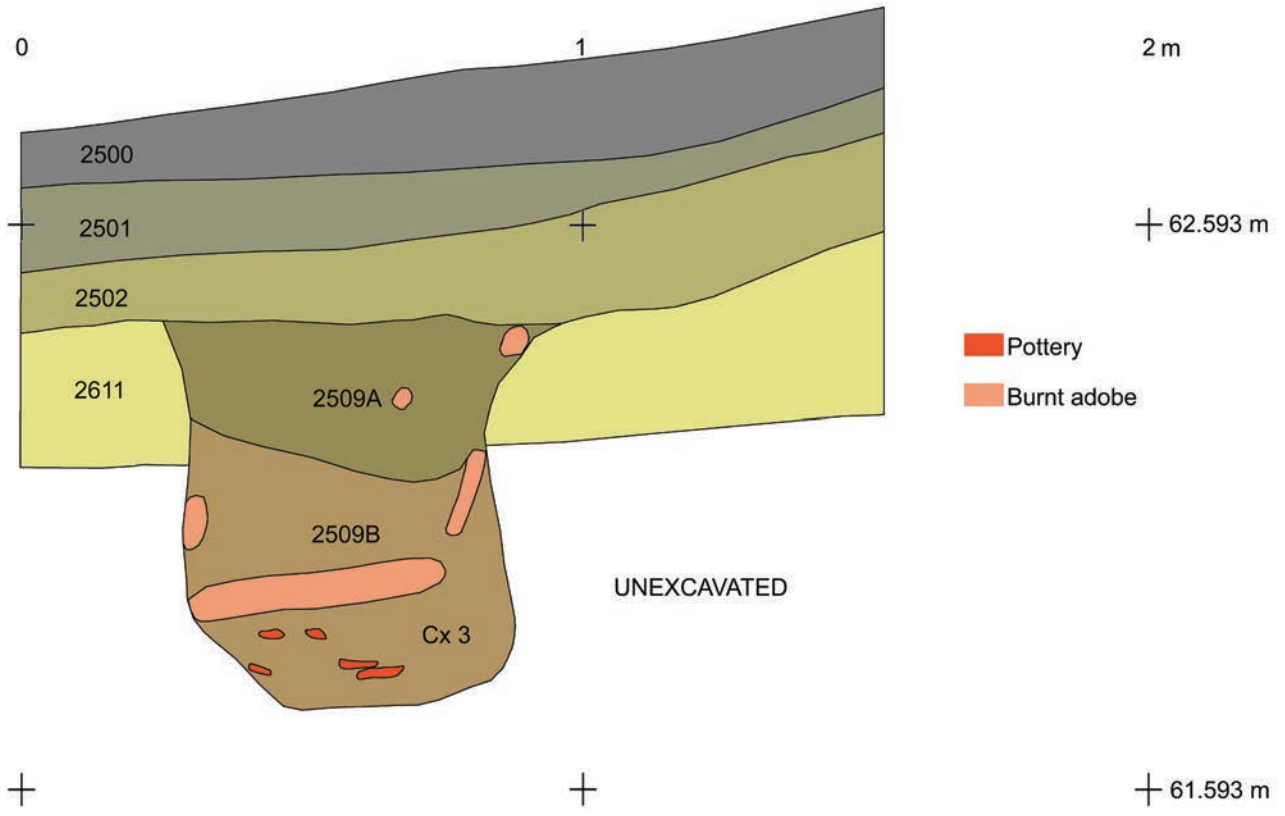


Figure 12. *Section I, Area A (SI-A), partial east profile showing feature Cx3.*

layer (SU2517) consists of poorly compacted, light grey silty sediment, rich in ash and containing minute charcoal fragments, along with fewer animal bones and pottery fragments than those in the upper layer. The upper layer (SU2515) consists of mixed sediment with variable textures, ranging from compact clay to medium-compact silt. It contains abundant charcoal and, in places, ash, along with animal bones, flint artifacts, and fragmentary pottery of Boian–Vidra tradition.

Feature Cx23 (Figs. 10, 15) was identified as an area of compact brown-grey soil (SU2527), extending over approximately 15 m² in the north-western corner of SI-A. It contained animal bones, charcoal, scattered burnt daub, and fragmented pottery of Boian–Vidra tradition. Only the upper part of this feature has been investigated so far, along with more recent features affecting it, including a series of pits (Cx1, 6, 11, 12, 13, 26), a ditch (Cx24), and an abandonment layer (SU2526). These observations revealed a substantial deposit thickness (over 1.10 m), which has led to a preliminary interpretation of this feature as a delimitation ditch of the Early Chalcolithic settlement. The feature will be further investigated in future excavations, and additional details will be provided accordingly.

7.1.2. Middle Chalcolithic (Gumelnița culture) features in SI-A

Feature Cx1 (Fig. 10, 13): an oval pit, measuring 0.80 × 0.70 m at the mouth and reaching a maximum depth of 1.05 m. It cuts into the abandonment layer SU2526 and overlaps pit Cx11. The fill consists of a weakly compacted, dark (blackish) sediment (SU2507), containing burnt daub inclusions, animal bones, flint artifacts, and fragmented pottery attributed to the A2 phase of the Gumelnița culture.

Feature Cx4 (Fig. 10): a circular pit with a diameter of 1 m and a depth of 0.66 m from the level of identification. It has straight walls and a concave base. Two fill layers were identified. The lower fill (SU2516) consists of weakly compacted brown-grey sediment rich in archaeological material, including circular beads made of burnt bone, bone awls, perforated ceramic discs fashioned from sherds, flint artifacts, carbonised seeds, animal bones, and fragmentary pottery attributed to the A2 phase of the Gumelnița culture. The upper fill (SU2511) is composed of compact yellow clay containing animal bones, fragments of both burnt and unburnt daub, and scattered ceramic sherds.

Feature Cx5 (Fig. 10): a circular pit with a diameter of 0.80 m and a depth of 0.30 m from the level of identification. It has straight walls and an irregular (undulating) base. The fill (SU2513) consists of a grey, weakly compacted sediment containing flint flakes, two bone points, a tubular bead made of burnt bone, fragmented pottery, charcoal, animal bones, and burnt daub. In the central upper part of the feature, a compact mass of unburnt yellow clay was recorded, devoid of archaeological material.

Feature Cx11 (Figs. 10; 13): a pit of indeterminate plan-shape, only partially excavated (southern side), over a length of 1.10 m and a depth of 0.95 m. It is overlain by SU2526 and pit Cx1, and cuts feature Cx23. Three fill layers were identified, all showing a depositional slope from west to east. The lower layer (SU2573) is very compact, yellow-green in colour, with abundant gravel and sand; localized calcium carbonate concretions were observed towards the pit walls. Ceramic fragments were found in clusters, while hearth fragments, animal bones, and charcoal occurred more sporadically. The middle layer (SU2530) contains abundant ash and charcoal, along with hearth fragments, animal bones, and ceramic sherds.

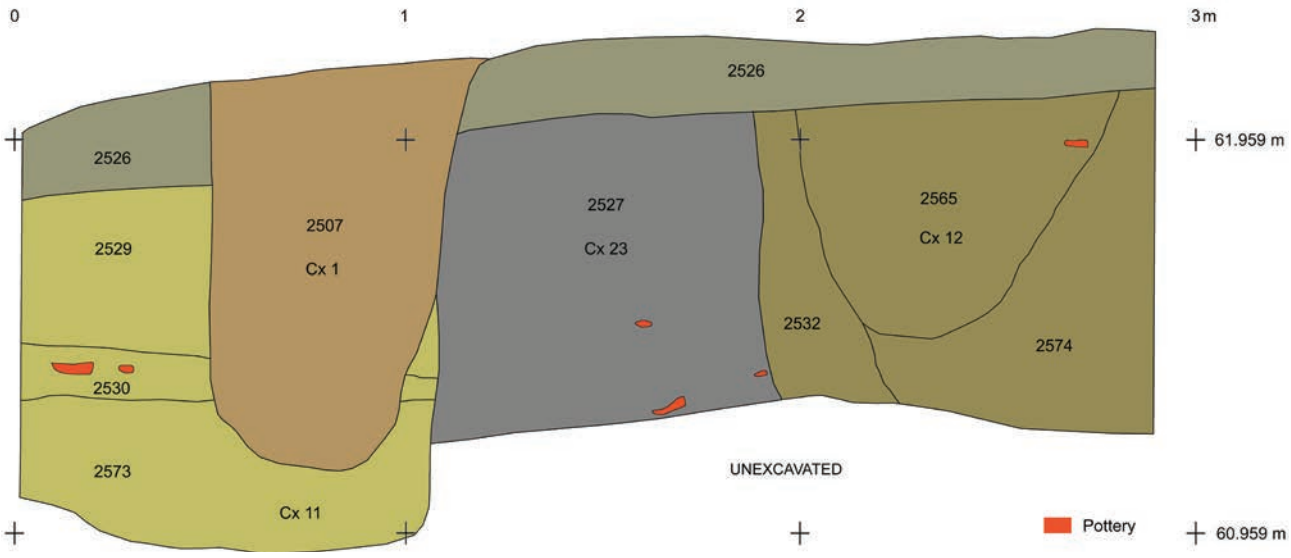


Figure 13. *Section I, Area A (SI-A), west profile of a provisory baulk north–south oriented in the middle of the section.*

The upper layer (SU2529) is heterogeneous, consisting of weakly compacted yellow-green sediment with layers of burnt adobe and abundant gravel, containing hearth fragments, pottery, animal bones, and flint artifacts.

Feature Cx12 (Figs. 10; 13): a partially excavated pit, documented over a length of 1.05 m and a depth of approximately 0.85 m. It is overlain by SU2526 and cuts feature Cx23. Three fill layers were recorded. The lower lateral deposits (SU2532 and SU2574) contain abundant pottery attributed to the A2 phase of the Gumelnița culture. The upper central fill (SU2565) consists of compact yellowish sandy sediment with only sparse archaeological material.

Feature Cx13 (Fig. 10): an oval pit, measuring 1 m along its north–south axis and 0.55 m along the short axis, with a depth of 0.35 m from the level of identification. It is overlain by the recent colluvium layer (SU2501) and cuts an earlier abandonment level (SU2526) as well as ditch Cx24. The fill (SU2505) consists of loose, brownish-black sediment with traces of burning and charcoal in the upper part, as well as fragmentary pottery and animal bones.

Feature Cx19 (Fig. 10): an oval pit (1.12 × 0.64 m), with a depth of 0.47 m from the level of identification. It contains a homogeneous, medium-compacted brown-grey silty sediment (SU2549), with sparse inclusions of burnt daub, pottery fragments, animal bones, stones, charcoal, and pieces of unburnt yellow clay. At the base of the pit, towards the southern side, a circular depression (c. 0.20 m deeper, with a diameter of approximately 0.40 m) was identified and interpreted as a posthole imprint.

Feature Cx24 (Fig. 10): a partially excavated ditch, oriented NE–SW. It measures 0.40 m in width at the top, 0.25 m at the base, and has a depth of 0.82 m. The walls are sloping, and the base is flat, with no evidence of postholes. The fill (SU2535) consists of loose, dark grey to black sediment containing charcoal, pottery fragments, and animal bones. It is cut by pit Cx13 and cuts feature Cx23.

Feature Cx34 (Fig. 10): a partially excavated oval pit, measuring 1.20 m in length (oriented SE–NW), 0.80 m in width, and with a maximum depth of 0.63 m. The walls curve towards the base, which is irregular in shape. The fill (SU2582) consists of weakly compacted brown-grey sediment containing burnt daub inclusions, charcoal, pottery fragments, hearth fragments, animal bones, shells, a clay disc, and a bone pendant. It is overlain by the abandonment layer SU2526 and partially cuts feature Cx23 (SU2527). In the north-eastern part, a smaller pit (Cx34A), with a diameter of 0.26 m, was identified. It contained loose fill without archaeological material and was interpreted as a posthole.

7.1.3. Early Bronze Age features (Glina culture) in SI-A

Feature Cx14 (Figs. 10; 15): a partially excavated oval pit/trench (0.75 × 0.60 m), with irregular walls, a flat base, and a depth of 1.17 m. The fill (SU2537) consists of loose, heterogeneous brown-grey silty sediment, with zonally distributed inclusions of burnt daub. It contains scattered charcoal fragments, shells, animal bones, two fragments of bone awls, and fragmentary pottery predominantly of Gumelnița culture tradition, alongside Glina culture material. The feature is overlain by a colluvial layer (SU2501) and cuts an earlier abandonment layer (SU2503).

Feature Cx29 (Fig. 10): an oval pit (1.00 × 0.70 m), with the long axis oriented north–south and a depth of 0.90 m. The fill consists of weakly compacted, brownish-black silty sediment containing animal bones, burnt daub, shells, a prismatic bone figurine, and ceramic fragments predominantly of Gumelnița culture tradition,

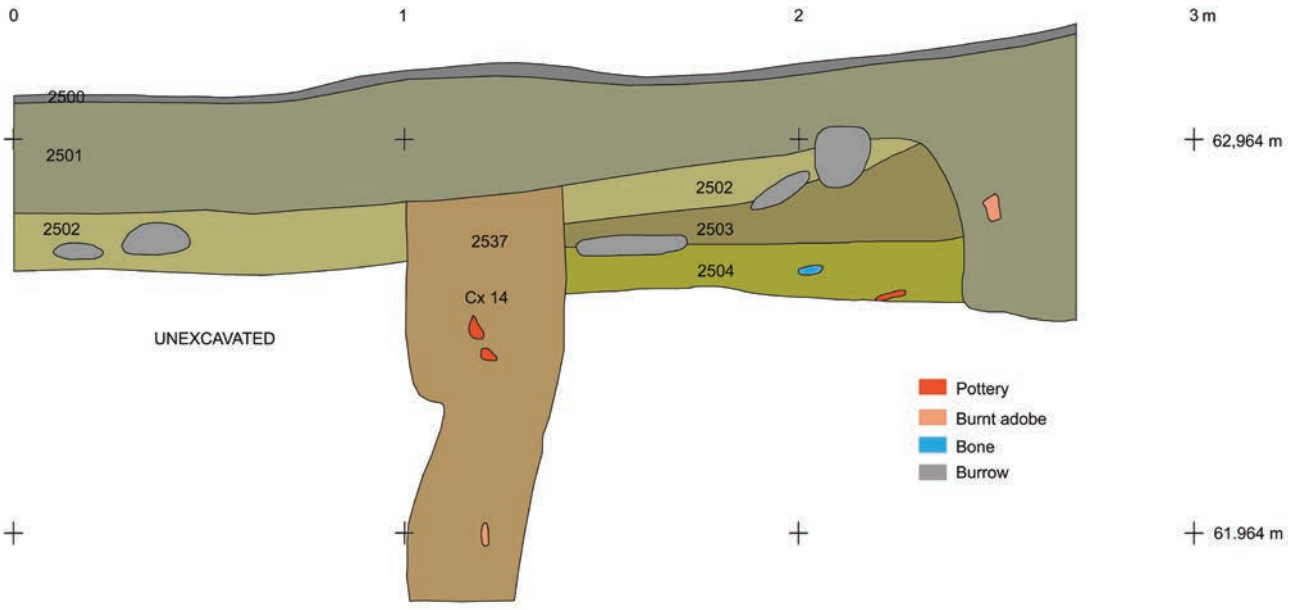


Figure 14. *Section I, Area A (SI-A), partial south profile showing feature Cx14.*

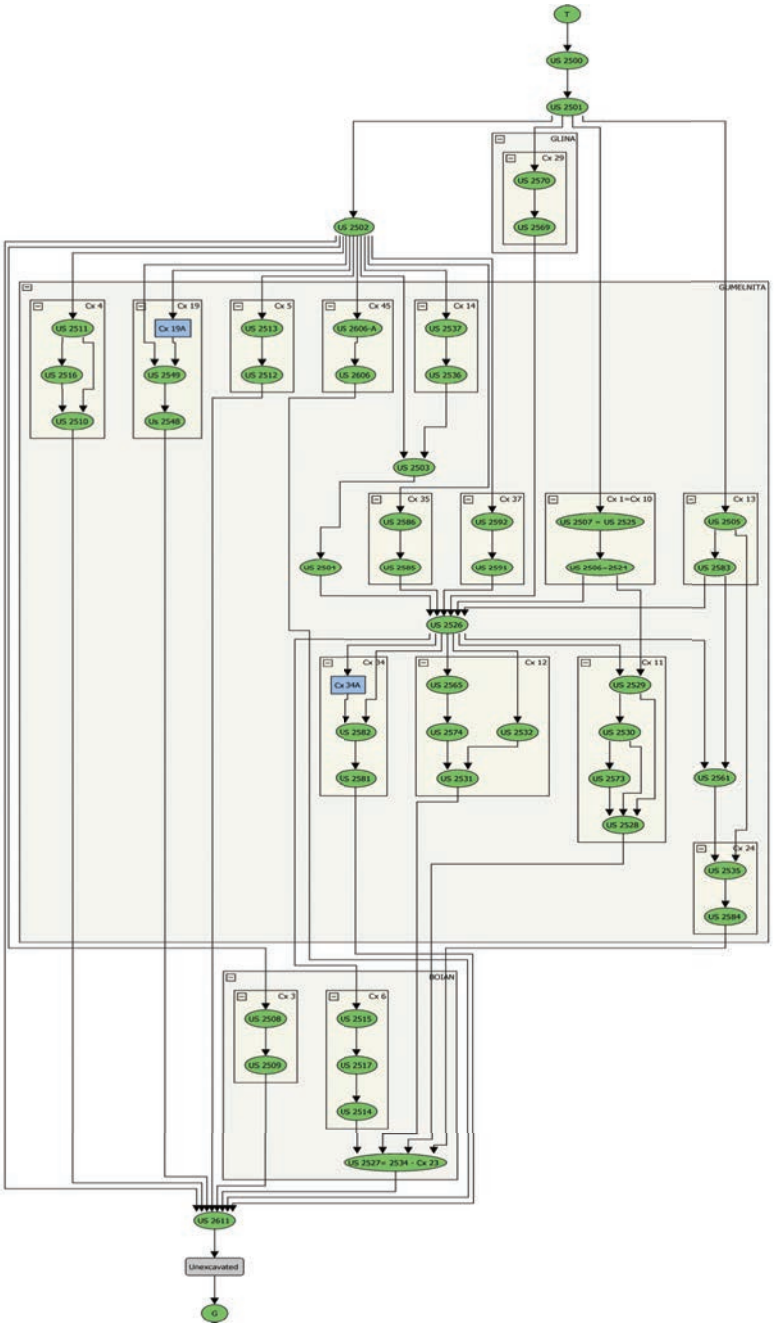


Figure 15. *Stratigraphic matrix of the section S I, Area A (SI-A).*

with additional ceramic material attributable to the Glina culture. The feature is overlain by a colluvium layer (SU2501) and cuts an earlier abandonment level (SU2526).

7.2. SI-B (Fig. 10, 5.2)

7.2.1. Early Chalcolithic features in SI-B

Feature Cx7 (Fig. 10): a circular pit (diameter 0.98 m) with curved walls and a convex base, with a depth of 0.24 m from the level of identification. It was located immediately beneath the topsoil and was affected by slope erosion processes. The fill (SU2519) consists of compact brown-grey silty sediment containing charcoal inclusions, scattered ceramic fragments of Boian culture–Vidra tradition, carbonised seeds, bones (some burnt), and small fragments of burnt daub. In the central area and towards the base, the deposit was affected by bioturbation.

Feature Cx8 (Fig. 10): similar to Cx7, was a circular pit (diameter 0.90 m) with curved walls and a convex base, with a depth of 0.15 m from the level of identification. It was also located immediately beneath the topsoil and affected by slope erosion. The fill (SU2521) consists of loose

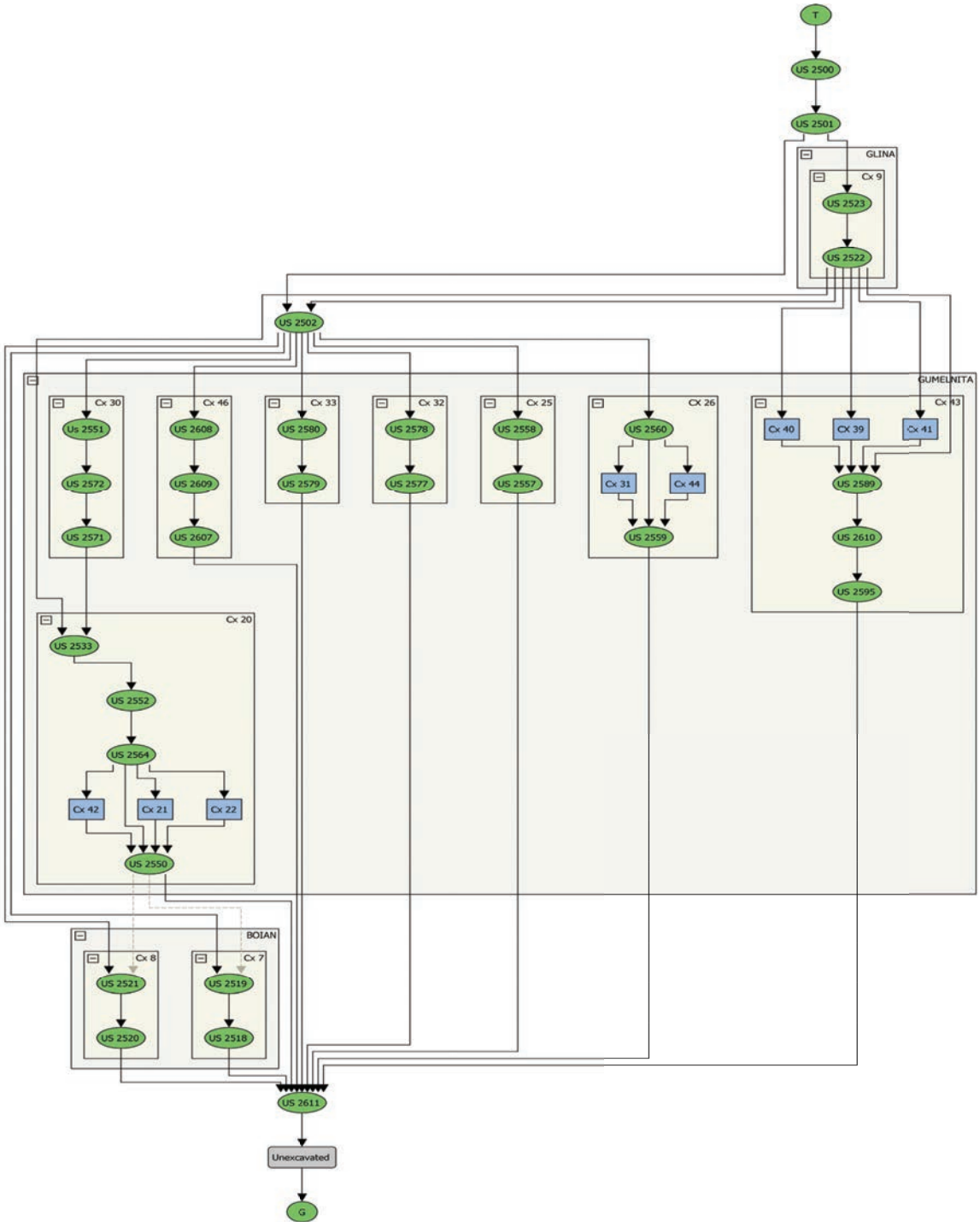


Figure 16. *Stratigraphic matrix of the section S I, Area B (SI-B).*

brown-grey silty sediment containing charcoal inclusions, very few ceramic fragments of Boian–Vidra tradition, animal bones, and fragments of burnt daub.

7.2.2. Middle Chalcolithic features in SI-B

Feature Cx20 (Figs. 10, 17, 18): a large pit, partially uncovered and excavated over an area of approximately 3 m², in the SE corner of SI-B. The upper part consisted of a loose greyish fill (SU2533), containing abundant fragmented materials (animal bones, ceramics of the Gumelnița culture tradition, lithics), ranging in thickness from 0.45 m in the central area to 0.05 m towards the west. Towards the base, two additional fill layers (SU2552 and SU2564), 0.10–0.20 m thick, were identified; these were compact and contained less archaeological material. In the upper

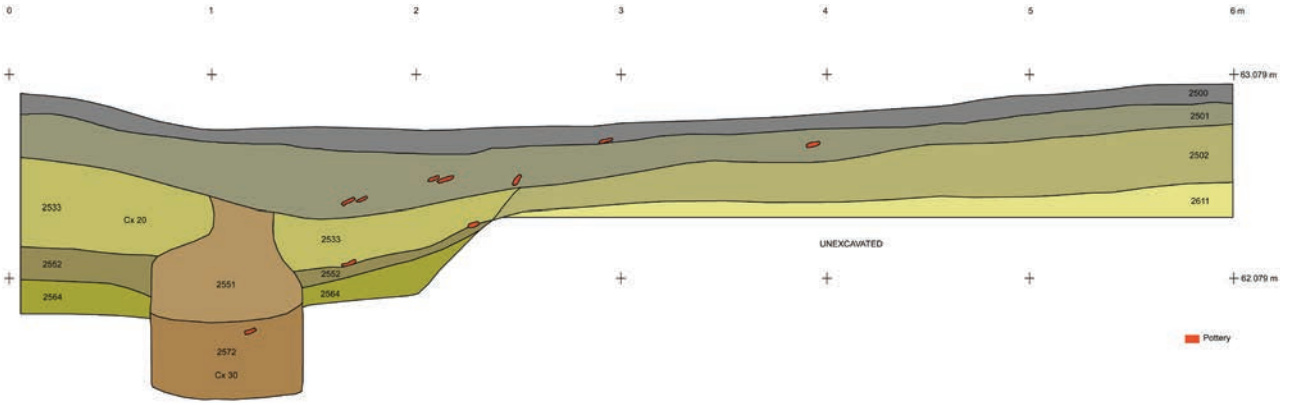


Figure 17. *Section I, Area B (SI-B), south profile.*

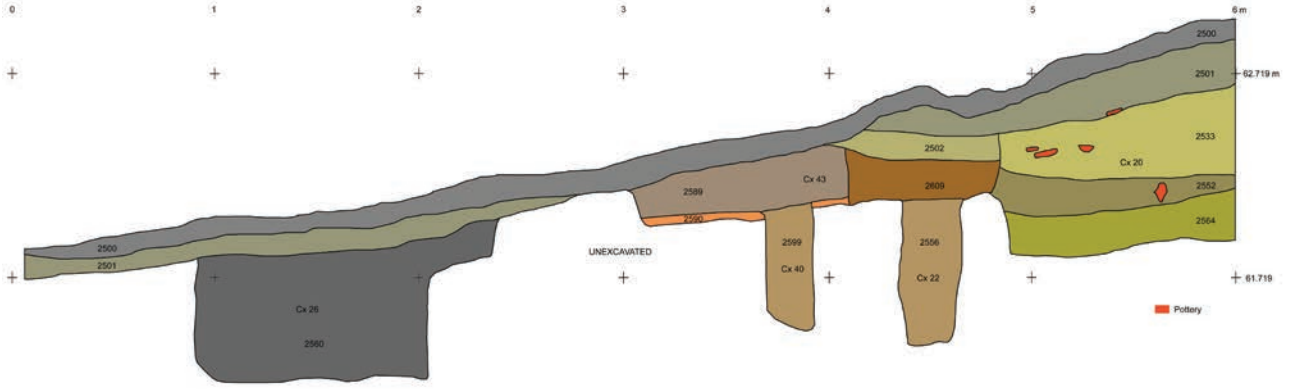


Figure 18. *Section I, Area B (SI-B), east profile.*

layer, a complete copper needle with double volute was discovered. The cut and base of the pit (SU2550) showed no specific arrangements typical of habitation areas (such as prepared clay floors or access steps). However, along the entire investigated perimeter of Cx20, several large postholes (Cx21, 22, 33, 42) were identified, the deepest (Cx21) reaching a depth of 1.20 m below the identification level. This led to the preliminary interpretation that at least part of these formed a structural system associated with Cx20, possibly a pit-house or hut.

Feature Cx25 (Fig. 10): a circular pit with a diameter of 0.70 m and a maximum depth of 0.36 m. The fill (SU2558) consists of homogeneous grey sediment with white inclusions (calcium carbonate), containing few scattered ceramic fragments (Gumelnița culture) and one bone fragment. At the base, towards the north, a posthole was identified. It is possible that the post was connected with the structure linked to feature Cx26 (see below).

Feature Cx26 (Figs. 10, 16): partially excavated bifurcated trench, L-shaped in plan. The longer part, oriented E–W, is narrower, with straight walls and a flat base, and contains an oval posthole (Cx44) at its base. The shorter part, oriented N–S, is wider, deeper, and contains a rectangular posthole (Cx31) at its southern end, in which ash lenses and charcoal inclusions were identified. The trench fill (SU2560) consists of very compact dark brown-black sediment, with lumps of black soil, rare ceramic fragments (Gumelnița culture), and animal bones.

Feature Cx30 (Figs. 10, 16, 17): circular pit, partially excavated, with a diameter of 0.80 m and a depth of 1.06 m, cutting into the upper fill of pit/dwelling Cx20. It contained two fill layers: the upper (SU2551), consists of loose, brown-grey sediment with compact yellow clay lumps, animal bones, ceramics, lithics, and scattered burnt daub; the lower (SU2572), a compact brown-yellow sediment with rare ceramic fragments, animal bones, lithics, and charcoal.

Feature Cx43 (Fig. 10): a partially revealed sunken structure. Its fill consists of a compact, brown-grey layer (SU2589), 0.20–0.30 m thick, containing ceramic fragments (Gumelnița culture), animal bones, and charcoal, which overlies a very compact clay floor (SU2590). Three postholes (Cx39, 40, and 41) were identified in the area.

Feature Cx46 (Fig. 10): a circular pit, partially excavated, with a mouth diameter of 0.86 m and a depth of 0.90 m. The walls are bell-shaped, and the base is flat. It has two fill layers: SU2608 (upper) and SU2609 (lower).

The upper layer consists of homogeneous loose brown-grey sediment, with rare ceramic fragments, animal bones, and flint flakes. The lower fill is composed of multiple lenses of yellow clay, sand, and sediment rich in ash towards the base. Within this layer, abundant ceramic fragments (Gumelnița culture), two copper fragments, complete bone tools, and bone beads were discovered.

7.2.3. Early Bronze Age features in SI-B

Feature Cx9 (Fig. 10): a circular pit with curved walls and a convex base, measuring 1.20 m in diameter at the mouth and having a maximum depth of 0.26 m. The fill (SU2523) consists of silty brown-grey sediment with abundant ash in the upper part, containing animal bones, charcoal inclusions, and scattered ceramic fragments of Glina culture tradition.

7.3. SI-C (Fig. 10, 5.3)

7.3.1. Middle Chalcolithic features in SI-C

Feature Cx15 (Fig. 10): a partially excavated hearth, with a single plaster layer (SU2539), yielding ceramics of Gumelnița culture tradition on its surface and in the surrounding area (SU2538). It was cut during the Early Bronze Age by trench Cx16 (SU2540). The preserved dimensions are 0.80 × 0.55 m, and the shape is irregular.

Feature Cx18 (Figs. 10, 19, 20): a partially excavated feature, possibly a trench, approximately 0.50 m wide. It is cut to the south by Cx36 (trench) and cuts Cx28 (pit) to the north. It contains two fill layers: the lower (SU2612), a loose grey sediment with fragmentary Gumelnița culture ceramics, lithics, and faunal remains; the upper (SU2547), a medium-compact brown-grey sediment containing lenses of unburnt clay, fragmentary Gumelnița culture ceramics, a stone grinder, and burnt daub inclusions in the upper part.

Feature Cx27 (Figs. 10, 19, 20): a partially excavated sunken feature, possibly a trench for post-setting. In the northern area, it is overlain by Cx36 and Cx38. Within the investigated area, five postholes (Cx27A, 27F, 27G, 27H, and 27I) were identified, four of which are aligned along a NW–SE axis. The feature has two fill layers. The postholes became visible after removal of the upper fill (SU2563), consisting of brown-grey sediment with more abundant archaeological material towards the lower part. The lower fill (SU2566) is a more compact brown sediment with less archaeological materials and was only partially excavated.

Feature Cx28 (Figs. 10, 19, 20): is a pit identified in the western profile of SI-C and partially excavated. It is cut by Cx18 and has a semi-circular shape. The fill (SU2568) consists of loose grey sediment with rare inclusions of burnt clay, charcoal, and carbonate concretions. It contains Gumelnița culture ceramics, lithics, and faunal remains.

Feature Cx36 (Figs. 10, 19, 20): is a partially excavated sunken feature, possibly a trench used for post support. It overlies Cx18 to the north and Cx27 to the south. The fill (SU2588) is granular, brown-grey with grey-white areas, containing burnt clay inclusions, charcoal, and calcium carbonate. It contains fragmentary Gumelnița ceramics, lithics, and faunal remains. Within its perimeter, four postholes (Cx36B, 36C, 36D and 36E) were identified and excavated. Postholes Cx36C and Cx36D cut a rectangular pit (Cx38) in the southern half of Cx36.

7.3.2. Early Bronze Age features in SI-C

Feature Cx16 (Fig. 10): is a trench interpreted as part of a fence or defensive structure, running obliquely across SI-C along a SE–NW direction, following the north-eastern edge of the tell terrace. It was partially excavated. The upper part is affected by slope erosion, resulting in a maximum depth of 1.20 m in the southern area and only 0.40 m in the northern area. The cross-section is ogival in shape, with widths at the mouth (identification level) ranging from 0.80 m (south) to 0.40 m (north). The fill (SU2541) consists of loose black-grey silty sediment with abundant fragmented materials, including ceramics of Glina culture tradition (as well as Gumelnița culture ceramics), animal bones, hearth

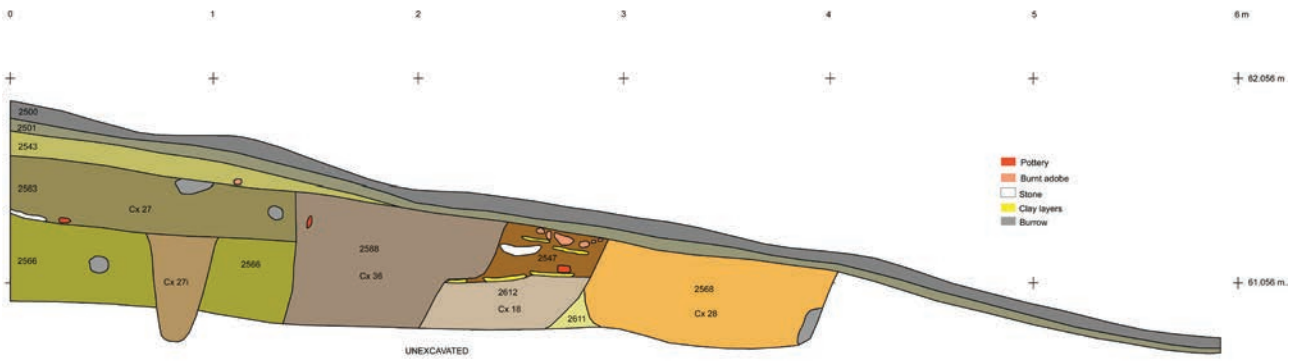


Figure 19. *Section I, Area C (SI-C), west profile.*

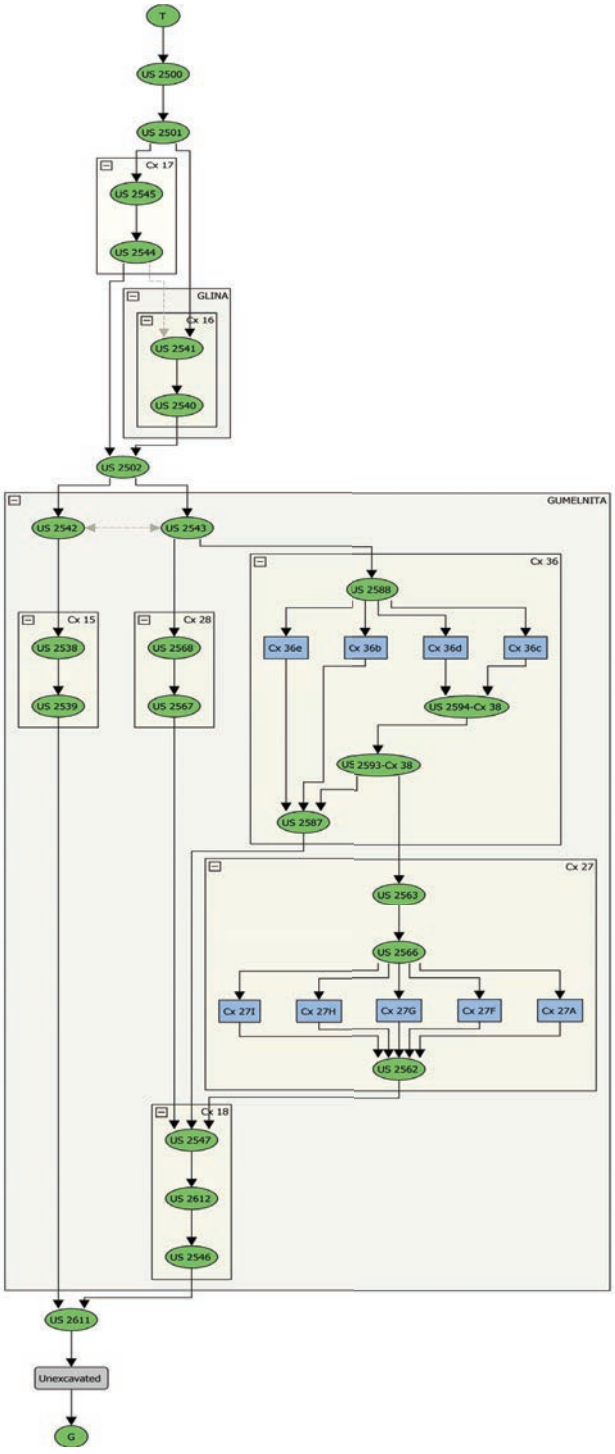


Figure 20. *Stratigraphic matrix of the section S I, Area C.*

fragments, charcoal, and burnt daub inclusions. At the base of Cx16, particularly in the southern sector, several postholes were identified, with diameters ranging from 0.30 to 0.50 m and depths between 0.70 and 1.20 m from the identification level of Cx16. Between these postholes, charred wooden beams were discovered along the base of the trench, arranged longitudinally in the eastern part. The trench cuts through a Chalcolithic hearth (Cx15) and extends into the eastern and northern profiles of SI-C.

7.4. Area SII (Fig. 11)

7.4.1. Middle Chalcolithic features in SII

The positioning of Section II in the central area of the tell, perpendicular to the profile of a previous archaeological trench, allowed for several preliminary stratigraphic observations, although only the upper levels, the topsoil (SU5000) and colluvial layer (SU5001) (Pl. V/3), were cleaned. The base of the anthropogenic deposits consisted of a loess layer, in which an initial human intervention was identified in the form of a sunken feature, whose fill (SU5007) contained ceramic material of Gumelnița culture tradition (see Section 9.2 for radiocarbon date). Above this feature, clay plaster layers belonging to the floors of an unburnt dwelling (SU5006) were identified, which also yielded Gumelnița culture ceramic material. At present, there is no stratigraphic evidence indicating the presence of earlier (Early Chalcolithic) occupation levels in this area. The Middle Chalcolithic anthropogenic deposits reach a thickness of approximately 2.9 m, with the most recent level (SU5005) (see Section 9.2 for radiocarbon date) being directly overlain by the first layer (SU5004) attributed to the Early Bronze Age. This stratigraphic relationship is likely due to the fact that the context that contained the Glina culture hearth (Cx2, see below) and the layer surrounding it (SU5004) appeared to be a sunken feature, most probably a pit-house. However, this hypothesis must be verified during future fieldwork.

7.4.2. Early Bronze Age features in SII

Feature Cx2 (Fig. 11): is a hearth constructed from clay plaster (SU5003), associated with materials of the Early Bronze Age (the Glina culture tradition). It was identified beneath a substantial layer of sediment containing abundant materials from the same period (SU5002). The feature was partially identified and excavated, displaying a semi-circular shape within SII, with a diameter of 0.85 m. The surrounding layer (SU5004), which contained fragmentary ceramics, animal bones, and lithics, was also partially investigated.

8. THE ANALYSIS OF THE ARCHAEOLOGICAL ARTIFACTS AND BIOLOGICAL REMAINS

8.1. POTTERY

Pottery analysis was conducted following the protocol outlined in Lazăr *et alii* (2017), based on a sherd-by-sherd approach and the systematic quantification of technological, typological, and functional attributes within a computerized database. Given the time-intensive nature of this methodology, the present study adopts a selective strategy. Complete assemblages of fragmentary pottery were analysed from two Boian–Vidra pits (Cx3 and Cx7) and two Gumelnița culture features (Cx4 and Cx5). For other

contexts, one attributed to the Gumelnița culture (Cx20) and four assigned to the Glina culture, only selected elements (rim sherds, bases, and representative fragments such as handles and decorated pieces) were examined. This approach was intended to identify general trends and diagnostic characteristics across the different occupational phases documented in this sector of the Glina Tell. A comprehensive analysis of the entire ceramic assemblage will be presented in a future dedicated study.

8.1.1. Early Chalcolithic pottery – Boian culture

Pottery in archaeological contexts

Two assemblages of fragmentary pottery were analysed, originating from pits Cx3 and Cx7, both attributed, on typological and decorative grounds, to the Vidra phase of the Boian culture (Pl. I). Pit Cx3 was only partially excavated, whereas Cx7 was fully investigated. The assemblages comprise 201 sherds which, following primary restoration, correspond to 131 items. The total weight is 2112 g, and the dimensional distribution of the fragments is presented in Table 1. Both assemblages are quantitatively limited and highly fragmented, consisting predominantly of body sherds smaller than 5 cm. Most fragments exhibit features such as small size, low individual weight, eroded edges, and a low refitting rate. These characteristics indicate repeated depositional processes prior to their incorporation into the analysed contexts and are consistent with secondary (domestic) refuse. Nevertheless, differences in depositional patterning can be observed. In Cx7, the assemblage is dispersed within a homogeneous fill, whereas in Cx3, the material is concentrated in the lower part of the first fill layer and associated with a significant quantity of clay and stone beads (see Section 6.3).

Paste analysis

The paste composition of the two assemblages is broadly comparable, with differences primarily reflected in the relative proportions of ware categories, notably a higher frequency of fine ware in pit Cx7. Fine pottery accounts for 28% in Cx3 and 50% in Cx7. Semi-fine ware is predominant in Cx3 (55%) and less represented in Cx7 (33%), while coarse ware occurs in identical proportions (17%) in both assemblages. Grog constitutes the principal tempering agent in both features. Chaff-tempered sherds are rare, whereas fine wares without added temper occur more frequently (Fig. 21). Among natural inclusions, sand is most common, while pebbles occur less frequently, both often associated with dispersed vegetal matter. Carbonate inclusions are comparatively rare.

Forming techniques and constructed shapes

Where primary forming traces could be identified, the predominant technique is the use of horizontally arranged coils. Rare instances of combined techniques, such as coiling in association with superimposed slabs, were observed exclusively in pit Cx3. The distribution of

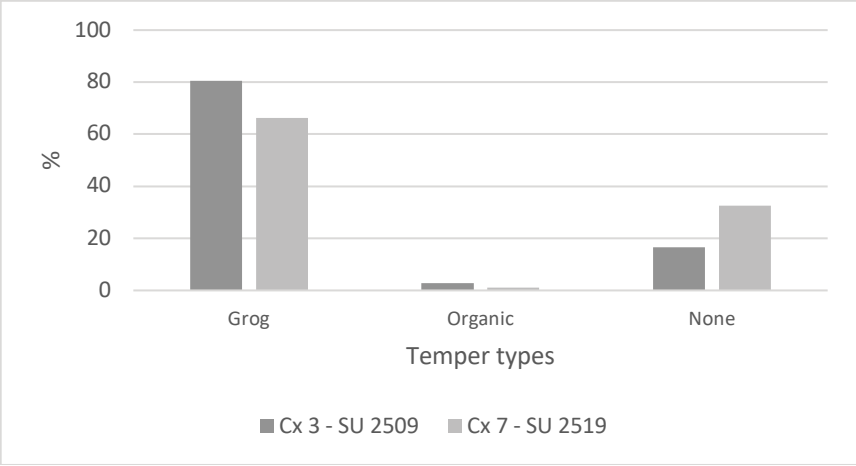


Figure 21. *Percentage distribution of the temper types in the Early Chalcolithic pottery assemblages (n=201).*

Surface	Feature	Stratigraphic unit	<2.5 cm	<5 cm	<7.5 cm	<10 cm	>10 cm	Total items	Total sherds	Weight (g)
SI – 2025	Cx3	2509	13	14	4	1	4	36	85	1107
	Cx7	2519	49	35	6	4	1	95	116	1005
	Total		62	49	10	5	5	131	201	2112

Table 1. *Contextual distribution of the Early Chalcolithic pottery by sherd size and weight.*

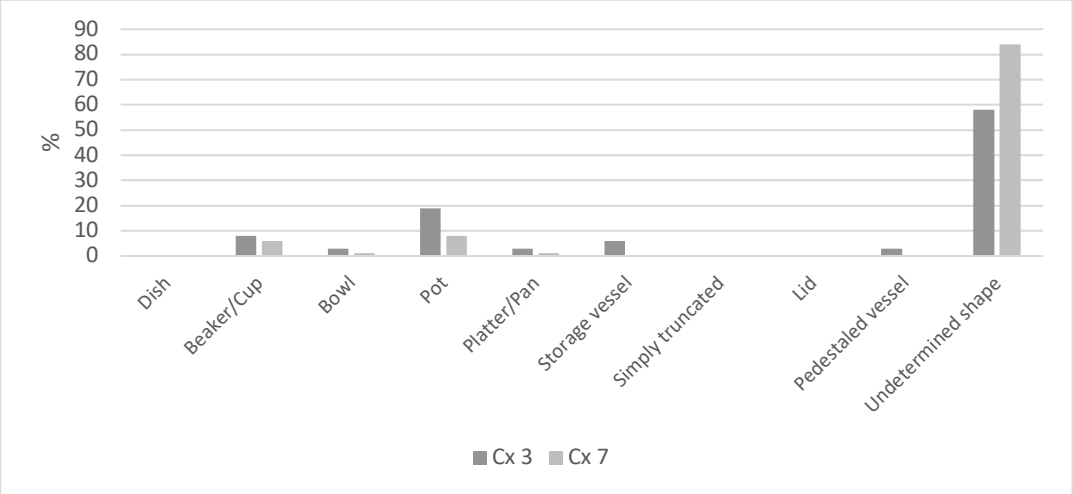


Figure 22. *Relative distribution of the undeterminate and identifiable Early Chalcolithic pottery shapes (n=201).*

vessel shape categories is heavily conditioned by the high proportion of undetermined fragments, yet still allows for the identification of several meaningful tendencies.

Both assemblages are structurally similar in being overwhelmingly composed of undetermined fragments (Fig. 22), which limits morphological resolution. However, they differ in the degree of identifiable variability. Cx3 preserves a broader spectrum of vessel types and a clearer predominance of pots, suggesting a more representative cross-section of functional categories. Fragments attributable to storage vessels and footed vessels (Pl. I/2) were recorded only in pit Cx3. In contrast, Cx7 is more heavily skewed toward indeterminate material and displays a narrower range of identifiable forms, which may reflect differences in preservation, recovery, or depositional context rather than strictly cultural choices.

Surface treatments and decoration methods

The analysis of surface treatments highlights coherent but distinct technological profiles when external and internal finishes are considered together. Cx3 is characterised by a relatively balanced distribution of surface treatments. Externally, vessels are predominantly smoothed (c. 38%) and burnished (c. 36%), with a notable presence of irregular barbotine (c. 16%) and only marginal polishing. Internally, the assemblage shows a similar heterogeneity, with smoothing (c. 36%) remaining significant alongside polishing (c. 33%) and burnishing (c. 25%). This pattern suggests a flexible technological approach, combining medium- and high-intensity treatments, with less emphasis on achieving highly standardized or highly lustrous surfaces. Cx7, by contrast, displays a more consistent and intensive finishing strategy. Externally, burnishing is clearly dominant (c. 58%), followed by smoothing (c. 27%), while other treatments are marginal. Internally, this preference for advanced finishing is even more pronounced, with polishing (c. 46%) and burnishing (c. 44%) overwhelmingly prevailing and smoothing reduced to a minor role. The assemblage thus reflects a systematic investment in producing well-finished, carefully treated surfaces, both inside and outside, associated with fine ware.

The distribution of decorative types (Fig. 23) indicates a shared ornamental repertoire, structured around a high proportion of undecorated vessels, but with meaningful differences in the selection and frequency of specific decorative methods. Cx3 presents a relatively diversified decorative profile. While undecorated surfaces dominate (c. 53%), a significant proportion of vessels display decoration. The most common techniques include patterned barbotine (c. 14%), impressed decoration (c. 8%) (Pl. I/6), and the combination of "*plissé* and impressed" (c. 8%) (Pl. I/4), alongside excision (c. 5%). *Plissé* (*i.e.* channelled) decoration alone is less frequent (c. 5%), excised motifs have similar values (c. 6%) (Pl. I/2), and incised or combined incised and painted motifs occur only sporadically (around 2–3%). Cx7, although similar in the overall dominance of undecorated surfaces (c. 52%), shows a more uneven distribution of decorative methods. *Plissé* decoration is markedly more prominent (c. 20%) (Pl. I/1), representing the principal decorative technique in this assemblage. Organized barbotine is also well represented (c. 15%), while other methods, such as impressed (c. 3%) (Pl. I/7–8), excised (c. 4%) (Pl. I/3), and incised (c. 3%) (Pl. I/5) decoration, occur at lower frequencies. The combination of *plissé* and impressed motifs, as well as incised and painted decoration, is rare or nearly absent.

Firing observations

The firing characteristics reveal both shared technological practices and significant differences in firing control and atmosphere (Fig. 24). Cx3 is dominated by incompletely oxidised fabrics (c. 44%), followed by a substantial proportion

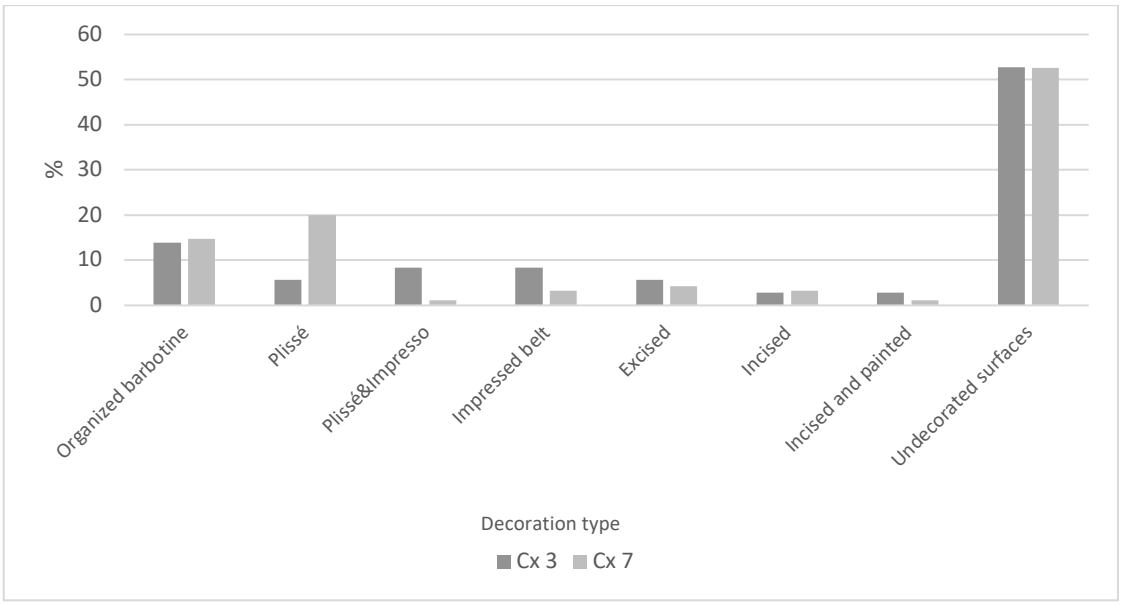


Figure 23. *Distribution of decorative types in the Early Chalcolithic pottery assemblages (n=201).*

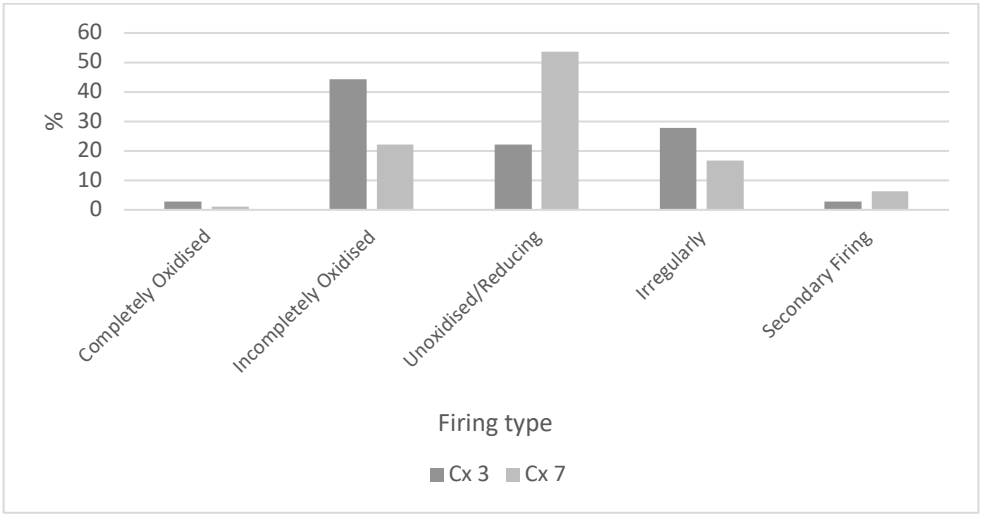


Figure 24. *Comparison of firing types in the Early Chalcolithic pottery assemblages (n=201).*

of irregular firings (c. 27%) and a notable presence of unoxidised/reducing conditions (c. 22%). Completely oxidised sherds are rare (c. 3%), as are cases of secondary burning (c. 3%). This distribution indicates a relatively heterogeneous firing regime, with limited control over atmosphere and temperature, resulting in variable outcomes. Cx7, in contrast, is characterised by a clear predominance of unoxidised/reducing firings (c. 54%), accompanied by lower but still significant proportions of incompletely oxidised (c. 22%) and irregular firings (c. 17%). Secondary burning is slightly more frequent (c. 6%), while completely oxidised examples remain minimal (c. 1%). This pattern suggests a more consistent preference for reducing conditions, implying a greater degree of control or intentionality in achieving darker, reduced fabrics.

8.1.2. Middle Chalcolithic pottery – Gumelnița culture

Pottery in archaeological contexts

The analysed Middle Chalcolithic pottery assemblage from Glina Tell derives from features Cx4, Cx5, and Cx20 (Pl. II–IV), belonging to several stratigraphic units within the

Surface	Feature	Stratigraphic unit	<2.5 cm	<5 cm	<7.5 cm	<10 cm	>10 cm	Total items	Total sherds	Weight (g)
SI – 2025	Cx4	2516	59	42	15	9	7	132	210	3008
		2516 & 2511	0	0	0	2	3	5	56	696
		2511	82	65	14	7	3	172	189	2110
	Cx5	2513	69	30	17	4	3	123	139	1359
	Cx20	2533	19	112	44	15	4	194	207	6709

Table 2. *Contextual distribution of the Middle Chalcolithic pottery by sherd size and weight.*

2025 excavation area S I. The material comprises 801 sherds (626 items), with a total weight of 13,878 g (Tab. 2). It should be noted that the material from Cx20 was selectively analysed, with priority given to diagnostic elements, particularly rim sherds, while the remaining assemblage is still under study and will be published separately. This introduces a degree of bias in the quantitative and morphological representation of this context.

From a dimensional perspective, the assemblage is dominated by small- and medium-sized fragments, especially in the <2.5 cm and <5 cm categories, indicating a high degree of fragmentation. Larger fragments are less frequent but better represented in Cx20, likely reflecting both preservation conditions and the selective recovery of diagnostic pieces. The average weight per sherd varies between contexts, further reflecting differences in preservation and sampling strategy. Eroded margins and carbonate deposits are common across all contexts, particularly in Cx4 and Cx20, indicating prolonged exposure to post-depositional processes. The distribution of vessel parts confirms the impact of these factors. While body sherds dominate in Cx4 and Cx5, Cx20 shows a markedly higher proportion of rim fragments, reflecting the selective analytical strategy rather than the original composition of the assemblage.

Overall, the Middle Chalcolithic pottery is highly fragmented and affected by secondary depositional processes, most likely related to domestic refuse. At the same time, the selective nature of the analysed material from Cx20 must be taken into account in any comparative or quantitative interpretation, pending the full publication of the assemblage.

Paste analysis

The paste composition is broadly homogeneous across the analysed contexts (Cx4, Cx5, and Cx20), with only moderate variations in the relative proportions of fabric categories. In all three contexts, fine and semi-fine wares dominate the assemblage, each representing roughly comparable proportions (generally between c. 40–55%). Semi-fine fabrics are slightly more prevalent in Cx4, while Cx5 and Cx20 show a more balanced distribution between fine and semi-fine categories. Coarse wares are consistently rare, accounting for less than 10% in all contexts, indicating a clear preference for better-prepared pastes.

From the perspective of tempering practices, grog is overwhelmingly dominant (Fig. 25), reaching particularly high values in Cx20, while remaining very frequent in Cx4 and Cx5 (c. 75–80%). Sherds without added temper are present in all contexts but in significantly lower proportions (c. 5–20%), while organic temper is extremely rare. This pattern points to a strong technological standardization in paste preparation, with grog representing the principal tempering agent.

The analysis of natural or accidental inclusions reveals a more diversified picture. Fine sand is consistently well represented across all contexts (c. 20%), often associated with organic debris or limestone fragments. Organic inclusions display notable variability, being particularly frequent in Cx5 and Cx20, while less represented in Cx4. Limestone and mixed inclusions (*e.g.*, sand and limestone, limestone with organic matter) occur regularly but in moderate proportions, suggesting the use of clay sources with heterogeneous mineral content. Coarser components such as rare pebbles are present but remain marginal.

The paste composition indicates a relatively standardized technological framework, characterised by the systematic use of grog temper and a preference for fine and semi-fine fabrics. At the same time, the variability observed in natural inclusions reflects differences in raw material procurement and clay preparation, likely conditioned by local resource availability rather than strict technological choices.

Forming techniques and constructed shapes

The analysis of primary forming techniques is significantly constrained by the high proportion of undiagnostic fragments. Consequently, the category of indeterminate forming techniques dominates across all contexts, particularly in Cx5 and Cx20 (reaching c. 80–85%), and remains substantial even in Cx4 (c. 75%). Where diagnostic traces are present, coiling appears as the principal forming method, accounting for c. 10–25% of the assemblage depending on context, with slightly higher values in Cx20. Other techniques, such as coiling combined with slabbing, hand modelling, or moulding, are only sporadically attested. This pattern suggests that coiling was the

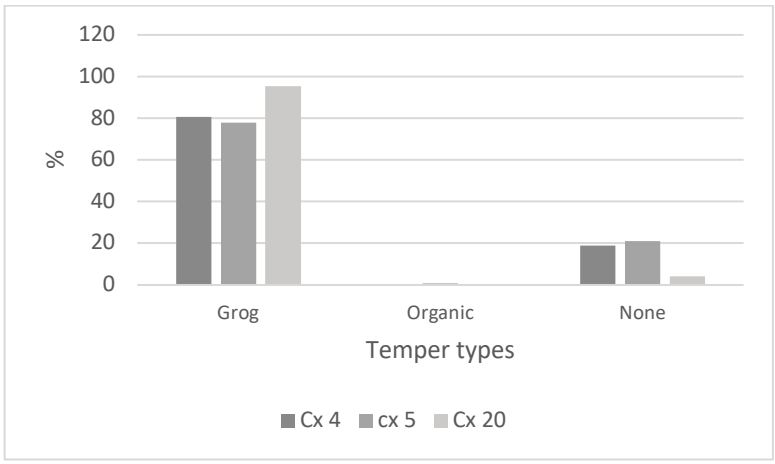


Figure 25. *Percentage distribution of temper types in the Middle Chalcolithic pottery assemblages (n=626).*

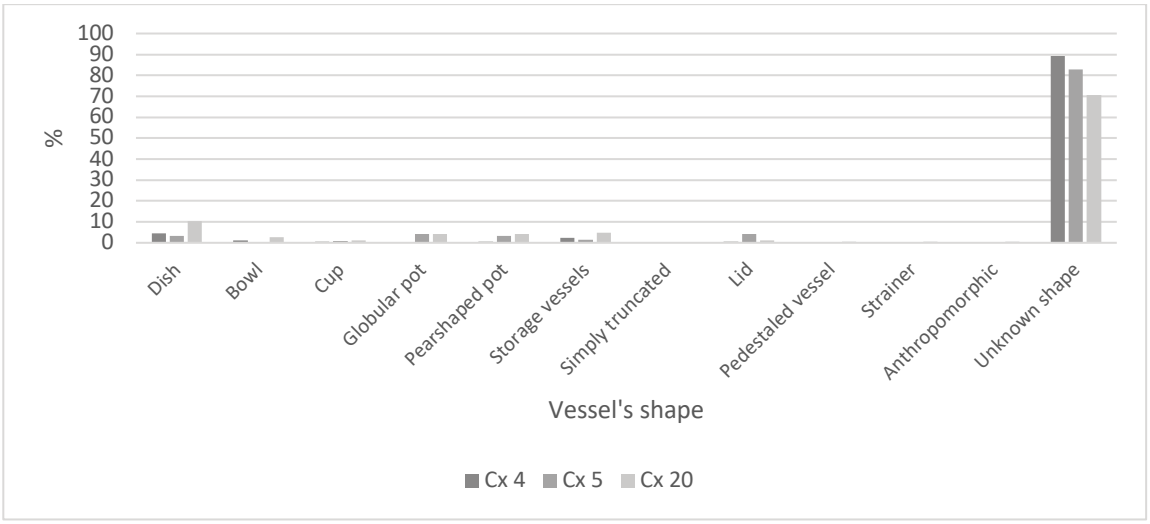


Figure 26. *Relative distribution of indeterminate and identifiable Middle Chalcolithic pottery shapes (n=626).*

dominant forming technique, although its visibility is limited by fragmentation and preservation conditions.

The distribution of general vessel shapes is likewise heavily affected by the high proportion of undetermined fragments, which represent between c. 60% (Cx20) and nearly 90% (Cx4). Among the identifiable forms, open and closed shapes are relatively balanced, with a slight predominance of open forms in Cx20 and a more even distribution in Cx4 and Cx5.

A more detailed typological breakdown confirms this pattern (Fig. 26). Undetermined shapes overwhelmingly dominate in all contexts (c. 70–90%), limiting morphological resolution. Among identifiable vessel types, dishes (Pl. II/1–4; Pl. IV/1–2, 10–12) and globular (Pl. III/3; Pl. IV/9, 17) or pear-shaped (Pl. III/5; Pl. IV/5–8, 13–14, 16) pots are the most consistently represented categories, followed by bitruncated storage vessels (Pl. III/1, 4, 6, 8; Pl. IV/4, 15) in moderate proportions, particularly in Cx20. Bowls (Pl. II/5; III/2), cups (Pl. III/11), and lids (Pl. IV/3) occur sporadically, while specialized forms such as pedestaled vessels, strainers, or anthropomorphic pieces are rare or isolated occurrences.

Surface treatments and decoration methods

The analysis of surface treatments in the Middle Chalcolithic assemblage reveals both shared technological patterns and notable differences between contexts. Externally, finishing techniques vary considerably. In Cx4, burnishing (c. 34%) and polishing (c. 29%) are well represented alongside smoothing (c. 27%), indicating a relatively balanced distribution of medium- and high-intensity treatments. In Cx5, smoothing becomes

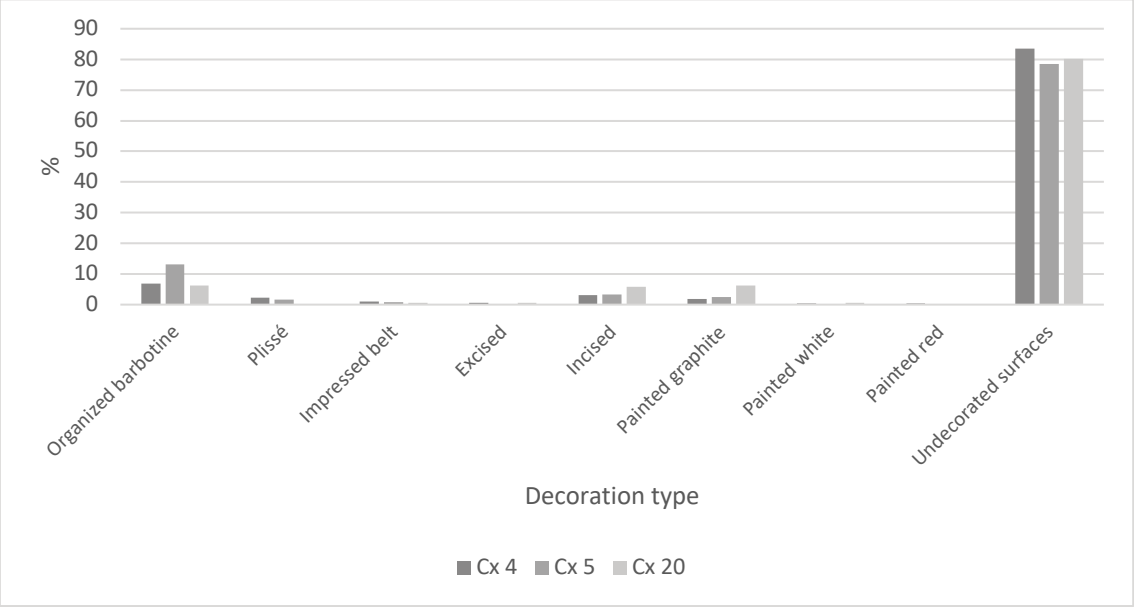


Figure 27. *Distribution of decorative types and undecorated sherds from Middle Chalcolithic pottery assemblage (n=626).*

the dominant technique (c. 36%), followed by burnishing (c. 28%) and polishing (c. 18%), suggesting a preference for more moderate surface preparation. By contrast, Cx20 is strongly dominated by burnishing (c. 58%), with significantly lower frequencies of smoothing and polishing, reflecting a more standardized and intensive finishing strategy. Other treatments, such as scraping and unorganized barbotine, occur only sporadically across all contexts.

Internally, the assemblage shows a more coherent pattern. Polishing and burnishing dominate in all contexts, with polishing particularly prominent in Cx4 and Cx5 (c. 40–45%), while burnishing reaches its highest values in Cx20 (c. 50%). Smoothing is less frequent internally, especially in Cx4, and scraping is negligible. This distribution suggests a general emphasis on well-finished interior surfaces, likely related to vessel functionality.

The correspondence between external and internal treatments varies by context. Cx20 displays a consistent preference for burnished surfaces both externally and internally, indicating a more standardized technological approach. In contrast, Cx4 and Cx5 exhibit greater variability, combining multiple finishing techniques within the same assemblage.

The distribution of decorative types (Fig. 27) is dominated by undecorated surfaces, which account for c. 80–82% of the combined assemblage. Among the decorated material, organized barbotine represents the most frequent technique (c. 6–13%, depending on context) (Pl. IV/8–9, 13–14, 16), followed by incised decoration (generally c. 3–6%) and painted graphite motifs (c. 2–6%). Other techniques, such as *plissé*, impressed bands, excision, and painted decoration in white or red, occur only sporadically and remain quantitatively insignificant.

At the contextual level, Cx4 and Cx5 display similar technological and decorative profiles, with a balanced use of surface treatments and a shared repertoire that includes organized barbotine, incised motifs, and the presence of *plissé* decoration. Cx20, by contrast, is characterised by a more standardized finishing strategy, dominated by burnishing, and by a different decorative profile. The absence of *plissé* and the higher frequency of graphite-painted motifs distinguish this assemblage from the others. These differences may have chronological significance, suggesting that Cx20 belongs to a later stage within phase A2 of the Gumelnița culture, while Cx4 and Cx5 reflect an earlier horizon within the Middle Chalcolithic occupation.

Firing characteristics

In all three features, incompletely oxidised and unoxidised/reducing fabrics dominate (Fig. 28), indicating a general reliance on low- to moderately controlled firing conditions. In Cx4, incompletely oxidised (c. 35%) and reducing fabrics (c. 40%) are relatively balanced, suggesting variable firing atmospheres. Cx5 shows a similar structure, although with a slightly higher proportion of irregular firings (c. 19%), pointing to less stable firing conditions. Cx20, by contrast, is strongly dominated by reducing conditions (over 50%), accompanied by a lower proportion of incompletely oxidised fabrics (c. 24%). This pattern indicates a more consistent preference for reducing atmospheres and, implicitly, a greater degree of control over the firing process. Completely oxidised ceramics are rare in all contexts (generally below 10%), while secondary burning is present in moderate proportions, particularly in Cx4.

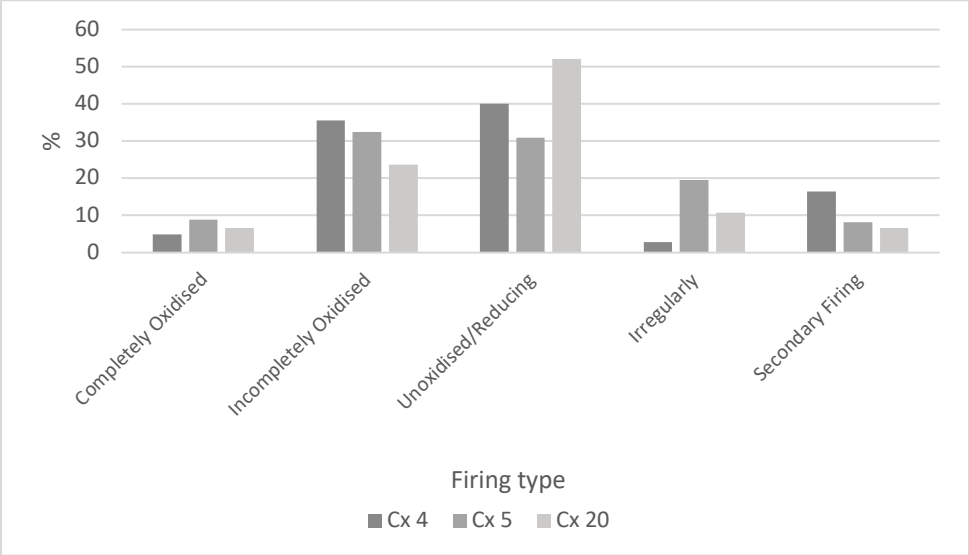


Figure 28. *Comparison of firing types in the Middle Chalcolithic pottery assemblage (n=626).*

8.1.3. Early Bronze Age pottery – Glina culture

Pottery in archaeological contexts

From the Early Bronze Age pottery assemblages (Pl. V–VIII), a total of 128 sherds (126 items) were selected for analysis in this study, with a cumulative weight of 5635 g (Tab. 3). The assemblage consists predominantly of rim sherds (c. 58%), followed by body sherds (c. 36%), while bases and handles are less frequent (c. 16% each). The assemblage is heavily dominated by material from feature Cx16, which alone accounts for 107 sherds (over 83% of the total) and 5001 g (c. 89% of the total weight), indicating a highly uneven contextual distribution.

In terms of dimensional classes, the assemblage is primarily composed of medium-sized fragments, with the <5 cm (n=57) and <7.5 cm (n=40) categories being the most frequent. Larger fragments are also relatively well represented, particularly in Cx16, where sherds exceeding 7.5 cm (n=26, combining the <10 cm and >10 cm categories) suggest better preservation conditions or reduced post-depositional fragmentation compared to other contexts.

Overall, the dataset points to a strongly skewed distribution pattern, with Cx16 representing the principal depositional context for Early Bronze Age pottery within the investigated area, while the other features provide only supplementary and highly fragmented material. Given this distribution, the following *chaîne opératoire* approach considers the Early Bronze Age pottery assemblage as a single analytical unit.

Paste analysis

The paste composition of the Early Bronze Age pottery assemblage is characterised by a clear predominance of grog-tempered fabrics (Fig. 29), which account for approximately 53% of the analysed sherds. A substantial proportion of vessels (c. 41%) lack intentionally added temper, suggesting either the use of naturally suitable clays or a deliberate technological choice favouring untempered fine pastes. Minor categories include mixed temper recipes, such as grog combined with shell (c. 4%), and the sporadic use of mineral inclusions such as sand or small pebbles (c. 2%). Organic temper is virtually absent.

Surface	Feature	Stratigraphic unit	<2.5 cm	<5 cm	<7.5 cm	<10 cm	>10 cm	Total items	Total sherds	Weight (g)
SI – 2025	Cx9	2523	0	6	2	1	0	9	10	270
	Cx14	2537	0	3	3	0	0	6	6	96
	Cx16	2541	1	45	34	16	10	106	107	5001
	Cx29	2570	0	3	1	1	0	5	5	268
	Total		1	57	40	18	10	126	128	5635

Table 3. *Contextual distribution of the Early Bronze Age pottery by sherd size and weight.*

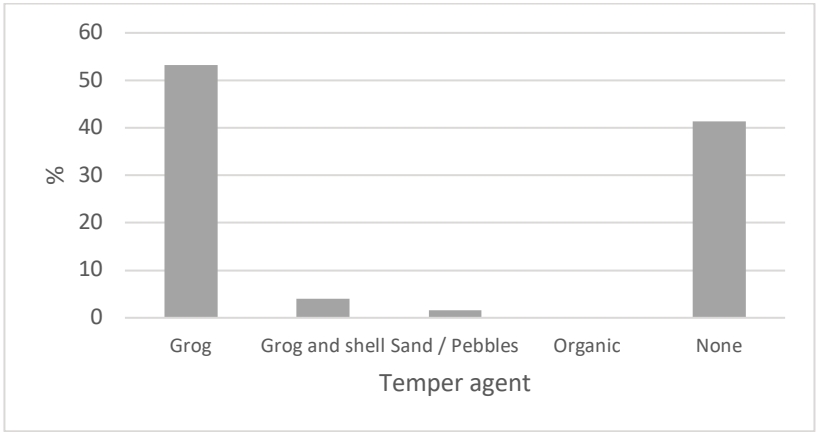


Figure 29. *Percentage distribution of temper types in the Early Bronze Age pottery assemblage (n=126).*

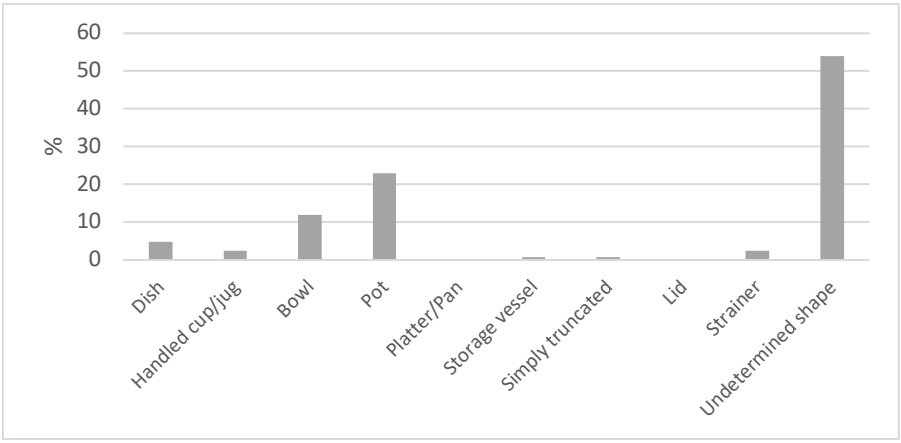


Figure 30. *Relative distribution of undeterminate and identifiable Early Bronze Age pottery shapes (n=126).*

The analysis of natural or accidental inclusions reveals a strong dominance of coarse mineral components, particularly pebbles and sand, which together account for approximately 60% of the observed inclusions. Fine sand is also well represented (c. 31%), while combinations involving organic matter or limestone occur only sporadically (generally below 5%). The near absence of purely organic inclusions further reinforces the mineral character of the raw materials employed.

Forming techniques and constructed shapes

The analysis of primary forming techniques indicates an overwhelming dominance of coiling, which accounts for approximately 85% of the assemblage. This confirms the central role of coiling as the principal forming method in the Early Bronze Age pottery. A smaller proportion of fragments (c. 15%) could not be assigned to a specific forming technique due to the absence of diagnostic traces. Other manufacturing techniques, such as slabbing, hand modelling, or moulding, are absent or not securely attested in the analysed material.

The distribution of general vessel shapes is strongly affected by the high proportion of undetermined fragments, which represent nearly half of the assemblage (c. 47%). Among the identifiable forms, closed shapes (c. 28%) slightly outnumber open forms (c. 25%). This pattern suggests a slight predominance of restricted vessels, although the high degree of fragmentation limits detailed functional interpretation.

A more detailed typological breakdown further illustrates the structural composition of the assemblage (Fig. 30). Indetermined shapes constitute the largest category (c. 54%), followed by hole-mouth or necked pots (c. 23%) (Pl. V/1–3, 5, 7, 9–11; Pl. VI/2–9, 14–17; Pl. VII/1–5, 7–9; Pl. VIII/14–15, 17–20, 26–30) and bowls (c. 12%) (Pl. V/4, 12–13; Pl. VI/13; Pl. VII/6, 12). Other vessel types, including dishes (c. 5%) (Pl. VII/11, 14–15), handled cups/jugs (c. 2%) (Pl. V/14; VII/12, 16; Pl. VIII/1–11, 13), strainers (c. 2%) (Pl. VIII/12), and storage vessels (Pl.VI/1, 10–11) or simply truncated forms (Pl. VIII/21, 24) (each below 1–2%), are only marginally represented. Platters/pans and lids are absent.

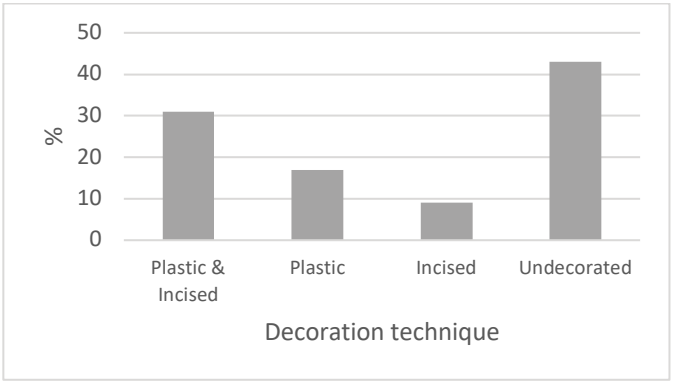


Figure 31. *Distribution of decorative elements and undecorated sherds from Early Bronze Age pottery assemblages (n=126).*

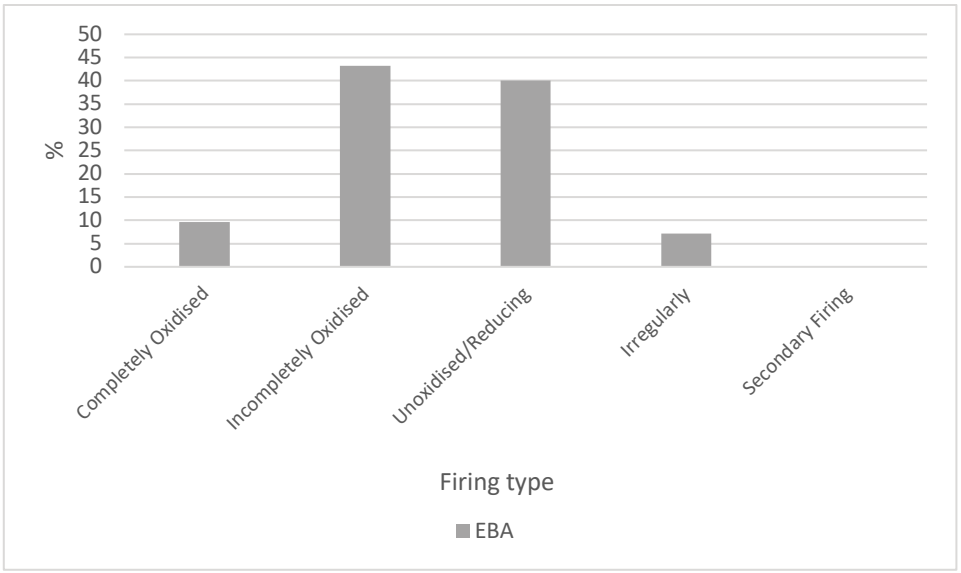


Figure 32. *Comparison of firing types in the Early Bronze Age pottery assemblage (n=126).*

Surface treatments and decoration methods

The analysis of surface treatments indicates a clear predominance of smoothing as the principal finishing technique, both externally (c. 68%) and internally (c. 69%). This suggests a consistent preference for medium-intensity surface preparation, resulting in relatively uniform vessel surfaces. Polishing (c. 14–15%) and burnishing (c. 10–12%) are also well represented, indicating a secondary level of investment in achieving more compact and lustrous finishes. Other treatments, such as scraping (c. 2–4%) and irregular barbotine (c. 2%), occur only sporadically, while untreated or indeterminate surfaces are negligible.

The distribution of decorative techniques (Fig. 31) reveals a predominance of undecorated vessels, which account for approximately 43% of the assemblage. Among the decorated material, plastic and combined plastic-incised ornamentation are most common (Pl. V–VIII). Vessels featuring both plastic and incised elements represent c. 31%, while exclusively plastic decoration accounts for c. 17%, and purely incised motifs are comparatively rare (c. 9%).

A more detailed analysis of decorative elements shows that impressed buttons (c. 21%) and handles or knobs (c. 17%) are the most frequent features, followed by impressed geometrical patterns (c. 14%) and impressed belts (c. 8%). More complex combinations, such as impressed bands associated with incisions, are uncommon (c. 3%). The assemblage is characterised by a relatively restrained decorative system, dominated by undecorated surfaces and supplemented by a limited range of plastic and impressed techniques. This pattern suggests a functional orientation of the pottery, with decoration playing a secondary and selectively applied role within the broader technological framework.

Firing characteristics

The firing regime of the Early Bronze Age pottery assemblage is dominated by incompletely oxidised (c. 43%) and unoxidised/reducing fabrics (c. 40%), which together account for the vast majority of the material (Fig. 32). Completely oxidised sherds are relatively limited (c. 10%), suggesting that fully oxidising atmospheres were only occasionally attained. Irregular firings account for a smaller proportion of the assemblage (c. 7%), reflecting fluctuations in firing conditions, such as uneven temperature or oxygen supply during the firing process. No clear evidence of secondary burning has been identified.

8.1.4. Discussion on prehistoric pottery from Glina Tell

The Early Chalcolithic pottery from Glina Tell represents the first documented occurrence of this assemblage type in the Bucharest area (Nestor 1928) and can be attributed to the Vidra phase of the Boian culture. Earlier studies (Nestor 1928; 1933; Petrescu-Dîmbovița 1944) provided only general qualitative observations, based on material lacking secure archaeological contexts and without quantitative evaluation. The newly analysed assemblages derive from two small pits. Their dimensional indices, high degree of fragmentation, and erosion patterns indicate multiple depositional episodes prior to their incorporation into the recorded contexts, suggesting a secondary domestic refuse. At a regional scale, the assemblages can be assigned to a late phase of the Vidra phase, the only technological feature with potential chronological relevance being the low proportion of vegetal temper. Comparative analysis with Boian–Vidra assemblages from Berceni – *Sit 12*, Gumelnița Terrace, and Sultana (Opriș *et alii* 2017; 2023; Lazăr *et alii* 2020) indicates a broadly conservative pattern of production at the regional level, reflected in vessel forms, decorative practices, and technological choices within the *chaîne opératoire*.

The analysed Middle Chalcolithic pottery comes from features Cx4, Cx5, and Cx20 and can be attributed to the Gumelnița culture. The assemblages are characterised by a high degree of fragmentation, frequent eroded edges, and carbonate deposits, indicating secondary deposition processes, probably related to domestic refuse. Cx4 and Cx5 display similar technological and decorative profiles, while Cx20 differs both in its quantitative dominance and its selective composition, which affects its representativeness. Paste preparation is relatively standardized, with a clear predominance of grog temper and fine to semi-fine fabrics. Forming techniques are dominated by coiling, and the assemblage is largely composed of utilitarian forms, although morphological resolution is limited by fragmentation. Surface treatments combine smoothing, polishing, and burnishing, with a stronger emphasis on burnishing in Cx20. Decorative practices are generally restrained, with undecorated vessels prevailing and decoration mainly consisting of barbotine, incised motifs, and occasional graphite painting. The presence of *plissé* in Cx4 and Cx5, its absence in Cx20, and the higher frequency of graphite painting in this latter context suggest a chronological distinction, with Cx20 belonging to a later stage within phase A2 (Voinea 2005), or even the early stage of phase B1 (Ignat 2018). Firing regimes are dominated by incompletely oxidised and reducing conditions, indicating moderate control over firing processes. Generally, the assemblage reflects a coherent technological tradition with limited variability.

The Early Bronze Age pottery derives from several features (Cx9, Cx14, Cx16, and Cx29), forming an assemblage strongly dominated by material from Cx16. As in the earlier assemblages, fragmentation patterns indicate secondary deposition, most likely of domestic origin. Technologically, the assemblage is characterised by a predominance of grog-tempered fabrics alongside a significant proportion of untempered wares, pointing to a flexible approach to paste preparation and the use of locally sandy clay resources. Forming techniques are overwhelmingly dominated by coiling. Morphologically, the assemblage is dominated by utilitarian forms, particularly pots and bowls, with a slight prevalence of closed shapes. Surface treatment is relatively standardized, with smoothing as the dominant technique on both vessel surfaces, complemented by limited polishing and burnishing. Decorative practices are restrained, with undecorated vessels prevailing and decoration mainly consisting of plastic and impressed/incised elements, a common feature of the Glina culture pottery (Băjenaru 2014, p. 177). The firing regime is dominated by incompletely oxidised and reducing conditions, suggesting moderate control over firing processes. Overall, the Early Bronze Age pottery reflects a coherent and functionally oriented technological tradition, consistent with domestic production within a stable *chaîne opératoire*.

8.2. OSSEOUS INDUSTRY

The analysed archaeological assemblage comprises 67 pieces processed from bone (n=45), antler (n=2), bivalve shell (n=14), and tortoise carapace (n=4) (Tab. 4, 5). Five pieces originate from contexts attributed to the Boian culture, 48 pieces from Gumelnița contexts, six pieces from Glina contexts, and eight pieces from mixed levels.

8.2.1. Early Chalcolithic – Boian Culture

Bone. Two pointed tools, a small bevelled tool, and an artifact of undetermined function were created from bone. Different transformation schemes were applied to both pointed tools. In the case of the first specimen, although it is a mesial fragment (Fig. 33/a), it can be stated that a flat blank, obtained through quadripartition, was used. The longitudinal debitage procedures involved grooving, identifiable by several specific striations present on the inferior side. The entire surface was rigorously shaped by abrasion. The second pointed tool (Fig. 33/b) was processed from a fibula, preserving the anatomical

Raw material			Bone								Antler
Processing stage			Finished Piece						Preform		Finished Piece
Typological category			Pointed tool	Bevelled tool	Spatula	Abraded astragalus	Figurine	Undetermined	Perforated plate	Figurine	Undetermined
S1A	-	SU2500		1							
	-	SU2501	1								1
	Cx3	SU2509		1							1
	Cx4	SU2516		1							
	Cx5	SU2513	2								
	Cx6	SU2515	1					1			
	-	SU2526						1	1		
	Cx12	SU2532	1								
		SU2565		2							
		SU2574						1			
	Cx14	SU2537	2								
	Cx23	SU2527	1								
	Cx24	SU2535		1							
	Cx29	SU2570					1				
S1B	-	SU2500		1							
	Cx9	SU2523	1			1					
	Cx20	SU2533	1	1	2			1			
		SU2552	1	1							
		SU2564	1	1							
	Cx26	SU2560	1								
	Cx46	SU2609	1	2	1						
S1C	-	SU2500				1					
	-	SU2501								1	
	Cx16	SU2541	3	1							
	Cx27	SU2566		1						1	
Mixed	-	-		3							
TOTAL			17	17	3	2	1	4	1	2	2

Table 4. *Artifacts made of bone and antler, distributed according to archaeological contexts (Cx3, Cx6, Cx23 – Boian culture; Cx4, Cx5, Cx12, Cx20, Cx24, Cx26, Cx27, Cx46 – Gumelnița culture; Cx9, Cx14, Cx16, Cx29 – Glina culture). Bone artefacts from features Cx14 and Cx29 were manufactured according to Gumelnița technological traditions but were recovered as residual material in pits dated to the Glina culture period.*

Raw material	Processing stage	Typological category	SIA			SIB		SIC					TOTAL
			Cx12	Cx19	-	Cx20		Cx18		Cx27	Cx28	-	
			SU2574	SU2549	SU2526	SU 2533	SU2564	SU2546	SU2547	SU2566	SU2568	SU2543	
Shell	Finished piece	Scraper	2	1	1	3	1	1	1	2	1	1	14
Tortoise shell	Finished piece	Container	2		1		1						4

Table 5. *Tools made from bivalve shells and tortoise carapace, distributed according to archaeological contexts (all contexts belong to the Gumelnița culture).*

volume of the bone. Technologically, interventions occurred only at the distal level, where scraping was applied around the circumference (Fig. 33/c) to prepare a sharp active end. This exhibits specific use-wear marks, consisting of a modification of the initial morphology from a pointed to a rounded shape, macroscopic polish, and fine transverse striations (Fig. 33/d). It has a length of 51 mm, a width of 16 mm, and a thickness of 8 mm.

The small bevelled tool (Fig. 33/e) preserves the anatomical volume of the bone. At the proximal level, the segmentation of the epiphysis occurred through percussion. The debitage edge was not shaped. The active end was also prepared by percussion (Fig. 33/g). A part of the percussion edge was prepared by abrasion (Fig. 33/f), which extends onto the superior side. The active end is affected by use-wear, characterised by a significant loss of material (Fig. 33/h), which created a denticulated morphology. At this level, the abrasion marks were eliminated, and the surface acquired macroscopic polish and functional longitudinal striations (Fig. 33/i). The length of the artifact is 90 mm, the maximum width is 18.4 mm, and the maximum thickness is 12 mm.

Two rib fragments (Fig. 33/j) most likely originate from a single artifact. The fragments preserve technological marks useful for reconstructing the employed procedures. A flat blank was used, obtained through a longitudinal bipartition procedure involving grooving, the marks of which are visible on both the mesial fragment (Fig. 33/k) and one of the edges of the proximal fragment (Fig. 33/l). Other technological marks appear on this latter fragment: the superior side was regularized by longitudinal scraping, which is covered by abrasion at the proximal end (Fig. 33/m).

Antler. A proximal fragment, strongly affected by taphonomic processes, originates from a red deer antler beam (Fig. 33/n). We cannot reconstruct the morphology of the artifact and, implicitly, we do not know to which typological category it belonged. The blank is in volume, the beam having been segmented by percussion applied around the entire circumference. The artifact is functionally broken at the level of a biconical perforation, obtained through bifacially applied rotation.

8.2.2. Middle Chalcolithic – Gumelnița culture

Bone. The category of pointed tools is represented by ten specimens that underwent varied processing schemes. In the case of blanks preserving the anatomical volume, the active end was created through a percussion blow. On one specimen (Fig. 34/a), the debitage edges remained largely in a raw state. Only at the distal level was abrasion applied around the circumference to form the pointed end. This is heavily rounded (Fig. 34/b), with flattened areas and longitudinal functional striations (Fig. 34/c). The artifact has a length of 77 mm, a width of 20 mm, and a thickness of 21 mm. Conversely, at another artifact (Fig. 34/d), a large part of the debitage edge was shaped through abrasion. Abrasion (Fig. 34/f) was also applied at the distal level around the entire circumference. The tip is blunted, exhibiting a modification of the initial volume and the disappearance of technological traces (Fig. 34/e). Its length is 80.4 mm, width 39.4 mm, and thickness 22 mm.

To obtain flat blanks (Fig. 34/g), a longitudinal bipartition procedure utilizing double grooving was applied (Fig. 34/h). The debitage edges were not entirely shaped. Only at the distal level was abrasion applied on the edges and on both sides (Fig. 34/i) to form the sharp active end. The tip exhibits heavy use-wear, being rounded, with polish and longitudinal striations (Fig. 34/j–k). The morphometric data are as follows: length – 82 mm, width – 15 mm, thickness – 11.2 mm. Division by percussion was applied to another specimen (Fig. 34/l). A portion of the surface of the debitage edges was regularized through diffuse percussion (Fig. 34/m). Only at the distal level is abrasion present around the entire circumference. The end shows a radical modification of the initial volume, being blunted, with the development of macroscopic polish (Fig. 34/n). The piece measures 73 mm in length, 14 mm in width, and 11 mm in thickness.

Another longitudinal debitage variant consisted of fracturing the bone by percussion (Fig. 35/c) into multiple splinters. One such splinter (Fig. 35/a) from the diaphyseal wall was used to make a pointed tool, currently fractured proximally. A large part of the debitage edges surface remained unshaped. Abrasion was applied to the edges (Fig. 35/b), as well as to both sides, only at the distal level. The

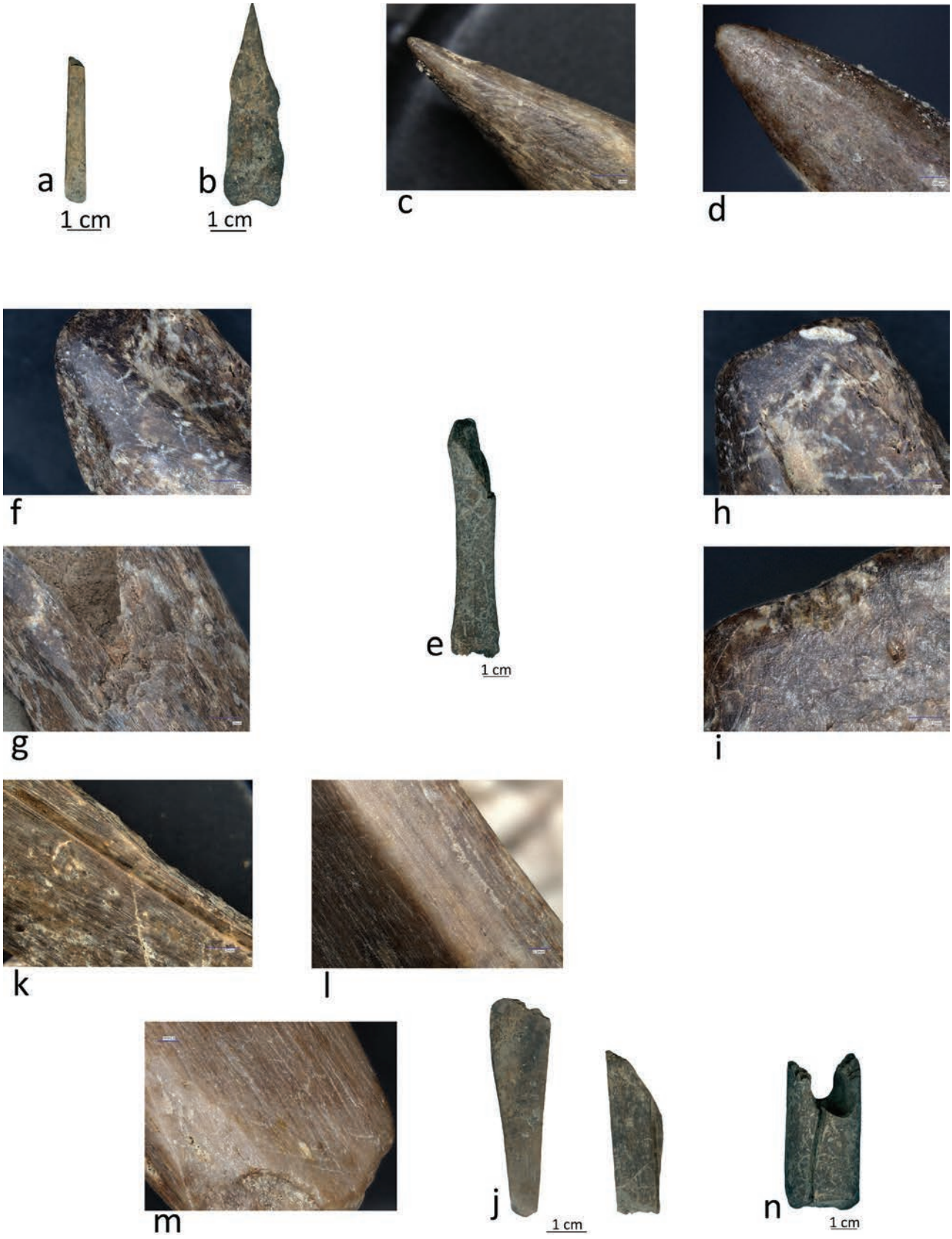


Figure 33. *a, b. Pointed tools made of bone (Boian culture); c. Scraping marks; d, h–i. Active end details; e. Bevelled tool made of bone (Boian culture); f. Abrasion marks; g. Percussion marks; j. Undeterminated bone fragments (Boian culture); k–l. Grooving marks; m. Scraping marks superimposed by abrasion; n.Fractured tool made of antler (Boian culture).*

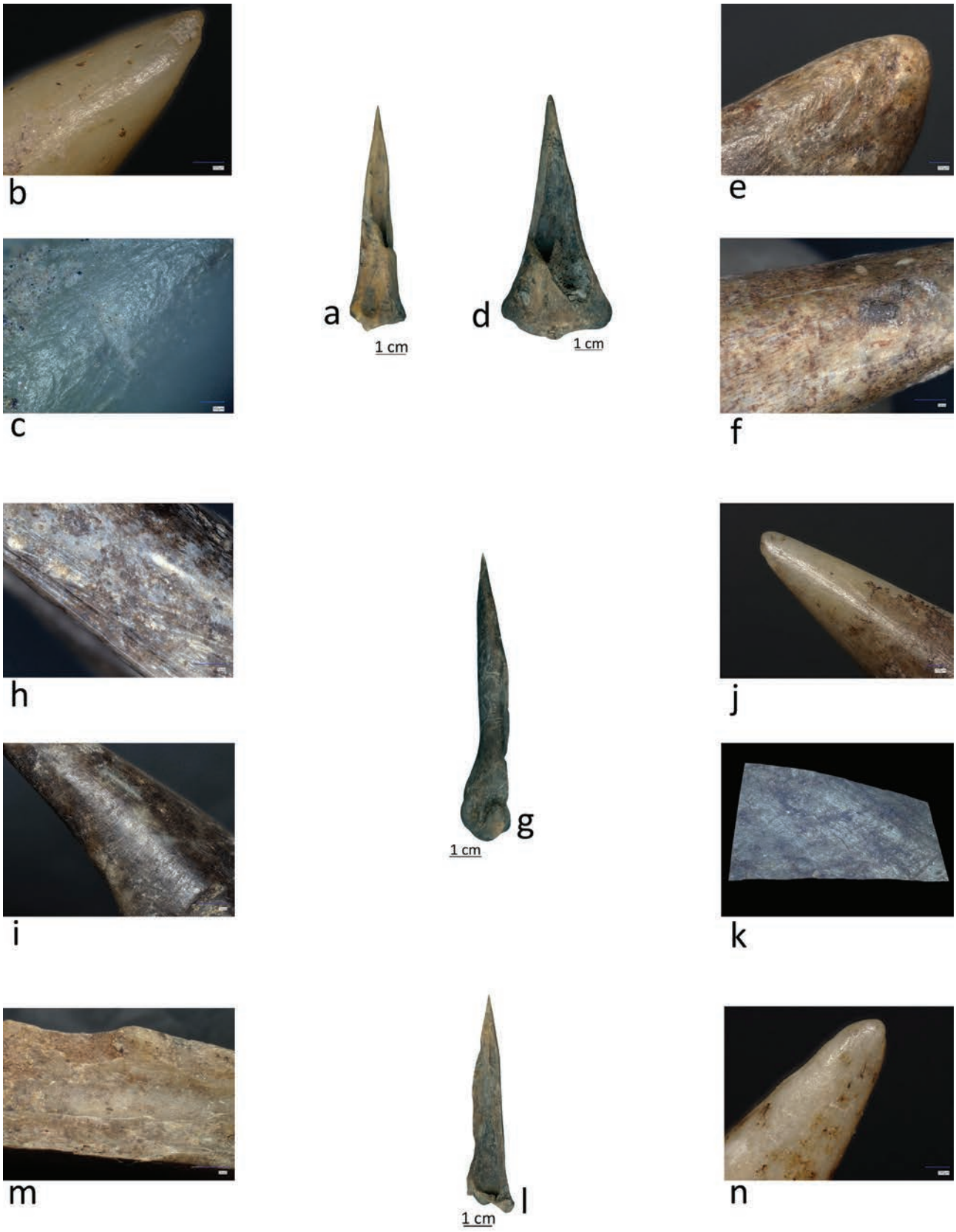


Figure 34. *a, d, g, l. Pointed tools made of bone (Gumelnița culture); b, e, j, n. Active end details; c, k. Use-wear area; f, i. Abrasion marks; h. Grooving marks; m.Percussion marks.*

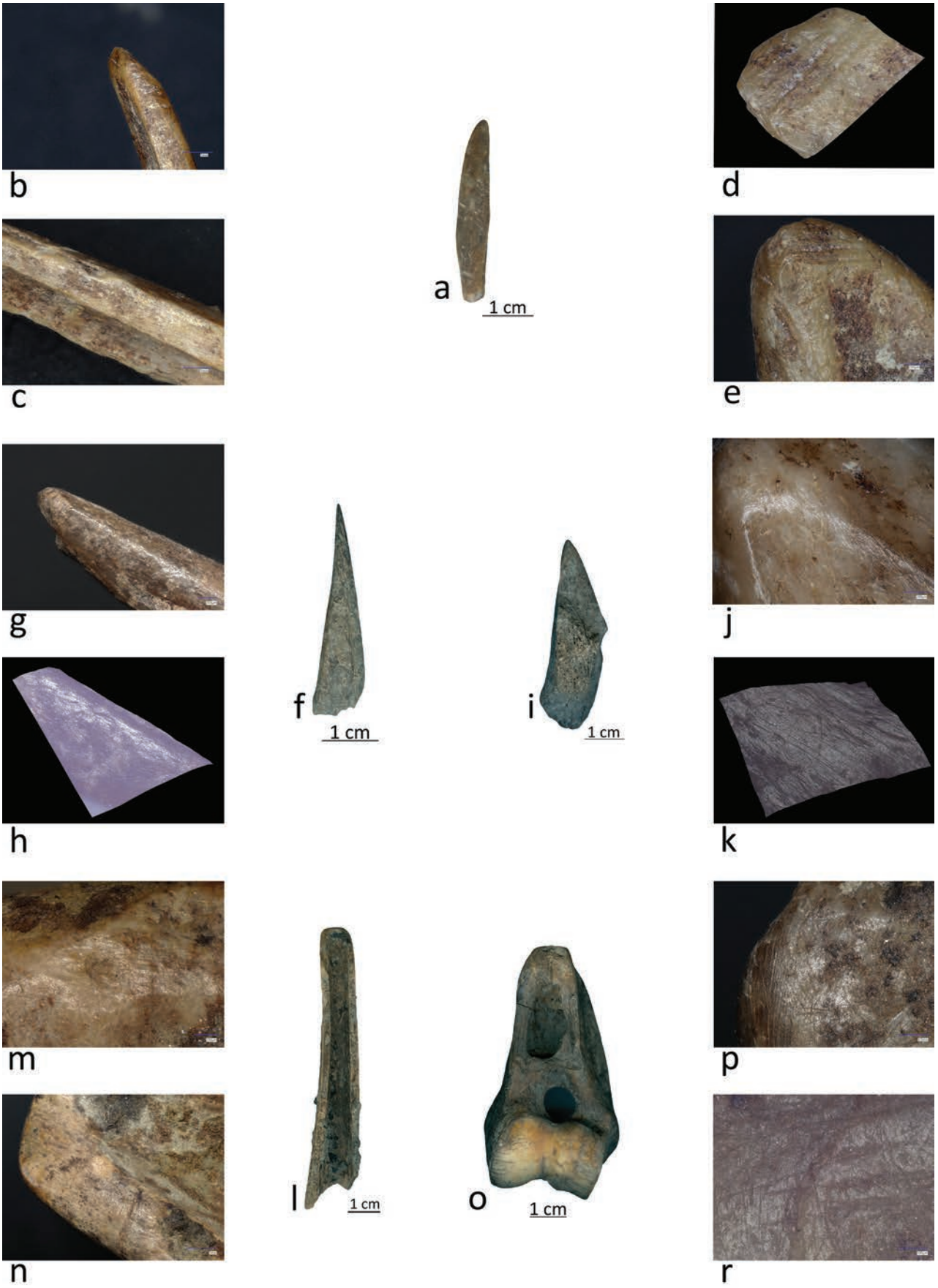


***Figure 35**. a, f, i. Pointed tools made of bone (Gumelnița culture); b, n. Abrasion marks; c. Percussion marks; d, h, j–k, m, r. Use-wear area; e, g, p. Active end details; l, o. Bevelled tools made of bone (Gumelnița culture).*

active end is heavily affected by use. We observe that the abrasion marks are very evident and superimpose areas of polish with longitudinal functional striations (Fig. 35/d–e). It is not excluded that the artifact was resharpened when it became blunted.

A mesial fragment of a pointed tool was crafted from a splinter originating from the diaphyseal wall of a long bone, obtained through successive percussion blows. The debitage edges were not regularized. Only at the distal level was bilateral scraping applied to create the convergence of the edges and a sharp active end. Through the same procedure of successive partitioning, the blank for another point – currently only a distal fragment (Fig. 35/f) – was obtained. In this case as well, the debitage edges were not shaped. Only at the level of the distal portion was abrasion applied around the entire circumference. The tip is rounded, affected by use-wear represented by polish and longitudinal striations (Fig. 35/g–h). A third fragment preserves only the proximo-mesial area. The blank is flat, being a splinter from the diaphyseal wall. We cannot determine the debitage procedures because the entire preserved surface has been shaped.

A small distal fragment was made from a diaphysis transformed into a flat blank. However, we cannot reconstruct the longitudinal debitage procedures. Longitudinal scraping was applied to the edges. The active end is slightly fractured, but we were able to microscopically capture use-wear marks in the form of polish and longitudinal functional striations. Another specimen (Fig. 35/i) also exhibits multiple fractures, such that we cannot reconstruct the debitage procedures. Only at the level of the active end were we able to identify the application of abrasion. In contrast, elements related to the use-wear of the artifact are visible, consisting of macroscopic polish and the development of deep, rather sparse striations, arranged longitudinally in relation to the axis of the artifact (Fig. 35/j–k).

The bevelled tools are represented by ten specimens made on both in-volume and flat blanks. The first category includes a bevelled tool (Fig. 35/l), currently longitudinally fractured. The epiphysis was removed by percussion, without shaping the debitage edge. At the distal level, a percussion was applied after which the debitage edge was shaped by abrasion (Fig. 35/n). The use-wear of the end is evident, exhibiting polish and dense, rather deep longitudinal striations (Fig. 35/m). Another specimen (Fig. 35/o), made from a *Sus* sp. humerus, has a preserved epiphysis. To prepare the active end, percussion was applied obliquely on the segmentation plane. Abrasion is present only at the distal level, on the inferior side. The active end is heavily blunted, with loss of raw material (Fig. 35/p), polish, and long, irregularly arranged striations (Fig. 35/r). It has a length of 73.5 mm, a width of 41 mm, and a thickness of 40.2 mm. In the case of an ulna (Fig. 36/a), the epiphysis was removed by percussion, without shaping the debitage edge. Interventions occurred at the distal level, with bifacial transverse abrasion (Fig. 36/c). Use-wear striations are present, but they are sparse, long, and slightly oblique to the end (Fig. 36/b). The morphometric data are as follows: length – 91 mm, width – 36.4 mm, thickness – 17.2 mm. A second specimen made from an ulna is heavily fractured, with only a distal fragment preserved. The same technological procedures were employed.

One caprine radius (Fig. 36/d) has its epiphysis removed by percussion. At the distal level, an oblique percussion blow was applied, accompanied by the abrasion of the debitage edge. Use-wear is pronounced, with a significant loss of raw material at the median level, creating a concavity covered by polish (Fig. 36/f). The use-wear also consists of rather irregular, deep striations developed on both sides of the end (Fig. 36/e). We can assume that a hard material was processed. The length of the bevelled tool is 68.2 mm, the width is 12.5 mm, and the thickness is 6.4 mm.

Splinters from the diaphyseal wall were also utilized, obtained through successive partitions by percussion, with the edges left in a raw state. In the case of the first specimen (Fig. 36/g), abrasion was applied to the debitage edges and end, at the proximal level. At the distal level, the active end is shaped by bifacial transverse abrasion (Fig. 36/i). The abrasion striations are visible and superimpose a use-wear area with polish and dense, fine longitudinal striations (Fig. 36/h). Evidently, periodic resharpening of the artifact took place. The length of the tool is 56 mm, the width is 25 mm, and the thickness is 7 mm.

A second specimen (Fig. 36/j), fractured proximally, has its debitage edges regularized by abrasion. On the superior side, along a median longitudinal area, abrasion was applied to flatten the convexity of the bone. At the level of the active end, a bifacial transverse groove is evident, suggesting that transverse segmentation was achieved through sawing (Fig. 36/l). The use-wear consists of macroscopic polish and dense longitudinal striations covering the abrasion (Fig. 36/k).

On another specimen (Fig. 36/m), which is multiply fractured, the abrasion applied only at the level of the active end on the inferior side is difficult to distinguish (Fig. 36/o). The active end is heavily affected, with significant losses of raw material that created a concavity at the median level. The surface was covered by use-wear consisting of long, fine striations arranged perpendicularly to the end (Fig. 36/n).

At two other specimens (Fig. 36/p), fractured at the proximal level, shaping by abrasion was applied bifacially only at the level of the active end (Fig. 36/s). The use-wear is pronounced, developing flattened areas with macroscopic polish, alongside dense, fine striations oblique to the end (Fig. 36/r).

Three pieces belong to the category of figurines. The only specimen (Fig. 37/a) that reached the final stage of processing is a prismatic figurine from a *Sus* sp. metapodial. Although characteristic of the Gumelnița culture tradition, it was recovered from an Early Bronze Age pit (Cx29) attributed to the Glina culture, where it most likely represents residual material. Technological interventions

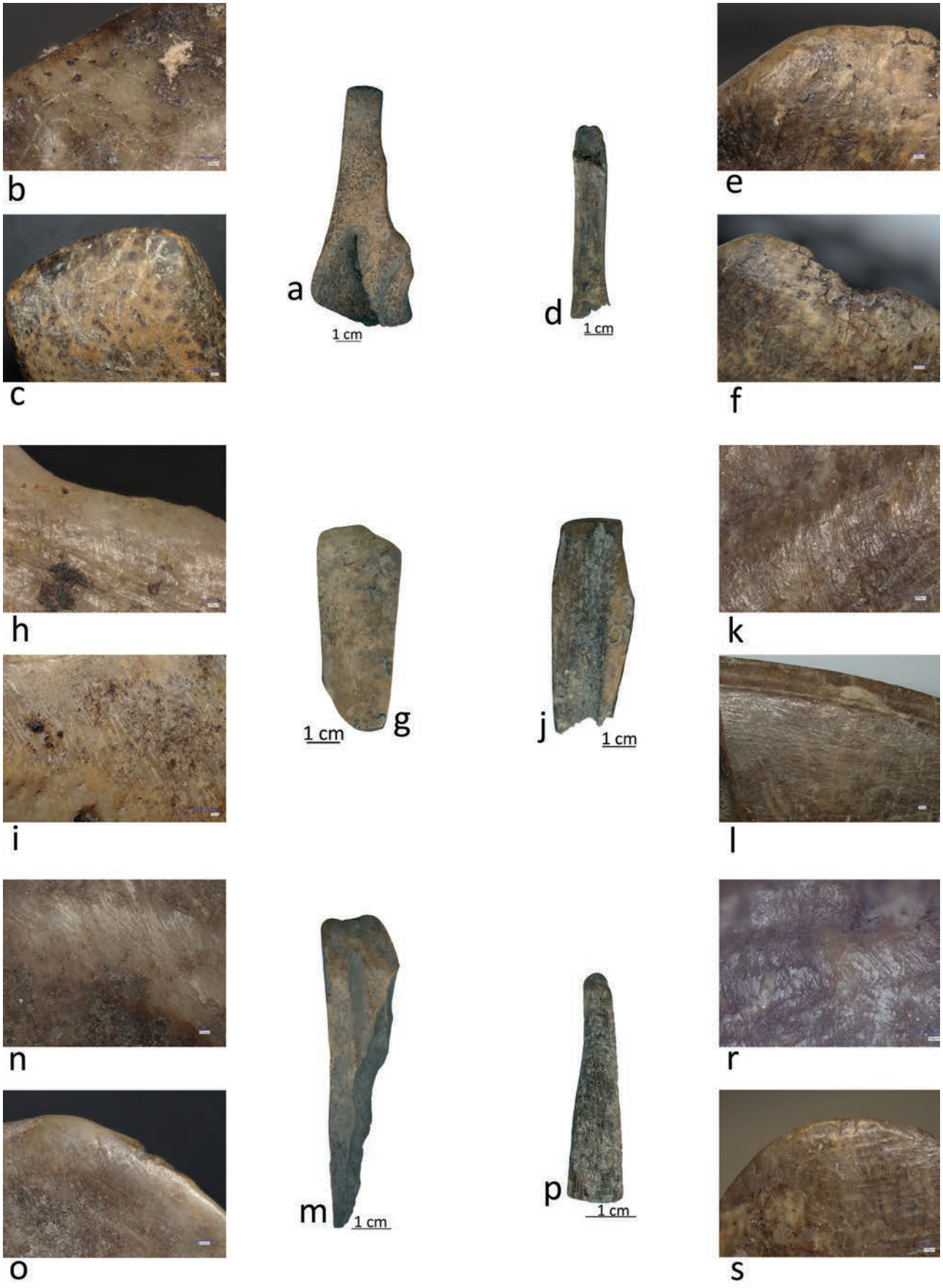


Figure 36. *a, d, g, j, m, p. Bevelled tools made of bone (Gumelnița culture); b, e, h, k, n, r. Use-wear area; c, f, l, o, s. Active end details; i. Abrasion marks.*

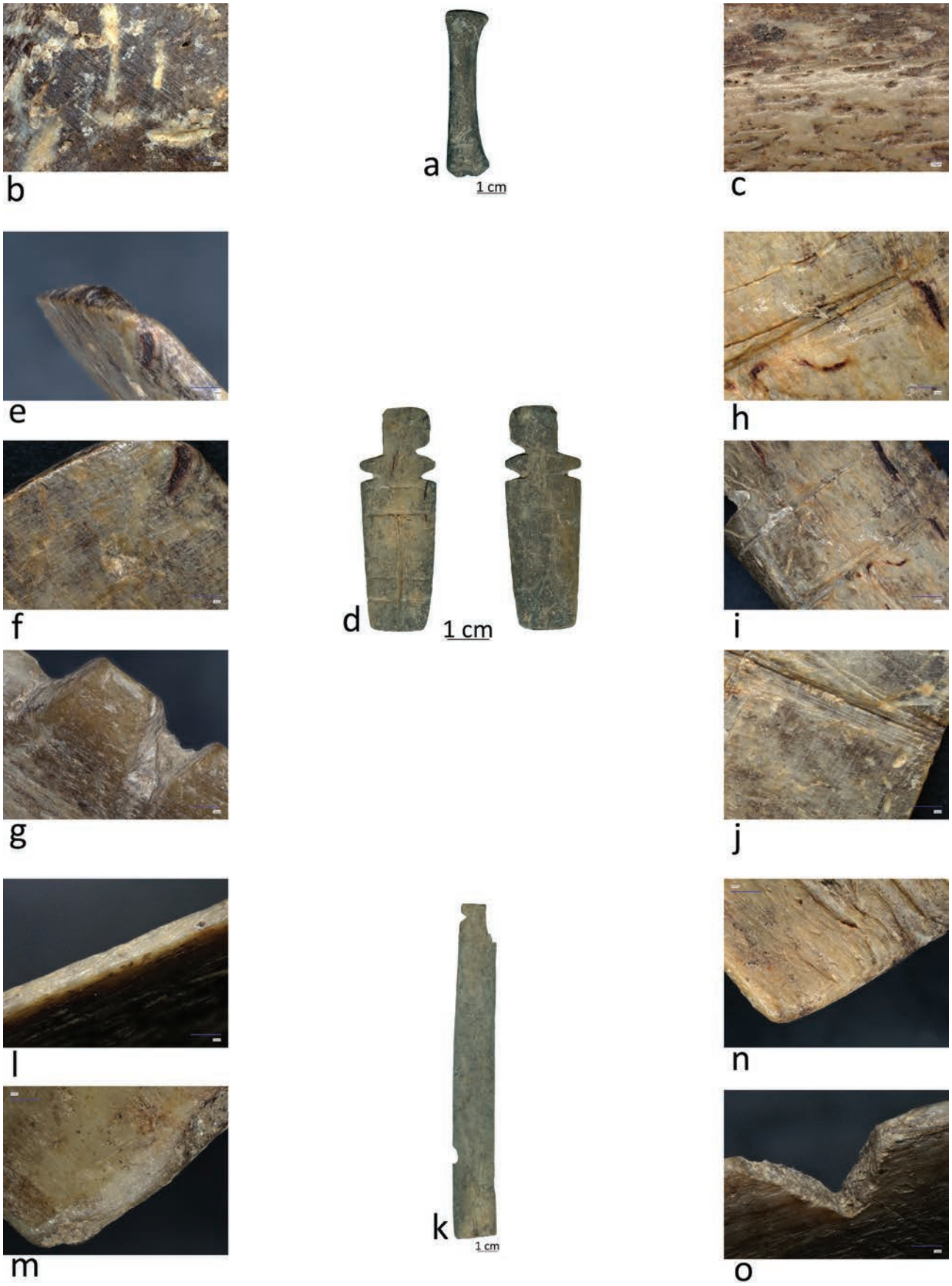


Figure 37. *a. Prismatic bone figurine (Gumelnița culture); b, e–f, n. Abrasion marks; c. Use-wear area; d, k. Flattened bone figurines under processing (Gumelnița culture); g, h–i, o. Sawing marks; j. Grooving marks; l. Scraping marks; m. Sawing marks superimposed by abrasion.*

occurred only at the distal level. The bone was shaped by abrasion (Fig. 37/b), forming three flattened facets that suggest an anthropomorphic head. The distal end was also shaped until it became rectilinear. At the mesial level, the artifact exhibits use-wear characterised by the flattening of the surface and macroscopic polish, resulting from handling (Fig. 37/c). The length of the piece is 58.5 mm, the maximum width is 15 mm, and the maximum thickness is 15.8 mm. The other two pieces are in various stages of processing and were intended to be transformed into flat figurines. For the first specimen (Fig. 37/d), the longitudinal debitage procedures are unknown because the entire contour was shaped by abrasion (Fig. 37/e). The detachment of the head and arms was achieved through alternate bifacial sawing (Fig. 37/g), with visible cutting marks. The entire surface of the artifact, on both sides, was regularized by abrasion (Fig. 37/f). On the superior side, at the level of the pelvis, the creation of specific anatomical elements was initiated, without the process being finalized. In the area of the pubic triangle, two transverse grooves appear (Fig. 37/h). Starting from these, a central longitudinal incision was traced through grooving (Fig. 37/j) to mark the separation of the legs. Lower down, towards the feet, another two transverse grooves are present (Fig. 37/i). The morphometric data are as follows: length – 51 mm, maximum width – 17 mm, maximum thickness – 2 mm. For the second specimen (Fig. 37/k), a large mammal rib was used. The rib was longitudinally bipartitioned most likely by scraping (Fig. 37/l), as the traces of this procedure appear on the debitage edges. Transversally, at both ends, segmentation by sawing was used, superimposed by the abrasion of the debitage edge (Fig. 37/m). The inferior side was rigorously shaped (Fig. 37/n) to eliminate the spongy tissue. The piece is fractured at one end, but it is visible that the procedure for detaching the head had been initiated through alternate cutting by sawing (Fig. 37/o). Its length is 158 mm, maximum width 18 mm, and maximum thickness 1.8 mm.

Three rib fragments were transformed into spatulas. The first two specimens are fractured at the proximal level. For the first spatula (Fig. 38/a), the rib was longitudinally bipartitioned by percussion, without shaping the debitage edges. Only at the level of the active end was a bifacial transverse abrasion applied (Fig. 38/c). This is largely eliminated by the use-wear of the front, which is heavily blunted, exhibiting macroscopic polish and dense, deep longitudinal striations (Fig. 38/b). At the second specimen (Fig. 38/d), the anatomical volume was preserved. To prepare the active end, a percussion blow was applied. The regularization of the debitage edge was carried out only at the level of the active end (Fig. 38/f). The use-wear is localized at the level of the front (Fig. 38/e), demonstrating that the artifact was not used for a long time. The last spatula (Fig. 38/g) preserves a large part of the rib in its anatomical shape, with technical interventions localized at the distal level. At one end, abrasion was applied (Fig. 38/h) to confer a convex morphology. The use-wear is in this case as well localized at the level of the front, consisting of macroscopic polish and the appearance of short, dense striations (Fig. 38/i). The spatula has a length of 154 mm, an average width of 14 mm, and an average thickness of 7.2 mm.

A rib fragment from a large mammal (Fig. 38/j) was processed to be transformed into a perforated plate, though the procedure was not finalized. The rib was longitudinally divided by percussion. One of the debitage edges was not modified, while the other was shaped by abrasion (Fig. 38/k). Transversally, segmentation was applied through sawing with evident technological marks. Centrally, a perforation was created by bifacial rotation (Fig. 38/l). The morphometric data are as follows: length – 26.5 mm, width – 16.5 mm, thickness – 4 mm, perforation diameter – 6 mm.

Three pieces are heavily fractured; thus, we do not know to which typological category they belonged. For the first specimen (Fig. 38/m), a rib originating from a medium-sized mammal was used. The blank is flat, obtained through bipartition in percussion, with unshaped debitage edges. A perforation by bifacial rotation is present (Fig. 38/n). Another rib fragment preserving the anatomical volume has one of the edges abraded until reaching the spongy tissue. For the third fragment (Fig. 38/o), the diaphysis of a long bone was used, longitudinally debited through a quadripartition procedure involving grooving (Fig. 38/p) and percussion. At the distal level, abrasion was applied (Fig. 38/r) around the circumference.

Shell. 11 shell fragments of *Unio* sp. (Fig. 39/a) and three of *Anodonta* sp. (Fig. 39/f) were utilized as scrapers in cleaning activities. In no instance was there any technological intervention; the shell was used in its natural shape. The morphology of the shell allows it to be easily held in the hand. Three use-wear areas, with variable amplitudes and combinations, are visible on these artifacts. The first develops at the ventral end, towards the internal side. The natural ventral edge has a convex and sharp morphology. In contrast, on the archaeological specimens, the contour is linear, with a rounded morphology of the wall and a smooth texture. Under the microscope, the lamellar structure specific to the shell is no longer visible; the end is now wider, exhibiting short, dense striations arranged perpendicularly to the edge (Fig. 39/b–c, g). These marks demonstrate that the ventral end functioned as the active front and was used in a bidirectional rubbing action, which determined the development of functional marks perpendicular to the axis of the artifact. The second use-wear area develops on the internal side. This presents an alternation of nacreous areas and opaque areas (Fig. 39/d, h). We considered this to be the result of a hand-friction process that exfoliated the nacre layer. The third use-wear area is visible on the external side, at the median level. It appears as a flattened surface that led to the alteration of the natural structure of the shell, sometimes with the appearance of small areas with polish (Fig. 39/e).

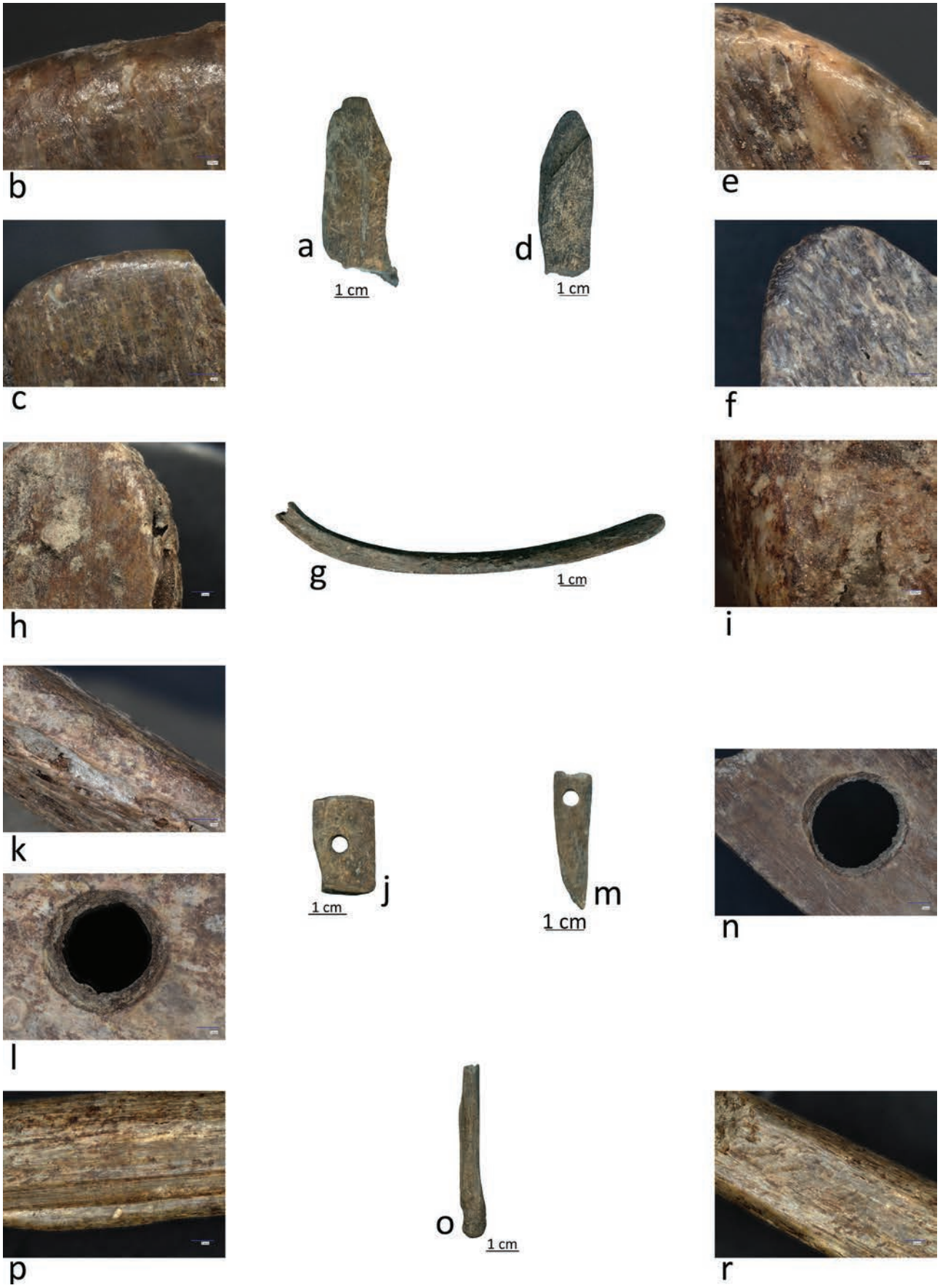


Figure 38. *a, d, g. Spatulas made of bone (Gumelnița culture); b, e, i. Use-wear area; c. Active end detail; f, h, k, r. Abrasion marks; j. Bone plate under processing (Gumelnița culture); l, n. Perforation details; m, o. Undeterminated pieces made of bone (Gumelnița culture); p. Grooving marks.*

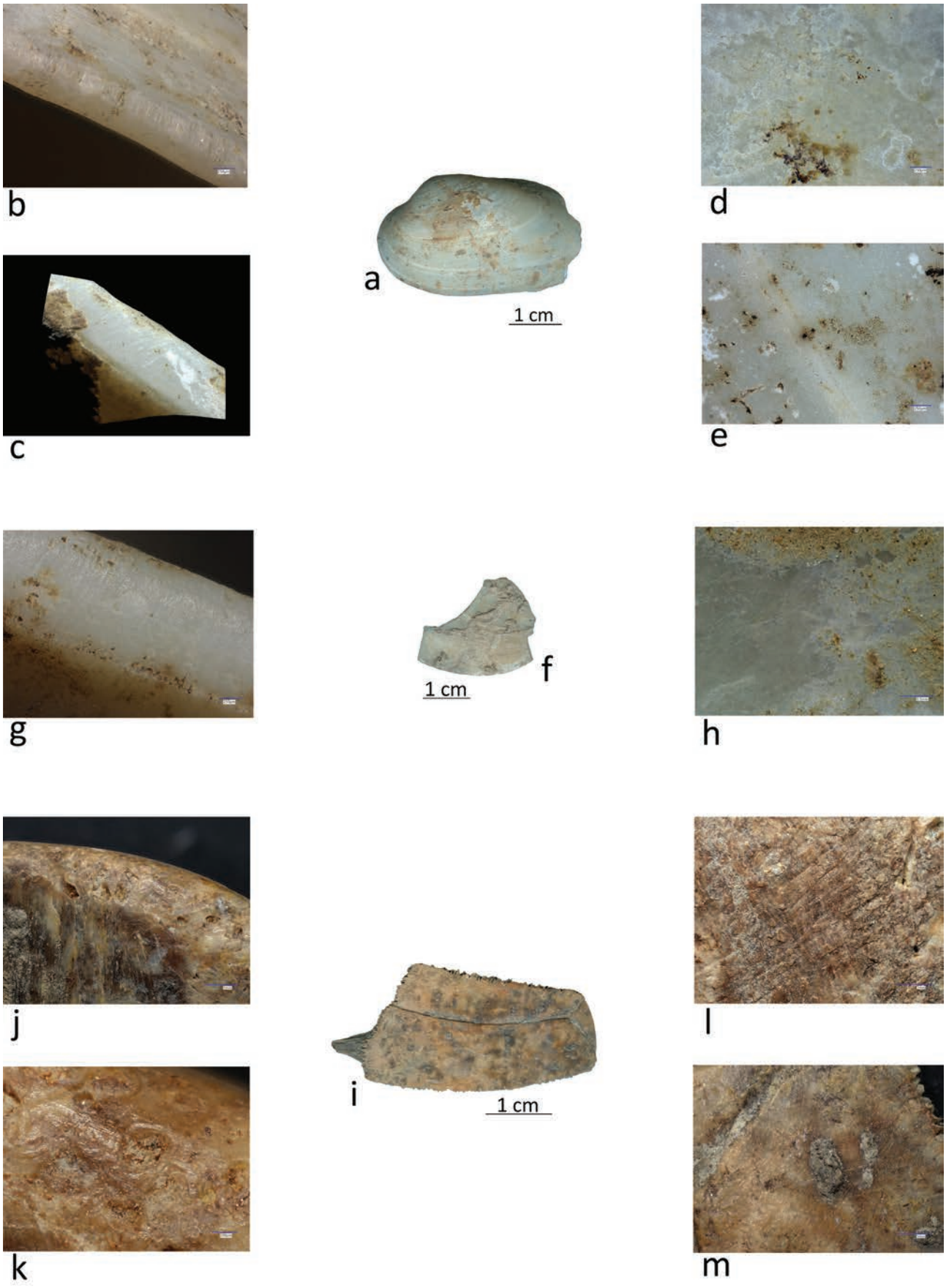


Figure 39. *a, f. Scrapers made of shells (Gumelnița culture), b–c, g. Functional marks at the ventral end; d, h, l. Use-wear at the internal side; e, m. Use-wear at the external side; i. Container made of carapace (Gumelnița culture); j. Abrasion marks; k. Use-wear area.*

Carapace. Four carapace fragments, belonging to *Emys* sp., bear on their surface traces compatible with their use in anthropogenic activities. On one specimen (Fig. 39/i), on the single preserved external edge, the contour was abraded (Fig. 39/j). The specific elements of all these fragments consist of varied traces that support the hypothesis of their use as containers. On the inferior side, at the periphery of the contour, a use-wear area formed, characterised by the rounding of the wall and macroscopic polish (Fig. 39/k), while deep incisions, rather irregular in their arrangement, are present in the interior (Fig. 39/l). On the superior side, the use-wear marks consist of flattened areas with macroscopic polish and irregular *striae* (Fig. 39/m).

8.2.3. Early Bronze Age – Glina culture

Bone. The category of pointed tools is represented by four specimens. One specimen, fractured at the distal level (Fig. 40/a), originates from the diaphysis of a long bone. The blank is flat, obtained through quadripartition by percussion. A large part of the debitage edges remained unshaped. Abrasion (Fig. 40/b) was applied at the level of the distal end and at the meso-distal level, around the entire circumference, to prepare the front. Another pointed tool (Fig. 40/c), a meso-distal fragment, was also obtained through a bone quadripartition procedure, only this time by double grooving (Fig. 40/e). The shaping procedure was applied at the distal level, around the entire circumference. The active end is heavily blunted, acquiring a concave morphology and macroscopic polish (Fig. 40/d).

A splinter (Fig. 40/f) from the diaphyseal wall, obtained through fracturing, was transformed into a pointed tool. The artifact is a meso-distal fragment. Only distally was a bilateral abrasion applied (Fig. 40/h) on the debitage edges and around the circumference, towards the tip. This is heavily rounded, exhibiting a radical modification of the volume, polish, and fine striations (Fig. 40/g). A fragment (Fig. 40/i) from a flat bone, obtained through fracturing by percussion, was prepared only at the distal level through a combination of scraping (Fig. 40/k) and abrasion. The active end is rounded, with functional striations developed longitudinally (Fig. 40/j). It has a length of 72.5 mm, a width of 13 mm, and a thickness of 2.4 mm.

A caprine astragalus (Fig. 40/l) was utilized for a short period of time. On the dorsal side, small flattened areas are present (Fig. 40/m), especially at the level of the protuberances, with specific abrasion striations (Fig. 40/n). The astragalus measures 32 mm in length, 19.2 mm in width, and 19 mm in thickness.

A small bevelled tool (Fig. 40/o) was processed from a diaphysis fragment of a long bone belonging to a large mammal. It is only a fragment of a multiply fractured artifact. The flat blank was obtained through successive partitions, although the specific procedures cannot be identified. On the preserved fragment, both sides were regularized by abrasion (Fig. 40/r). The use-wear is not advanced; however, small areas of polish and flattening had begun to form (Fig. 40/p).

8.2.4. Undetermined contexts

Bone. Five bevelled tools originate from such contexts. For an artifact preserving the anatomical volume (Fig. 41/a), a caprine ulna was used. The epiphysis was removed by percussion, without the regularization of the debitage edge. Only at the distal level was abrasion applied on both sides to create a bevelled-type active end (Fig. 41/c). The front displays evident use-wear, with dense, parallel, and rather deep longitudinal striations (Fig. 41/b). It measures 60 mm in length, 22 mm in width, and 8 mm in thickness.

A caprine tibia (Fig. 41/d) was longitudinally bipartitioned by percussion. The artifact is fractured proximally. The debitage edges were prepared by diffuse percussion, with visible marks (Fig. 41/f). The active end was shaped by bifacial abrasion applied only at the distal level. The abrasion marks are covered by strong polish, with fine and dense longitudinal striations (Fig. 41/e). Evidently, a resharpening process of the active end did not take place, as we observed at other artifacts.

A splinter (Fig. 41/g) was obtained by percussion from a mandible, resulting in a flat blank. The debitage edge was not shaped; only at the end, on both sides, was a transverse abrasion applied (Fig. 41/i) to create a specific active front for a bevelled tool. This end has a denticulated appearance, but with areas of rounding, polish, and fine longitudinal striations (Fig. 41/h). At the median level, on the superior side, the artifact exhibits small areas of polish, flattening, and chaotically arranged fine striations. It measures 63 mm in length, 32 mm in width, and 14 mm in thickness.

The fourth bevelled tool is heavily affected by post-depositional processes. A splinter from the diaphyseal wall was obtained by percussion, with its edges left largely unshaped. At the proximal level, longitudinal scraping was applied to one of the edges to form a sharp proximal end. At the level of the active front, a transverse abrasion was applied bifacially. The end has significant material loss, over which use-wear appears to superimpose. The length of the bevelled tool is 74 mm, the width is 26 mm, and the thickness is 7.5 mm. A fragment (Fig. 41/j) from the diaphysis of a long bone belonging to a large mammal is heavily burnt, with surface deposits that have covered some of the technological marks. The blank is flat, obtained from the diaphyseal wall through successive percussions. Abrasion was applied bifacially (Fig. 41/l) at the distal level and appears to superimpose use-wear areas with evident longitudinal striations (Fig. 41/k). It is clear that the end was reshaped when it became blunted. The morphometric data are as follows: length – 83 mm, width – 22.5 mm, thickness – 11.2 mm.

A caprine astragalus (Fig. 41/m) was intensely utilized. The lateral sides were intensely abraded until the surfaces became perfectly flat (Fig. 41/o). From the dorsal and plantar sides, a perforation was performed by bifacial rotation. The artifact was suspended on a thread,

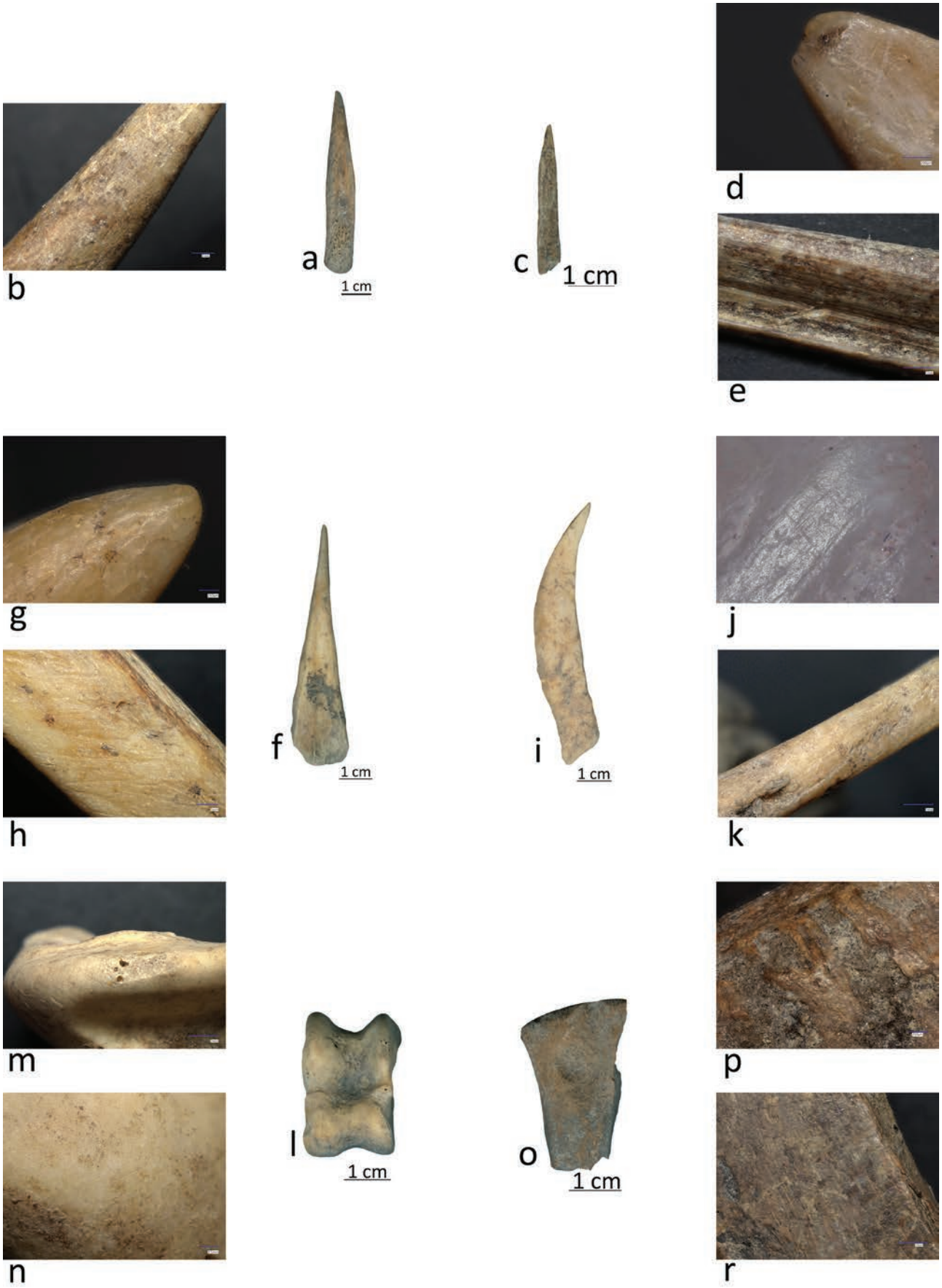


Figure 40. *a, c, f, i. Pointed tools made of bone (Glina culture); b, h, m-n, r. Abrasion marks; d, g, p. Active end details; e. Grooving marks; j. Use-wear area; k. Scraping marks; l. Abraded astragalus (Glina culture); o. Bevelled tool made of bone (Glina culture).*

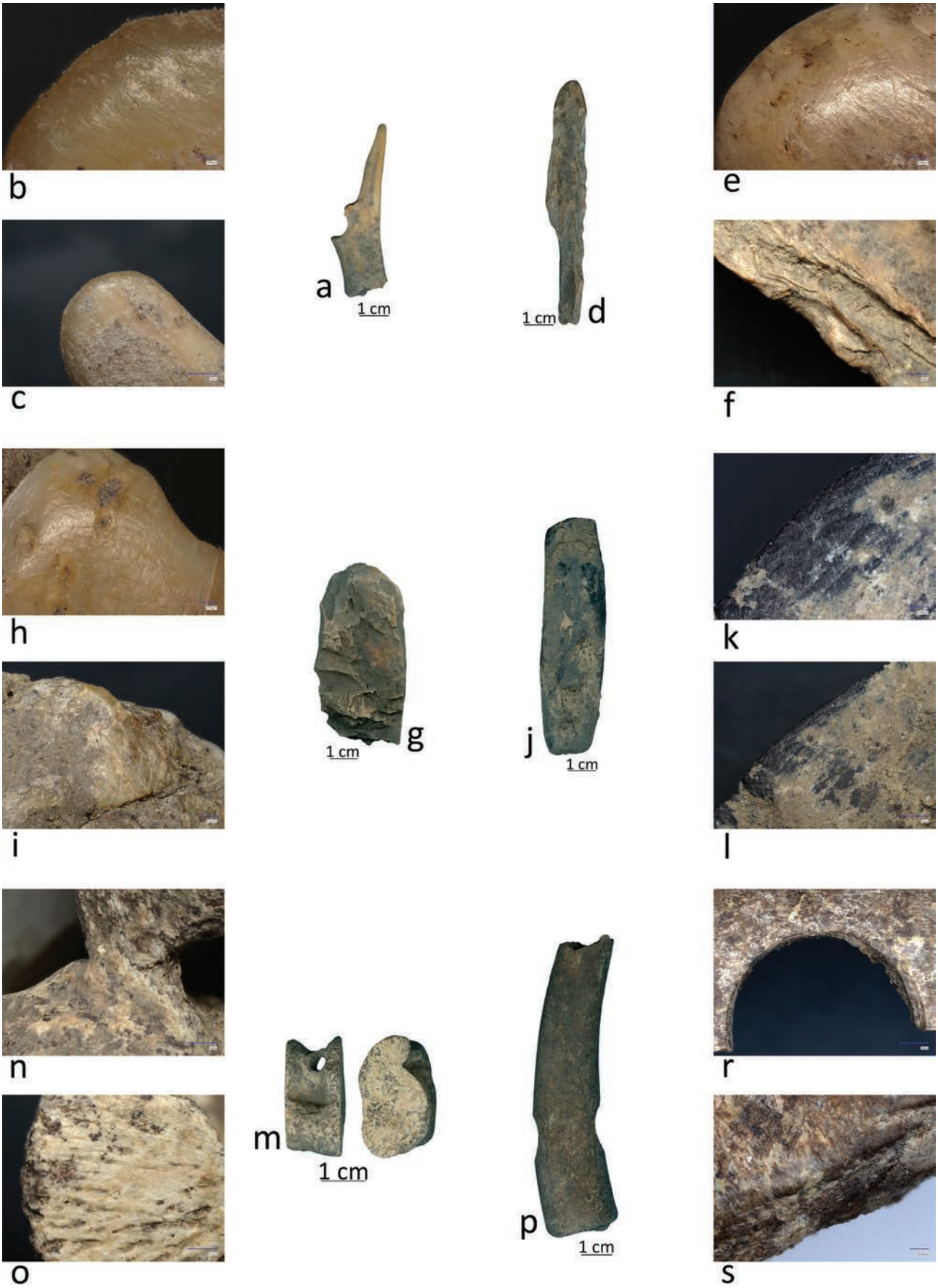


Figure 41. *a, d, g, j. Bevelled tools made of bone (undeterminated context); b, e, h, k. Use-wear area; b, c. Active end detail; f, s. Percussion marks; i, l, o. Abrasion marks; m. Abraded astragalus (undeterminated context); n, r. Perforation details; p. Tool made of antler (undeterminated context).*

as the wall towards the extremity is cracked (Fig. 41/n) as a result of pressure. The length of the astragalus is 28 mm, the width is 13 mm, the thickness is 15 mm, and the perforation diameter is 4 mm.

A pointed tool, currently fractured at the distal level, was made from the diaphyseal wall of a long bone, debited through successive percussion blows. The debitage edges, as well as the proximal end, were shaped by abrasion.

Antler. A red deer antler tine (Fig. 41/p), preserving the anatomical blank, was segmented from the branch by percussion (Fig. 41/s). The artifact is fractured both transversally, at the level of the active end, and longitudinally. At the proximal level, the artifact was provided with a perforation performed by bifacial rotation (Fig. 41/r), which ensured a transverse hafting.

8.2.5. Discussion on osseous industry

*Raw materials***.** Bone represents the dominant raw material in all three analysed cultures, being systematically exploited by utilizing the diaphyses of long bones, as well as flat bones and specific skeletal elements. The Boian culture differs in this respect through the more frequent use of red deer antler, which occurs only occasionally in the analysed assemblages attributed to the other two cultural groups. The Glina culture additionally resorts to the caprine astragalus, utilized without technical modifications, reflecting an opportunistic exploitation of the bone's natural morphology. The Gumelnița culture is distinguished by the broadest spectrum of raw materials, including, besides bone, bivalve shell (*Unio* sp. and *Anodonta* sp.) and tortoise carapace (*Emys* sp.), exploited with a minimum level of technological intervention.

Typological categories. Pointed tools and bevelled tools constitute the typological categories common to all three cultures, representing the functional core of the hard animal material industry and responding to diverse needs for processing raw materials. The Boian culture presents the most restricted typological repertoire, limited to these two categories and a few artifacts of indeterminate function, while the Glina culture adds the use of the astragalus. The Gumelnița culture stands out, once again, through a considerably more diversified typological repertoire that exceeds the strictly utilitarian sphere, including spatulas, perforated plate, shell scrapers, carapace containers, and anthropomorphic figurines. The presence of the latter, in various stages of processing, demonstrates that the bone industry in the Gumelnița culture was not limited to the production of tools but extended into the domain of symbolic expression.

Technology. The comparative analysis of the technical production schemes reveals a technological background common to all three cultures, materialized in the use of the same fundamental longitudinal debitage procedures (percussion and grooving) and the same shaping techniques, namely abrasion and scraping, applied predominantly at the distal level for the preparation of the active end. Differences reside mostly in the level of elaboration of the finished artifacts: the Gumelnița culture tends towards a more systematic regularization of the surfaces, including through the abrasion of the debitage edges and the sides of the artifacts, while in the Boian and Glina cultures, the edges are more frequently kept in a raw state. Sawing represents a technique attested exclusively in the Gumelnița culture, utilized in the processing of figurines and perforated plate, indicating a higher level of technical specialization associated with the production of objects with complex morphology. Additionally, the practice of reshaping worn artifacts, documented for pointed tools and bevelled tools in the Gumelnița culture, demonstrates a more careful management of the toolkit.

Functionality. The use-wear marks identified on the pointed tools from all three cultures (rounding of the active end, macroscopic polish, and longitudinal functional striations) are compatible with their use in processing materials of low/medium hardness, such as hide or vegetal fibres, indicating a common functionality regardless of the culture. The bevelled tools also present a homogeneous use-wear pattern across the three cultures, characterised by significant losses of raw material, a denticulated or concave morphology of the end, and deep striations, suggesting the processing of hard materials, possibly wood or bone. The Gumelnița culture, however, expands the functional spectrum: spatulas and shell scrapers are associated with modelling or smoothing clay-like materials, while carapace containers indicate use in storage or preparation activities. Figurines enter the sphere of symbolic and ritual functionality, a dimension absent in the analysed assemblages for the Boian and Glina cultures. The available data do not, however, allow definitive conclusions regarding the overall picture of these industries due to the small size of the samples, especially concerning the Boian and Glina cultures.

8.3. PERSONAL ADORNMENTS

8.3.1 Early Chalcolithic – Boian culture

In Cx3, attributed to the Boian culture, 79 clay beads exhibiting a biconvex morphology were identified (Fig. 42/a). The lateral edges are convex and convergent, whereas the ends are rectilinear. A central perforation with a cylindrical morphology was created (Fig. 42/b–d). The ends display small concavities with rounded walls (Fig. 42/e–f), resulting from friction against the suspension thread. The morphometric data are included in the Table 6.

Additionally, three cylindrical beads made from *Spondylus* shell are included (Tab. 8; Fig. 42/g, j). They exhibit a circular morphology, a rectangular cross-section, and a central perforation performed by bifacial rotation. The surface of the artifacts has been rigorously abraded (Fig. 42/h, k–l). The perforation displays a slight deformation, characterised by the flattening of the wall, the obliteration of rotation marks, macroscopic polish, and fine striations

No.	Length	Maximum diameter	Perforation diameter
1.	6	4	1.8
2.	6.4	3	1.2
3.	6	3.2	1.8
4.	6.5	3.4	1.3
5.	7.1	3.5	1.4
6.	5	3.5	1.4
7.	5	3.4	1.2
8.	6.2	3.5	1.1
9.	6	3.2	1.1
10.	7	3	1.2
11.	6.5	3	1.1
12.	7	3	1.3
13.	7.2	3.2	1.4
14.	6.8	3.5	1.2
15.	7.4	3.5	1.4
16.	7.4	3	0.8
17.	6	3.2	1.4
18.	8	3.2	1.4
19.	6.5	3.2	1.4
20.	6	3.4	1.4
21.	7	3.5	1.2
22.	6	3.5	1.1
23.	6.5	3.5	1.2
24.	6	3.5	1.1
25.	6	3.6	1.8
26.	5.2	4	1.1
27.	5.2	3	1.1
28.	6	3.2	1.4
29.	6	3.2	1.4
30.	6	3.5	1.6
31.	5.2	3.8	1
32.	6.2	3.2	1
33.	6	3.8	1.5
34.	6	3.5	1.1
35.	7	3.2	1
36.	5.1	4	2
37.	6.2	3.8	1
38.	6.2	3.5	1
39.	6	3.2	1.1
40.	6.5	4	1.1
41.	5.5	3.2	0.9
42.	4.8	3.2	1.6
43.	6.3	3.8	1.1
44.	6	3.5	1.6
45.	6.2	3.8	1.1
46.	5.2	3.5	1.3
47.	5	3.2	0.8
48.	6	3.5	1.2
49.	4.8	3.2	1.1
50.	4.9	3	0.9
51.	4.8	3.1	1.4
52.	4.9	3.4	1.5
53.	5.4	3.2	1.8
54.	4.7	3	1.4
55.	6.2	-	-
56.	7.5	3.1	0.9
57.	6	3.5	1.3
58.	7	3.6	1
59.	6.5	3.2	1.1
60.	6.8	3.2	1.2
61.	6	3.2	1.2
62.	7	3.5	1.4
63.	6	3	1.2
64.	6.2	3.2	1.2
65.	5.2	3.2	1.2
66.	6	3.1	1.2
67.	6	3.5	1.2
68.	5.2	3.2	1
69.	5.5	3.2	1.2
70.	5	3.2	1
71.	5	3	1
72.	5.5	3.2	1.2
73.	6	3.5	1.8
74.	6	3	1.2
75.	6	3	1.4
76.	6	3	1.4
77.	6	3.5	2
78.	5.3	3.2	1.4
79.	4.6	3.2	1.8

Table 6. *Dimensions (in mm) of biconvex beads made of clay.*

Raw material	Processing stage	Typological category	S1A						S1B			TOTAL
			Cx3	Cx4	Cx5	Cx6	Cx12		Cx7	Cx21	Cx46	
			SU2509	SU2516	SU2513	SU2517	SU2565	SU2574	SU2519	SU2554	SU2609	
Clay	Finished piece	Biconvex bead	79									79
Stone	Finished piece	Cylindrical bead		9			2	2		1	3	17
Shell	Finished piece	Cylindrical bead	1			1			1			3
		Pendant				1						1
Bone	Finished piece	Tubular bead	1		1							2
	Preform	Tubular bead		1								1

Table 7. *Stratigraphic distribution of personal adornments at the Glina Tell, depending on the raw materials and typological category (Cx3, Cx6, Cx7 – Boian culture; Cx4, Cx5, Cx12, Cx21, Cx46 – Gumelnița culture).*

oriented perpendicularly to the opening (Fig. 42/i, m). The artifacts present the following dimensions:

No.	Diameter	Thickness	Perforation diameter
1.	4	2	1.2
2.	4	1.2	1.8
3.	4.8	1.4	1.4

Table 8. *Dimensions (in mm) of cylindrical beads made from Spondylus shell.*

A pendant imitating a deer canine was processed from the same type of shell (Fig. 43/a). The debitage procedures used to obtain the blank remain unknown due to interventions during the next stage. The specific shape was created through abrasion (Fig. 43/b). Towards the distal end, a perforation was created by bifacial rotation (Fig. 43/d). The perforation exhibits a small use-wear area towards the distal side which corresponds to a minor fracture at the end (Fig. 43/c). It is highly probable that this represents the pressure area of the suspension thread. One of the sides is intensely flattened and displays macroscopic polish (Fig. 43/e), functioning as the friction surface against the skin or clothing. The morphometric data are as follows: length – 16.5 mm, maximum width – 5.8 mm, maximum thickness – 3 mm, perforation diameter – 2.1 mm.

A tubular bead made from the bone diaphysis of a small-sized mammal, was also recovered. It presents multiple surface deposits; thus, specific technological traces cannot be identified. However, it can be stated that the artifact was obtained by preserving the anatomical volume of the bone through the segmentation of the diaphyseal wall. The medullary canal was utilized, rendering a perforation stage unnecessary.

8.3.2. Middle Chalcolithic – Gumelnița culture

In Gumelnița contexts, 16 cylindrical black stone beads are present (Tab. 9; Fig. 43/f), featuring a rectangular cross-section and parallel rectilinear edges. Centrally, a perforation was performed by bifacial rotation. The surface of the artifacts was rigorously abraded (Fig. 43/g–i) to achieve the desired shape and dimensions. At the level of the perforations, small deformation areas are evident, characterised by the obliteration of rotation marks and the flattening of the wall (Fig. 43/j–k), alongside fine, dense striations arranged obliquely to the opening (Fig. 43/l). The morphometric data are presented in Table 9.

No.	Diameter	Thickness	Perforation diameter
1.	3.5	1.2	1.3
2.	3.6	1.2	1.6
3.	3.8	1.2	1.2
4.	3.8	2	1.8
5.	4	1.2	1.8
6.	4	2	2.6
7.	4.2	1.1	1.4
8.	4.5	2	2
9.	5	1.4	2
10.	5	1.6	2.2
11.	5	1.6	2.8
12.	5	2	1.8
13.	5	2	1.8
14.	5	2.2	1.4
15.	5	2.2	2.8
16.	5.2	1.8	2.2

Table 9. *Dimensions (in mm) of cylindrical beads made of stone.*

A bead with circular morphology was most likely made of clay (Fig. 44/a). It has one flattened side, and the other has converging convex edges (Fig. 44/b). A cylindrical perforation was made in the center (Fig. 44/c). Its diameter is 6.5 mm, its thickness is 2.6 mm, and the diameter of the perforation is 1.3 mm.

The tubular beads were obtained from the diaphyses of long bones (Fig. 44/d) from small mammals. The finished

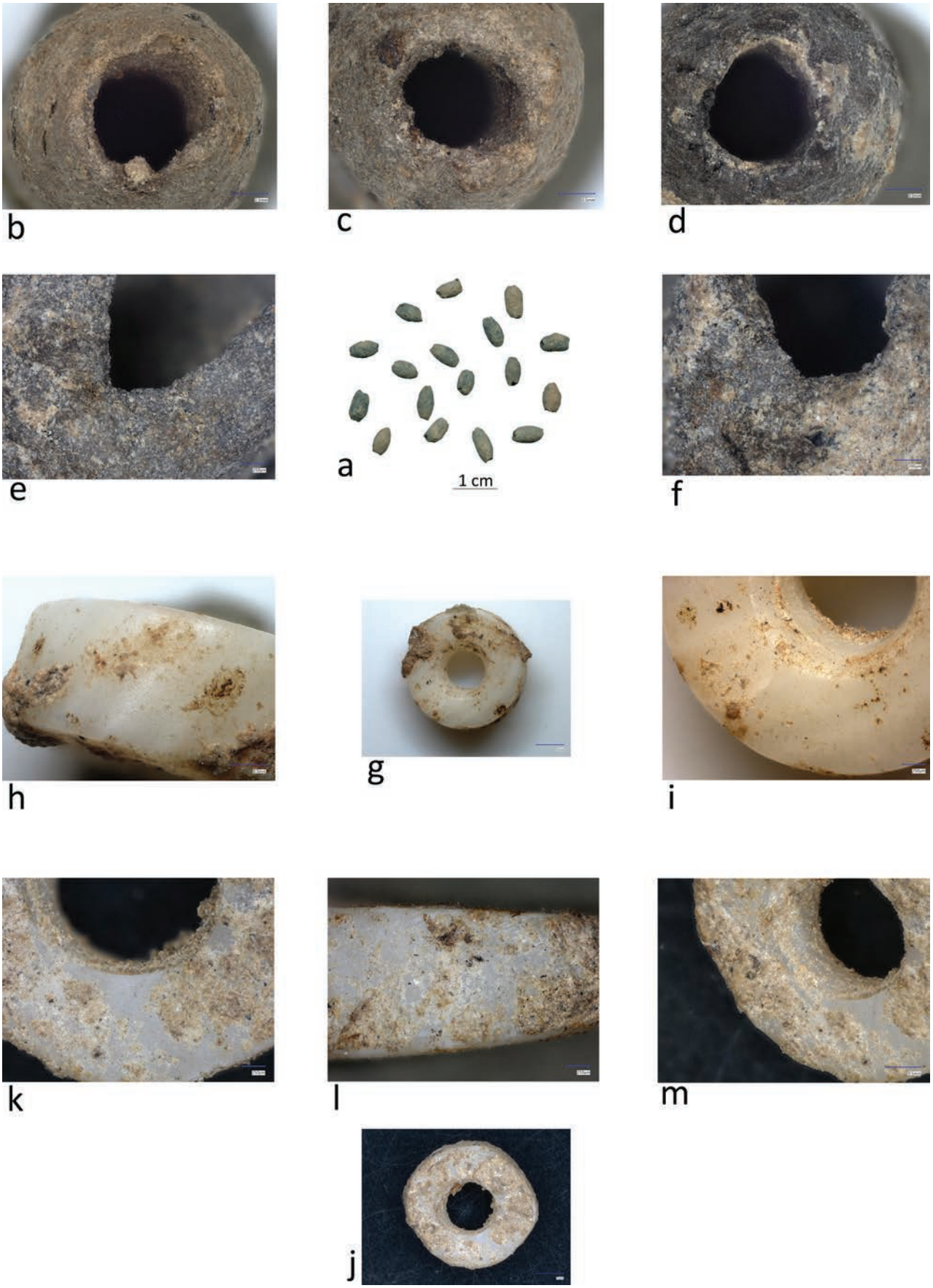


Figure 42. *a. Beads made of clay (Boian culture); b–d. Perforation details; e–f. Perforation deformation; g, j. Beads made of Spondylus shell (Boian culture); h, k–l. Surface details; i, m. Use-wear at the perforation level.*

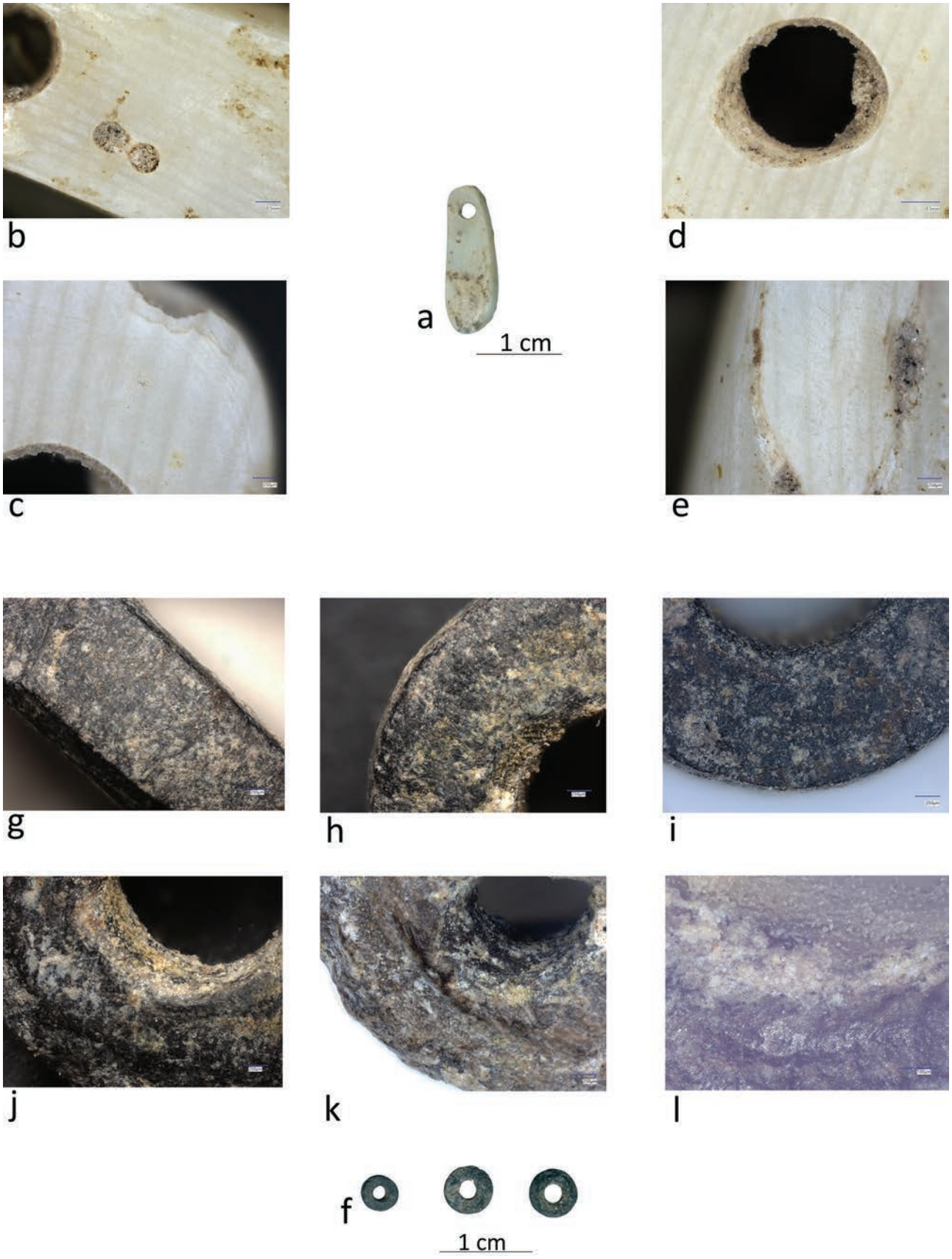


Figure 43. *a. Pendant made of Spondylus shell (Boian culture); b, g–i. Surface details; c, e. Use-wear area; d. Perforation detail; f. Beads made of stone (Gumelnița culture); j–l. Use-wear at the perforation level.*



Figure 44. *a. Bead made of clay (Gumelnița culture); b. Surface detail; c. Perforation detail; d. Bead made of bone (Gumelnița culture); e, i–j. Sawing marks; f. Abrasion marks; g. Use-wear at the end; h. Bone preform (Gumelnița culture).*

piece was made by segmenting the diaphyses at both ends by sawing (Fig. 44/e), followed by the rigorous shaping of the segmentation edge (Fig. 44/f). There was no need for a perforation process, as the medullary canal of the bone was utilised. The piece shows use-wear at the periphery of the end, consisting of rounding of the wall, macroscopic lustre and fine striations arranged perpendicularly to the end (Fig. 44/g). An additional specimen (Fig. 44/h) appears to still be under processing. The marks of the sawing used in the debitage operation are very clearly visible (Fig. 44/i–j). However, the segmentation edge was not shaped. The dimensions of these pieces are provided in Table 10.

No.	Length	Diameter	Perforation diameter
1.	14.5	2.8	1.3
2.	10.2	3.2	1.8

Table 10. *Dimensions (in mm) of tubular beads made of bone.*

8.3.3. Discussion on personal adornments

The comparative analysis of the personal adornments from the Boian and Gumelnița cultures reveals both similarities and differences that reflect distinct techno-cultural traditions. Typologically, both cultures utilized tubular bone beads and clay beads, demonstrating the continuity of shared traditions. However, differences reside in the variety of shapes and raw materials: the Boian culture is distinguished by a more pronounced typological diversity, including the cylindrical *Spondylus* beads and the pendant imitating a deer canine, artifacts with an evident prestige value that indicate the existence of exchange networks. Conversely, the Gumelnița culture introduces cylindrical stone beads as a distinctive element, reflecting local adaptations in the procurement of raw materials. Technologically, both cultures employed similar techniques: bone segmentation by sawing, rigorous surface abrasion, and bifacial perforation. From a functional perspective, the use-wear traces identified on the artifacts of both cultures (flattening of the perforation walls, macroscopic polish, and fine striations) confirm that all analysed categories were utilized as personal adornments, worn as pendants or necklaces.

8.4. CLAY REPRESENTATIONS

During the 2025 excavations at the Glina Tell settlement, five clay representations were identified in SI (Tab. 11; Fig. 45). The artifacts were subjected to macroscopic examination, in order to determine their morphological and technological characteristics.

Two zoomorphic figurines (Fig. 45/1–2) were identified in contexts dated to Gumelnița period (features Cx18 and 20). The first figurine was made of semi-fine clay paste, with grog added as temper, while the other was made of fine clay paste, without added temper. The surface treatment was done by smoothing. Regarding the firing technique, the zoomorphic figurines were burnt in an oxidising atmosphere. The anatomical features are schematically represented, through a perforation which described the nose of one of the figurines (2). The other artefact (1) is perforated obliquely in opposite directions, from head to bottom. Additionally, use-wear traces were observed on the feet of the first figurine (1), while the second (2) has the legs fractured in antiquity and only one preserved horn.

In feature Cx4 (dated to Gumelnița period) and Cx6 (dated to the Boian period) two miniature leg fragments were discovered (4, 3), made of semi-fine clay paste, without added temper (Fig. 45/3–4). The surface treatment was done by smoothing. Regarding the firing technique, the artifacts were made in an incompletely oxidising atmosphere. Feature Cx4 yielded a fragmented miniature chair (5), made of fine clay paste, without added temper (Fig. 45/5). The surfaces were smoothed. Firing was conducted under reducing conditions. After macroscopic examination, the exterior edges of the clay object are eroded, due to secondary deposition. It can be observed that the clay representation has a perforation in the middle of the area where the leg should be.

The zoomorphic figurines represent quadrupeds specific to the Gumelnița culture, with little emphasis on anatomical details. The first one, schematically modelled with two perforations, resembles those identified in other Gumelnița archaeological contexts (Sultana – *Malu Roșu*, Gumelnița, Căscioarele, Geangoiești, Vidra) (Marinescu-Bîlcu, Ionescu 1967, p. 37, Pl. XII; Ilie, Dumitru 2014, Pl. III/3; Andreescu, Vintilă 2017, p. 120, Pl. IV). The second specimen has a long body, with the legs anciently fractured and a single preserved horn. The miniature chair resembles those identified in other tell settlements such as Sultana – *Malu Roșu,* Gumelnița, Vidra, Căscioarele, Cunești (Andrieșescu 1924; Comșa 1980; Dumitrescu 1925; Rosetti 1938; Ștefan 1925; Ștefan 2011).

8.5. METAL ITEMS

Metal artifacts were identified in areas SI-A and SI-B. A particularly significant artifact, consisting of a double-spiral (double volute) pin, was identified in feature Cx20, interpreted as a dwelling dated to the Gumelnița

No.	Type	Context	Measurements	in text
1	Zoomorphic figurine	SI-C, □ C7, SU 2543, 62381, ID 17, reg. no. 31.	L=5,7 cm/D=1,7 cm	1
2	Zoomorphic figurine	SI-B, B9, Feature Cx20, SU 2552, 61991, reg. no. 36	L=6,2 cm; l=2,5 cm	2
3	Miniature leg fragment	SI-A, □ A1, Feature Cx6, SU 2515, reg. no. 32	L=3 cm/H=2,5 cm; T=1,4 cm	3
4	Miniature leg fragment	SI-A, Feature Cx4, SU 2516	L=1,9 cm; T=1,4 cm	4
5	Miniature chair fragment	SI-A, Feature Cx4, SU 2516	L=3,4 cm; l=3,1 cm	5

Table 11. *The list of clay representations found at Glina Tell in 2025.*



Figure 45. *Clay representations found at Glina Tell, 2025 campaign: zoomorphic figurines (1–2); miniature leg fragments (3–4); miniature chair fragment (5).*

period, located in the south-eastern part of trench SI-B. This feature also yielded numerous ceramic fragments, animal bones, hearth fragments and charcoal (see above).

As part of a common ornament category specific to Kodžadermen–Gumelniţa–Karanovo VI cultural complex, the artifact is characterised by two volute spirals and a circular cross-section at the distal end, which tapers to a pointed tip. The object is completely preserved (Fig. 46/1). Such artifacts are found predominantly in settlements, as isolated finds, or as part of deposits (*e.g.*



Figure 46. *Metal items found at Glina Tell during the 2025 fieldworks: double volute pin (1); awl fragment (2); fragments (3–4).*

No.	Type	Site	Year	Context	Measurements	in text	Results of XRF analyses (%)				
							Cu	Sn	Ni	Fe	Pb
1	Double volute pin	Glina	2025	SI-B, □ B9, Feature Cx20, SU2552, 62091, ID 19, reg. no. 34.	L = 9,6 cm	1	93.98	n.d.	0.85	4.54	n.d.
2	Awl fragment	Glina	2025	SI-A, □ A7, SU2526, 62171, ID 23, reg. no. 39	L = 2,9 cm	2	88.49	n.d.	0.65	10.34	n.d.
3	Fragment	Glina	2025	SI-B, □ B4, Feature Cx46, SU2609, reg. no. 63.		3	81.65	n.d.	0.57	17.67	n.d.
4	Fragment	Glina	2025	SI-B, □ B4, Feature Cx46, SU2609, reg. no. 65.		4	91.01	4.26	1.81	1.47	0.59

Table 12. *The list of metal objects found at Glina Tell in 2025, their archaeological contexts, measurements and chemical composition by XRF (nd = not detected).*

Căscioarele – *Ostrovel*, Gărăgău, Geangoiești, Gumelnița, Jilava, Morteni, Pietrele, Sărulești, Teiu, Vărăști settlement, Vidra, Ruse, Găbarevo, Karanovo, Popovo, Dolen Čiflik, Čatalka, Teliš, Zavet, Goljamo Delčevo, and Varna necropolises) (Bem 2000, p. 155–179; Ilie, Neaga 2010, p. 79–97; Comșa 1965; 1978, p. 113, fig. 4 (12); Darie, Georgescu 2017, p. 56–77; Todorova, Vajsov 2001).

Another awl fragment (2) was found in SU2526; this represents a common morphological category found within KGK VI area (Fig. 46/2). Two fragmented objects (3, 4) were

found in feature Cx46, alongside animal bones, adobe fragments, flint, shells, snail and bone tools (Fig. 46/3–4).

The metal objects are currently undergoing restoration at the National History Museum of Romania. Before the restoration process, the items were analysed using XRF method by Dragoș-Alexandru Mirea at the Bucharest Municipality Museum Laboratory with a handheld Skyray Instruments Genius spectrometer. The results indicate copper as the main constituent element, with values between 81–93% and high values of iron, which may indicate the composition of the artifacts' exterior surface due to soil deposition (Tab. 12).

To conclude, it should be noted that the objects found during the 1926–1927 and 1943 excavations at Glina (*e.g*. flat axe, awls, rings, pins, flat bone figurine with copper ornaments) were published in the archaeological reports and studies (Nestor 1928, p. 123–124, 129; Petrescu-Dîmboviţa 1944, p. 69; Mareș 2002) and a series of them were subjected to the chemical analyses performed by S. Junghans, E. Sangmeister, and M. Schröder in the 1960s (Junghans *et alii* 1968, p. 238–239). The spectral analyses demonstrated the presence of native copper with minor elements such as silver, nickel, iron, and lead (Mareș 2002, p. 80). Recent studies adopt a techno-morphological approach, corroborated by XRF analysis, as presented by C.E. Ștefan (2016, p. 233–239; 2022a, p. 23–37) in relation to finds from National Museum of Antiquities. Among these is the assemblage of ornaments from Grave no. 6 at Glina, comprising 158 items (23 cylindrical copper beads and 135 pieces made of *Spondylus*, *Dentalium*, limonite, marlstone, and limestone) (Ștefan 2022a, p. 30).

8.6. ARCHAEOZOOLOGY

The studied faunal assemblage comprises 2,201 remains originating from various types of archaeological features (pits, foundation trenches, and dwellings), as well as from cultural layers associated with the Boian culture (Vidra phase), the Gumelnița culture (A2 phase), and the Glina culture. An archaeozoological study of the fauna from the Glina level (approximately 1,500 remains) was carried out nearly 30 years ago (Haimovici 1997); however, given the preliminary nature of that analysis, we did not consider it appropriate to make comparisons with it. Faunal remains from various classes of animals have been identified, including molluscs, fish, reptiles, birds and mammals (Fig. 51), the latter representing the most numerous category.

The taxonomic identification of the faunal remains, especially the mammal bones, was carried out using the reference collection (comparative anatomy) of the Archaeozoology Laboratory of the "Vasile Pârvan" Institute of Archaeologyof the Romanian Academy. Additionally, methodological works by Silver (1969), Schmid (1972) and Barone (1986) were consulted. The distinction between sheep and goat was made based on the postcranial skeleton following the criteria of Boessneck (1969) and Zeder and Lapham (2010). For age-at-death estimations, several works were used: Schmid (1972) for dental eruption; Ducos (1968) and Grant (1982) for cattle dental wear; Horard-Herbin (1997) for pigs and Payne (1973), Zeder and Pilaar (2010) for caprines. For correlating dental/skeletal ages with biological ages, the work of Udrescu *et alii* (1999) was used. Measurements of faunal remains were taken using callipers with a precision of 0.1 mm, following the recommendations of von den Driesch (1976). Withers height for sheep and pigs was calculated using Teichert's (Udrescu *et alii* 1999, p. 89, 97) indices. In the following sections, the faunal material will be presented according to their succesive cultural levels, from the earliest (Boian culture) to the most recent (Glina culture).

8.6.1. Early Chalcolithic – Boian culture

The Boian culture is poorly represented in the faunal assemblage, with only 294 remains recovered (Tab. 13). The fauna originates exclusively from archaeological features (Cx) such as pits (Cx3, 6, 7, 8) and trenches (Cx23). The richest feature is Cx6, from which 159 remains were recovered (54.1% of the total). Mammal remains predominate (92.9%), followed by birds (1.4%), molluscs (3.7%), fish (1%), and reptiles (1%).

Mollusca. The remains of gastropods and bivalves are relatively few (n=19). The terrestrial snail *Helix* sp. and the aquatic snail *Viviparus* sp. were identified. Among bivalves, fragments of valves belonging to the river mussel *Unio* sp. and the lake mussel *Anodonta* sp. predominate.

Pisces. Only three remains were identified, two of which belong to a single pike individual (*Esox lucius*), with an estimated total length of 0.49 m and a weight of 0.8 kg.

Reptilia. Three fragments of carapace belong to the aquatic turtle *Emys orbicularis*. One of these shows a polished distal edge, probably resulting from processing the carapace for use as a container.

Aves. Only four diaphysis fragments were identified, belonging to small-sized birds, whose species could not be established.

Mammalia. Within the mammal assemblage, only 119 remains (43.6%) were taxonomically identified, weighing 1,239 g (75.3%). The list of identified species is relatively short, including both domestic species (cattle, sheep, goat, dog) and wild species (red deer, roe deer, wildcat, and hare) (Tab. 13). A number of suid remains could not be precisely identified and are therefore included under *Sus domesticus/ Sus scrofa* (*Sus* sp.). Despite the small faunal sample, a brief characterisation of the animal economy can be made. Domestic animals dominate in terms of number of remains (79.8%). Among these, cattle (35.3%) slightly exceed caprines (34.5%), followed by pigs (7.6%) and dogs (2.5%). Game represents 16.8%, more than half of which is hare (10.9%), followed by cervids (2.5% each). By weight, large species dominate: cattle (61.3%), followed by caprines (11.2%), pigs (5.2%), and dogs (1.3%). Among wild species (16.2%),

Section	**SI-A**	**SI-A**	**SI-A**	**SI-B**	**SI-B**	**SI-A**	**SI-A**	**TOTAL N**	**%**	**TOTAL W**	**%**	**TOTAL MNI**	**%**
Feature	**Cx3**	**Cx6**	**Cx6**	**Cx7**	**Cx8**	**Cx23**	**Cx23**						
Species/SU	**2509**	**2515**	**2517**	**2519**	**2521**	**2527**	**2534**						
Anodonta sp.	1	1						2		0.8			
Unio tumidus								0		0			
Unio sp.	2	2	2					6		4.8			
Helix sp.		1						1		1			
Viviparus sp.		2						2		0.9			
Total Mollusca	**3**	**6**	**2**					**11**		**7.5**			
Esox lucius				2				2		0.7			
Pisces undetermined				1				1		0.3			
Total Pisces				**3**				**3**		**1**			
Reptilia (*Emys orbicularis*)	**1**	**1**		**1**				**3**		**2.7**			
Aves		**2**	**2**					**4**		**1.6**			
Bos taurus	7	26	3	2		1	3	42	35.3	760	61.3	2	12.5
Ovis/Capra	1	9	3	13	1	9	3	39	32.8	106	8.6	1	6.3
Ovis aries				1				1	0.8	20	1.6	1	6.3
Capra hircus		1						1	0.8	13	1.0	1	6.3
Sus domesticus	2	3		3	1			9	7.6	64	5.2	2	12.5
Canis familiaris		1		1			1	3	2.5	16	1.3	1	6.3
Cervus elaphus	1	1					1	3	2.5	54	4.4	1	6.3
Capreolus capreolus	3							3	2.5	98	7.9	2	12.5
Felis sylvestris		1						1	0.8	2	0.2	1	6.3
Lepus europaeus	4	6		2			1	13	10.9	47	3.8	3	18.8
Sus domesticus/ Sus scrofa		4						4	3.4	59	4.8	1	6.3
Total identified	**18**	**52**	**6**	**22**	**2**	**10**	**9**	**119**	**100**	**1239**	**100**	**16**	**100**
undetermined large-sized	3	32	5	4		4	5	53		273			
undetermined medium-sized	7	46	5	23	4	9	7	101		134			
Total mammals	**28**	**130**	**16**	**49**	**6**	**23**	**21**	**273**		**1646**			
Total fauna	**32**	**139**	**20**	**53**	**6**	**23**	**21**	**294**		**1658.8**			

Table 13. *The numerical and percentage distribution of the number of remains (N), weight (W), and minimum number of individuals (MNI) of the fauna identified in the features of the Boian culture.*

roe deer dominate (7.9%), followed by red deer (4.4%) and hare (3.8%) (Fig. 47; Tab. 13).

The estimation of the minimum number of individuals (MNI) was carried out despite the small size of the faunal sample (Fig. 47; Tab. 13). Thus, cattle are represented by one juvenile (6–18 months) and one adult (4–9 years), both identified based on dentition; sheep and goat are each represented by one subadult/adult individual (distally fused metapodials), to which is added one juvenile caprine of indeterminate species (unfused scapula); pigs are attested by one individual aged 10–12 months and one male aged 12–18 months (identified based on dentition); the dog is represented by one subadult/adult individual.

Wild taxa exhibit a relatively high proportion based on MNI (43.5%), likely due to the small sample size, which tends to overestimate poorly represented species. Thus, the hare is the most numerous species, with three individuals (one juvenile – proximal unfused radius and two

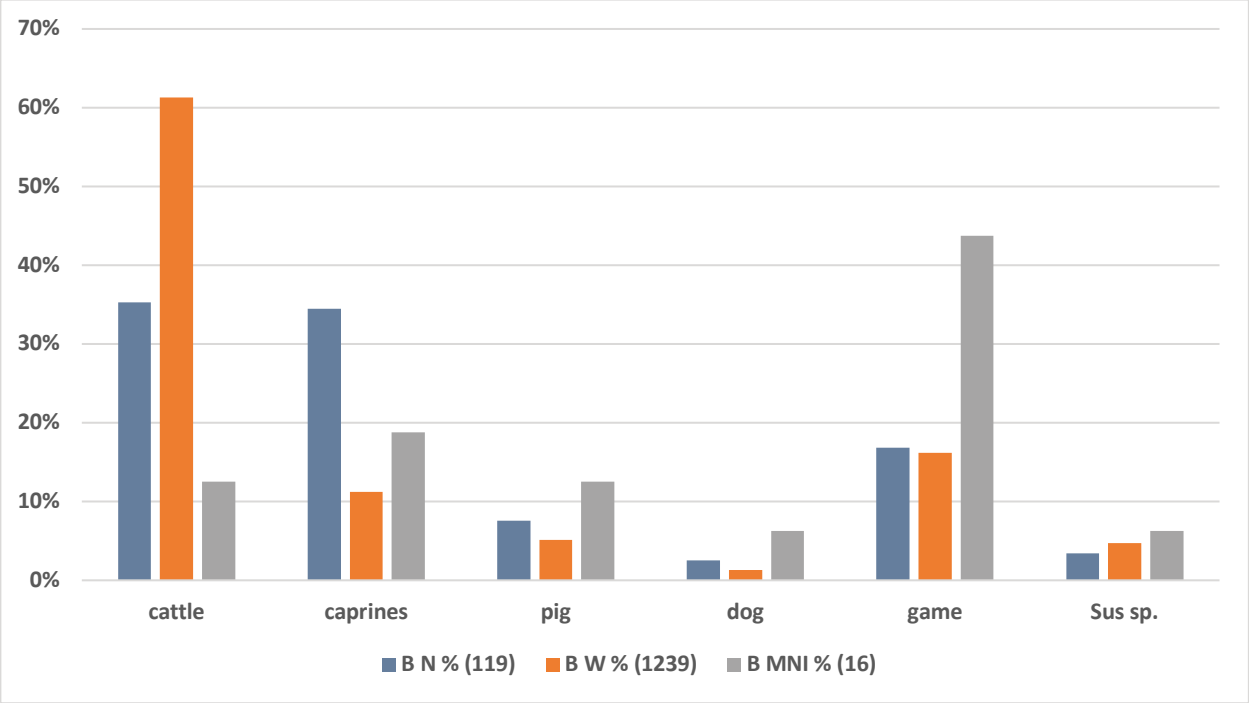


Figure 47. *Percentage distribution of the number of remains (N), weight (W), and minimum number of individuals (MNI) of the fauna from the Boian culture discovered at the Glina Tell. Legend: B – Boian culture; game – red deer, roe deer, wildcat, and hare.*

adults – distally fused femora), followed by roe deer with two subadult/adult individuals (distally fused metatarsals), one adult red deer (distally fused femur), and one subadult/adult wildcat (distally fused humerus). One newborn/fetus individual of *Sus* sp. was identified based on a scapula.

Within the faunal assemblage, a sheep metatarsal was identified, based on which a withers height of 54.9 cm was calculated using Teichert's index (Udrescu *et alii* 1999, p. 97).

8.6.2. Middle Chalcolithic – Gumelnița culture

Compared to the Boian and Glina cultural levels included in this study, the Gumelnița assemblage is relatively rich in osteological remains, with a total of 1,399 remains recovered. The faunal material originates from several archaeological features (Cx1, 4, 5, 11, 12, 13, 18, 19, 20, 21, 22, 24, 26, 27, 28, 30, 34, 43, 46) as well as from the cultural layer (CL). The number of remains per feature varies considerably, the smallest assemblage (Cx1) being represented by a single remain (0.07%), while the richest (Cx20) yielded 428 remains (30.6%) out of a total of 1,399 remains (Tab. 14).

Mollusca. A total of 55 bivalve shell fragments were recorded. These belong to species of the genus *Unio* (*Unio tumidus* and *Unio crassus*) and the genus *Anodonta*. Only a few could be measured: *U. tumidus* with a valve height of 24 mm and two *U. crassus* specimens with values of 19.2 and 21.5 mm. These measurements represent small to medium values, characteristic of a river with features similar to those near the settlement. The relatively high proportion of *Anodonta* sp. (lake mussels) (32%) is noteworthy, which are characteristic of areas with ponds or lakes permanently supplied by a river. It is likely that, during the Eneolithic period, the area surrounding the settlement included a wetland environment with ponds and lakes that were periodically flooded during higher water levels. Several fragments of *Anodonta* sp. and *Unio* sp. fragments (approximately 21% of the identified valves) display ventral edge wear caused by abrasion, likely resulting from their use as tools.

Pisces. Only a single caudal vertebra was identified, belonging to a carp (*Cyprinus carpio*) individual with an estimated total length of approximately 0.65 m and a weight of 4.5 kg.

Reptilia. Only seven remains from the carapace of the European pond turtle (*Emys orbicularis*) were identified, in just three of the investigated units (Tab. 14). In the case of the carapace, some fragments with internal traces (scratches) were identified in US 2532 (Cx12), and in US 2564 (Cx20), the latter also showing worn edges. Most likely, the carapace was processed for use as a container.

Aves. Only a single diaphysis fragment from a long bone belonging to a small-sized bird was identified.

Mammalia. Mammal remains predominate (1,335 remains, representing 95.4% of the total analysed assemblage). From a taxonomic point of view, only 428 remains (32.05%) were identified to species level; however, these account for 6,935 g (83.9%) of the total weight (Tab. 14).

Section	S I A	S I A	S I A	S I A	S I A	S I A	S I C	S I A	S I B	S I B	S I B	S I A	S I B	S I C	S I C	S I B	S I A	S I B	S I B	CL	N TOTAL	%	W TOTAL	%	MNI TOTAL	%
Complex	**1**	**4**	**5**	**11**	**12**	**13**	**18**	**19**	**20**	**21**	**22**	**24**	**26**	**27**	**28**	**30**	**34**	**43**	**46**							
Species/SU	**2507**	**2511**	**2513**	**2529**		**2505**	**2547**	**2549**		**2554**	**2556**	**2535**	**2560**		**2568**	**2572**	**2582**	**2589**								
Anodonta sp.		3			2		1		4	1		1		1			1			6	20		5.3			
Unio tumidus												1						1		1	3		0.7			
Unio crassus					1															1	2		3.2			
Unio sp.					7	1	1	1	9			1		3	1	1	2			3	30		11.5			
Total Mollusca		**3**			**10**	**1**	**2**	**1**	**13**	**1**		**3**		**4**	**1**	**1**	**3**	**1**		**11**	**55**		**20.7**			
Pisces (*Cyprinus carpio*)					**1**																**1**		**0.6**			
Reptilia (*Emys orbicularis*)					**2**				**2**						**2**					**1**	**7**		**5.9**			
Aves									**1**												**1**		**0.4**			
Bos taurus		7	1	1	32	5	2	3	55			3	5	11	5		7	3	16	27	183	42.76	5023	72.43	7	19.44
Ovis aries		3			2				5					2						2	14	3.27	108	1.56	4	11.11
Capra hircus					3				7										1	3	14	3.27	146	2.11	5	13.89
Ovis/Capra			2		14	1	2	3	28	1	1	1	1	22		3	2	4	3	15	103	24.07	711	10.25	3	8.33
Sus domesticus	1	2	1	1	4		4		9				2	1			1	1		5	32	7.48	360	5.19	3	8.33
Canis familiaris									6			2		2					5	3	18	4.21	71	1.02	1	2.78
Bos primigenius															1						1	0.23	26	0.37	1	2.78
Cervus elaphus					3		2							3						2	10	2.34	165	2.38	1	2.78
Capreolus capreolus					2																2	0.47	48	0.69	1	2.78
Sus scrofa									1						1			1		1	4	0.93	99	1.43	1	2.78
Meles meles									1												1	0.23	4	0.06	1	2.78
Martes sp.									1												1	0.23	9	0.13	1	2.78
Vulpes vulpes		2	2		3				4					1	1					3	16	3.74	35	0.50	2	5.56
Lepus europaeus		6	1		5				5								1				18	4.21	43	0.62	2	5.56
Bos taurus/Bos primigenius		1																			1	0.23	15	0.22	1	2.78
Sus domesticus/Sus scrofa		1			1	1			2			1							3	1	10	2.34	72	1.04	2	5.56
Total identified	**1**	**22**	**7**	**2**	**69**	**7**	**10**	**6**	**124**	**1**	**1**	**7**	**8**	**42**	**8**	**3**	**11**	**9**	**28**	**62**	**428**	**100**	**6935**	**100.00**	**36**	**100.00**
undetermined large-sized		15	12		7	5	1		49	4		7	4	11	13			8	33	20	189		717			
undetermined medium-sized		72	73	1	60	27	5		239	19	1	22	9	25	7	8		13	62	75	718		610			
Total mammals	**1**	**109**	**92**	**3**	**136**	**39**	**16**	**6**	**412**	**24**	**2**	**36**	**21**	**78**	**28**	**11**	**11**	**30**	**123**	**157**	**1335**		**8262**			
Total fauna	**1**	**112**	**92**	**3**	**149**	**40**	**18**	**7**	**428**	**25**	**2**	**39**	**21**	**82**	**31**	**12**	**14**	**31**	**123**	**169**	**1399**		**8289.6**			

Table 14. *Numerical and percentage distribution of the number of remains (N), weight (W), and minimum number of individuals (MNI) of the fauna from the Gumelnița culture at the Glina Tell.*

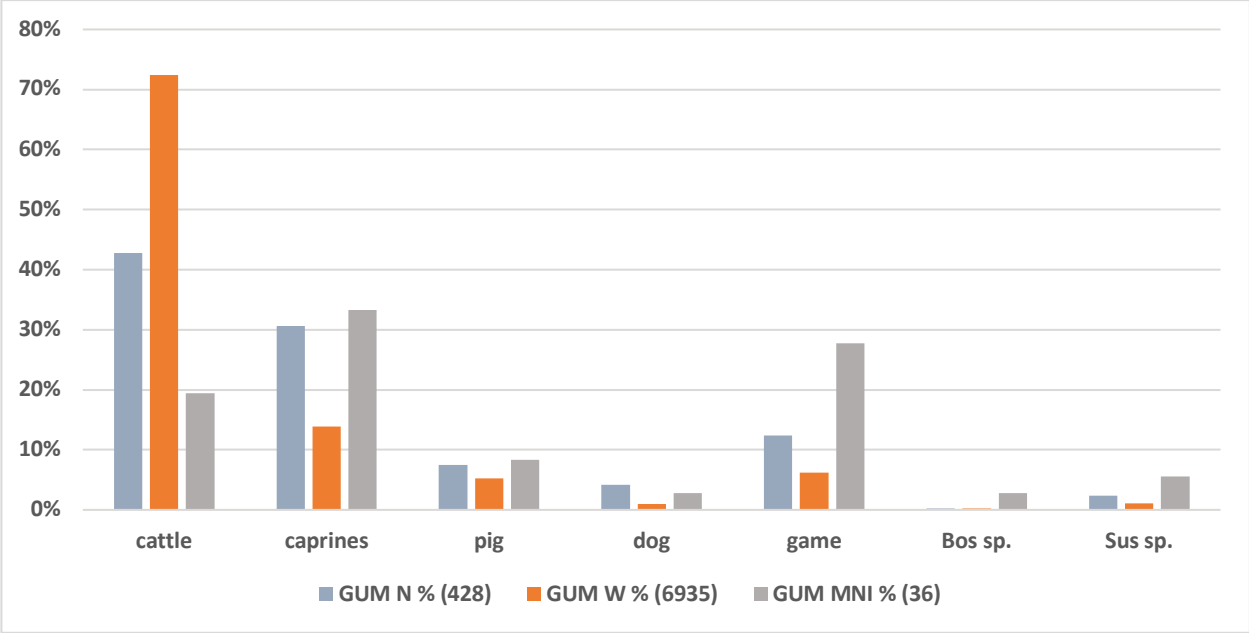


***Figure 48**. Percentage distribution of the number of remains (N), weight (W), and minimum number of individuals (MNI) of the fauna from the Gumelnița culture discovered at the Glina Tell. Legend: GUM – Gumelnița culture; game – aurochs, red deer, roe deer, wild boar, marten, badger, fox, and hare.*

The identified taxonomic spectrum is relatively rich and includes both domestic species (cattle, sheep, goat, pig, and dog) and wild species (aurochs, red deer, roe deer, wild boar, badger, marten, fox, and hare).

Considering the frequency of the number of remains, domesticates clearly dominate the faunal assemblage, with 364 remains (85%). Cattle rank first, with 183 osteological remains (42.8%), followed by caprines with 131 remains (30.6%), pigs with 32 remains (7.5%), and finally dogs with 18 remains (4.2%). It is worth noting that on the mandible of a juvenile/subadult dog, a disarticulation mark was observed on the external surface, which may indicate its slaughter for consumption.

Wild species are represented by 53 remains (12.3%), most of which are attributed to hare, with 18 remains (4.2%), followed by fox with 16 remains (3.7%) and red deer with 10 remains (2.3%), while the other species are poorly represented (under 1%) (Fig. 48).

A similar pattern can be observed in terms of the weight of bone remains. Cattle clearly dominate with 72.4%, followed by caprines with 13.9%. At a considerable distance are pig (5.2%) and dog (1%). Among wild species, red deer (2.4%) and wild boar (1.4%) are the most significant, while the remaining species have a negligible proportion (below 1%) (Fig. 48).

Based on the faunal assemblage, an estimation of the minimum number of individuals (MNI) was also carried out (Tab. 14 and Fig. 48). Thus, cattle are represented by seven individuals (19.4%), identified exclusively on the basis of dentition (one aged 6–12 months, two aged 1–1.5 years, one aged 2–4 years, one aged 4–6.5 years, one aged 6.5–9 years, and one old adult over 11 years).

Caprines have the highest proportion in terms of MNI (33.3%). Sheep are represented by four individuals (one individual under 3 months based on a proximally unfused first phalanx and three subadult/adult individuals based on left astragali), while goat is attested by five individuals identified on the basis of dentition (one aged 6–12 months, two aged 1–1.5 years, one aged 3–4 years, and one aged 4–6 years). Caprines that could not be identified to species level are represented by three individuals (one foetus/newborn individual based on a left unfused scapula and two individuals aged 9–12 months based on dentition).

Pig, represented by three individuals (8.3%), was identified exclusively on the basis of dentition (one aged 8–10 months, one aged 12–14 months, and one aged 24–30 months), while dog (2.8%) is attested by a single adult individual.

Large- and medium-sized game (aurochs, red deer, roe deer, and wild boar) are each represented in this assemblage by one subadult/adult individual. Carnivores are represented by three species only: badger and marten, each represented by one adult individual (identified based on cranial fragments), while fox is represented by two individuals (one infant/juvenile identified on the basis of a proximally unfused tibia and one subadult/adult based on a distally fused radius).

Hare is represented by two individuals identified on the basis of two right calcanei. *Bos* sp. is represented by one foetus/newborn individual, while *Sus* sp. is represented by one foetus/newborn individual based on a right femur and one individual aged 2–4 months based on dentition.

At sheep, four withers heights were estimated, all calculated using Teichert's (Udrescu *et alii* 1999, p. 97)

index. Two values were obtained based on astragali (60.3 and 59.3 cm) and two based on calcanei (60.7 and 58.3 cm), resulting in an average of 59.65 cm.

At pig, two withers heights were identified: one based on an astragalus (72.7 cm) and one based on a metacarpal IV (79.4 cm), both calculated using Teichert's (Udrescu *et alii* 1999, p. 86) index.

8.6.3. Early Bronze Age – Glina culture

It is represented by 508 faunal remains recovered from a series of archaeological features, including pits (Cx9, 14, 29) and ditches (Cx16), as well as from the cultural layer (CL). The majority of the bones were recovered from features (97.2%), the richest being the Cx16 (66.9%) (Tab. 15; Fig. 49). Within this feature, two remains belonging to the carapace and plastron of a European pond turtle (*Emys orbicularis*) and one axonost from a fish assigned to the cyprinid group were also identified. Given the scarcity of faunal material belonging to other animal classes, the following section will focus exclusively on mammals.

Mammalia. Out of the total mammal assemblage, 209 fragments (41.5%) were taxonomically identified, representing a total weight of 2,063 g (76.9%). As in the case of the Boian culture, the list of identified species is relatively limited, including the typical domesticates (cattle, sheep, goat, pig, and dog). At this stage of research, the absence of the domestic horse is noteworthy.

Wild fauna is represented by only five species: red deer, roe deer, wild boar, fox, and hare (Tab. 15).

Animal husbandry is well illustrated by the quantity of bones belonging to domestic mammals. Thus, caprines dominate with 45.5%, followed by cattle (34.9%), pig (9.6%), and dog (4.8%). Wild fauna is very poorly represented in terms of the number of remains (only eight), among which hare (1.4%) and wild boar (1%) have the highest proportions (Tab. 15).

In terms of weight, cattle predominate with 67.3%, followed at a considerable distance by caprines (18.8%), pigs (9.8%), and dogs (2%). The proportion of wild fauna also remains low (1.6%), within which wild boar is relatively well represented (0.8%).

The estimated minimum number of individuals (MNI) indicates that caprines have the highest representation, with six individuals (30%). Of these, two are sheep (one

Section	**SI-B**	**SI-A**	**SI-C**	**SI-A**	**SII**	**TOTAL N**	**%**	**TOTAL W**	**%**	**TOTAL MNI**	**%**
Feature	**Cx9**	**Cx14**	**Cx16**	**Cx29**							
Species / SU	**SU2523**	**SU2537**	**SU2541**	**SU2570**	**SU5002**						
Pisces			1			1		0.5			
Reptilia (*Emys orbicularis*)			3			3		2.6			
Mammals											
Bos taurus	4	8	49	8	4	73	34.9	1389	67.3	4	20.0
Ovis/Capra	15	6	50	9	6	86	41.1	322	15.6	2	10.0
Ovis aries			6			6	2.9	41	2.0	2	10.0
Capra hircus		2	1			3	1.4	25	1.2	2	10.0
Sus domesticus	6	2	11	1		20	9.6	203	9.8	3	15.0
Canis familiaris	4		5	1		10	4.8	41	2.0	1	5.0
Cervus elaphus		1				1	0.5	7	0.3	1	5.0
Capreolus capreolus			1			1	0.5	3	0.1	1	5.0
Sus scrofa			2			2	1.0	16	0.8	1	5.0
Vulpes vulpes			1			1	0.5	2	0.1	1	5.0
Lepus europaeus		1	2			3	1.4	6	0.3	1	5.0
Sus domesticus/Sus scrofa	1		2			3	1.4	8	0.4	1	5.0
Total identifiable	**30**	**20**	**130**	**19**	**10**	**209**	**100.0**	**2063**	**100.0**	**20**	**100.0**
undet. large-sized	20		75	4	4	103		408			
undet. medium-sized	49		131	11		191		209			
Total mammals	**99**	**20**	**336**	**34**	**14**	**503**		**2680**			
deer antler	1					1		140			
Total fauna	**100**	**20**	**340**	**34**	**14**	**508**	**0**	**2823.1**			

Table 15. *Numerical and percentage distribution of the number of remains (N), weight (W), and minimum number of individuals (MNI) of the fauna from the features and cultural layer (CL) of the Glina culture at the Glina Tell. Legend: G – Glina culture; game – red deer, roe deer, wild boar, fox, and hare.*

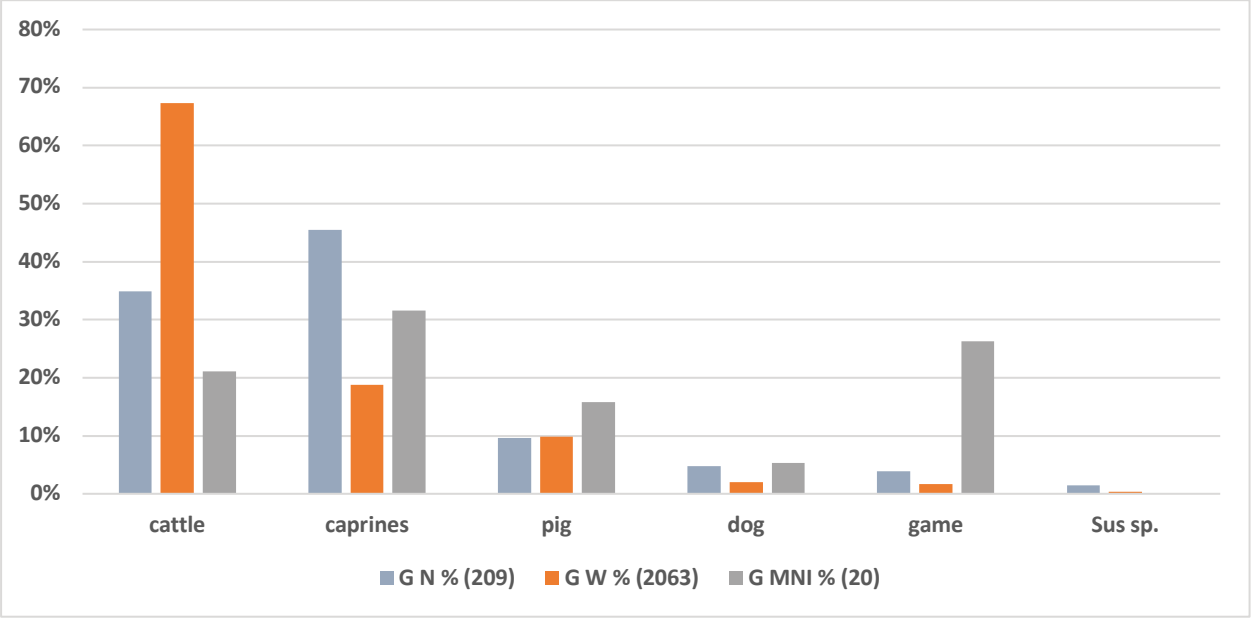


Figure 49. *Percentage distribution of the number of remains (N), weight (W), and minimum number of individuals (MNI) of the fauna from the Glina culture discovered at the Glina Tell. Legend: G – Glina culture; game – red deer, roe deer, wild boar, fox, and hare.*

aged 6–12 months and one aged 12–24 months, identified based on dentition), two are goats (one approximately 4 months old – distal humerus in the process of epiphyseal fusion – and one aged 18–24 months, based on dentition), and two are caprines not identified to species level (one newborn and one individual aged 2–4 years, both identified based on dentition).

Cattle are represented by four individuals (20%), all identified based on dental eruption and wear (one aged 6–12 months, one aged 1.5–2 years, one aged 3–4 years, and one aged 6.5–9 years). Pig, represented by three presumed individuals (one aged 6–10 months, one female aged 12–16 months, and one aged 18–20 months, identified based on dentition), account for 15%. Dog is attested by a single adult individual.

Wild fauna, in terms of MNI, appears excessive (25%) in this relatively small sample, each species being represented by a single subadult/adult individual, except for wild boar (one subadult aged 18–20 months), for which a more precise age estimation was possible based on dentition (Tab. 15). One infant individual of *Sus* sp. was identified based on an extremely porous and unfused ulna.

A sheep metacarpal recovered from the faunal assemblage allowed the estimation of a withers height of 55.7 cm, calculated using Teichert's (Udrescu *et alii* 1999, p. 97) index.

8.6.4. Archaeozoology – intra-site comparisons

In terms of the number of remains, cattle and caprines clearly dominate the faunal spectrum in each cultural assemblage, competing for primacy. Thus, in the Boian culture sample, they are almost equal (35% cattle and 33.3% caprines); in the Gumelnița culture assemblage, cattle (42.8%) exceed caprines (30.6%), while in the Glina culture assemblage the ratio is reversed (caprines account for 45.5% and cattle for 34.9%). Based on the current data, it can be observed that pigs and dogs do not play a significant role in the economy of these communities (below 10%). As for wild fauna, it can be observed that its importance decreases from the Boian culture (16.8%) to the Glina culture (3.8%) (Fig. 50).

In terms of weight, cattle clearly dominate, ranging from 61.3% (Boian assemblage) to 72.4% (Gumelnița assemblage) (Fig. 50), while caprines show a gradual increase from the Boian assemblage (11.2%) to the Glina culture (18.8%). A similar trend is observed in pigs, whose proportion increases from 5.2% in the Boian assemblage to 9.8% in the Glina assemblage. Dogs again have an almost negligible contribution to the palaeoeconomy of these cultures (below 2%). A relevant aspect is represented by wild fauna, which maintains its importance in the Boian assemblage (16.2%), but decreases progressively in the Gumelnița (6.2%) and Glina assemblages (below 2%).

From the perspective of MNI, caprines dominate and increase significantly from 18.8% (Boian assemblage) to over 30% in both the Gumelnița (33.3%) and Glina (30%) assemblages. Cattle follow a similar trend, increasing from 12.5% (Boian assemblage) to 19.4% (Gumelnița assemblage) and exceeding 20% in the Glina culture. Pigs show variations between 8.3% (Gumelnița assemblage) and 15% (Glina assemblage), while dogs range between 2.8% (Gumelnița assemblage) and 6.3% (Boian assemblage). Although the MNI of cattle is lower than that of caprines,

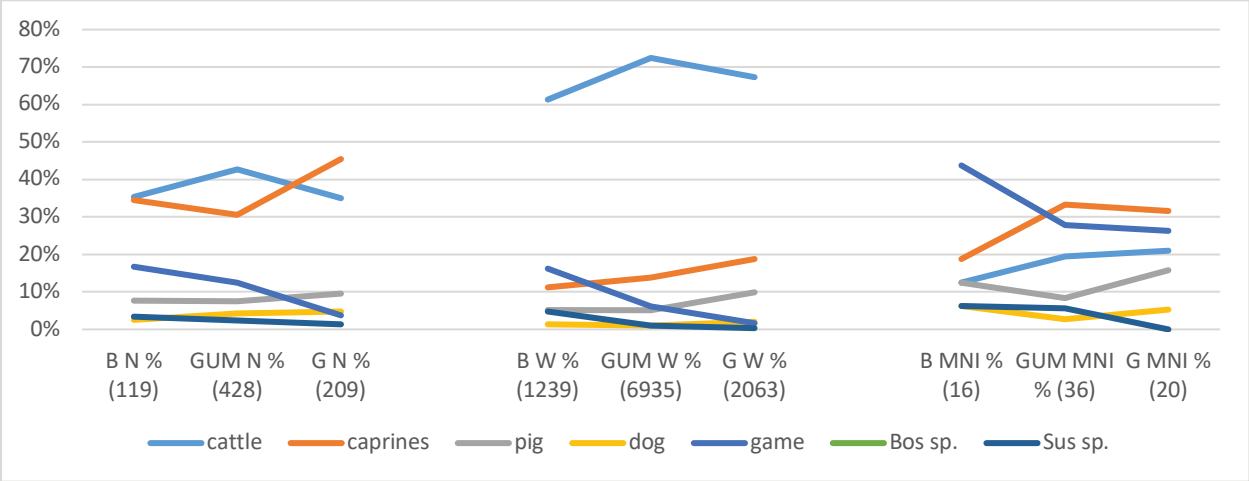


Figure 50. *Percentage distribution of the number of remains (N), weight (W), and minimum number of individuals (MNI) of the fauna from the Boian, Gumelnița, and Glina cultures discovered at the Glina Tell. Legend: B – Boian culture; GUM – Gumelnița culture; G – Glina culture; game – red deer, roe deer, wild boar, marten.*



Figure 51. *Examples of faunal remains with specific traits from all cultural levels (scale in centimetres). 1. Cattle* (Bos taurus)*, atlas with multiple defleshing marks (Cx27); 2. Sheep* (Ovis aries)*, fused right metacarpal (Cx16); 3. Pig* (Sus domesticus)*, unfused right ulna (CL); 4. Roe deer* (Capreolus capreolus)*, fused right metatarsal (Cx12); 5. Marten* (Martes *sp.*)*, skull (Cx20); 6. Hare* (Lepus europaeus)*, right mandible (Cx20); 7. Fox* (Vulpes vulpes)*, left mandible (Cx24).*

cattle remain the most exploited species in terms of meat production, as in archaeozoology one head of cattle is considered equivalent to six caprines or three pigs.

With regard to wild fauna, the situation is particularly interesting. In the Boian assemblage, the proportion of domestic species (50%) is almost equal to that of hunted species (43.8%); however, it should be noted that the Boian sample is numerically very small. The proportion of wild fauna decreases in the Gumelnița (27.8%) and Glina (25%) assemblages (Fig. 50).

8.6.5. Preliminary archaeozoological conclusions

Our archaeozoological study highlights, despite the relatively small sample sizes, the evolution of animal-based palaeoeconomy across the three cultural phases (Boian, Vidra phase; Gumelnița, A2 phase; Glina). Animal husbandry plays an important role in the life of these communities, particularly cattle and caprines, which compete for primacy, followed by pigs, whose proportion increases throughout the cultural sequence.

Wild fauna has a relatively higher proportion in the Boian culture and a reduced presence in the Gumelnița and Glina cultures. The apparent overrepresentation of wild species may also be due to the small sample sizes, an aspect that should be carefully monitored in future research.

From the perspective of the exploitation of environmental animal resources, the data provided by this study offer limited information. The aquatic environment supplied a certain amount of food through shellfish gathering and fishing, especially during the summer period, particularly for Chalcolithic communities. The turtle *Emys orbicularis* also appears to have been consumed, although to a lesser extent. However, it can be observed that both shells and turtle carapaces were used as tools or containers in daily activities. After use, they were discarded, representing a type of expedient tool made from easily accessible food waste available during certain periods of the year.

8.7. ARCHAEOBOTANICAL DATA

From the 2025 archaeological campaign, 17 soil samples were collected with a total volume of 111.5 litres. All of them were processed by flotation at the „Vasile Pârvan" Archaeological Institute of the Romanian Academy, resulting 32 subsamples of 2 mm and 0.3 mm, respectively. The sorted material produced a mixed archaeobotanical assemblage comprising charred, dry/mineralized and modern plant remains, including cereals, pulses, fruits, weed seeds and indeterminate charred fragments. Detailed information regarding sample distribution, sediment volume, plant concentration and taxonomic composition is provided in Table 16. Since only two samples have so far been completely analysed, the results remain preliminary and should be interpreted with caution.

Together with the samples above, 39 charcoal and seeds samples were collected by hand *in situ* and through dry sieving. These samples were collected from SI. Only 13 samples contained a total of 35 macrobotanical remains (from features Cx3, Cx4, Cx6, Cx,7, Cx16, Cx46 and other stratigraphical units). The taxonomical analysis was carried out with the Bresser Advance ICD microscope and different botanical atlases (Cappers, Bekker 2013; Sârbu *et alii* 2013; Bojňanský, Fargšová, 2007; Jacomet 2006). All in all, 10 samples from Early Chalcolithic features were analysed taxonomically (Cx3, Cx6, Cx7, Cx8), 7 samples from Middle Chalcolithic features (Cx 4, Cx5, Cx13, Cx31 and Cx46), 4 samples from Early Bronze Age features (Cx9 and Cx16) and other three samples from undated features (Cx21, Cx22 and one from SII, square X1) were also analysed. The taxonomical identifications are shown in Table 16.

Most of the macrobotanical remains are dry and modern (84%) and the rest of them are charred. This difference is a result of the agglomeration of corn gromwell (*Lithospermum arvensis*) nutlets found in Cx9 (=3192) and more of them spread in other archaeological features (Fig. 52). This agglomeration can be interpreted as animal activity. The richest features are Cx6 and Cx16, a fact triggered by the larger number of samples collected and processed. In general, most of the charred remains belongs to the cereal group (55%), followed by the unidentified group (34%). The unidentified group is represented here by the amorphous remains, found in features Cx5 and Cx2. The weed group is represented by 7% of charred macrobotanical remains; the gathered fruits (2%), pulses (1%) and oily group (1%) have a low distribution (Fig. 53). From now on, we will only discuss the charred macrobotanical remains.

The domesticated cereals group is mostly represented by *Cerealia*. These fragmented remains were found primarily in waste areas. Moreover, the majority of the *Cerealia* fragments come from the Early Bronze Age features. The next species is barley (*Hordeum vulgare* – with a total of 20 caryopses) (Fig. 55/a, b) followed by emmer (*Triticum dicoccum*) and wheat (*Triticum* sp.). Other species documented are einkorn (*Triticum monococcum)* (Fig. 55/c, d) represented in all chronological periods, naked and hulled barley, found only in Early Bronze Age contexts. Finally, millet (*Panicum milliaceum*) (Fig. 55/g) was found in small quantities in Cx6 and Cx16, respectively. This finding can be explained by taphonomic intrusion. The pulses category has a low distribution and representation. Peas (*Pisum sativum)* is found in the Late Eneolithic period (Cx46), but with one 2 seed cotyledons, and one whole seed from feature Cx2. Bitter vetch (*Vicia ervilia*) was identified only at Early Eneolithic level (Cx6). The other taxonomic determinations were collected from the Late Eneolithic (Cx4) and Early Bronze Age features (Cx16).

The flax seeds (*Linum usitatissimum*) (Fig. 55/e) were found in a Late Eneolithic feature with 3 seeds and one seed was found in the Early Bronze Age waste area (Cx16). The gathered plant group is represented here by plum family (*Prunus* sp.), with stone fragments found in Early and Late Eneolithic features (Cx6 and Cx5, respectively) (Fig. 55/f). Cornelian cherry stones (*Cornus* sp.) were found

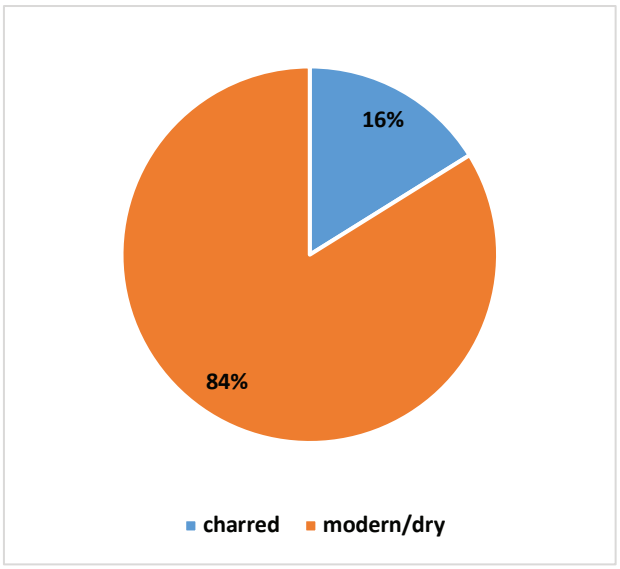


Figure 52. *The distribution of charred and modern/dry macrobotanical remains in the identified samples (n= 4190).*

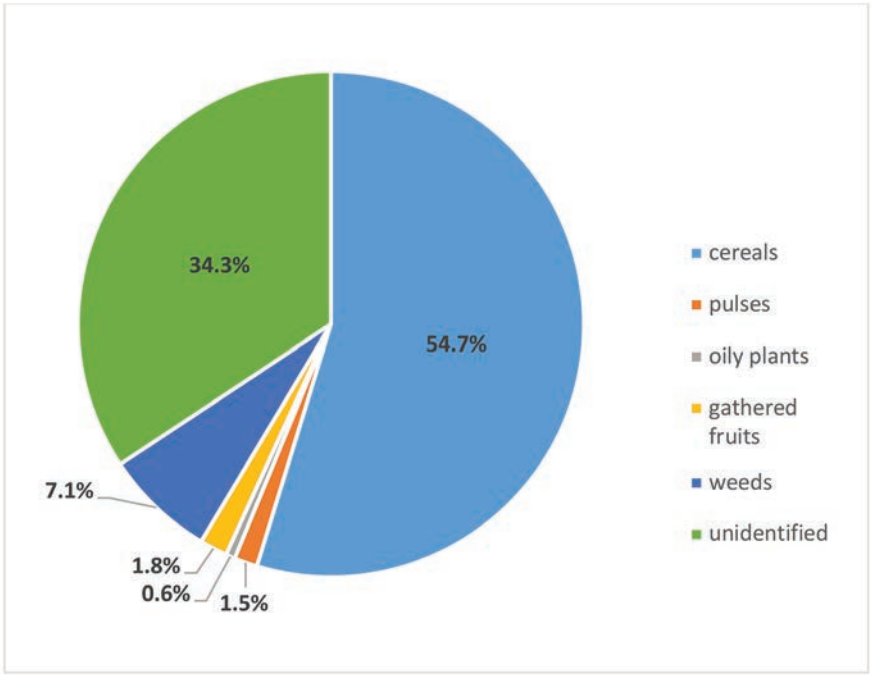


Figure 53. *The distribution of charred plant remains (n= 676).*

in the Early Bronze Age feature (Cx16). Finally, blackthorn (*Prunus spinosa*) was identified in the Early Eneolithic feature (Cx6) (Fig. 54).

The weeds category is the most diverse but occurs in small quantities. For the Early Eneolithic the species identified are black mustard (cf. *Brassica nigra*), fat hen (*Chenopodium album*), needle grass (*Stipa* sp.) and sedges (*Carex* sp.). For Late Eneolithic, savory (*Lamiaceae* cf. *Satureja*), fat hen (*Chenopodium album*), danewort (*Sambucus ebulus*) were identified. The Early Bronze Age is represented by wild cereals (brome – *Bromus* sp.), cleavers (*Galium* sp.), and fat hen (*Chenopodium album*). The unidentified group has a large representation, with a peak in the Early Bronze Age. This could be explained

Complex/Features			**Cx3**	**Cx4**	**Cx5**	**Cx6**		**Cx7**	**Cx8**	**Cx9**	**Cx13**	**Cx16**	**Cx21**	**Cx22**	**Cx31**	**Cx46**	**Cx2**	**TOTAL**
Stratigraphical Unit			2509	2516	2513	2515	2517	2519	2521	2523	2505	2541	2554	2556		2609	5003	–
Square (□)			A9	A9	A6	A1	A1	B1-4	B2	B9	A4	C9	B8-9	B9	B6	B4	X1	
Volume of processed sediment (liter)			10	10	10	22	–	6	5	12	8	16.5	–	–	4	–	8	111.5
Sample number			4	2	2	2	1	2	1	1	1	3	1	1	1	1	1	24
Total number of finds			23	23	14	187.5	10	7	20	3422	187	211	1	1	13	2	68	4190
Plant concentration per liter (unit/liter)			2.3	2.3	1.4	8.5	–	1.16	4	285.1	23.3	12.7	–	–	3.25	–	8.5	
Taxon	**Organ**	**Preservation**																
Cerealia	fragments	charred	5	3		20	1	1	3	158		100			4		6	301
Hordeum sp.	caryopse	charred		1						2								3
Hordeum sp.	frg caryopse	charred					1											1
Hordeum vulgare	caryopse	charred		1		2				2		1		1	2		2	11
Hordeum vulgare	frg caryopse	charred				1						2	1					4
Hordeum vulgare vulgare	caryopse	charred								2		1						3
Hordeum vulgare vulgare	frg caryopse	charred								2								2
Hordeum vulgare nudum	caryopse	charred										1						1
Hordeum vulgare nudum	frg caryopse	charred										1						1
Triticum sp.	caryopse	charred		1		4				8							2	15
Triticum sp.	frg caryopse	charred						3				2						5
Triticum sp.	spikelet fork	charred										2						2
Triticum sp.	glume	charred										1						1
Triticum cf. *monococcum*	caryopse	charred						1			1	1					1	4
Triticum monococcum	caryopse	charred						2		4								6
Triticum cf. *dicoccum*	frg caryopse	charred										1						1
Triticum dicoccum	caryopse	charred										5						5
Panicum miliaceum	seed	charred				2						2						4
Poaceae	frg caryopse	charred				3			4			2						9
Poaceae cf. *Bromus* sp.	caryopse	charred										2						2
Bromus sp.	caryopse	charred										1						1
Bromus sp.	frg caryopse	charred										4						4
Stipa sp.	frg awn	charred				1												1
Fabaceae – wild	seed	charred		2														2
Fabaceae – domesticated	frg seed	charred										2						2
cf. *Pisum sativum*	seed cotyl	charred														2	1	3
Pisum sativum	seed	charred															1	1
Vicia ervilia	seed	charred				2												2

Vicia sativa	seed	modern	11															11
Linum usitatissimum	seed	charred									3	1						4
cf. *Cornus* sp.	frg endocarp	charred										1						1
cf. *Prunus* sp.	frg endocarp	charred				1												1
Prunus sp.	frg endocarp	charred			2		6											8
Prunus spinosa	frg endocarp	charred					2											2
Asteraceae	seed	charred			1													1
Galium sp.	seed	charred							1	2								3
Galium cf. *tricornutum*	seed	charred								1								1
Lamiaceae	seed	charred								2								2
Lamiaceae cf. *Melissa*	seed	charred															1	1
Lamiaceae cf. *Satureja*	seed	charred			1													1
Tilia platyphyllos	fruit	dry/ mineralized									2							2
Atriplex sp.	seeds	charred	3															3
Atriplex sp.	seeds	modern							4	4		1			1			10
Atriplex cf. *patula*	seeds	modern				3.5												4
Chenopodium sp.	seed	charred										3						3
Chenopodium sp.	seed	modern								10	152	1						163
Chenopodium album	seeds	charred		2		1						3						6
Chenopodium album	seeds	modern				19						1					8	28
Polycnemum arvense	seeds	modern	1	1		58				2	1						14	77
cf. *Portulaca oleracea*	seed	modern							2	3	1	1						7
Lithospermum arvensis	seeds	dry/ mineralized	2							3192	1	10					1	3206
Buglossoides officinale	seed	dry/ mineralized									1							1
cf. *Brassica nigra*	seeds	charred				6												6
Sambucus ebulus	seed	charred									2							2
Sambucus ebulus	seed	modern															1	1
Sambucus nigra	seed	modern										1					1	2
Astragalus sp.	seed	modern										1						1
Carex sp.	seeds	charred	1									1						2
Convolvulus sp.	seed	modern										1						1
indet	fragments	charred		12		64			6	28	23	54			6		28	221
amorphous mass	fragments	charred			10												1	11

Table 16. *Archaeobotanical data from soil samples collected during the 2025 fieldworks at Glina Tell.*

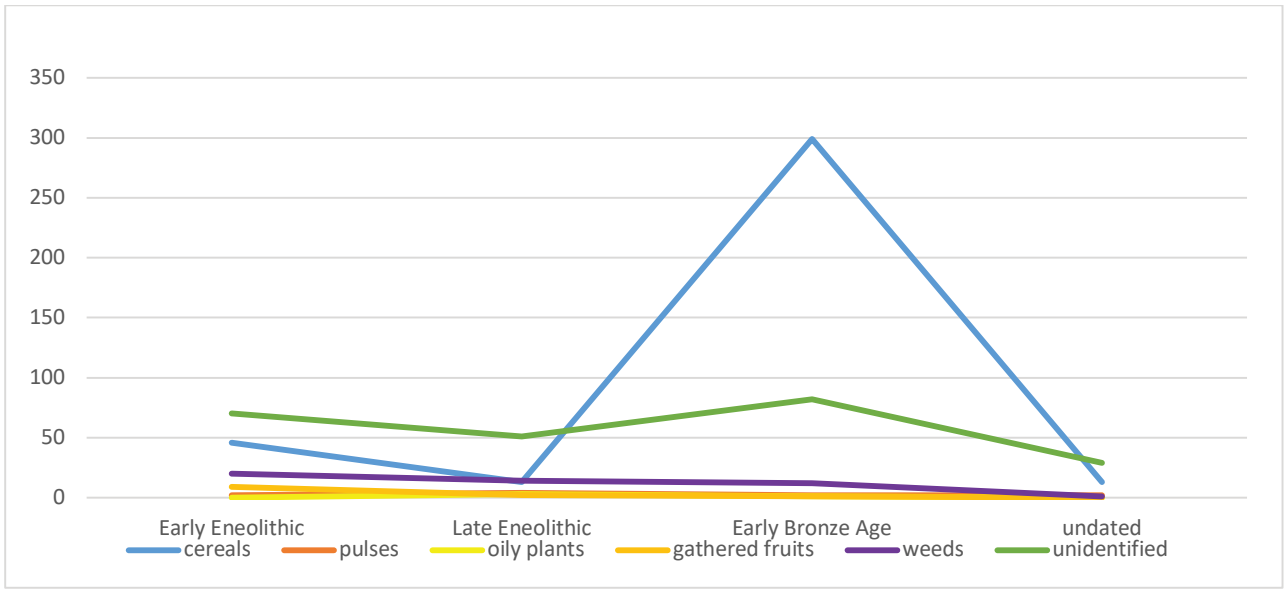


Figure 54. *Plant group distribution based on the chronological periods of archaeological features (n=676).*

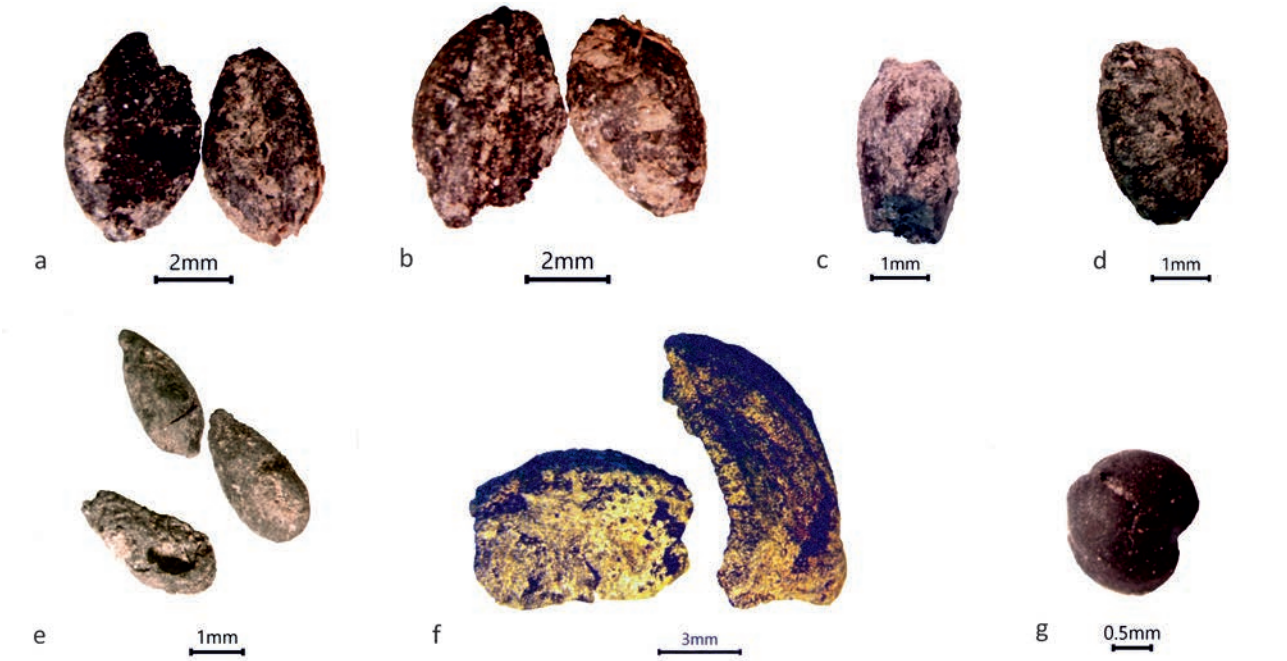


Figure 55. *Examples of charred macrobotanical remains: a. barley caryopses* (Hordeum vulgare)*, ventral side, Cx31; b. barley caryopses* (Hordeum vulgare)*, dorsal side, Cx31; c. einkorn caryopses* (Triticum monococcum) *dorsal side, Cx2; d. einkorn caryopses* (Triticum monococcum)*, ventral side, Cx2; e. flax seeds* (Linum usitatissimum)*, Cx13; f. prune family stone fragments* (Prunus *sp.*)*, Cx6; g. millet grain* (Panicum miliaceum)*, Cx6.*

by the number of samples processed and identified but also by the type of features from which the samples were collected. As such, most of these fragments are a result of waste managements.

Ecologically, the species from the gathered plant group (cornelian cherry, plum species and blackthorn) develop in forest-steppe environments, either as ecotones between forests and open spaces, or they can grow near human settlements (ruderal species). They can form an ecological association with different species of cleavers, or plants from the mint family (*Lamiaceae*). Black mustard is also a ruderal plant species and can grow in plant associations with chenopod species (Sârbu *et alii* 2013).

If we take into account the modern and dry plant species found, we see that most of them develop in a dry and hot environment, typical to a steppic area. These are saltbush (*Atriplex* cf. *patuta*), fat hen (*Chenopodium album*), field needleleaf (*Polycnemum arvense*), bindweed (*Convolvulus* sp.) and milkvetch (*Astragalus* sp.). The saltbush species, chenopods species, common purslane (*Portulaca oleracea*), bindweeds, milkvetch, corn gromwell (*Lithospermum arvensis*), common gromwell (*Buglossoides officinale*) and common vetch (*Vicia sativa*) are also included in the segetal and ruderal groups (Sârbu *et alii* 2013; Săvulescu 1953; 1960). Large-leaved Lime (*Tilia platyphyllos*) and elderberry (*Sambucus nigra*) are trees and shrubs that grow in the forest-steppe environment, elderberry as an ecotone between both forests and open areas, and ruderal species. Danewort (*Sambucus ebulus*) grows as a ruderal species, and it develops ecological associations with chenopods (Sârbu *et alii* 2013). The wild cereals (*Stipa* sp., *Bromus* sp.) are species typical for steppe environments (Sârbu *et alii* 2013).

Archaeologically, most of the identified domestic plant species are reported at other Early and Middle Chalcolithic sites in Romania (specifically, during the Boian and Gumelnița cultures). For example, einkorn, emmer and barley were found extensively at Gumenița tell, Călărași County; Hârșova tell, Constanța County; Bordușani – *Popină*, Ialomița County; Vlădiceasca, Radovanu, Sultana – *Malu Roșu*, Călărași County; Pietrele, Ipotești, Giurgiu County; Teiu, Argeș County; Geangoești, Dâmbovița County etc. (Lazăr *et alii* 2017; 2020; Golea *et alii* 2014; Bogaard 2001; Toderaș *et alii* 2009; Monah 1999; Cârciumaru 1996). Until now, no archaeobotanical material was analysed from Glina culture (Early Bronze Age). Millet (*Panicum milliaceum*) was found at different archaeological sites from this period, but they were later radiocarbon dated to the Late Bronze Age (Golea *et alii* 2023). Flax seeds are rarely found, until now, only at Bordușani – *Popină*, Ialomița County and at the Gumelnița Tell settlement, Călărași County were identified but in small quantities (Golea 2025). Peas and bitter vetch are commonly found in the Boian and Gumelnița cultures. The gathered plant species are also commonly found at Chalcolithic sites in the southern part of present-day Romania, for example all three species (plum family, cornelian cherries and blackthorn) were documented at Pietrele, Giurgiu County; Gumelnița tell, Sultana – *Malu Roșu*, Călărași County and so on (Müller *et alii* 2025; Lazăr *et alii* 2020, 2017; Toderaș *et alii* 2009).

In conclusion, the identification of a diverse list of species of both domesticated and wild plants at Glina Tell provides a first baseline for discussing plant remains at the site. At the same time, the plant determinations for Glina culture (Early Bronze Age) are a novelty, as does the plant list for this site. Hopefully, future excavations will bring forth more information regarding the type of agriculture, land management and food preferences.

9. RELATIVE AND ABSOLUTE CHRONOLOGY

9.1. Relative chronology

Given the limited extent of the 2025 excavation, much of which focused on an area affected by erosion and lacking a consistent archaeological stratigraphy (SI), the contribution of the present investigations to the relative chronology of the site remains modest in comparison with previous research (Nestor 1928; 1933; Petrescu-Dîmbovița 1944; Ștefan 2016). Nevertheless, the known succession of the Early Chalcolithic (Late Boian culture), Middle Chalcolithic (Gumelnița culture), and Early Bronze Age (Glina culture) occupations was once again confirmed.

At the same time, the current investigations represent the first attempt to systematically integrate stratigraphic and contextual observations with the analysis of archaeological artifacts and ecofacts recovered from controlled excavations. Based on pottery typology, particularly vessel shapes and decorative patterns, the Late Boian contexts identified in area SI can be assigned to the Vidra phase of the culture (Comșa 1974). The Middle Chalcolithic assemblages display certain internal differences: most of the investigated contexts correspond to a typical Gumelnița A2 horizon (Voinea 2005), while feature Cx20 may indicate a later A2 stage and possibly an early B1 horizon. The Early Bronze Age ceramic assemblage displays the characteristic traits generally associated with the Glina culture (Băjenaru 2014), unsurprisingly given that this cultural group was originally defined on the basis of materials discovered at the site of Glina – *La Nuci* itself.

9.2. Absolute chronology

Four AMS radiocarbon determinations were obtained on faunal remains recovered from secure archaeological contexts, while an additional earlier date from a human bone discovered in the previous excavations was integrated into the present analysis. The available dataset therefore comprises five radiocarbon determinations corresponding to the Boian–Vidra and Gumelnița A2 cultural horizons documented at the site (Table 17; Fig. 56).

The earliest determination, Poz-52571 (5890 ± 40 BP), published previously by Lazăr *et alii* (2013), derives from a human bone recovered from a funerary context tentatively attributed to the Boian culture–Vidra phase. Although the precise archaeological context is insufficiently documented due to the circumstances of the old excavations, the calibrated interval (4850–4680 cal BC) fits well within the expected chronology of the late Boian horizon in southern Romania (Lazăr *et alii* 2020; Opriș 2025; Opriș *et alii* 2017; 2022). The new date obtained during the 2025 fieldwork from pit Cx3 in SI-A (RoAMS-3928.4: 5876 ± 39 BP) provides an important confirmation of this attribution. Recovered from a secure archaeological context associated with Boian–Vidra pottery, this determination calibrates between 4843 and 4616 cal BC and is statistically consistent with

Lab. Code	Archaeological context	Culture-Phase	14C Age BP	± 1 σ	Start	End	Sample type	Species	References
Poz-52571	grave (?)	Boian-Vidra	5890	40	4850	4680	bone	*Homo sapiens*	Lazăr *et alii* 2013
RoAMS-3928.4	SI-A, Cx3, SU2509	Boian-Vidra	5876	39	4843	4616	bone	*Ovi-caprine*	This study
RoAMS-3929.4	SII, SU5007, 61.457 m	Gumelnița-A2	5609	34	4532	4355	bone	Herbivore	This study
RoAMS-3931.4	SII, SU5005, 64.377 m	Gumelnița-A2	5640	27	4541	4368	bone	Herbivore	This study
RoAMS-3930.4	SI-C, Cx16, SU2541, 61.444 m	Glina	5506	36	4446	4263	bone	Herbivore	This study

Table 17. *Characteristics of samples selected for radiocarbon dating and the results of the radiocarbon dating (calibrated intervals at 95.4%).*

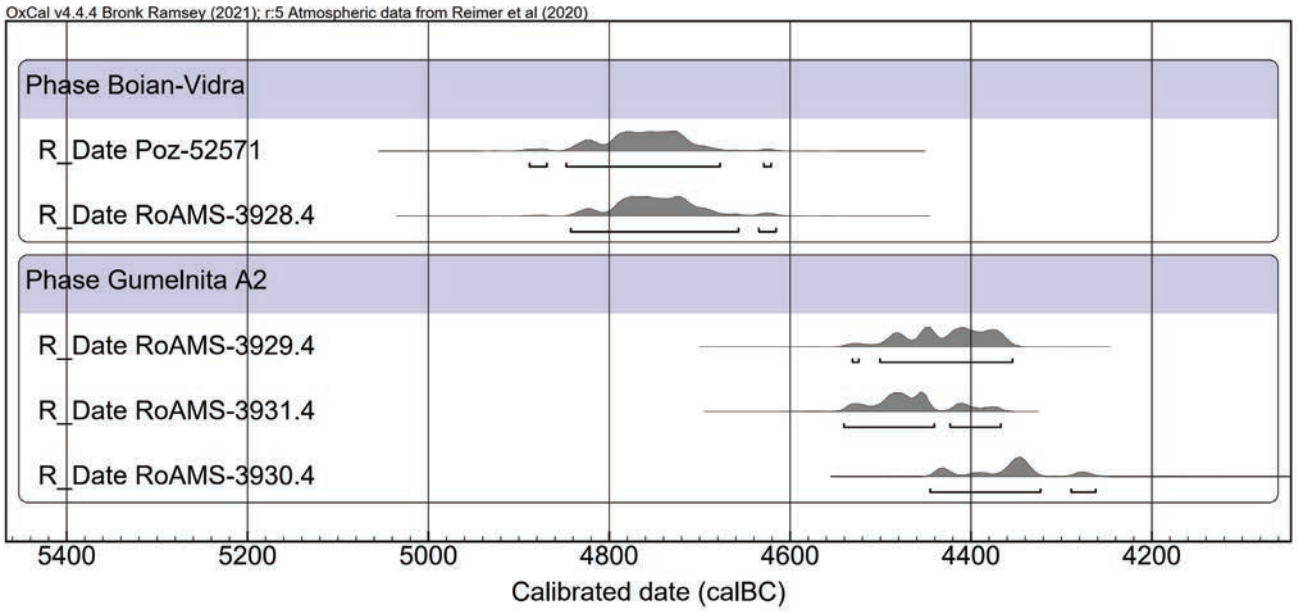


Figure 56. *Plot of the calibrated radiocarbon dates for the Boian–Vidra and Gumelnița A2 occupations from Glina Tell, generated in OxCal v4.4.4 using the IntCal20 atmospheric calibration curve (Reimer* et alii *2020).*

the previously published determination. Together, the two dates indicate an Early Chalcolithic occupation of the tell during the later stages of the Vidra phase.

Two additional radiocarbon determinations derive from Middle Chalcolithic contexts investigated in Section II. Sample RoAMS-3931.4 (5640 ± 27 BP), recovered from SU5005 at an elevation of 64.377 m, calibrates between 4541 and 4368 cal BC, while sample RoAMS-3929.4 (5609 ± 34 BP), originating from SU5007 at 61.457 m, calibrates between 4532 and 4355 cal BC. Both samples are associated stratigraphically and typologically with the Gumelnița A2 occupation identified in SII. Although the stratigraphic relationship suggests that SU5007 predates SU5005, the two radiocarbon determinations are statistically very close, and Bayesian modelling produced acceptable but relatively low agreement indices (Amodel = 62.3; Aoverall = 67.5). This indicates slight tension between the measured radiocarbon ages and the observed stratigraphic sequence, although not sufficient to invalidate the model. Overall, the dates place the investigated Gumelnița occupation within the first part of the second half of the 5th millennium cal BC, corresponding well with the generally accepted chronology of Gumelnița A2 communities in the Lower Danube region (Popescu *et alii* 2023).

The final determination, RoAMS-3930.4 (5506 ± 36 BP), derives from the fill of Early Bronze Age trench Cx16 (SU2541) in SI-C, a feature attributed archaeologically to the Glina culture. However, the calibrated interval (4446–4263 cal BC) clearly places the dated sample within the Middle Chalcolithic and overlaps entirely with the Gumelnița A2 horizon rather than the Early Bronze Age occupation. This discrepancy is best explained by the residual character of

the dated faunal remain. The interpretation is strongly supported by the archaeological composition of the feature fill itself, which contained a substantial quantity of Gumelnița A2 pottery alongside ceramics characteristic of the Glina culture. The radiocarbon determination should therefore not be regarded as dating the construction or use of trench Cx16, but rather as evidence for the redeposition of earlier Chalcolithic material into an Early Bronze Age feature. This situation highlights the complex depositional processes affecting the upper levels of the tell and demonstrates the importance of correlating radiocarbon results with stratigraphic observations and associated artifact assemblages.

10. CONCLUSION

The 2025 investigations at Glina Tell represent the first stage of a broader multidisciplinary research programme aimed at reassessing one of the key prehistoric settlements of the Lower Danube region. Despite the extensive disturbances caused by earlier excavations, erosion, and recent anthropogenic interventions, substantial archaeological deposits and coherent stratigraphic sequences remain preserved across several areas of the settlement.

The application of micro-stratigraphic excavation methods, single-context recording, high-resolution spatial documentation, geophysical prospection, geomorphological investigations, and systematic environmental sampling has provided the first coherent dataset capable of integrating archaeological, spatial, and palaeoenvironmental evidence within a unified interpretative framework. Even at this preliminary stage, the results contribute significantly to a better understanding of the internal organisation of the tell, depositional and post-depositional processes, and the long-term dynamics of habitation within the broader Glina–Bălăceanca archaeological landscape.

The archaeological assemblages recovered during the campaign confirm the complex multi-period occupation of the site, spanning the Early Chalcolithic, Middle Chalcolithic, and Early Bronze Age. At the same time, the newly documented contexts provide, for the first time, securely recorded stratigraphic and contextual data suitable for future chronological, technological, and palaeoenvironmental analyses. The integration of artefactual, archaeozoological, archaeobotanical, sedimentological, and radiocarbon data has the potential to substantially refine current understandings of cultural developments and settlement dynamics in the Bucharest area and, more broadly, in the Lower Danube region.

Although the present contribution is limited to a preliminary presentation of the first campaign results, the investigations carried out in 2025 establish the methodological and analytical foundations for a long-term research programme. Future excavation campaigns and laboratory analyses will allow the refinement of the chronological framework, the reconstruction of habitation sequences and environmental changes, and a more detailed evaluation of the role played by Glina Tell within the prehistoric networks of southern Romania.

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Author contributions

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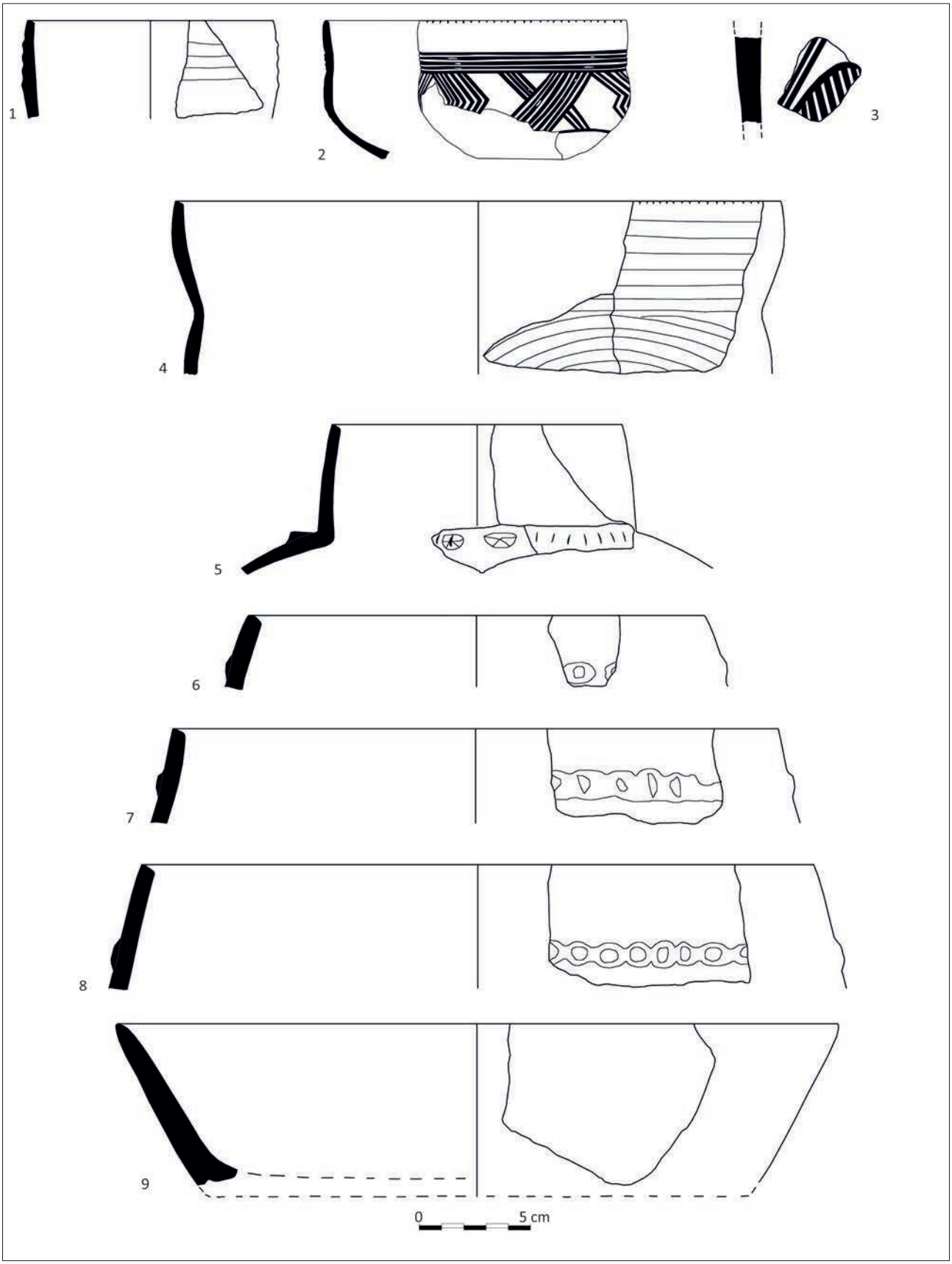


Plate I. *Early Chalcolithic pottery (Boian culture). 1, 3, 5, 7–8. SI-A, Cx7; 2, 4, 6, 9. SI-A, Cx3.*

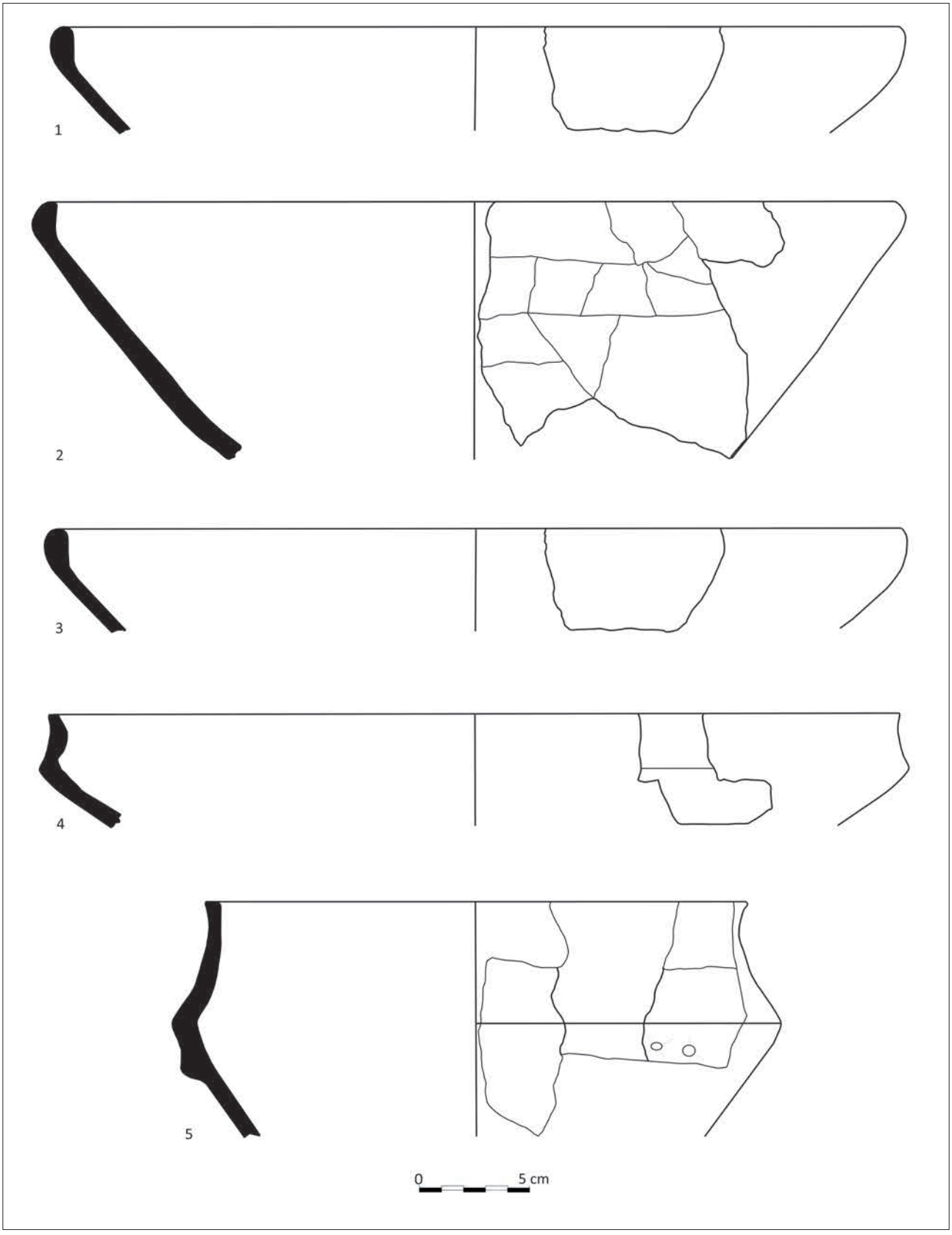


Plate II. *Middle Chalcolithic pottery (Gumelnița culture). 1–5 SI-A, Cx4.*

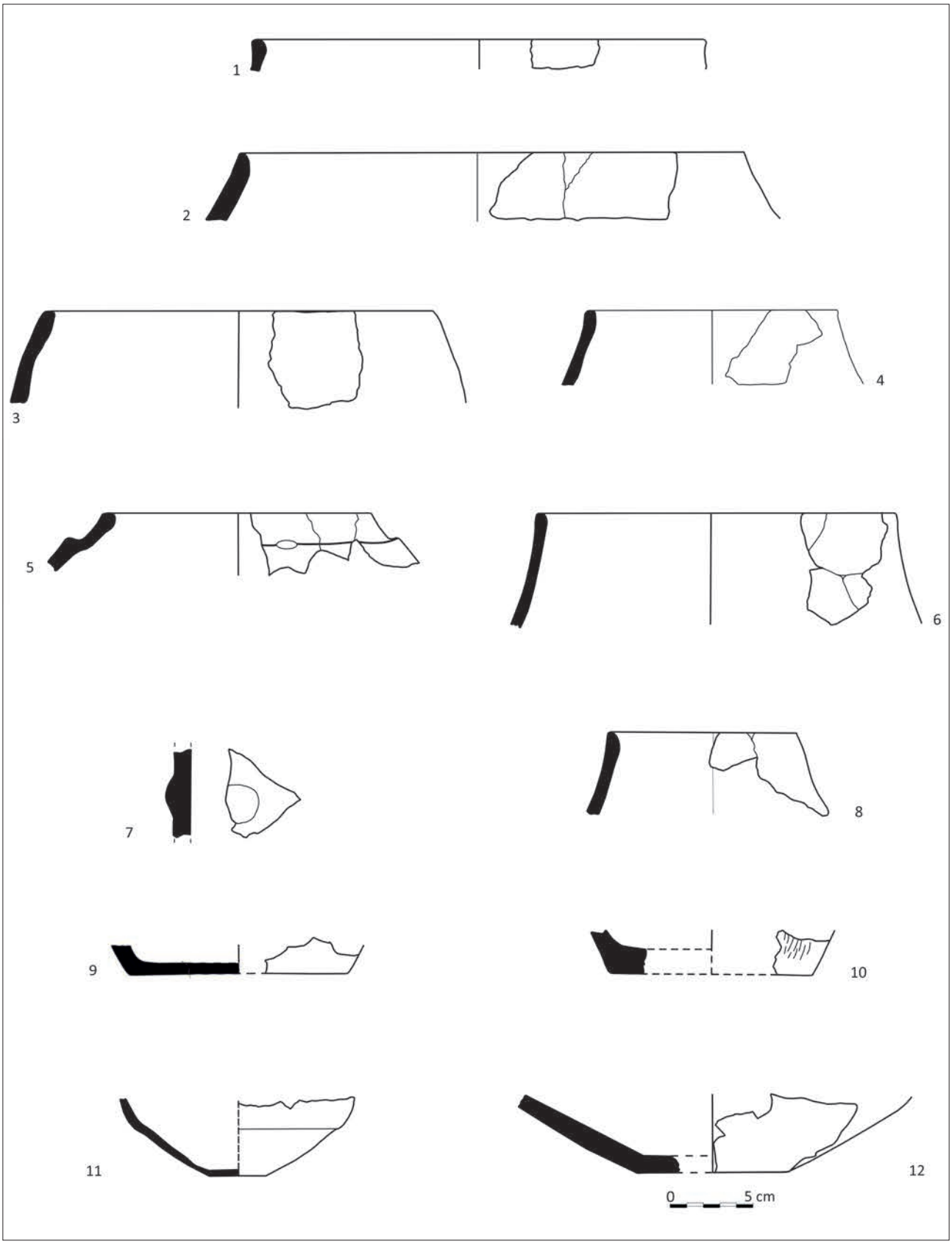


Plate III. *Middle Chalcolithic pottery (Gumelnița culture). 1–12. SI-A, Cx4.*

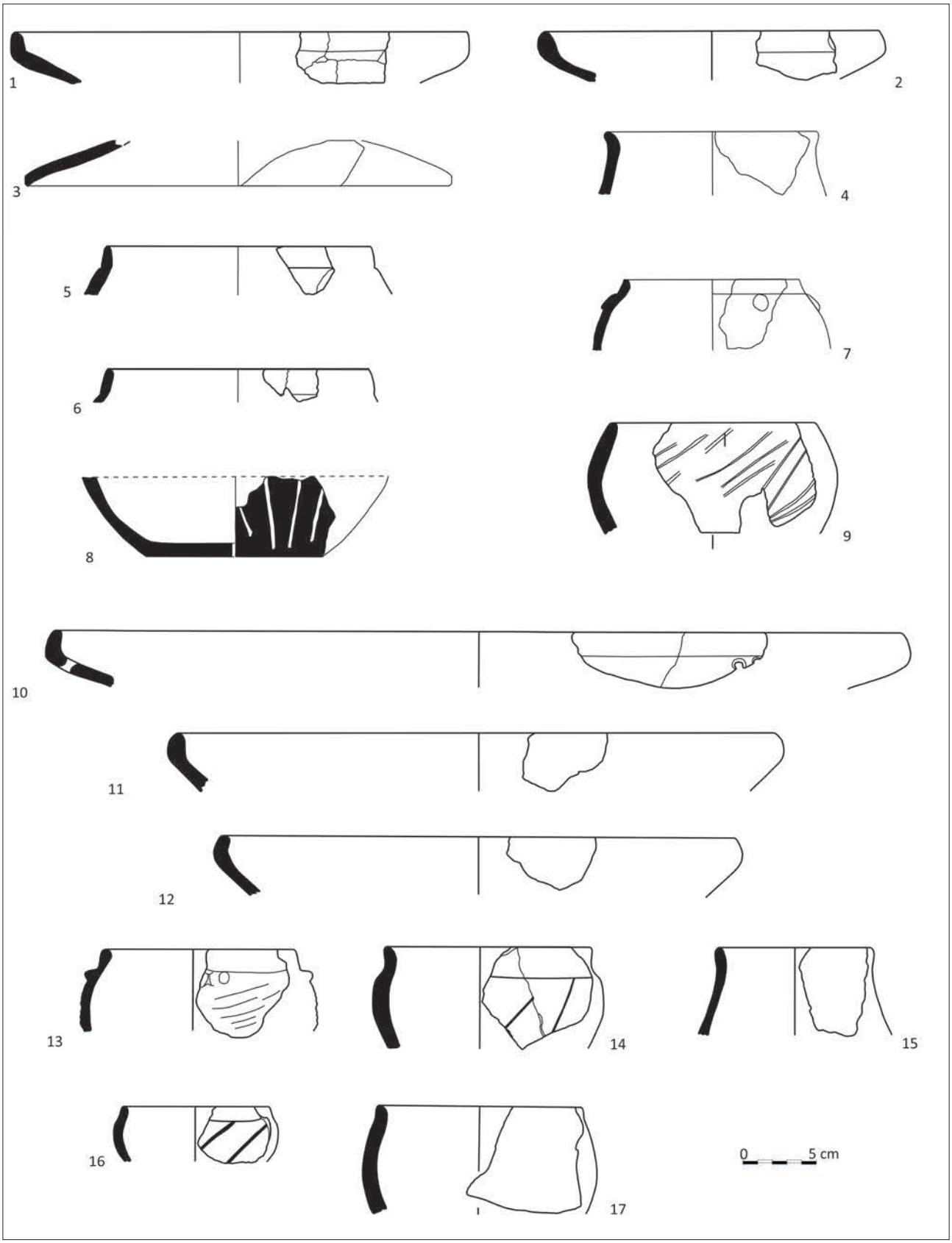


Plate IV. *Middle Chalcolithic pottery (Gumelnița culture). 1–9. SI-A, Cx5; 10–17. SI-B, Cx20.*

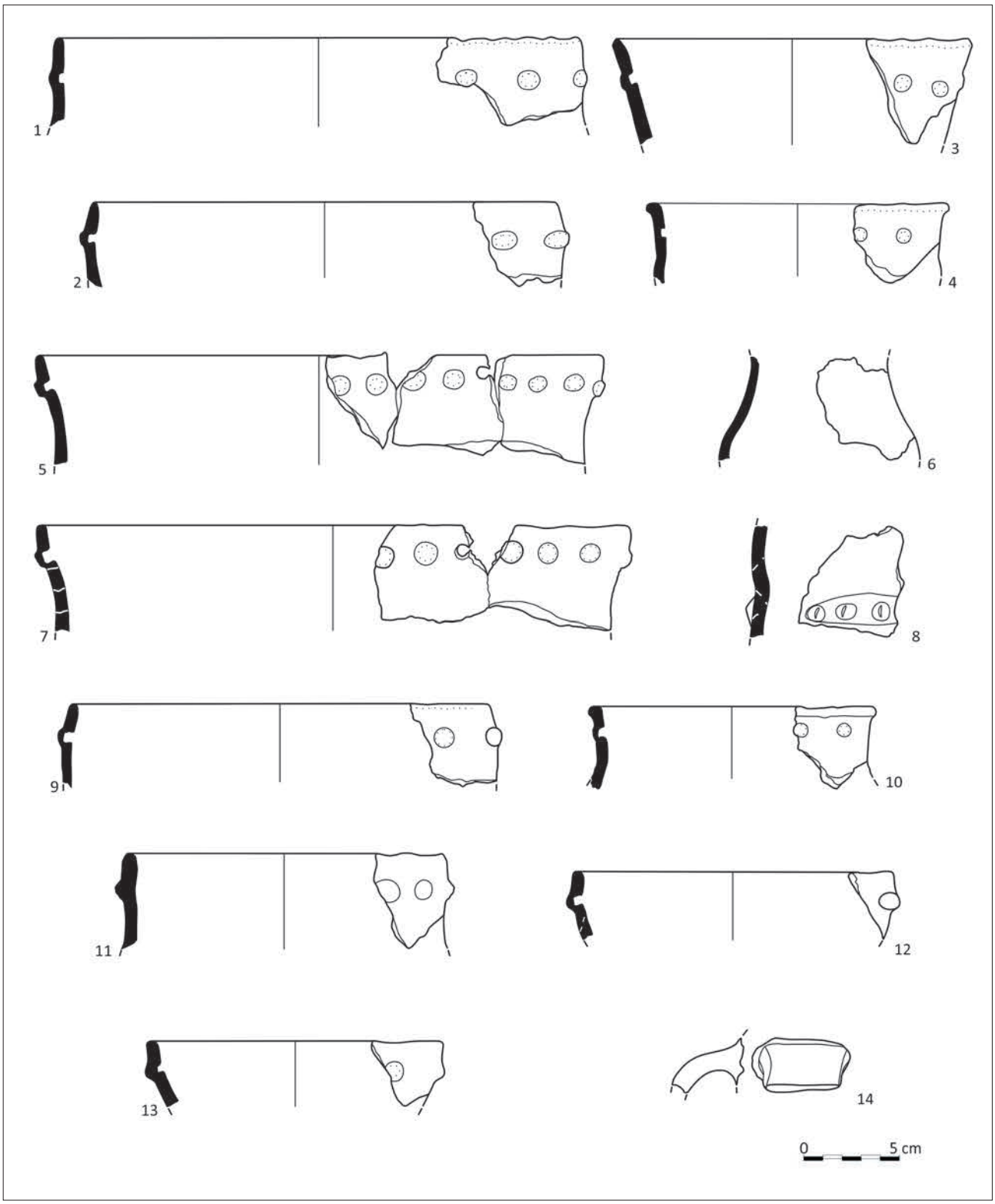


Plate V. *Early Bronze Age pottery (Glina culture). 1–2. SI-A, SU2501; 3. SII, SU5001; 4–14. SI-B, Cx9.*

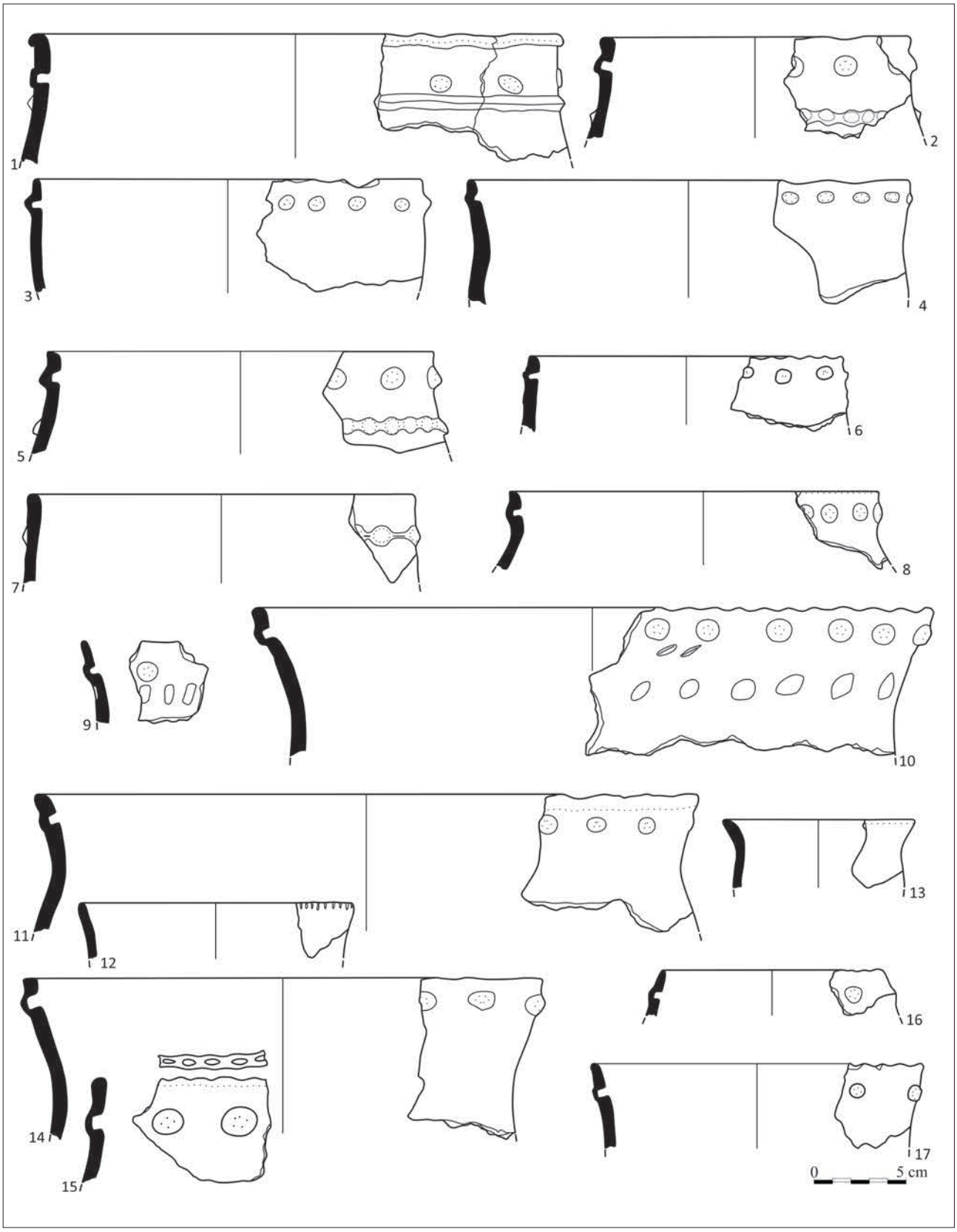


Plate VI. *Early Bronze Age pottery (Glina culture). 1–17. SI-C, Cx16.*



Plate VII. *Early Bronze Age pottery (Glina culture). 1–16. SI-C, Cx16.*

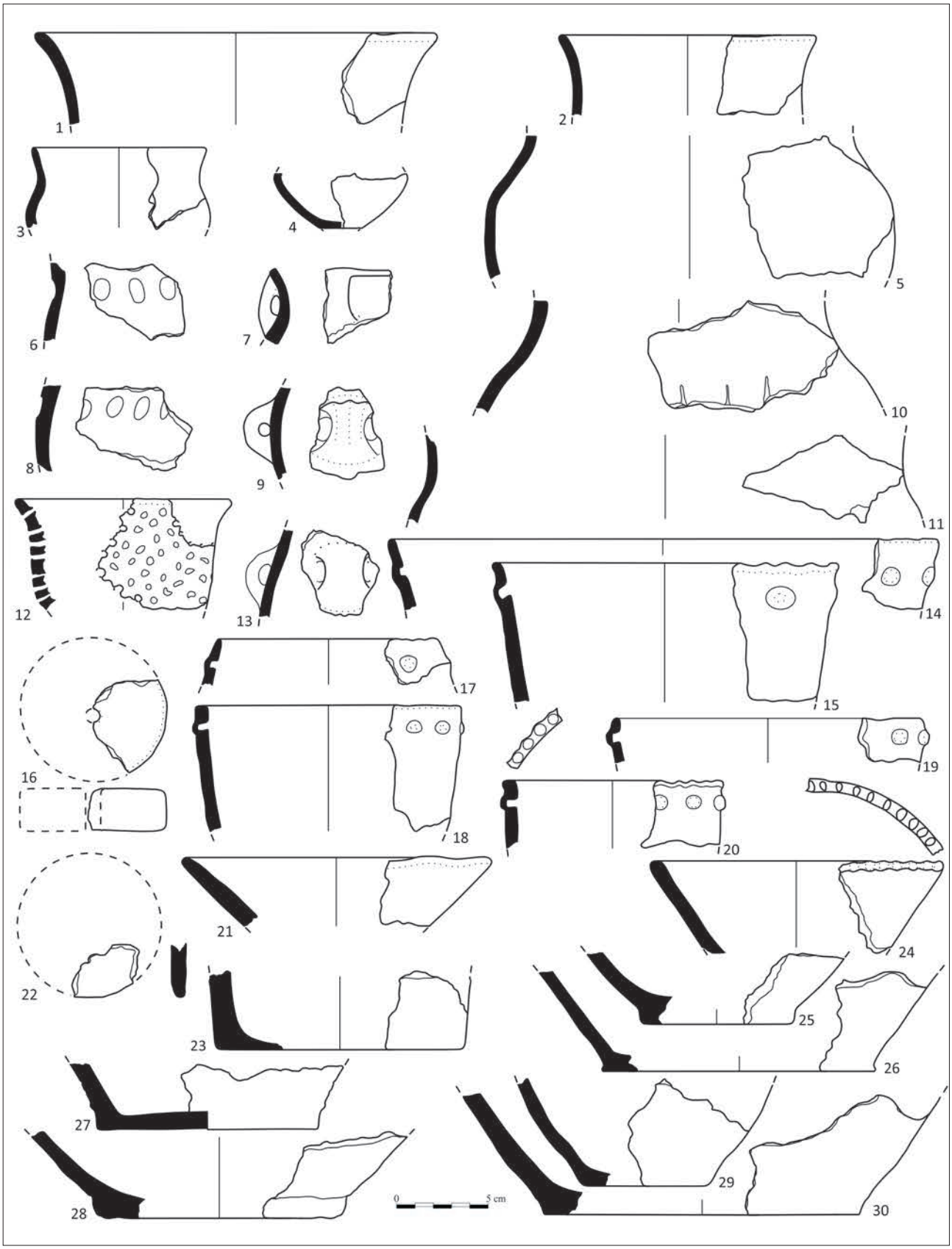


Plate VIII. *Early Bronze Age pottery and clay wheel fragments (Glina culture). 1–30. SI-C, Cx16.*

CINNABAR USE IN THE EARLY BRONZE AGE MORTUARY PRACTICES OF THE NORTHERN BALKANS

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Keywords: *North Balkans, Early Bronze Age, barrow graves, Yamna culture, cinnabar, hematite*

Abstract: *The article presents the results of the SEM and RAMAN analyses as well as the microscopic examination of red pigments from three Early Bronze Age barrow graves from Kriva Bara (Northwest Bulgaria). The results indicate a mixture between hematite and cinnabar used in the mortuary practices. Thus, Kriva Bara barrow presented the earliest use of cinnabar in Early Bronze Age Northern Balkans. Its utilization in Prehistoric Europe and, especially amongst Yamna communities is also discussed.*

Cuvinte-cheie: *Balcanii de nord, epoca bronzului timpuriu, morminte tumulare, cultura Yamna, cinabru, hematit*

Rezumat: *În articol sunt prezentate analizele SEM și RAMAN, precum și observațiile la microscop ale pigmenților roșii din trei morminte tumulare din epoca bronzului timpuriu de la Kriva Bara (Bulgaria de nord-vest). Rezultatele indică un amestec de hematit și cinabru folosit in practicile funerare. Astfel, tumulul de la Kriva Bara reprezintă cea mai veche utilizare a cinabrului în Balcanii de nord din epoca timpurie a bronzului. Se discută, de asemenea, utilizarea acestuia în Europa preistorică și, în special, în cadrul comunităților Yamna.*

INTRODUCTION

Cinnabar is a mineral containing mercury (Hg) which, alongside gold (Au), silver (Ag), copper (Cu), iron (Fe), lead (Pb), and tin (Sn), is one of the seven metals known in ancient times. It occurs as an amorphous mercuric sulphide, which subsequently converts to a crystalline red mercuric sulphide (HgS)[1]. The word "cinnabar" derives from the Greek's "κιννάβαρι", a word that has two components originating from the words "*motion*" and "*weight*" which are in fact the main properties of mercury (Hg). Alongside other properties, cinnabar changes its color to black when exposed to sunlight and does not regain it if the exposure was long. A highly intense red dye was produced from cinnabar. Its unique qualities, striking beauty and eye-catching intensity made it one of the most precious pigments to ancient civilisations, symbolising vitality, power, and spiritual significance. Its vibrant colour was often associated with blood, life, and the divine, further elevating its importance in rituals and ceremonial contexts. Its rarity, difficulty of extraction, and refinement added to its allure, making it a luxury item reserved to art, religious artefacts, and mortuary practices. Ancient cultures, no matter whether Roman, Chinese, or Mesoamerican, valued cinnabar not only for its visual impact but also for its transformative qualities, reflecting the alchemical and mystical belief that it held the power to transcend physical states. This transformative symbolism likely influenced its use in funerary contexts, in tombs, on statues, stelae and ceremonial objects, usage meant to ensure the transition of the soul, and its rebirth in the afterlife[2].

In daily life, cinnabar *"…may have been reserved for special occasions (and people), limited body decoration and tattooing"*[3]. Other than its ritual use, it had practical applications, as well. It is well known that in China and India it was used as a medical remedy taken orally as a *„...sedative and to treat fever, insomnia, stroke, trauma to the brain, mouth and tongue ulcers, and other ailments"*, and as an ointment – to treat ulcers, syphilis, etc[4]. From the perspective of mortuary practices, it is noteworthy that it delays decomposition "…*thanks to its powerful bactericide and insecticide properties"*[5].

[1] Kiplik 1956.

[2] Manova 2021, p. 13–31; Gliozzo 2021.

[3] Gliozzo 2021, p. 9.

[4] Emslie *et alii* 2019, p. 79–93 with references.

[5] Cervini-Silva *et alii* 2013.

The data existing prior to 2024 showed that in present-day Bulgaria, cinnabar was used from the 4th century BC onwards, and always in religious contexts: in Late Iron Age Thracian tombs (4th – 1st century BC); in Late Antiquity burial structures (the Silistra tomb); during the Middle Ages and the Revival period (in Christian temple paintings, Christian religious books and miniatures)[6]. The only "evidence" for a potential earlier use of cinnabar was the presence of sulfur and iron ions in a sample of the red pigment applied on the inner part of a bowl from an Early Bronze Age (EBA) barrow grave near Drazevo, Yambol region, Thrace[7]. Surprinsingly, the presumption of a possible use of cinnabar in the EBA of the northern Balkans was supported also by the discovery in 2024, and the subsequent analyses of the pigments used in the mortuary practices, of a barrow near Kriva Bara (North–West Bulgaria) which makes the main subject of the present report.

KRIVA BARA BARROW

The Kriva Bara barrow was situated in the western part of the Lower Danube region, within present-day north-western Bulgaria, some 15 km south of the Danube River. It is part of the westernmost agglomeration of EBA barrows in the country (Fig. 1/1). The 2024 rescue excavations were prompted by the construction of a gas pipe-line[8]. Before the excavations, the barrow measured a 0.50 m in height and had a diameter of ca 30 m (Fig. 2). Given its location within an actively cultivated agricultural field, it is likely that the original dimensions could have been larger. Six burial structures from the first half of the 3rd millennium BC (Table 1), one Late Iron Age structure and a bovine skull (*Bos taurus*) dated to the 18th–19th centuries AD (Poz-179390 170 ± 30 BP; 1.6%N, 4.6%C, 2.5%coll) were investigated in the barrow area (Fig. 3/1; 4).

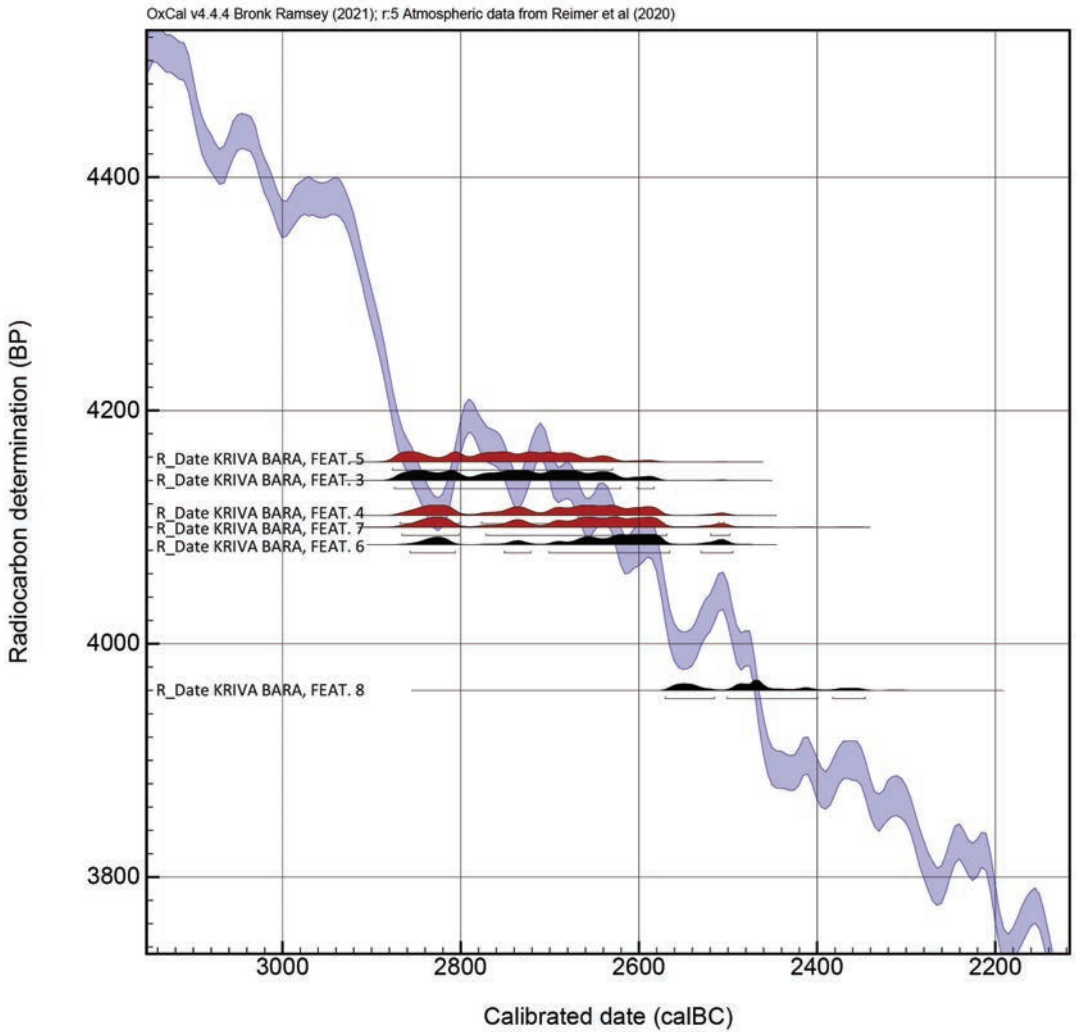


Table 1. *Kriva Bara, calibrated AMS dates of the EBA graves on OxCal plot (OxCal v.4.4).*

[6] Manova 2021.

[7] Manova 2021, p. 65.

[8] Alexandrov, Włodarczak 2025.

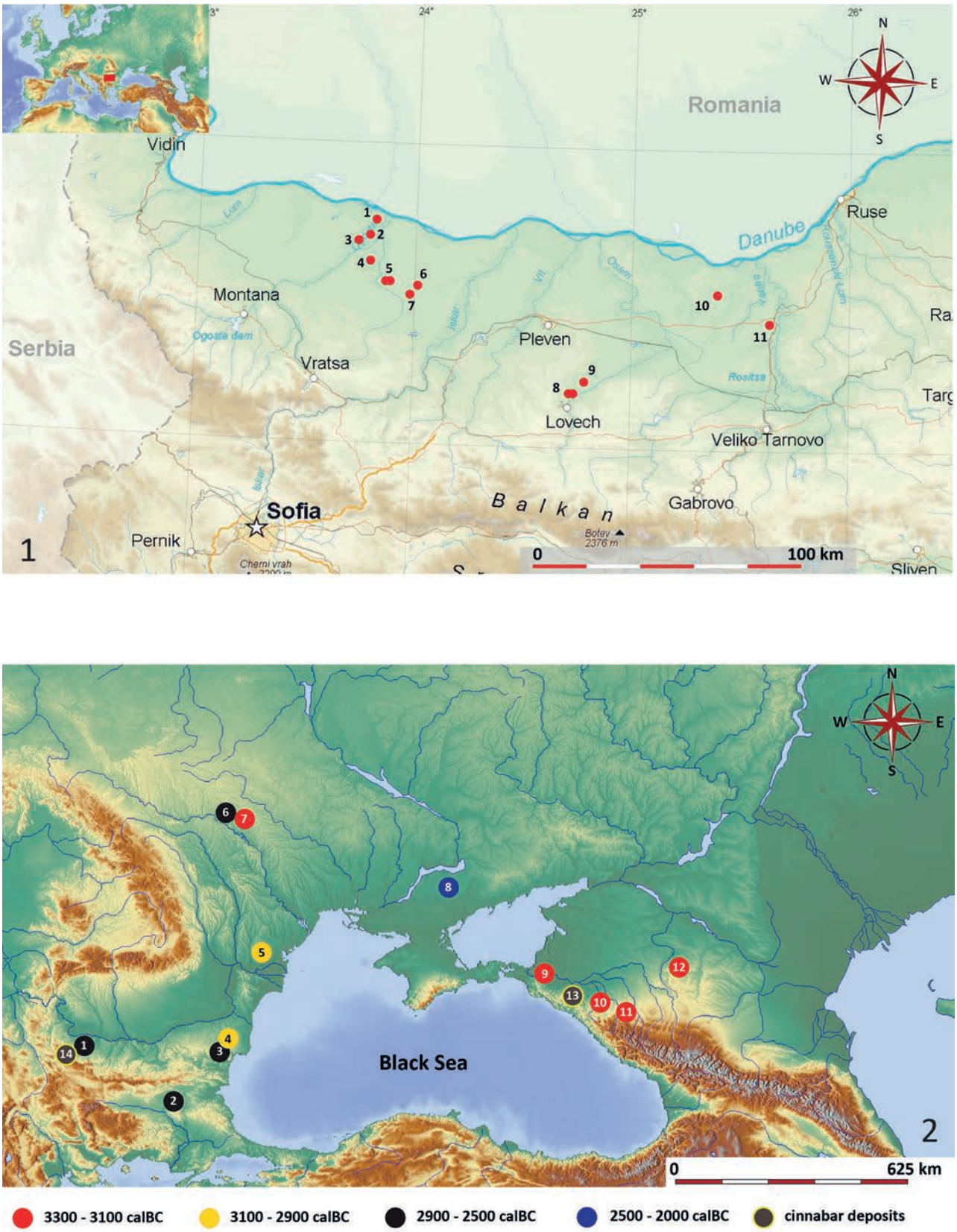


Figure 1. 1. *Early Bronze Age barrows excavated in North-West Bulgaria (1. Kozlodui; 2. Butan; 3. Kriva Bara; 4. Manastirishte; 5. Tarnava; 6. Kneza; 7. Tarnak; 8. Goran-Slatina; 9. Vladinya; 10. Kozlovets; 11. Polsko Kosovo). Credit: https://map.bgmountains.org;* ***2.*** *Burial complexes with cinnabar in the Black Sea region mentioned in text (1. Kriva Bara; 2. Mednikarovo; 3. Vetrino; 4. Dobrich; 5. Novosiolovca; 6. Porohy; 7. Prydnistryanske; 8. Zamozhne; 9. Chekon-2; 10. Maykop; 11. Novosvobodnaya (ex Tsarkaya); 12. Mar'inskaya; 13. Krasnodar; 14. Chiprovtsi). Credit: https://maps-for-free.com/.*

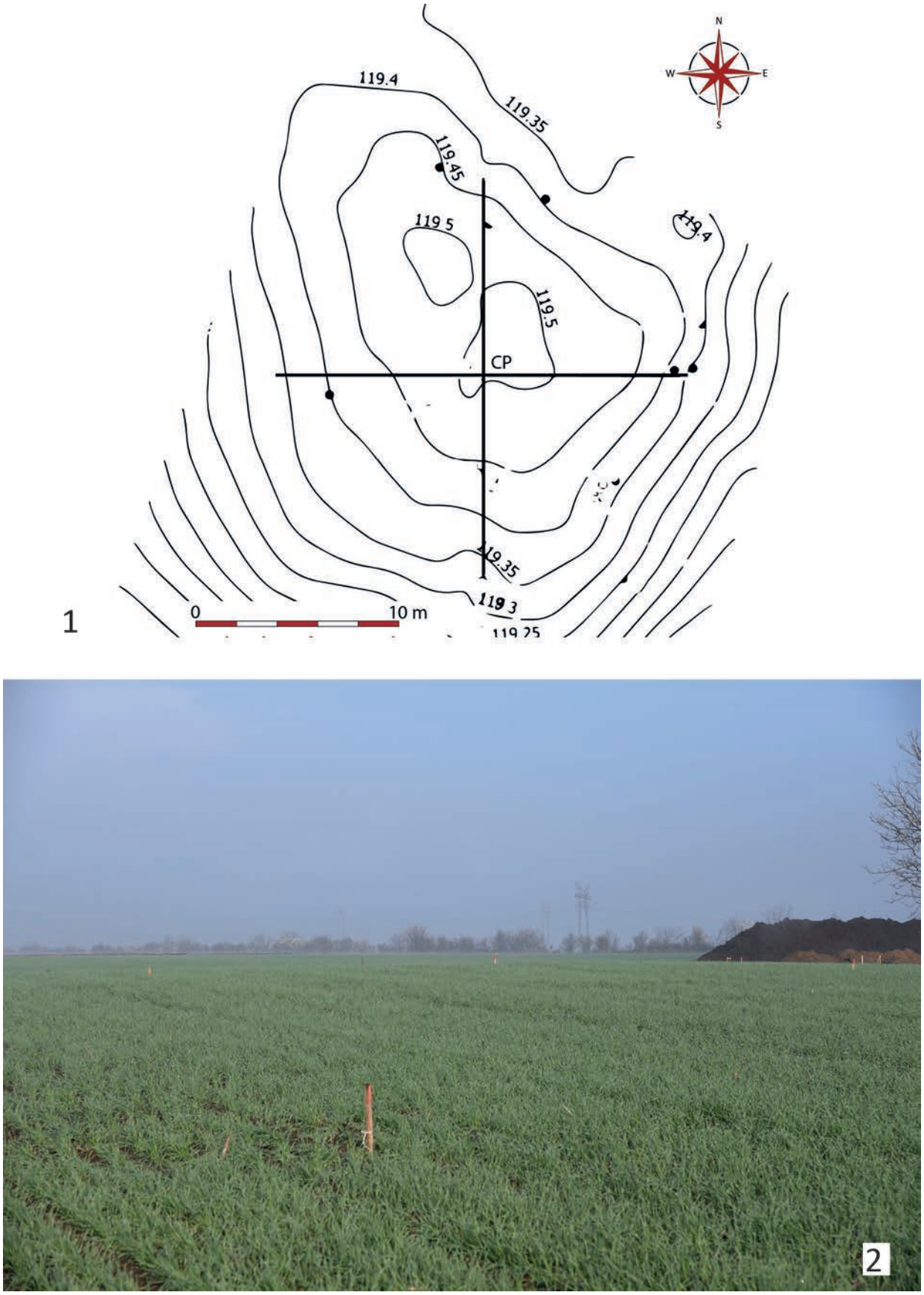


Figure 2. *Kriva Bara barrow.* ***1.*** *Topographic map (credit: Tomasz Oberc);* ***2.*** *The barrow before the excavations (credit: Stefan Alexandrov).*

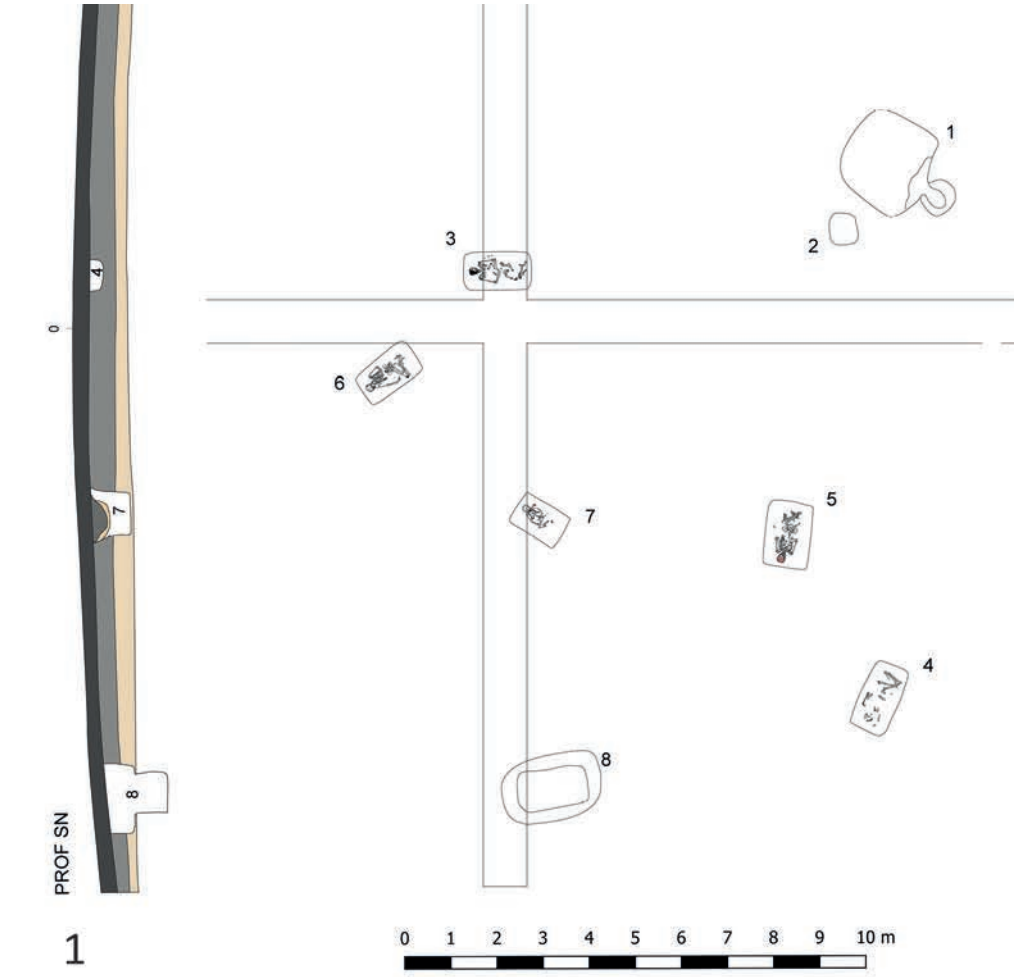




Figure 3. *Kriva Bara barrow.* ***1.*** *Plan of the features investigated (credit Michał Podsiadło);* ***2.*** *Aerial view of the EBA graves in the southern sector (credit: Piotr Włodarczak).*

The EBA features include five inhumations and one cremation, divided into three burial groups. The first one includes two inhumation graves (feature nos. 3 and 6), located in the central part of the barrow fill (Fig. 3). Both graves represent secondary inhumations with the pits dug into the already existing barrow fill. Feature no. 3 consisted of the poorly preserved remains of a male (40–50 years old). The body was placed in an articulated supine position with flexed legs, the arms bent at the elbows with the palms on the abdomen, oriented west–east. The ^{14}C date Poz-179391 returned the result 4140 ± 35 BP; 2.3%N, 7.6%C, 3.3%coll (Fig. 5). Feature no. 6 contained a well-preserved articulated skeleton of a female (25–30 years old), in a semi-supine position, slightly on the right side, with flexed legs, the right arm along the body and the left one flexed at the elbow with the palms on the abdomen. The orientation was southwest–northeast. The ^{14}C date Poz-179393 indicated the interval 4085 ± 30 BP; 0.9%N, 4.4%C, 6.5%coll (Fig. 6/1–3).

The second group of burials is represented by feature no. 8, a cremation grave, located in the southern part of the barrow fill; the radiocarbon date is Poz-178946: 3960 ± 30 BP; 0.4%N, 1.5%C, carbonate (Fig. 6/4–5). No grave inventory or use of pigments in mortuary practices were recorded in these three features presented above.

The three remaining graves (features nos. 4, 5, and 7) that are the main subject of the present study, were located in the south-eastern sector of the barrow. Feature no. 4 was partly destroyed by modern agricultural activities. However, most of the skeleton remained intact allowing the reconstruction of the position of the 50–55 years old male: supine position with flexed legs (collapsed to the right side), the left arm flexed at the elbow while the right arm was missing. The orientation was southwest–northeast and the radiocarbon date Poz-179395: 4110 ± 35 BP; 1.2%N, 6.7%C, 1.5%coll (Fig. 7). No inventory was found in the grave, but a strip of red pigment was noted on the posterior side of the right tibia while traces of red pigment were visible on the anterior side as well (Fig. 10/1–3). Red colouring was clearly visible inside all areas of the cancellous bones of the upper and lower limbs (Fig. 11/1–4).

Feature 5 comprised the inhumation of a male individual aged 20–30 years, placed in supine position with flexed lower limbs and the arms bent at the elbows, the forearms resting across the chest area. Both palms were absent. The burial was oriented south–north. Radiocarbon analysis: Poz-179394 reads 4156 ± 30 BP; 0.7%N, 3.9%C, 1.6%coll (Fig. 8). Although no grave goods were recovered, the burial is notable for the extensive use of red pigment. Traces were recorded on several extracranial areas of the skull: on the right maxilla above the first molar and the first and second premolars; on the left maxilla above the first molar and second premolar (Fig. 12/1–4); on the left zygomatic bone; on the upper part of the left temporal region; around the external acoustic meatus; on the upper portion of the left mandible; and across the parietal area (Fig. 13/1–4). Red pigment was also observed on the endocranial surface, particularly on the right and left parietal bones around the lambda point (Fig. 14/1–4). Additional traces were visible at the roots of the teeth, specifically the upper right first premolar and the lower right third premolar (Fig. 15/1–3). Red colouring was likewise detected within the cranial bone structure in areas corresponding to the extracranial pigment application. Furthermore, a cuprorivaite-based blue pigment was identified on the left mandible (Fig. 16).

Feature no. 7 was the well-preserved inhumation of an infant (5–6 years old). The body was placed in supine position with flexed legs, arms along the body and orientation northwest–southeast. Radiocarbon analysis Poz-179392 reads 4100 ± 35 BP; 4.1%N, 11.3%C, 7.5coll (Fig. 9). A lump of red pigment (roughly 7 x 3 cm) was found near the left shoulder (Fig. 17/1–4).

ANALYSES OF THE PIGMENTS FROM KRIVA BARA BARROW

Methods and equipment:

To analyse the nature of the red pigments found in the three graves, SEM-EDS, RAMAN, optical stereomicroscopy and spectral analyses were carried out as follows:

a) ***Scanning Electron Microscopy***. Analyses with much higher magnifications concerning the detailed structure of the samples and their elemental composition were carried out on a JEOL JSM-26390 scanning electron microscope (secondary electrons mode) equipped with an energy-dispersive detector. The analysis of the samples intended to provide details for the elemental composition present on the surface of the samples. The methodology was related to the need for purity of the investigated pigments in which soil components were present;

b) ***Raman spectrometer analyses*** with a *inVia Qontor Microscope* with *Leica* lens, and *CCD* detector (21°C operating room temperature). Each sample was analysed on a 2mm glass slide, scanned from 10–15 to 180s using Wire 5.6 software. For excitation, a 532 nm laser with 50 mW output power was used. Depending on the specimen concentration, the nominal power used during the analysis was 2.5 and 5 mW. A 785 nm line laser with an output power of 300 mW with a nominal power of 1 mW was also used. X50 lens were used to focus the laser beam and collect the scattered light in a backscatter configuration. The diameter of the illuminated spot on the specimen surface was about 3 µm. The spectral range studied was between 100.00 cm^{-1} and 2000.00 cm^{-1}.

c) ***Magnification observation*** of samples was carried out with an Optical Stereomicroscope *Stem 305* equipped with a ZEISS *Axiocam 208 color* camera.



Figure 4. *Kriva Bara barrow.* ***1–3.*** *Feature no. 1 (credit Piotr Włodarczak);* ***4.*** *Feature no. 2 calibrated AMS date (OxCal v.4.4);* ***5.*** *Feature no. 2 (credit Piotr Włodarczak).*

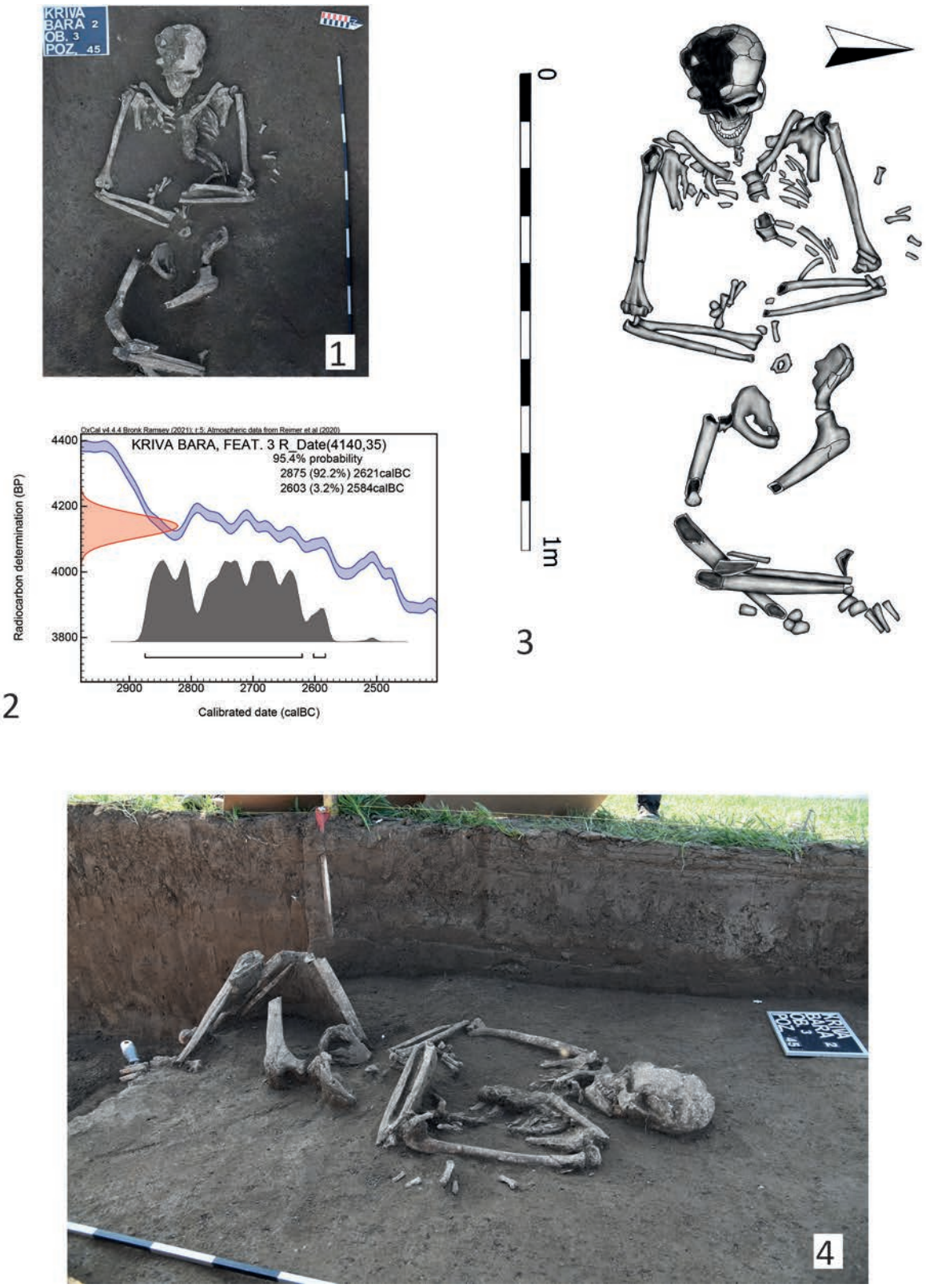
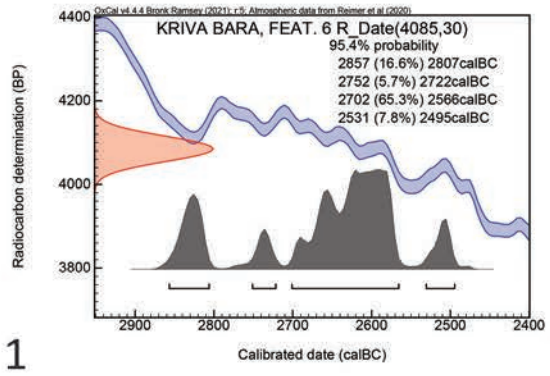
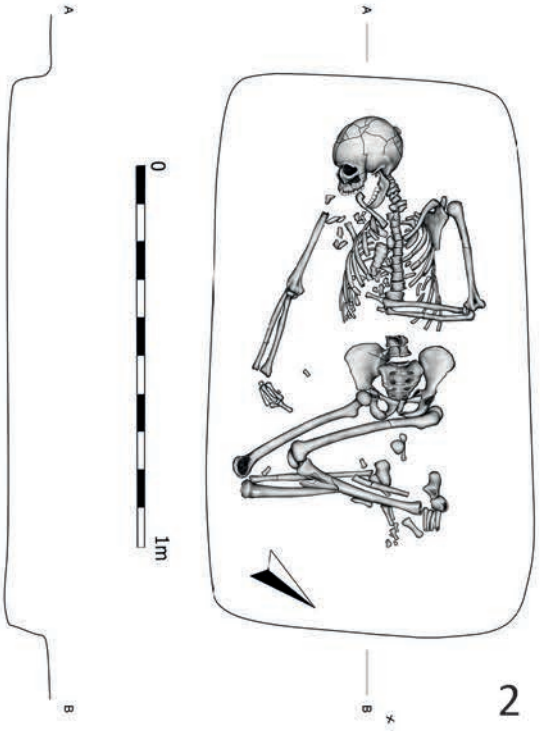


Figure 5. *Kriva Bara barrow, feature no. 3.* ***1, 4.*** *(credit Piotr Włodarczak);* ***2.*** *(credit Michał Podsiadło);* ***3.*** *calibrated AMS date (OxCal v.4.4).*







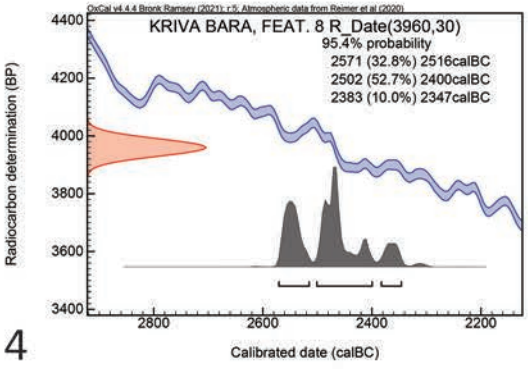




Figure 6. *Kriva Bara barrow.* ***1–3.*** *feature no. 6;* ***4–5.*** *feature no. 8.* ***3, 5.*** *(credit Piotr Włodarczak);* ***2.*** *(credit Michał Podsiadło);* ***1, 4.*** *calibrated AMS dates (OxCal v.4.4).*

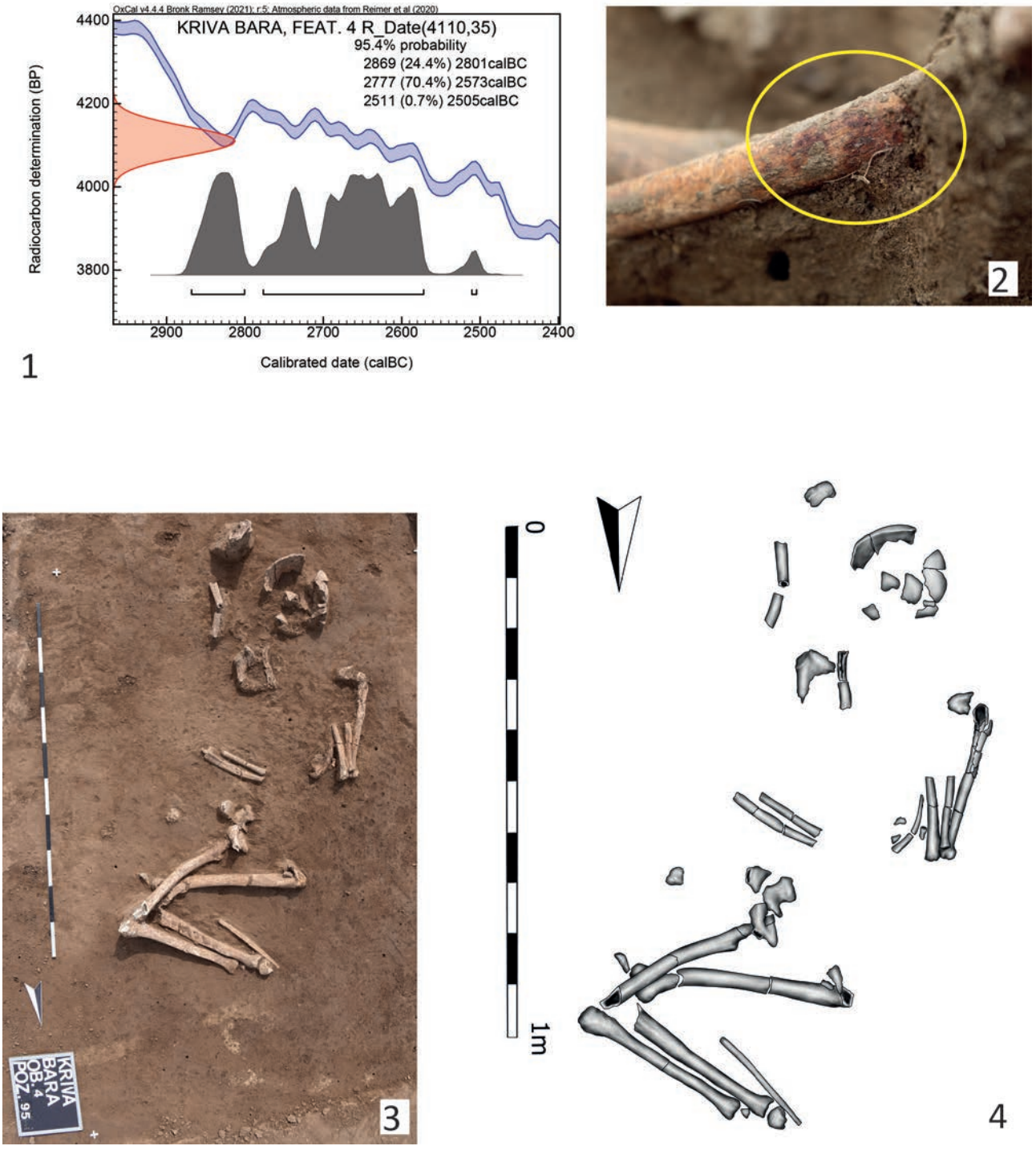


Figure 7. *Kriva Bara barrow, feature no. 4.* ***1.*** *Calibrated AMS date (OxCal v.4.4);* ***2, 3.*** *(credit Piotr Włodarczak);* ***4.*** *(credit Michał Podsiadło).*

Results

Feature no. 4

The pigments on the tibia as well as the staining of the cancellous long bones were analysed.

- ***Pigments on the tibia***

– *SEM analyses* (Fig. 10/5; Table 2): the main elements in the sample are carbon (C), oxygen (O), and calcium (Ca), which should be associated with bone composition, and iron (Fe). The high amount of phosphorus (P) may be interpreted as a mineral component in human bones, but its appearance could also be related to modern soil fertilization. Trace elements – silicon (Si), aluminum (Al), and sodium (Na) were detected in the samples as well, the last one as part of the elemental composition of the human bone. In the spectra nos. 31 and 32, the presence of iron (Fe) was recorded as 44.57 and 43.47 (weight %),

Result Type		Weight %							
Spectrum Label	Spectrum 24	Spectrum 25	Spectrum 26	Spectrum 27	Spectrum 29	Spectrum 30	Spectrum 28	Spectrum 31	Spectrum 32
C	15.24	7.44	7.92	14.48	11.15	5.57	11.51	13.89	12.49
O	51.50	36.04	37.30	45.72	49.50	52.97	49.37	21.40	22.53
Na	0.54	0.50	0.59	0.39	0.65	0.31	0.64	0.17	0.15
Al	0.05	0.41	0.46	0.13	0.12	3.78	0.06	0.42	0.36
Si	0.07	0.34	0.30	0.07	0.05	6.20	0.06	0.19	0.13
P	9.72	15.39	14.72	11.29	11.41	0.00	11.33	0.00	0.00
Ca	22.88	39.54	38.51	27.76	27.03	27.59	26.99	18.66	20.56
Fe	0.00	0.00	0.17	0.00	0.05	3.34	0.03	44.57	43.47
Hg	0.00	0.33	0.03	0.16	0.04	0.24	0.00	0.70	0.31
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

Result Type		Atomic %							
Spectrum Label	Spectrum 24	Spectrum 25	Spectrum 26	Spectrum 27	Spectrum 29	Spectrum 30	Spectrum 28	Spectrum 31	Spectrum 32
C	23.50	14.05	14.71	23.43	18.20	9.47	18.73	30.50	27.61
O	59.60	51.12	52.00	55.54	60.66	67.59	60.31	35.28	37.40
Na	0.43	0.50	0.57	0.33	0.55	0.28	0.54	0.19	0.17
Al	0.03	0.35	0.38	0.09	0.09	2.86	0.05	0.42	0.36
Si	0.05	0.28	0.24	0.05	0.04	4.51	0.04	0.18	0.12
P	5.81	11.28	10.60	7.08	7.22	0.00	7.15	0.00	0.00
Ca	10.57	22.39	21.43	13.46	13.22	14.05	13.16	12.29	13.63
Fe	0.00	0.00	0.07	0.00	0.02	1.22	0.01	21.06	20.67
Hg	0.00	0.04	0.00	0.02	0.00	0.02	0.00	0.09	0.04
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

Table 2. *Kriva Bara, feature 4. SEM/EDS analyses of the red pigment at the tibia.*

and 21.06 and 20.67 (atomic %) respectively. Some of the spectra, especially nos. 25, 31 and 32 show the presence of mercury (Hg). No sulfur (S) was detected in the specific measurements, which we attribute to the low level of the element compared to the higher levels of the other elements.

– *RAMAN analyses* (Fig. 10/4): the peak at 284 cm^{-1} (very weak) coincides with that of the soil at 279 cm^{-1}, interpreted as degenerate E vibrations of cinnabar (HgS)[9]. Therefore, we may presume this is cinnabar in very low concentration.

Considering all the above we suggest that the red pigment sample from the tibia contains hematite (Fe_2O_3) and very small amounts of cinnabar (HgS).

- ***The staining of the cancellous long bones***

– *SEM analyses* (Fig. 11/5; Table 3): the elemental composition includes calcium (Ca), magnesium (Mg), and phosphorus (P), which are components of the human bones. The high percentage of phosphorus (P), measured in spectra nos. 11, 12, and 14, could be related to phosphate fertilizers, as above. Iron (Fe), silicon (Si), aluminum (Al), the trace element titanium (Ti), as well as the minimal concentration of mercury (Hg) measured in the spectra nos. 13, 19, and 22, may be associated with the cancellous bone staining.

– *RAMAN analyses* (Fig. 11/5*)*: two distinct peaks at 1088 cm^{-1} and 1618 cm^{-1} are observed. The one at 1088 cm^{-1} is to be related to the (Si-O-Si) stretching vibration, triggered by mineral components in a siliceous environment. The band at 1088 cm^{-1} can be attributed to the symmetric stretching of bone carbonated hydroxyapatite (CO_3). The very weak peak at 284 cm^{-1} may be interpreted as degenerate E vibrations of cinnabar (HgS)[10]. Therefore, we may interpret this as cinnabar in a very low concentration.

Considering all the above, we suggest that the staining of the cancellous long bones contains hematite with the microelement titanium (Ti) and cinnabar (HgS).

[9] Scheuermann *et alii* 1969.

[10] Scheuermann *et alii* 1969.

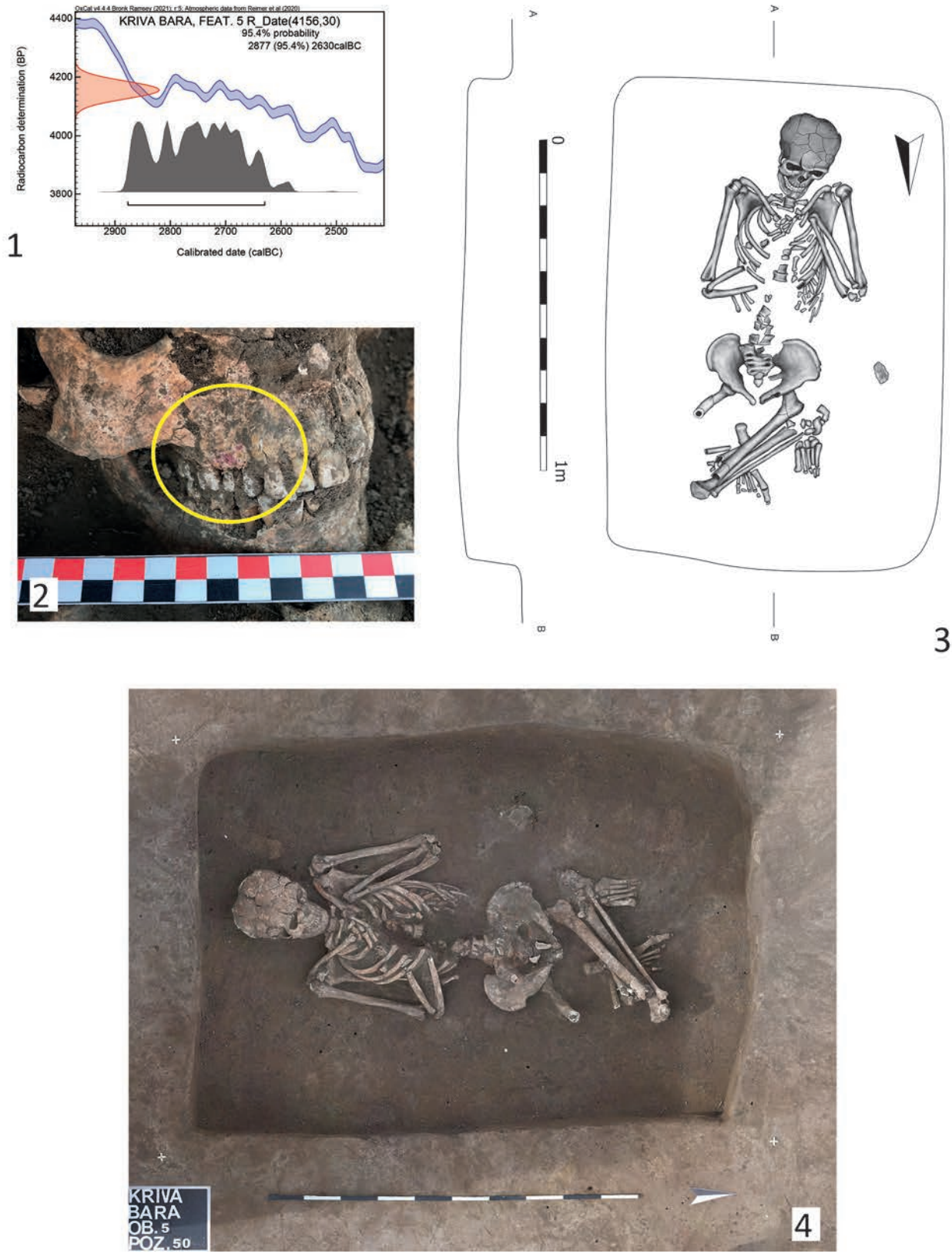
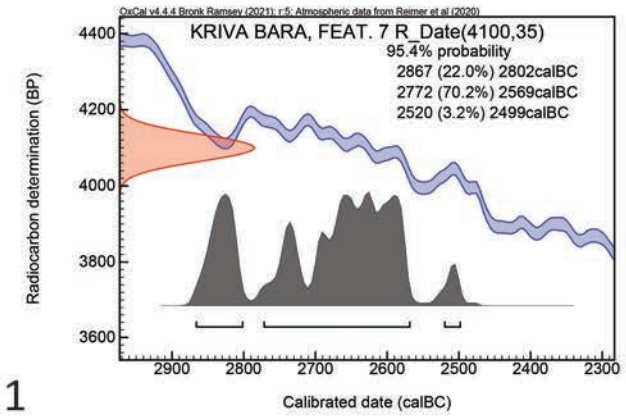


Figure 8. *Kriva Bara barrow, feature no. 5.* ***1.*** *Calibrated AMS date (OxCal v.4.4);* ***2, 4.*** *(credit Piotr Włodarczak);* ***3.*** *(credit Michał Podsiadło).*



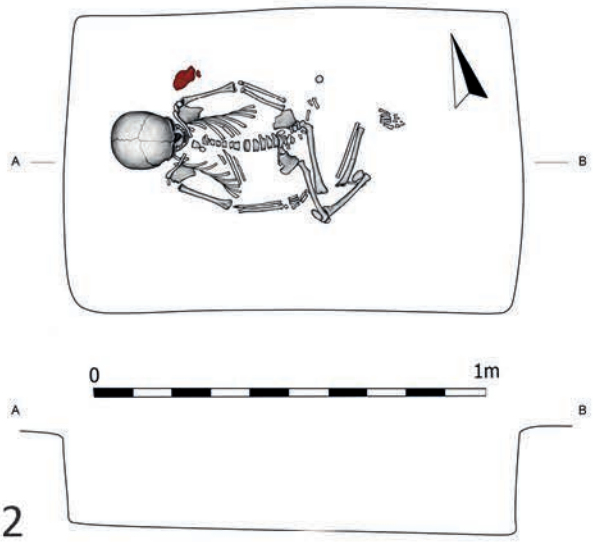








Figure 9. *Kriva Bara barrow, feature no. 7.* ***1.*** *Calibrated AMS date (OxCal v.4.4);* ***2.*** *(credit Michał Podsiadło);* ***3–5.*** *(credit Piotr Włodarczak).*

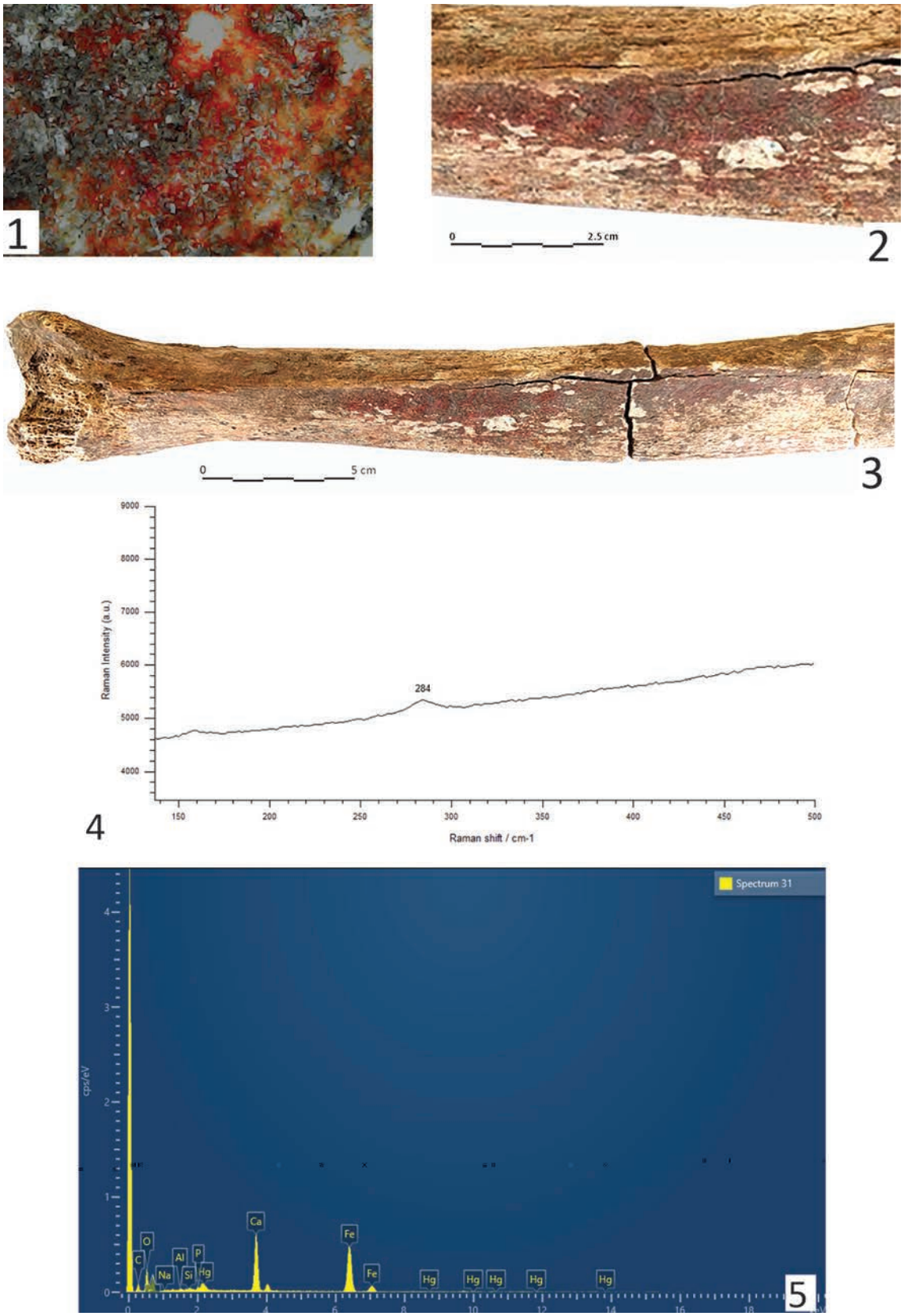


Figure 10. *Kriva Bara barrow, feature no. 4, red pigment on the tibia.* ***1.*** *Macro photo (credit Rositsa Manova);* ***2–3.*** *photo (credit Stefan Alexandrov);* ***4.*** *RAMAN image (inVia Qontor Microscope);* ***5.*** *SEM/EDS image (JEOL 6390 and INCA Oxford).*

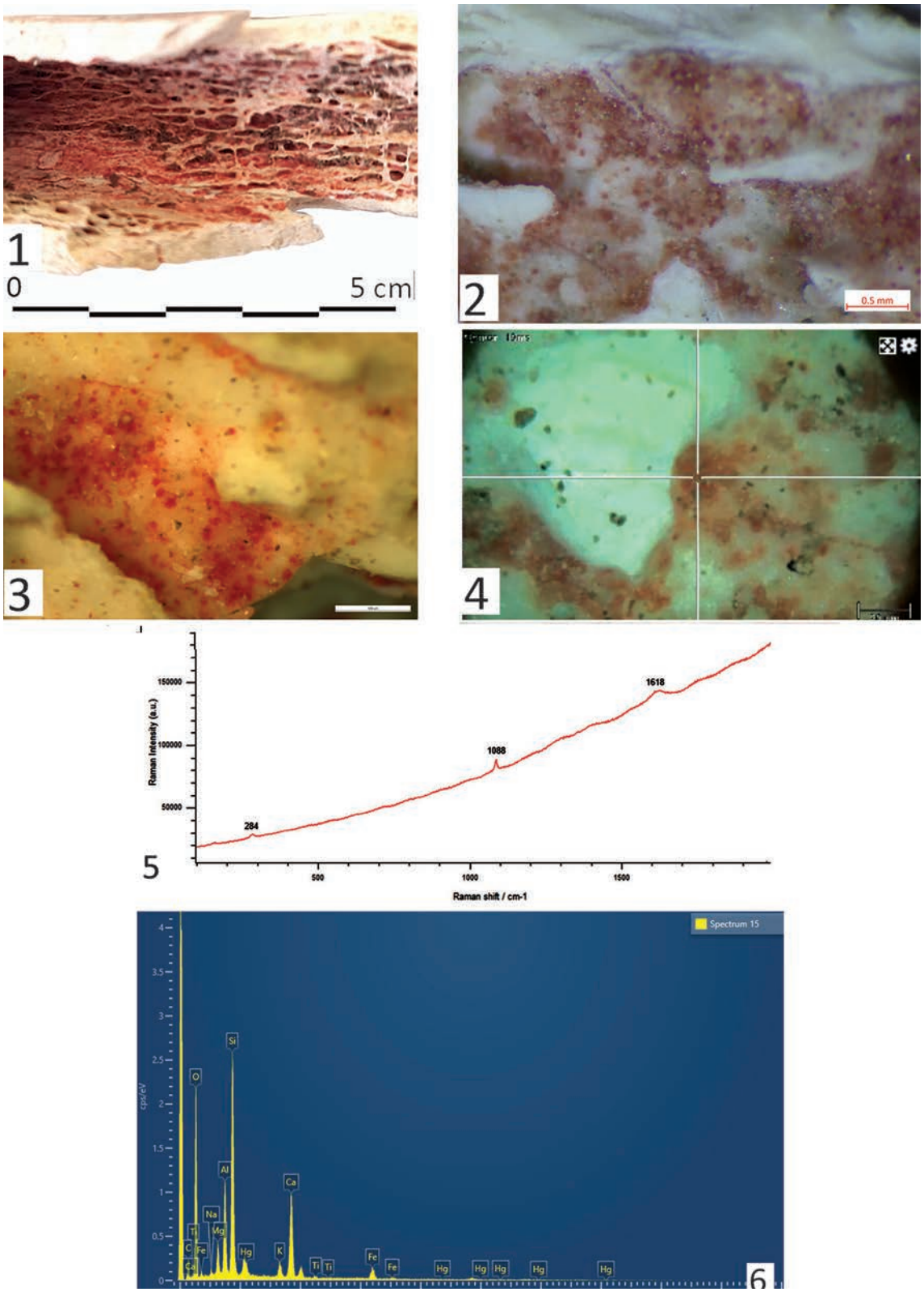


Figure 11. *Kriva Bara barrow, feature no. 4, staining of the cancellous long bones (tibia).* ***1.*** *Photo (credit Stefan Alexandrov);* ***2–4.*** *Optical microscopy (JEOL 6390 and INCA Oxford);* ***5.*** *RAMAN image (inVia Qontor Microscope);* ***6.*** *SEM/EDS image (JEOL 6390 and INCA Oxford).*

Result Type		Weight %										
Sp. Lab	Spectrum 11	Spectrum 12	Spectrum 13	Spectrum 14	Spectrum 15	Spectrum 16	Spectrum 17	Spectrum 18	Spectrum 19	Spectrum 20	Spectrum 21	Spectrum 22
C	9.26	4.83			16.83	14.87		16.67	18.29	16.77	25.47	20.95
O	41.39	38.51	61.78	44.72	49.16	52.21		54.89	59.51	56.07	58.87	61.28
Na					0.47							
Mg					2.09		93.13					
Al					5.59					0.38	2.75	
Si					13.13							
P	12.58	10.75		12.69						2.46		0.56
K					1.23							
Ca	36.77	45.92	37.31	42.59	8.15	32.92		28.28	22.14	24.32	12.91	15.86
Ti					0.27							
Fe			0.51	0.00	3.07		6.87	0.16				
Hg	0.00	0.00	0.40	0.00	0.00	0.00	0.00	0.00	0.06	0.00	0.00	1.34
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

Result Type		Atomic %										
Sp. Lab.	Spectrum 11	Spectrum 12	Spectrum 13	Spectrum 14	Spectrum 15	Spectrum 16	Spectrum 17	Spectrum 18	Spectrum 19	Spectrum 20	Spectrum 21	Spectrum 22
C	16.47	9.34			25.25	23.26		25.11	26.27	24.93	34.06	29.10
O	55.26	55.95	80.39	65.49	55.35	61.31		62.07	64.19	62.57	59.12	63.89
Na					0.37							
Mg					1.55		96.89					
Al					3.73					0.25	1.64	
Si					8.42							
P	8.68	8.07		9.60						1.42		0.30
K					0.57							
Ca	19.60	26.63	19.38	24.90	3.67	15.43		12.77	9.53	10.83	5.17	6.60
Ti					0.10							
Fe			0.19	0.00	0.99		3.11	0.05				
Hg	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.11
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

Table 3. *Kriva Bara, feature 4. SEM/EDS analyses of the red pigment in the cancellous bone of the tibia.*

Feature no. 5. Pigments on the endo- and exocranial parts of the skull and on the root of a molar of the deceased were analysed.

- ***Pigments on the right maxilla***

– *SEM analyses* (Fig. 12/5; Table 4). The elemental composition in the spectra nos. 27 and 28 includes calcium (Ca), potassium (K), magnesium (Mg), all components of hydroxyapatite. The high percentages of phosphorus (P) could be equally related to the individual's diet and phosphate fertilizers. Iron (Fe), silicon (Si), aluminium (Al), and the trace element titanium (Ti) are characteristic elements of the red pigment hematite from Bulgaria. The presence of mercury (Hg) in all the spectra, and especially in spectrum 27 is to be mentioned as well. In conclusion, a mixture of hematite and cinnabar was probably used to color the right maxilla.

- ***Pigments on the exocranial part of the right parietal bone***

– *RAMAN analyses* (Fig. 13/5): The peaks at 148 cm^{-1} and 159 cm^{-1} in human bone are typically associated with various molecular characteristics that influence bone quality characterization. The peak at 148 cm^{-1} is usually attributed to bending vibrations of various molecular modes, often associated with vibrations in minerals present in bones, such as hydroxyapatite or carbonate substitutions in the mineral structure. The peak at 159 cm^{-1} is often associated with vibrations related to amides, particularly those associated with collagen, the main organic matrix protein in bones. The peak at 248 cm^{-1} belongs to cinnabar (HgS), and the one at 285 cm^{-1} is due to the subsequent degenerate E vibrations of cinnabar (HgS). Therefore, we may conclude that this is cinnabar in a very

Result Type	Weight %					
Spectrum Label	Spectrum 23	Spectrum 24	Spectrum 25	Spectrum 26	Spectrum 27	Spectrum 28
C	11.11	10.41	17.68	20.68	16.53	15.91
O	39.48	61.35	46.55	46.51	35.06	40.53
Na					0.18	0.29
Mg					1.00	1.09
Al					4.47	4.97
Si					9.30	10.09
P	13.72	3.99	8.85	7.89	1.75	4.21
K	0.11	2.11	0.39	0.40	1.24	1.33
Ca	34.95	15.46	24.63	22.46	11.88	15.39
Ti					0.33	0.21
Fe	0.25	5.79	1.27	1.33	3.39	2.89
Hg	0.38	0.89	0.63	0.74	14.88	3.09
Total	100.00	100.00	100.00	100.00	100.00	100.00

Result Type	Atomic %					
Spectrum Label	Spectrum 23	Spectrum 24	Spectrum 25	Spectrum 26	Spectrum 27	Spectrum 28
C	19.61	16.12	27.69	31.41	29.66	26.05
O	52.32	71.30	54.71	53.03	47.23	49.83
Na					0.17	0.25
Mg					0.89	0.88
Al					3.57	3.62
Si					7.14	7.07
P	9.39	2.39	5.37	4.64	1.22	2.67
K	0.06	1.01	0.19	0.19	0.69	0.67
Ca	18.49	7.17	11.56	10.22	6.39	7.55
Ti					0.15	0.09
Fe	0.09	1.93	0.43	0.43	1.31	1.02
Hg	0.04	0.08	0.06	0.07	1.60	0.30
Total	100.00	100.00	100.00	100.00	100.00	100.00

Table 4. *Kriva Bara, feature 5. SEM/EDS analyses of the red pigment at the right maxilla.*

low concentration. The peaks at 500 cm^{-1} and 912 cm^{-1} are due to phosphates typical of bones at different wave frequencies.

- ***Pigments on the endocranial part of the skull***

– *SEM analyses* (Fig. 14/5; Table 5): In spectra nos. 13, 17, and 5 were detected characteristic elements of hydroxyapatite, with high concentration of phosphorus (P), possibly related to the individual's diet. Magnesium (Mg) is also a bone component, usually strengthening the bone structure. On spectrum no. 17, the microelement titanium (Ti) is observed in combination with silicon (Si), aluminum (Al), and iron (Fe), which are characteristic elements of the red pigment hematite from Bulgaria. Spectrum no. 16 shows manganese (Mn), which may be related to the individual's diet (cereal plants) or soil acidity. The low concentrations of mercury (Hg) again indicate the connection between red hematite and cinnabar used in a mixture to color the inside of the skull.

Result Type	Weight %							
Spectrum Label	Spectrum 12	Spectrum 13	Spectrum 16	Spectrum 17	Spectrum 21	Spectrum 23	Spectrum 6	Spectrum 5
C	12.76	11.94	12.40	10.81	19.86	15.63	3.36	12.12
O	55.17	37.08	51.24	48.95	33.13	27.02	18.40	49.43
Mg		0.37		0.94				1.22
Al		1.39		4.52				3.71
Si		2.61		7.57			15.46	8.72
P	9.11	10.53	9.38	6.08	2.81	2.84		
K		0.45		0.88				1.08
Ca	21.67	31.48	21.67	14.55	43.62	54.06	1.55	21.38
Ti				1.12				
Mn			4.64					
Fe	0.86	3.99	0.43	4.35	0.20	0.17	61.22	2.34
Hg	0.45	0.15	0.23	0.22	0.38	0.27	0.00	0.00
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

Result Type	Atomic %							
Spectrum Label	Spectrum 12	Spectrum 13	Spectrum 16	Spectrum 17	Spectrum 21	Spectrum 23	Spectrum 6	Spectrum 5
C	19.81	21.24	19.96	17.58	33.69	29.34	8.98	19.40
O	64.30	49.51	61.93	59.76	42.18	38.08	36.92	59.42
Mg		0.32		0.76				0.96
Al		1.10		3.27				2.65
Si		1.99		5.26			17.67	5.97
P	5.48	7.27	5.86	3.84	1.85	2.07		
K		0.25		0.44				0.53
Ca	10.08	16.78	10.46	7.09	22.17	30.41	1.24	10.26
Ti				0.46				
Mn			1.63					
Fe	0.29	1.53	0.15	1.52	0.07	0.07	35.19	0.81
Hg	0.04	0.02	0.02	0.02	0.04	0.03	0.00	0.00
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

Table 5. *Kriva Bara, feature 5. SEM/EDS analyses of the red pigment in the endocranial part of the skull (parietal zone).*

• ***The sample from the right maxillary first premolar***

– *SEM analyses* (Fig. 15/4; Table 6). In spectra nos. 33, 34, 36, and 37, were detected the characteristic elements of hydroxyapatite, with a high concentration of phosphorus (P), already noted at the other samples. Magnesium (Mg) is also a component of bone, usually strengthening its structure. On spectrum no. 17, the microelement titanium (Ti) is again observed in combination with silicon (Si), aluminum (Al), and iron (Fe), which are characteristic elements of the red pigment hematite from Bulgaria. High concentrations of mercury (Hg) again indicate the connection between red hematite and cinnabar used in a mixture and probably ingested through the oral cavity.

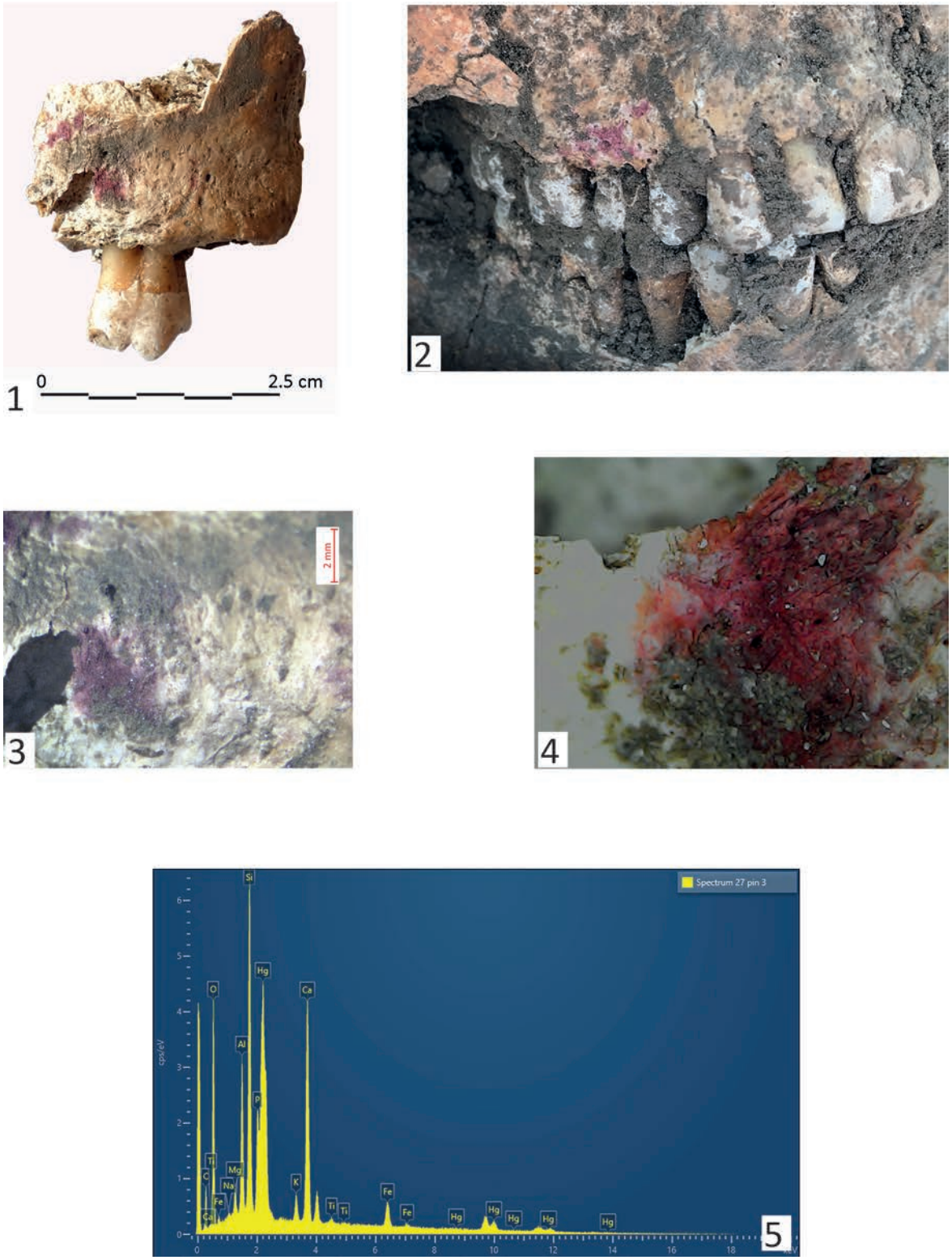


Figure 12. *Kriva Bara barrow, feature no. 5, red pigments on maxilla and mandible.* ***1–2.*** *Photo (credit Stefan Alexandrov);* ***3.*** *Optical microscopy (JEOL 6390 and INCA Oxford);* ***4.*** *Macro photo (credit Rositsa Manova);* ***5.*** *SEM/EDS image (JEOL 6390 and INCA Oxford).*

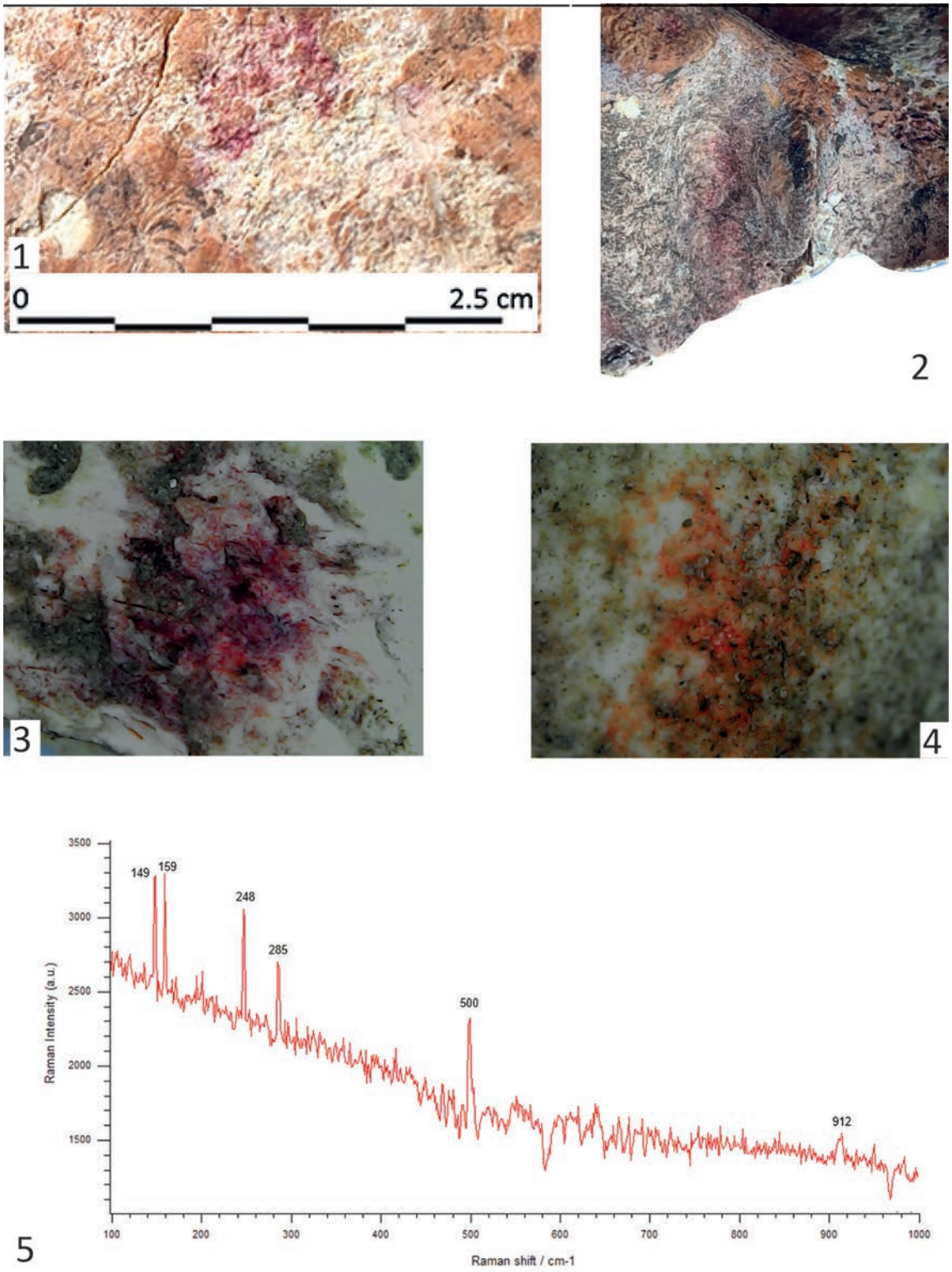


Figure 13. *Kriva Bara barrow, feature no. 5, red pigments on the exocranial parts of the skull.* ***1, 3.*** *Parietal bone;* ***2, 4.*** *Left temporal zone (1, 2 – credit Stefan Alexandrov; 3, 4 – credit Rositsa Manova);* ***5.*** *RAMAN image (inVia Qontor Microscope).*

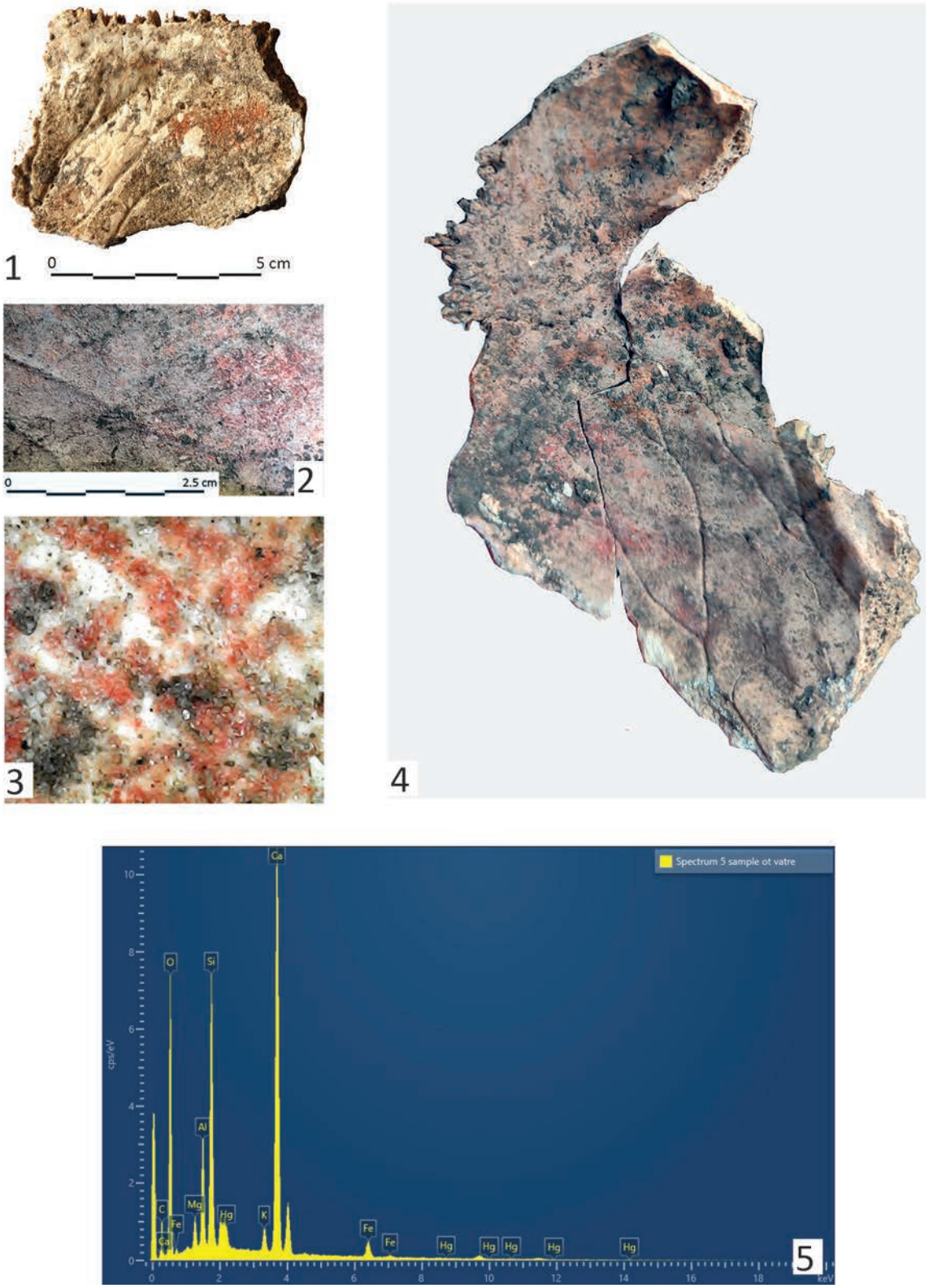


Figure 14. *Kriva Bara barrow, feature no. 5, red pigments on the endocranial parts of the skull.* ***1, 4.*** *Photo (credit Stefan Alexandrov;* ***2, 3.*** *Macro photo (credit Rositsa Manova);* ***5.*** *SEM/EDS image (JEOL 6390 and INCA Oxford).*

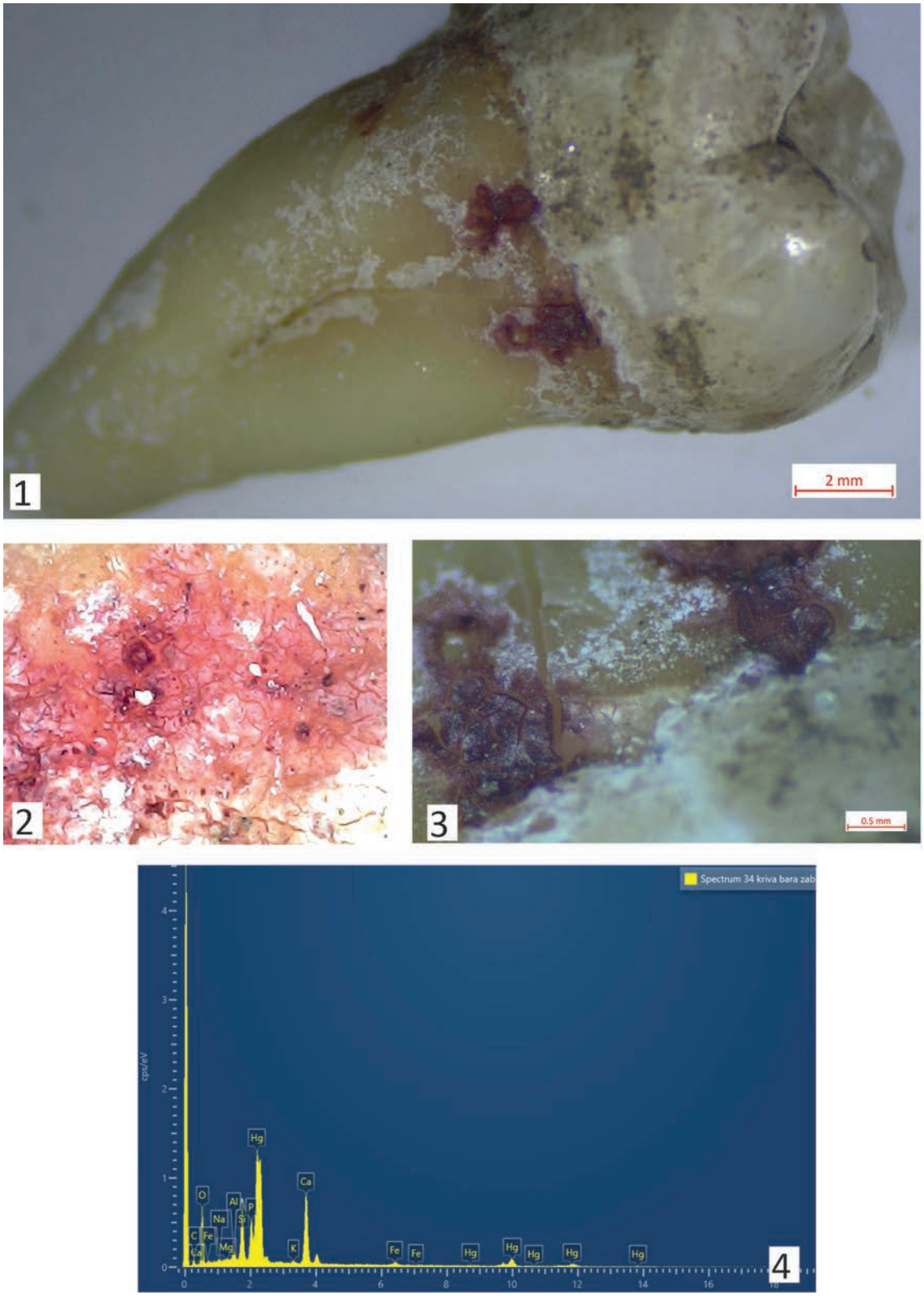


Figure 15. *Kriva Bara barrow, feature no. 5, red pigments on the root of the right maxillary first premolar.* ***1, 3.*** *Optical microscopy;* ***2.*** *Macro photo (credit Rositsa Manova);* ***4.*** *SEM/EDS image (JEOL 6390 and INCA Oxford).*

Result Type	Weight %			
Spectrum Label	Spectrum 33	Spectrum 34	Spectrum 36	Spectrum 37
C	9.96	10.38	10.68	12.69
O	23.29	29.82	29.44	22.51
Na	0.00	0.34	0.26	0.19
Mg	0.24	0.07	0.23	0.10
Al	0.63	1.03	1.37	0.99
Si	1.32	5.21	1.98	0.89
P	5.68	3.10	2.34	3.54
K	0.13	0.49	0.88	0.04
Ca	38.14	13.49	31.95	14.94
Fe	0.47	0.86	8.99	0.30
Hg	20.13	35.21	11.89	43.80
Total	100.00	100.00	100.00	100.00

Result Type	Atomic %			
Spectrum Label	Spectrum 33	Spectrum 34	Spectrum 36	Spectrum 37
C	22.96	23.94	22.30	32.44
O	40.30	51.64	46.16	43.21
Na	0.00	0.41	0.28	0.25
Mg	0.27	0.08	0.24	0.13
Al	0.64	1.06	1.27	1.12
Si	1.30	5.14	1.77	0.98
P	5.08	2.77	1.89	3.51
K	0.09	0.35	0.56	0.03
Ca	26.34	9.32	19.99	11.45
Fe	0.23	0.42	4.04	0.17
Hg	2.78	4.86	1.49	6.71
Total	100.00	100.00	100.00	100.00

Table 6. *Kriva Bara, feature 5. SEM/EDS analyses of the red pigment at the right maxillary first premolar.*

Feature no. 7

- ***The lump of red pigment***

– *SEM analyses* (Fig. 17/6; Table 7*)*: the elemental composition includes calcium (Ca), potassium (K), magnesium (Mg) which are components of hydroxyapatite. Iron (Fe), silicon (Si), and aluminium (Al) could be related to hematite. The presence of mercury (Hg) in all spectra is to be mentioned as well, probably, indicating a mixture of hematite and cinnabar.

– *RAMAN analyses* (Fig. 17/5). The peaks at 214 cm^{-1} and 279 cm^{-1} should be related to lattice vibrations in the soil and correspond to a band of hematite (Fe_2O_3) with 88.8% content. The peak at 267 cm^{-1} is, most likely, due to the presence of cinnabar (HgS), as it is known that, depending on the concentration, its peak can shift by 10 cm^{-1} in different types of samples[11]. Therefore, we may conclude that the pigment is composed of hematite mixed with a very low amount of cinnabar.

The results of the archaeometric analyses presented above point towards a mixture of hematite and cinnabar used in the mortuary practices: a) as a lump, placed near

[11] Scheuermann *et alii* 1969.

Result Type	Weight %						
Spectrum Label	Spectrum 1	Spectrum 2	Spectrum 8	Spectrum 22	Spectrum 28	Spectrum 30	Spectrum 31
C	13.63	8.19	6.65	17.53	10.71	17.73	18.45
O	36.25	30.86	36.18	37.38	51.25	61.97	45.75
Mg	1.70	1.23	1.41	1.20	2.00	2.14	4.98
Al	4.48	3.36	3.15	3.95	10.35	4.97	8.56
Si	8.30	5.97	8.20	7.72	15.74	7.85	16.60
S	0.10	0.16	0.03	0.03	0.22	0.56	0.04
K	0.87	0.71	0.31	0.64	3.91	0.89	1.27
Ca	0.51	5.11	0.38	0.75	2.06	2.45	0.83
Fe	34.02	43.95	43.43	30.56	3.41	0.99	3.26
Hg	0.14	0.46	0.23	0.24	0.36	0.45	0.26
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00

Result Type	Atomic %						
Spectrum Label	Spectrum 1	Spectrum 2	Spectrum 8	Spectrum 22	Spectrum 28	Spectrum 30	Spectrum 31
C	24.77	17.31	13.58	30.08	16.69	24.51	27.32
O	49.47	48.98	55.43	48.16	59.97	64.32	50.85
Mg	1.52	1.29	1.43	1.02	1.54	1.46	3.64
Al	3.62	3.16	2.86	3.02	7.18	3.06	5.64
Si	6.45	5.40	7.16	5.67	10.49	4.64	10.51
S	0.07	0.13	0.02	0.02	0.13	0.29	0.02
K	0.49	0.46	0.20	0.34	1.87	0.38	0.58
Ca	0.28	3.24	0.23	0.38	0.96	1.01	0.37
Fe	13.30	19.98	19.06	11.28	1.14	0.29	1.04
Hg	0.02	0.06	0.03	0.02	0.03	0.04	0.02
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00

Table 7. *Kriva Bara, feature 7. SEM/EDS analyses of the red pigment near the shoulder.*

the shoulder of the child from feature no. 7; b) applied on the body: lower leg (as suggested by the tibia in feature no. 4) and head (as suggested by the skull in feature no. 5); c) applied on the side of the head (as indicated by the endocranial part of the parietal bone of the skull in feature no. 5). The absorption of the red pigments into the long bones of the individual from feature no. 4 may suggest possible exposure or its digestion. The latter hypothesis is to be presumed for the individual from feature no. 5 as well, based on the presence of the pigment on the roots of its teeth.

Our investigation focused on the elemental compositions of the red pigments, their raw material source remaining a goal for future investigations. However, considering the location of Kriva Bara and the presence of cinnabar, it is noteworthy to mention that the nearest deposits are in "Lukina Padina" locality near Chiprovtsi, ca 70 km southwest from the barrow[12]. Other cinnabar-rich areas in Bulgaria are concentrated in its south-western part (Tran and Kyustendil regions and Southern Rila mountain), the Eastern Rhodopes, Sakar and Strandja mountains[13].

CINNABAR IN PREHISTORIC EUROPE

Kriva Bara results presented above are the first clearly documented evidence for the use of cinnabar in the EBA mortuary practices in the Balkans. So far, the earliest known use of cinnabar comes from the Near East and Anatolia. The information was summarized by Elisabetta Gliozzo: cinnabar was used as a pigment in mortuary practices (applied on the body/burial masks) or on the

[12] Abramson *et alii* 1991, p. 47–49, fig. 1.
[13] Vitov, Marinova 2007.

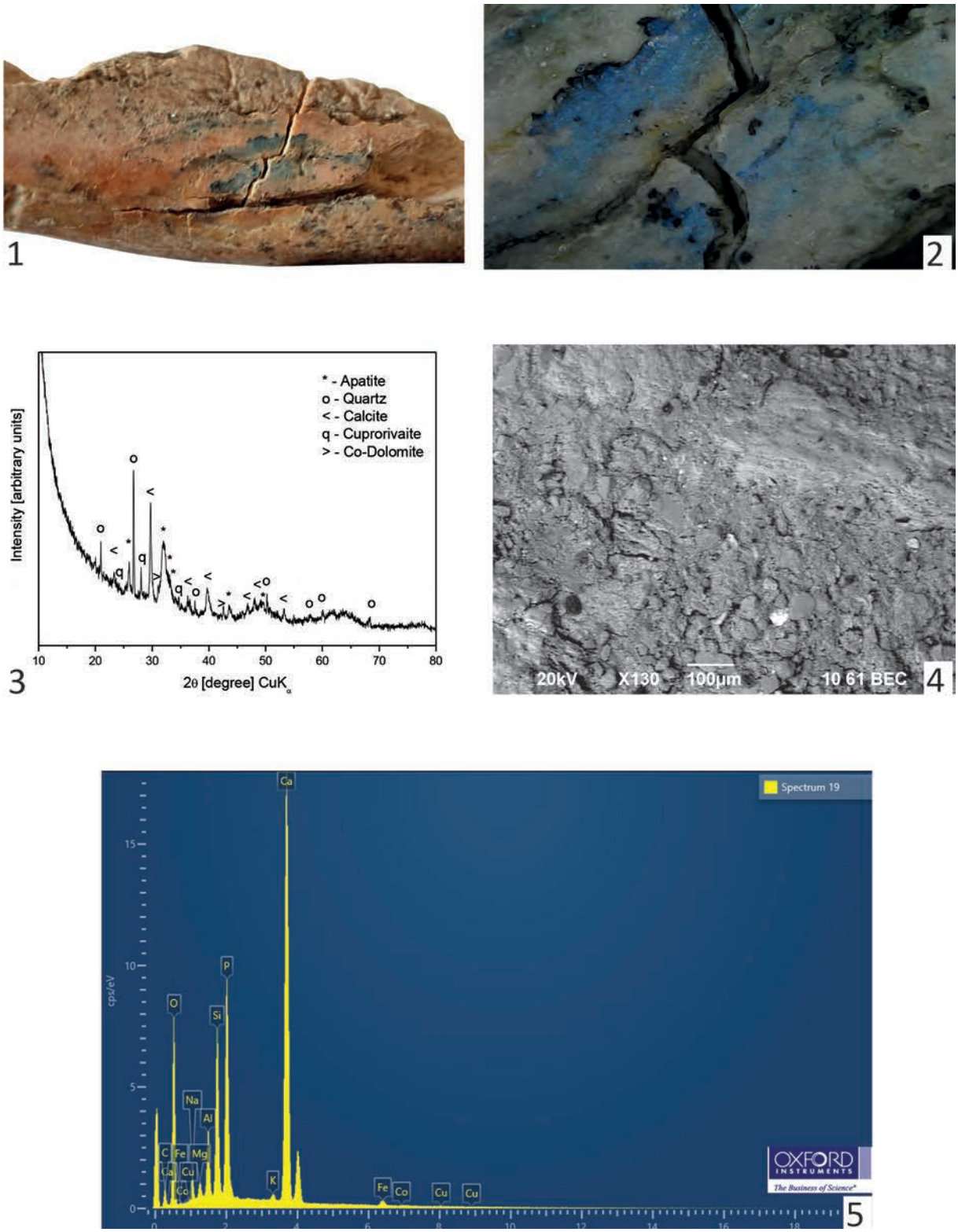


Figure 16. *Kriva Bara barrow, feature no. 5, blue pigments on left mandible (after Manova* et alii *2026).* ***1.*** *Photo (credit Stefan Alexandrov);* ***2.*** *Macro photo (credit Rositsa Manova);* ***3.*** *Mineral composition* ***4.*** *Surface morphology – secondary electron image (JEOL 6390 and INCA Oxford);* ***5.*** *SEM/EDS image (JEOL 6390 and INCA Oxford).*

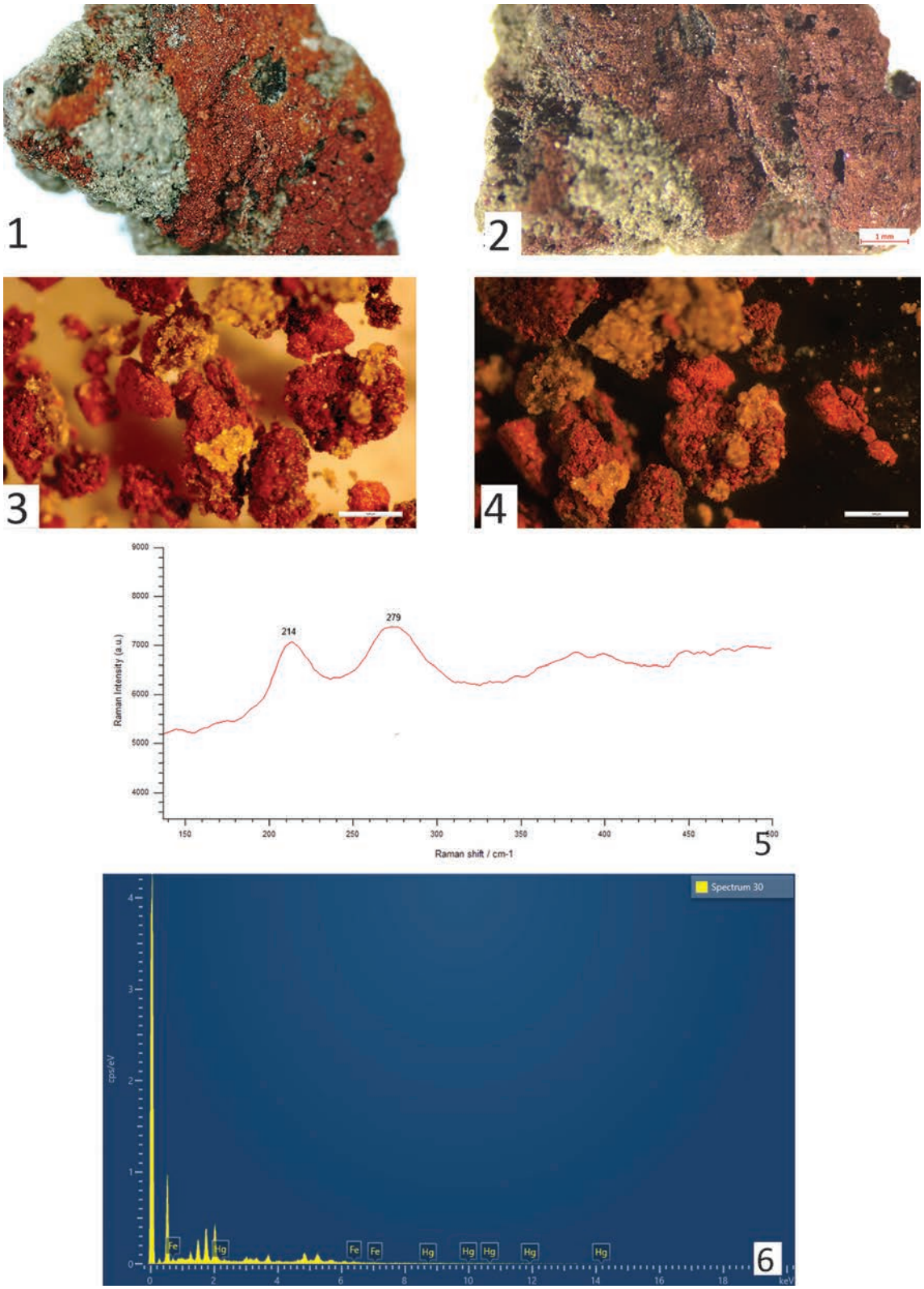


Figure 17. *Kriva Bara barrow, feature no. 7, red pigments left of the shoulder.* ***1–4.*** *Optical microscopy (JEOL 6390 and INCA Oxford);* ***5.*** *RAMAN image (inVia Qontor Microscope);* ***6.*** *SEM/EDS image (JEOL 6390 and INCA Oxford).*

walls of dwellings during the 9th millennium BC in Israel (Kfar HaHoresh site) and the 8th–7th millennia BC in Syria (Tell Abu Hureyra) and Turkey (Çatal Hüyük)[14].

In Europe, the earliest use of cinnabar is attested in the west Mediterranean area. It Italy, it appears in settlement contexts in the mid-6th millennium BC at La Marmotta (Lazio region)[15]. It is well known in the Iberian Peninsula from the second half of the 6th millennium BC, in various contexts [16]. Its presence in megalithic monuments is attested in the 5th millennium BC in Spain: on bones, the floor and walls of the burial chambers in the dolmens near Alberite, Cueva de los Murciélagos, Gavá mine, the menhir of Casas de Don Pedro etc[17]. Cinnabar was used as a pigment, mainly for painting figurines, in the Central Balkan Vinča culture between the end of the 6th and the first half of the 5th millennium BC[18]. Occasional use in pottery decoration was documented in Tuscany (Italy) and Dalmatia (Croatia) in the 5th millennium BC, as well[19]. During the first half of the 4th millennium BC, it is reported at the Velilla dolmen (Osorno, Palencia) as well as at some monuments in southern Portugal, such as Anta Grande do Zambujeiro[20]. Further east, cinnabar was used as a dye covering the engraved decoration and edges of the anthropomorphic *stelae* from Bastidonne, Beaucet and Gargas, in Provence (south-east France), dated to the 3900–3600 BC period[21].

During the EBA period (second half of the 4th–3rd millennium BC), two areas document the use of cinnabar in mortuary practices – Southwest Europe and the Black Sea region. Its use in the former area is attested in large quantities in megalithic structures, where it was applied on the body and clothes of the deceased, on the grave goods, or on the walls of the burial chambers. In the circular dolmen of La Velilla – counting over 100 burials and dated to the second half of the 4th millennium BC, it covered the bodies of the deceased; a large amount of cinnabar, estimated at "…*several hundreds of kilograms*" was recovered during the excavation. "Pure" cinnabar was found on the floor and the grave goods in Chan de Armada, El Redondil and other dolmens in the region. Cinnabar mixed with red ochre was applied on the walls of some of the grave chambers, as well[22].

Probably the most expressive example of the use of cinnabar in the Iberian Peninsula during the EBA is the Valencina mega-site (south–west Spain). This spectacular monument described as "…*the largest Iberian settlement"* from that period is dated to 2900–2650 calBC. There, in the "Montelirio" tholos and tomb for example, cinnabar was attested on human remains and grave goods (including clay figurines), on the floor, as well as on the inner walls of the chamber[23]. Undisputed remains of cinnabar have also been found in Bell-Beaker and Bronze Age burials dating to the late 3rd and early 2nd millennium BC[24]. Several ore deposits were mined including the famous Almadén ones[25].

The earliest use of cinnabar in Bronze Age mortuary practices in the Black Sea region (the last quarter of the 4th– beginning of the 3rd millennium BC) is attested in Novosvobodnaya variant of the Maykop culture (north Caucasus). There, cinnabar was utilized in three different ways: applied on the body of the deceased; on the inner walls/floor of the burial chambers or on the clothes of the deceased. The cinnabar was used there both individually or mixed with red ochre [26].

Cinnabar applied on the body was found in four Maykop graves. The first one is the eponymous kurgan (Oshad). The main grave complex there yielded three individuals lying in supine position with flexed legs. Y. Piotrovsky states that "…*skeleton no. 1, as well as the area around it, was covered with a layer of red paint – cinnabar*", "…*skeletons nos. 2 and 3 were covered with red paint (cinnabar), but to a lesser extent than skeleton no. 1*"[27]. According to V. Trifonov, the body of the deceased was first painted with red ochre; the cinnabar being sprinkled on the body and the grave goods after their arrangement on the floor of the burial chamber[28]. The bones of the deceased in the two graves from Novosvobodnaya (formerly Tsarskaya) barrows nos. 1 and 2 excavated by N. Veselovsky in 1898, were also painted with cinnabar; they were dated to 3300–3000 BC and 3350–2700 BC (95% probability) respectively[29]. To this moment, the last Maykop feature that revealed the presence of cinnabar on bones is Marinskaya 3, barrow 1, grave 18 (male, 40–44 years old) dated 3430–3330 BC. The head of the buried individual was painted with bright red pigment; found also on the elbows, as thin strips 3–5 mm wide on the knees and spots on the feet bones. The analyses of the pigment from the skull showed that "…*the* os frontale *of the "Maikop chief" was painted with unadulterated cinnabar"*[30].

The inner walls and floors of the Maykop burial chambers were painted with red pigments as well. In the primary grave (no. 4) from Novosvobodnaya, barrow no. 1 (excavations 2017–2018) cinnabar was found on the floor, as well as on a flint arrowhead. The grave dates to 3350–3100 calBC[31]. The rear wall of the tomb in barrow no. 11 from the same necropolis displayed a 40 cm wide red band of cinnabar, and the remaining three walls – with red ochre[32]. In two cases, clothes used in the ritual were also painted with cinnabar. A fragment of a "fur coat" made of

[14] Gliozzo 2021; Schotsmans *et alii* 2022.
[15] Pannocchia *et alii* 2024.
[16] Domingo *et alii* 2012; Gliozzo 2021.
[17] Prieto *et alii* 2020, p. 19.
[18] Gajić-Kvaščev *et alii* 2012.
[19] Grifoni 2001, p. 428; Kaiser, Forenbaher 2016, p. 148–150.
[20] Gleba *et alii* 2021.
[21] D'Anna *et alii* 2015; Masson 2020.
[22] Rodríguez *et alii* 2020 ; Prieto *et alii* 2020, p. 19; Gleba *et alii* 2021.
[23] García Sanjuán *et alii* 2024.
[24] Lettow-Vorbeck 2016.
[25] Hunt *et alii* 2011.
[26] Trifonov *et alii* 2017, p. 1043.
[27] Piotrovsky 2020, p. 65, 68, fig. 3.
[28] Trifonov *et alii* 2015, p. 46.
[29] Trifonov *et alii* 2014, p. 511; Trifonov *et alii* 2017, p. 1043.
[30] Mednikova 2013, fig. VII; Mednikova 2015, p. 52, fig. 1.
[31] Trifonov *et alii* 2019.
[32] Trifonov *et alii* 2014, p. 511.

squirrel hide with *"...fibres dyed bright carmine-red'*, was found in the grave from barrow no. 2 near Novosvobodnaya (formerly Tsarskaya) excavated by N. Veselovsky in 1898. The pigment was defined as "…*true cinnabar i.e. mercury sulphide*".[33] A radiocarbon date on the fur place it between 3335 and 2932 calBC[34]. During 1979–1980 excavations of the barrow no. 31 from the same necropolis, in grave no. 5 was found a fragment of cloth preserved on the exterior part of a bronze dish. A red, mercury-based pigment (montroydite) was used to colour the cloth by "…*painting or sprinkling technique*"[35]. Recent investigations proved that the raw material had a local origin – near Krasnodar in the Maykop area[36].

Further north, cinnabar was found in the pre-Yamna grave no. 3 from barrow 3, near Prydnistryanske, Podillia Region (Ukraine). A small lump had been placed alongside rich grave goods in an infant(?) burial dated between 3363 and 3041 calBC[37]. Three more barrow graves from the same region – Porohy, barrow 3A, graves no. 7 (*adultus/ maturus*, male?), no. 11 (25–30 years old, male), and no. 12 (*adultus*, female) yielded cinnabar, as well. All the samples analysed – small lumps, were retrieved from the floors of the grave pits. The SEM results showed very high values of mercury (Hg) in graves nos. 7 and 11 – between 50% and 60% (atomic weight). The three graves were dated to the Late Yamna period, between 2900 and 2450 calBC[38]. To our knowledge, the latest use of cinnabar during the EBA in the North Black Sea region dates to the second half of the 3rd millennium BC, observed in barrow 7 near Zamozhne (Ingul culture, southern Ukraine) where the clay mask on the skull of the deceased was decorated with a pigment composed of a mixture of hematite and cinnabar[39].

Outside the two regions discussed, cinnabar was used for the decoration of marble female figurines in the late EB I period in the southern Cyclades[40].

DISCUSSION

As mentioned above, the Kriva Bara results are the first documented evidence for the use of cinnabar in EBA Balkans, between 2900-2500 calBC, a period that corresponds to the "Late Yamna" chronological horizon. However, Kriva Bara is not the only site that provided data for the use of cinnabar in the EBA mortuary practices. As mentioned above, similar data came from the Drazevo grave (Thrace). In addition, SEM analyses of the red pigment from the pit-floor in Mednikarovo, barrow 6, grave 3 (Thrace) also revealed very small amounts of mercury (Hg)[41]. Recent EDS analyses of the red pigments on long bones from graves nos. 3 and 9 in barrow 4, Vetrino – Necropolis 3 (north–eastern Bulgaria) presented mercury (Hg) particles as well[42]. Although indirect, these data could be regarded as "evidence" for the potential use of cinnabar in these graves that also date to the "Late Yamna" chronological horizon, characterised by a change in burial customs and pigment use. As already discussed, this period introduces the practice of mixing different pigments such as hematite and cinnabar. This innovation, documented also in Ukraine and Moldova, suggests advanced technological efforts and supports the idea of increased interactions between the late Yamna populations and the local communities, resulting in a "…*cultural exchange and resource-sharing practices*". The analytical results from Kriva Bara emphasize that the choice of pigments was not only a technical matter but also a cultural and economic one. The circulation of high-value pigments like cinnabar suggests that "…*their role in exchange networks, and their symbolic importance is reflected in the meticulous selection and preparation of materials*"[43].

The red pigment found on the endocranial part of the skull of the male individual from feature 5 is direct evidence for the dismemberment of the body, considering that applying pigments to the inner part of the skull is impossible without separating it from the body. A similar ritual is documented also in feature no. 6 from barrow 20, Vetrino – Necropolis 1 (3100–2900 calBC) where the inner face of the parietal bones of the skull of a child (age group *Infans* I) was coated with calcium carbonate (CaCo3)[44]. Another example comes from the Maykop culture, Chekon-2 site (3300–3100 calBC) where the inner surface of the frontal and all the inner elements of the parietal bones of an adult male were painted with cinnabar[45]. The dismemberment of the body (also known as "*demembration"*) is a common practice for the EBA Yamna communities and is also attested in other regions during Bronze Age Europe, as well[46].

Considering the accumulation of mercury (Hg) in the cancellous long bones of the individual from feature no. 4, some conclusions could also be drawn. The analytical results presented above suggest an exposure to cinnabar. Generally, three possible ways of such exposure have been discussed: environmental pollution; pre-mortem use and manipulation of mercury and associated compounds (cinnabar), and post-mortem diagenetic processes[47]. The analyses on mercury exposure of 70 individuals from the EBA Valencina site showed that most of the high mercury values (>10 μg/g) were recorded in the *humeri*, followed by the *femora* and *tibiae*. According to the authors, the

[33] Trifonov *et alii* 2015.
[34] Trifonov *et alii* 2018, p. 119.
[35] Shishlina *et alii* 2003, p. 337.
[36] Trifonov *et alii* 2017, p. 44.
[37] Klochko *et alii* 2015b, p. 207–213; Alexandrov *et alii* 2026.
[38] Klochko *et alii* 2015a, p. 78–141; Alexandrov *et alii* 2026.
[39] Mednikova 2015, p. 53, fig. 2.
[40] Carter 2008, with references to Higgins 1972 and Hendrix 1998.
[41] Alexandrov *et alii* 2026.
[42] Unpublished data from rescue excavations in 2024 directed by Stefan Alexandrov.
[43] Alexandrov *et alii* 2026.
[44] Manova *et alii* 2025.
[45] Korenevsky *et alii* 2015, p. 35–38.
[46] Manova *et alii* 2025, with references.
[47] García Sanjuán *et alii* 2024.

"*…accumulation of mercury in long bones would directly disprove the diagenetic contamination hypothesis, as the post-mortem incorporation of Hg from the cinnabar sprayed in the tombs would not 'select' which bones to accumulate in*"[48]. Such conclusion can be applied to the Kriva Bara individual, as well. We can also exclude the environmental pollution since three of the individuals from Kriva Bara (feature nos. 3, 6, and 8) showed no traces of pigments at all. Thus, the pre-mortem use of cinnabar for the discussed individual seems quite possible. The hypothesis is supported by the presence of cinnabar at the dental roots of the individual from feature no. 5, suggesting the digestion of a mixture of hematite and cinnabar. Thus, we think that the two male individuals from Kriva Bara (features nos. 4 and 5) were probably either involved in the production of cinnabar or they digested it directly and, thus, according to some authors, they could have been "*…part of a small group of religious specialists and elite members who perhaps inhaled or consumed cinnabar as part of their lifestyle*"[49].

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VASELE DE TIP *PYRAUNOS* DIN EPOCA BRONZULUI DE PE TERITORIUL ROMÂNIEI

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Keywords: Pyraunos*, Zurbaua 1, Bronze Age, Tei culture*
Abstract: Pyraunos*-type vessels – also referred to as vessel-ovens or portable hearths in literature – are ceramic receptacles designed for cooking and the transport of fire. The present paper originates in the discovery of fragments belonging to this category within a Tei culture settlement at Zurbaua 1 (Ilfov County), a vessel type with scarce attestations in Muntenia. In addition to presenting this find, the study contributes to the systematic cataloguing of pyraunos discoveries from the Bronze Age within the present-day territory of Romania, drawing on a database of 88 archaeological sites. The analysis examines vessel typology, functionality, and the relationship between vessel types and site categories.*

Cuvinte-cheie: Pyraunos*, Zurbaua 1, epoca bronzului, cultura Tei*
Rezumat: *Vasele de tip* pyraunos*, cunoscute în literatură și ca vase-cuptor sau vetre portative, sunt recipiente ceramice utilizate la gătit și în transportul focului. Lucrarea de față are ca punct de plecare identificarea unor fragmente aparținând unor vase* pyraunos *în cadrul așezării Tei de la Zurbaua 1 (județul Ilfov). Acest tip de vas a fost rar menționat până acum în Muntenia. De asemenea, lucrarea reprezintă o contribuție la catalogul descoperirilor acestui tip de vas de pe teritoriul României, datat în epoca bronzului, prin inventarierea și analiza a 88 de puncte arheologice. Analiza privește tipologia, funcționalitatea și relația dintre tipul de vas și situl în care a fost descoperit.*

INTRODUCERE

În urma cercetărilor arheologice preventive întreprinse în situl pluristratificat de la Zurbaua 1[1], județul Ilfov (Pl. I), am identificat o serie de fragmente ceramice provenind de la vase de tip *pyraunos* din contexte aparținând culturii Tei. Contribuția de față este organizată în două secțiuni. În prima parte sunt prezentate două vase fragmentare identificate într-o groapă cu resturi menajere de la Zurbaua 1, iar cea de-a doua cuprinde discuția cu privire la acest tip de descoperiri de pe teritoriul actual al României.

SCURT ISTORIC

Termenul *pyraunos* desemnează la origine un vas în care se poate face și transporta focul și care are funcția de încălzitor/brazier[2]. Mențiuni ale acestui tip de vas apar în izvoare scrise, făcând parte din subiectele și titlurile unor comedii, precum cele semnate de Aristofon – *Δίδυμαι ἢ Πύραυνος* (*Didymai ē Pyraunos/Surorile gemene sau vasul cu cărbuni*)[3], Eufanos – *Πύραυνος* (*Pyraunos/Brazierul/Cel care aprinde focul*)[4] sau Alexis – *Pyraunos*[5]. În arheologie, termenul a fost adoptat și pentru vasele care pot servi drept cuptoare mobile și în care se poate prepara hrana. Alte denumiri întâlnite sunt *vas-cuptor* sau *vatră mobilă/portabilă*. Despre această din urmă denumire, Alix Hochstetter sublinia că este impropriu folosită, întrucât nu vatra este transportată, ci oala cu suportul aferent[6].

Încă din primele decenii ale secolului al XX-lea, descoperirile de *pyraunoi* au fost tratate cu vădit interes. În spațiul maghiar, primele studii care au vizat originea, forma și utilitatea acestor vase au apărut în 1929[7]. János Banner publică un exemplar întregibil de la Pécs, încadrat în tipul vaselor cu grătar[8]. După săpăturile de la Füzesabony-Öregdomb, Ferenc von Tompa atrage atenția asupra pieselor cu vas încorporat, stabilind prima încercare de grupare tipologică: cu grătar, respectiv cu vas încorporat[9]. Cea mai mare densitate de *pyraunoi* rămâne până în prezent cea de la Kastanas (Macedonia centrală, Grecia). În straturile aparținând perioadei târzii a epocii bronzului și primei epoci a fierului au fost identificate

[1] Cercetările au fost desfășurate între martie 2024 și decembrie 2025, ca parte a proiectului de infrastructură A0, Lot 1, Nord (Bâcu-Joița). Colectivul de cercetare a fost condus de dr. Radu Băjenaru și i-a avut ca membri permanenți pe dr. Silviu Ene, drd. Alin Diaconu, drd. Ștefan Mariș și pe autoarea acestui articol.
[2] Conze 1890, p. 118.
[3] Orth 2020, p. 27.
[4] Mastellari 2020, p. 305.
[5] Sommerstein 2019, p. 37.
[6] Hochstetter 1984, p. 157.
[7] László 1929; Banner 1929.
[8] Banner 1929, fig. 11.
[9] Tompa 1937, p. 35.

fragmente de la aproximativ 950 de astfel de vase, utilizate în scop domestic[10].

La începutul anilor 2000, în literatura de specialitate au apărut lucrări care au vizat în special Bazinul Carpatic. Un studiu în două părți a fost semnat de Klára Fischl, Viktória Kiss și Gabriella Kulcsár în 2001 și publicat în limbile maghiară[11], respectiv germană[12]. Au fost prezentate descoperirile din bronzul mijlociu și târziu și din prima epocă a fierului. Un alt volum a apărut în Slovacia în 2003. Acesta a cuprins atât o tipologie amănunțită, cât și un repertoriu organizat pe țări. Spațiul vizat a fost destul de vast, cuprinzând peninsula Italică, Europa centrală, nordul peninsulei Balcanice, descoperiri din zona egeeană și Anatolia[13].

Subiectul a fost tratat și în volumul *The archaeology of fire in the Bronze Age of Romania* apărut în 2001[14]. Mult mai recent a apărut articolul lui Krassimir Leshtakov despre *pyraunoi* și vase cu mânere interioare din Bulgaria[15]. Un capitol privind evoluția și tipologia vaselor de gătit din nordul Greciei și Bulgaria[16] a apărut în volumul *Cooking with plants in Ancient Europe and beyond*[17].

În literatura referitoare la cultura Tei din spațiul nostru am putut identifica o menționare a unui „*fragment provenind de la un vas mare cuptor*" descoperit de Vasile Boroneanț la Chitila – *Cărămidărie* în nivelul I, corespunzător fazei Tei I[18]. Alte fragmente de vase-cuptor au mai fost descoperite în așezarea din punctul 2 de la Lunca-Bârzești. Sunt menționate fragmente apărute atât în strat, cât și în două gropi menajere (Pl. VIII/d–f). Pasta este descrisă ca având drept degresant cioburi pisate. Întreaga așezare este atribuită fazei Tei IV[19]. Fragmente din alte zece exemplare au fost identificate în așezarea de la Podu Broșteni – *Poiana Popii*[20]. Pasta este grosieră, semifină într-un caz, având ca degresanți nisip și pietricele. Decorul constă în brâuri alveolare și *Besenstrich* (Pl. VIII/a–c). Arderea s-a făcut în mediu oxidant[21].

VASELE DE TIP *PYRAUNOS* DE LA ZURBAUA 1

Materialul ceramic identificat în nivelul de locuire Tei este foarte divers, de la ceramică fină și semi-fină, reprezentată prin cești, *kantaroi* și boluri, la ceramică grosieră, în care includem vasele de mari dimensiuni. Din a doua categorie am identificat în complexul 341 fragmentele a două vase de tip *pyraunos*.

Complexul 341 este o groapă de formă ovală în plan (aprox. 0,60 × 0,70 m). În profil a avut formă bitronconică, cu fundul alveolat (Pl. I). S-a conturat la -0,70 m față de nivelul actual de călcare și s-a adâncit până la -1,82 m. Umplutura a fost compusă dintr-un pământ de culoare cenușie-negricioasă, afânat, amestecat cu pigmenți portocalii, cărbuni și concrețiuni calcaroase. Au fost observate și numeroase crotovine. Inventarul arheologic constă în fragmente ceramice, un fragment de râșniță și resturi osteologice animale fără urme de prelucrare.

Ceramica identificată a putut fi încadrată cronologic în epoca bronzului și în cea de-a doua epocă a fierului (La Tène). Groapa a fost săpată în regimul cercetărilor preventive, astfel încât nu s-au putut face însemnări privind adâncimea la care au fost identificate diferitele fragmente ceramice. Din acest motiv, deși materialul se încadrează preponderent în epoca bronzului, complexul este datat în epoca fierului și este încadrat în categoria gropilor cu resturi menajere.

Din cele două vase, am identificat în total 39 de fragmente ceramice: 15 din vasul 1, 24 din vasul 2. La nivel macroscopic, vasele sunt destul de asemănătoare; diferența principală este că vasul 1 are un aspect mai puțin îngrijit, fiind observabile pietricele din pastă la suprafața vasului, pe când la vasul 2 pietricelele sunt „ascunse" sub angobă. Un alt element de diferențiere îl reprezintă urmele de ardere secundară de pe vasul manta. Pentru o mai bună înțelegere a pieselor descrise, am ales să denumesc cele două părți componente *vas principal* – **VP**, respectiv *vas suport* – **VS**.

Conform tipologiei lui Peter Romsauer[22], cele două vase din groapa Cx 341 aparțin tipului A1 de *pyraunoi*, reprezentat de un vas cu fundul rotund, înglobat într-un altul de formă cilindrică sau de clopot, cu gură de acces. Restaurarea acestor două vase este imposibilă, dat fiind numărul mic de fragmente păstrate. Am încercat, pe baza analogiilor existente, o reconstituire grafică. Pentru aceasta am apelat la analogiile cele mai apropiate ca punct de descoperire, anume vasul de la Verbicioara (Pl. IX/a)[23] și vasele de la Podu Broșteni (Pl. VIII/a–c)[24].

Vas 1: Pastă grosieră, amestecată cu șamotă, pietricele și nisip, arsă oxidant. A fost finisat prin netezirea superficială a suprafeței. VP este mai bine netezit. Sunt observate mai multe crăpături cauzate de expunerea la temperaturi ridicate.

Din vasul 1 s-au păstrat foarte puține fragmente tipice, motiv pentru care am putut face numai o reconstituire parțială (Pl. II). Diametrul aproximat în zona de convergență dintre VP și VS a fost de 36 cm. Pe baza a trei fragmente am aproximat înălțimea VP la minim 20 cm. Înălțimea VS nu a putut fi calculată. Pentru toartă am pornit de la amprentele rămase, care indicau o toartă specifică bronzului târziu, cu secțiune triunghiulară. Nu am avut fragmente pe care să

[10] Hochstetter 1984, p. 158.
[11] Fischl *et alii* 2001a.
[12] Fischl *et alii* 2001b.
[13] Romsauer 2003.
[14] Schuster *et alii* 2001, p. 46–47.
[15] Leshtakov 2019.
[16] Dimoula *et alii* 2022.
[17] Soultana *et alii* 2022.
[18] Boroneanț 1981, p. 201, 214.
[19] Sandu 1992, p. 170–179, pl. III/12, V/1–2.
[20] Ștefan 2024, pl. CXXV/11, CXXXVIII/4.
[21] Ștefan 2024, p. 99.
[22] Romsauer 2003, p. 20–34.
[23] Berciu 1952, p. 151.
[24] Ștefan 2024, pl. CXXV/11, CXXXVIII/4.

le pot integra în zona gurii de alimentare sau a găurilor de eliberare a presiunii.

Vas 2: Pastă grosieră, amestecată cu mica, pietricele și șamotă. Pe exterior a fost finisat prin aplicarea unui strat subțire de lut. La interior pare să fi fost netezit cu o spatulă din lemn.

Pentru vasul al doilea (Pl. III) am calculat diametrul sub gaura de eliberare a presiunii din VS la aproximativ 32 cm. Având o parte din gaura de evacuare (cel mai probabil pe cea din spatele vasului) și știind că aceasta se află în partea superioară a vasului, dar nu în punctul de maximă curbare, am presupus că vasul se continuă în jur de 13–15 cm în jos, pentru ca spațiul destinat focului să fie destul de încăpător. Totodată, am apreciat că deasupra găurii de evacuare vasul ar avea în jur de 8 cm. Astfel a rezultat înălțimea VS de 25–27 cm. Pentru VP am presupus că se aseamănă cu vasul 1 și că avea o toartă aplicată. La înălțimea toartei de circa 6 cm am adăugat înălțimea fragmentului de buză cu brâu aplicat. Am apreciat că îmbinarea vaselor se făcea pe la jumătatea VP, rezultând un vas de circa 20–22 cm. Întregul sistem ar fi avut, așadar, în jur de 35–37 cm înălțime.

ANALIZA MICROSCOPICĂ

O parte a fragmentelor ceramice a fost analizată și microscopic. Analizele au fost realizate cu microscopul Keyence VHX-X1, aflat în dotarea Institutului de Arheologie „Vasile Pârvan". Am obținut fotografii mărite de 20x, 100x și 200x. Cu ajutorul aceluiași microscop am realizat și analize compoziționale pe suprafață și în adâncime[25].

Pentru vasul 1 (Pl. II), analiza microscopică a oferit informații referitoare la modul de îmbinare a celor două vase. Astfel, întâi a fost realizat VP, apoi s-a trecut la construirea VS, prin lipirea directă de burta acestuia. De jur-împrejur, pe interior, s-a format un șanț în care se observă linii transversale fine. Pe exterior, alipirea celor două se observă cu ochiul liber, prin urmele în formă de arcadă lăsate de o spatulă lată. Compoziția chimică a reliefat valori mari de oxigen și siliciu, însoțite de potasiu și fier.

Tot cu ajutorul microscopului, pe brâul de pe buza vasului al doilea (Pl. III) a putut fi identificată o amprentă umană. Pe fragmentul pe care s-a păstrat jumătatea dintr-o gaură de evacuare a presiunii se observă cu ochiul liber o succesiune de dungi cenușii groase de circa 1 cm, ce par a fi rezultatul degajării căldurii. Zona a fost analizată microscopic, fiind identificată astfel o serie de pete neregulate de culoare brun-negricioasă. Compoziția chimică a oferit pentru oxigen, siliciu, fier și potasiu valori apropiate de cele înregistrate în cazul vasului 1. În plus, au apărut urme de mangan și aluminiu.

[25] Mulțumesc doamnei Anca-Diana Popescu pentru sprijinul acordat în obținerea acestor informații.

REPERTORIUL DESCOPERIRILOR DE *PYRAUNOI* DIN ROMÂNIA

Descoperirile din spațiul actual al României reprezintă un eșantion, într-o încercare de a înțelege „moda" utilizării acestui tip de vas.

1. **Acâș – *Crasna Veche* (SM)**
   Tip sit: Așezare
   Tip vas: vas cu pereți laterali
   Încadrare culturală: Grupul Cehăluț
   Bibliografie: Kacsó 1997, p. 87, pl. VIII/7–9.
2. **Arad – *Aradu Nou* (AR)**
   Tip sit: Așezare
   Tip vas: nespecificat
   Încadrare culturală: Otomani
   Bibliografie: Pădureanu 1987–1988, p. 507.
3. **Ariniș – *Sub ogrăzi* (MM)**
   Tip sit: Așezare
   Tip vas: nespecificat
   Încadrare culturală: Suciu de Sus
   Bibliografie: Kacsó 1980, fig. 2/30.
4. **Baia Mare (MM)**
   Tip sit: Așezare
   Tip vas: nespecificat
   Încadrare culturală: Suciu de Sus
   Bibliografie: Kacsó 1987, p. 51, fig. 1/7–8.
5. **Balta Verde – *Gura Blahniței* / *La morminți* (MH)**
   Tip sit: Necropolă
   Tip vas: miniatural
   Încadrare culturală: Gârla Mare
   Bibliografie: Berciu, Comșa, 1956, p. 303; Crăciunescu 2022, p. 80, pl. XXXIX/4.
6. **Berveni – *Râtul Caprei* (SM)**
   Tip sit: Așezare
   Tip vas: vas cu manta
   Încadrare culturală: Suciu de Sus
   Bibliografie: Németi 1990, p. 20, fig. 3/3, 8/13.
7. **Beudiu – *Fundoaia* (BN)**
   Tip sit: nespecificat
   Tip vas: nespecificat
   Încadrare culturală: Wietenberg
   Bibliografie: Marinescu 1995, p. 50, pl. IV/2.
8. **Bicaz – *Igoaie* (MM)**
   Tip sit: nespecificat
   Tip vas: nespecificat
   Încadrare culturală: nespecificat
   Bibliografie: Romsauer 2003, p. 123.
9. **Biharea – *Grădina CAP-Baraj* (BH)**
   Tip sit: Necropolă
   Tip vas: vas cu pereți laterali
   Încadrare culturală: Sfârșitul epocii bronzului – începutul epocii fierului
   Bibliografie: Dumitrașcu, Emödi 1980, p. 47–48.
10. **Bistreț (DJ)**
    Tip sit: nespecificat
    Tip vas: nespecificat
    Încadrare culturală: Gârla Mare
    Bibliografie: Romsauer 2003, p. 124.
11. **Boinești – *Cetatea de pământ* (SM)**
    Tip sit: Așezare
    Tip vas: vas cu grătar

Încadrare culturală: Suciu de Sus
Bibliografie: Bader 1978, p. 73, pl. XLIX/31.

12. Caransebeș – *Balta Sărată* (CS)
Tip sit: Așezare
Tip vas: vas cu manta
Încadrare culturală: Balta Sărată
Bibliografie: Ardeț, Negrei 2016, p. 41–45, fig. 9–10, pl. I–II.

13. Carei – *Bobald* (SM)
Tip sit: Așezare
Tip vas: vas cu manta
Încadrare culturală: Otomani
Bibliografie: Bader 1978, p. 55; Németi 1978, p. 118.

14. Carei – *Fermă* (SM)
Tip sit: Așezare
Tip vas: vas cu manta
Încadrare culturală: Suciu de Sus
Bibliografie: Németi 1990, fig. 5/8.

15. Căprioara – *Săliște* (CJ)
Tip sit: Așezare
Tip vas: vas cu manta
Încadrare culturală: Suciu de Sus
Bibliografie: Lazarovici 1977, fig. 1/19, 2/5; Kacsó 1987, p. 51.

16. Cârna - *Rampă* (DJ)
Tip sit: Așezare
Tip vas: vas cu pereți laterali
Încadrare culturală: Gârla Mare
Bibliografie: Șandor-Chicideanu 2003, p. 88.

17. Cehăluț (SM)
Tip sit: Așezare
Tip vas: vas cu manta
Încadrare culturală: Otomani
Bibliografie: Bader 1978, p. 57.

18. Cernat (CV)
Tip sit: Așezare
Tip vas: piedestal în formă de potcoavă
Încadrare culturală: Wietenberg
Bibliografie: Boroffka 1994, p. 94.

19. Chitila – *Cărămidărie* (IF)
Tip sit: Așezare
Tip vas: vas cu manta
Încadrare culturală: Tei
Bibliografie: Boroneanț 1981, p. 201.

20. Ciceu-Corabia – *Sub cetate* (BN)
Tip sit: Așezare
Tip vas: vas cu manta
Încadrare culturală: Wietenberg
Bibliografie: Boroffka 1994, Taf. 53/1–2.

21. Ciumești – *Bostănărie/Tökös* (SM)
Tip sit: Necropolă
Tip vas: nespecificat
Încadrare culturală: grupul Cehăluț
Bibliografie: Kacsó 1997, p. 87.

22. Cluj-Napoca – *Strada Maxim Gorki* (CJ)
Tip sit: Așezare
Tip vas: nespecificat
Încadrare culturală: Wietenberg
Bibliografie: Boroffka 1994, p. 16, Taf. 62/11.

23. Copalnic-Mănăștur – *Poiana* (MM)
Tip sit: Așezare
Tip vas: nespecificat
Încadrare culturală: Suciu de Sus
Bibliografie: Kacsó 1987, p. 51, fig. 2/43–44, 46.

24. Cornești (TM)
Tip sit: Așezare
Tip vas: nespecificat
Încadrare culturală: Vatina
Bibliografie: Romsauer 2003, p. 125.

25. Crasna – *Csereodal* (SJ)
Tip sit: Așezare
Tip vas: vas cu manta
Încadrare culturală: Grupul Cehăluț
Bibliografie: Bejinariu, Lakó 2000, fig. 14/4, 19/3, 27/2.

26. Cruceni – *Módosi út* (TM)
Tip sit: Așezare
Tip vas: vas cu manta
Încadrare culturală: Cruceni-Belegiș
Bibliografie: Szentmiklosi 2010, p. 296–297, pl. III/2.

27. Culciu Mare – *Sub grădini* (SM)
Tip sit: Așezare
Tip vas: vas cu pereți laterali
Încadrare culturală: Suciu de Sus
Bibliografie: Bader 1978, p. 55, Taf. 53/1–2, 58/1–2.

28. Culciu Mare – *Kendervetö* (SM)
Tip sit: Așezare
Tip vas: vas cu pereți laterali
Încadrare culturală: Suciu de Sus
Bibliografie: Bader 1978, p. 55.

29. Culciu Mic (SM)
Tip sit: Așezare
Tip vas: vas cu pereți laterali
Încadrare culturală: Suciu de Sus
Bibliografie: Kacsó 1975, p. 59.

30. Curtuișeni – *Dâmbul ars* (BH)
Tip sit: Așezare
Tip vas: vas cu manta
Încadrare culturală: Wietenberg/Suciu de Sus
Bibliografie: Németi 1978, p. 130.

31. Derșida – *Dealul lui Balotă* (SJ)
Tip sit: Așezare
Tip vas: nespecificat
Încadrare culturală: Wietenberg
Bibliografie: Boroffka 1994, p. 37.

32. Dindești (SM)
Tip sit: Așezare
Tip vas: vas cu manta
Încadrare culturală: Otomani
Bibliografie: Bader 1978, p. 55.

33. Doh – *Izvoare* (SJ)
Tip sit: Așezare
Tip vas: vas cu pereți laterali
Încadrare culturală: Suciu de Sus
Bibliografie: Kacsó 1987, p. 59.

34. Dorolțu – *Templomdob* (CJ)
Tip sit: nespecificat
Tip vas: vas cu manta
Încadrare culturală: Wietenberg
Bibliografie: Boroffka 1994, p. 41, Taf. 70/9.

35. Foieni – *Gomila Lupului* (TM)
Tip sit: Așezare
Tip vas: nespecificat
Încadrare culturală: Vatina
Bibliografie: Romsauer 2003, p. 126.

36. Foieni – *Moară* (SM)
Tip sit: Depozit/Descoperire funerară?

Tip vas: vas cu manta
Încadrare culturală: nespecificat
Bibliografie: Németi 1978, p. 130, fig. 4/5–8, 5/1.

37. Gârla Mare – *km fl. 836+400* (MH)
Tip sit: Așezare
Tip vas: miniatural
Încadrare culturală: Gârla Mare
Bibliografie: Crăciunescu 2022, p. 36, pl. XVII/5–6.

38. Gârla Mare – *km fl. 836+400* (MH)
Tip sit: Necropolă
Tip vas: miniatural
Încadrare culturală: Gârla Mare
Bibliografie: Crăciunescu 2022, p. 103, pl. LXIII/1a–c.

39. Gârla Mare – *km fl. 864+400*
Tip sit: Necropolă
Tip vas: miniatural
Încadrare culturală: Gârla Mare
Bibliografie: Crăciunescu 2022, p. 103, pl. LXII/1a–c.

40. Gârla Mare – *Insulă / km fl. 838* (MH)
Tip sit: Așezare
Tip vas: vas cu manta
Încadrare culturală: Gârla Mare
Bibliografie: Crăciunescu 2022, p. 42, pl. XXVI/4.

41. Ghidici – *Balta Țarova* (DJ)
Tip sit: Așezare
Tip vas: vas cu manta
Încadrare culturală: Gârla Mare
Bibliografie: Nica 1987, p. 26, fig. 17/2.

42. Giulești (MM)
Tip sit: Așezare
Tip vas: vas cu manta
Încadrare culturală: Suciu de Sus
Bibliografie: Kacsó 1987, p. 59, fig. 7/9–11.

43. Horia – *Vest* (AR)
Tip sit: Așezare
Tip vas: nespecificat
Încadrare culturală: Otomani
Bibliografie: Pădureanu 1987–1988, p. 512, pl. XII/13.

44. Iojib (SM)
Tip sit: nespecificat
Tip vas: nespecificat
Încadrare culturală: nespecificat
Bibliografie: Romsauer 2003, p. 127.

45. Izvoarele – *Aria lui Melaiche Andreca / km fl. 857* (MH)
Tip sit: Așezare
Tip vas: nespecificat
Încadrare culturală: Gârla Mare
Bibliografie: Crăciunescu 1992, p. 45, pl. 2/5; Crăciunescu 2022, p. 34.

46. Lăpuș (MM)
Tip sit: Necropolă
Tip vas: vas cu pereți laterali
Încadrare culturală: Lăpuș
Bibliografie: Kacsó 1975, p. 51, fig. 9/1–3; Kacsó 1981, Taf. 38.

47. Lăpușel – *Ciurgău* (MM)
Tip sit: Necropolă
Tip vas: vas cu manta
Încadrare culturală: Suciu de Sus
Bibliografie: Kacsó 1995, p. 84, pl. V.

48. Libotin - *Dâmbul Crucii* (MM)
Tip sit: Necropolă
Tip vas: nespecificat
Încadrare culturală: Lăpuș
Bibliografie: Kacsó 1990, p. 98, fig. 10/5–7.

49. Lunca-Bârzești – *Punctul 2* (IF)
Tip sit: Așezare
Tip vas: nespecificat
Încadrare culturală: Tei
Bibliografie: Sandu 1992, p. 170–174, pl. III/12, V/1–2.

50. Mediești Aurit – *Șuculeu* (SM)
Tip sit: Așezare
Tip vas: vas cu pereți laterali
Încadrare culturală: Suciu de Sus
Bibliografie: Bader 1978, p. 55, pl. LIII.

51. Mesteacăn – *La Prahov–Valea caselor* (MM)
Tip sit: Așezare
Tip vas: vas cu manta
Încadrare culturală: Suciu de Sus
Bibliografie: Kacsó 1987, p. 66.

52. Moldova Veche – *Ostrov* (CS)
Tip sit: nespecificat
Tip vas: nespecificat
Încadrare culturală: Vatina
Bibliografie: Crăciunescu 2015, p. 131; Crăciunescu 2022, p. 144.

53. Oarța de Jos – *Vâlceaua Rusului* (MM)
Tip sit: Așezare
Tip vas: vas cu pereți laterali
Încadrare culturală: Suciu de Sus
Bibliografie: Kacsó 1975, p. 59.

54. Oarța de Sus – *Oul Făgetului* (MM)
Tip sit: nespecificat
Tip vas: nespecificat
Încadrare culturală: nespecificat
Bibliografie: Romsauer 2003, p. 128.

55. Obreja – *Cânepi* (AB)
Tip sit: Așezare
Tip vas: vas cu manta
Încadrare culturală: Wietenberg
Bibliografie: Soroceanu 1973, Taf. 7/1; Boroffka 1994, p. 61, Taf. 105/10.

56. Ocnele Mari – *Știrand* (VL)
Tip sit: Așezare
Tip vas: vas cu manta
Încadrare culturală: Verbicioara
Bibliografie: Petre-Govora 1983, p. 85, fig. 6/5.

57. Ostrovu Corbului (MH)
Tip sit: Așezare
Tip vas: vas cu manta
Încadrare culturală: Gârla Mare
Bibliografie: Hänsel, Roman 1984, Abb. 24/1–5.

58. Ostrovul Corbului – *Botul Cliuciului / km fl. 911* (MH)
Tip sit: Așezare
Tip vas: vas cu manta
Încadrare culturală: Gârla Mare
Bibliografie: Crăciunescu 2022, p. 30.

59. Ostrovu Mare – *Bivolării* (MH)
Tip sit: Necropolă
Tip vas: miniatural
Încadrare culturală: Gârla Mare
Bibliografie: Berciu 1953, Taf. 29/4; Kacsó 1975, p. 53, fig. 36; Crăciunescu 2015, pl. II; Crăciunescu 2022, p. 73, pl. XXXIII/8, XXXIV/1–2.

60. Ostrovu Mare – *Colonie/km fl. 865* (MH)
Tip sit: Așezare
Tip vas: vas cu manta
Încadrare culturală: Gârla Mare
Bibliografie: Crăciunescu 2022, p. 25.

61. Otomani – *Cetatea de pământ* (BH)
Tip sit: Așezare
Tip vas: vas cu manta
Încadrare culturală: Otomani
Bibliografie: Bader 1978, p. 55; Németi 1978, p. 118.

62. Păuliș – *Dealul Bătrân/Via Karosy* (AR)
Tip sit: Așezare
Tip vas: nespecificat
Încadrare culturală: Otomani
Bibliografie: Pădureanu 1990, p. 159, Taf. 15/1, 3, 19/1–11.

63. Pecica (AR)
Tip sit: Așezare
Tip vas: vas cu manta
Încadrare culturală: Periam-Pecica (Mureș)
Bibliografie: Soroceanu 1973, p. 494, nota 17; Kacsó 1975, nota 36.

64. Peștera – *Peștera-Igrița*
Tip sit: Necropolă
Tip vas: nespecificat
Încadrare culturală: Igrița
Bibliografie: Emödi 1980, fig. 19/165.

65. Pișcolt – *Nisipărie* (SM)
Tip sit: Așezare
Tip vas: nespecificat
Încadrare culturală: Otomani
Bibliografie: Németi 1978, p. 109, fig. 9/9; Bader 1978, p. 57; Kacsó 1997, p. 87, pl. III, IV/1.

66. Plosca – *Cabana de metal* (DJ)
Tip sit: Necropolă
Tip vas: nespecificat
Încadrare culturală: Gârla Mare
Bibliografie: Șandor-Chicideanu, Constantinescu 2019, p. 35, pl. 85/6.

67. Podu Broșteni – *Poiana Popii* (AG)
Tip sit: Așezare
Tip vas: vas cu manta
Încadrare culturală: Tei
Bibliografie: Ștefan 2024, p. 99–102, pl. CXXIII/9, CXXV/11, CXXXII/4, CXXXVIII/4.

68. Rotbav – *La Pârâuț* (BV)
Tip sit: nespecificat
Tip vas: piedestal de formă pătrată
Încadrare culturală: Wietenberg
Bibliografie: Boroffka 1994, p. 169, Taf. 115/9.

69. Sălacea (BH)
Tip sit: nespecificat
Tip vas: vas cu manta
Încadrare culturală: Otomani
Bibliografie: Németi 1978, p. 118.

70. Seini – *Dagas* (MM)
Tip sit: nespecificat
Tip vas: nespecificat
Încadrare culturală: nespecificat
Bibliografie: Romsauer 2003, p. 130.

71. Socodor (AR)
Tip sit: Așezare
Tip vas: nespecificat
Încadrare culturală: Otomani
Bibliografie: Popescu 1956, fig. 9/6, 16/2, 29/1, 35/5, 73/1–2, 8.

72. Suciu de Sus (MM)
Tip sit: Necropolă
Tip vas: vas cu pereți laterali
Încadrare culturală: Suciu de Sus
Bibliografie: Bader 1976, p. 44, Taf. 7/1–5.

73. Suplacu de Barcău – *Lapiș* (BH)
Tip sit: Așezare
Tip vas: vas cu manta
Încadrare culturală: grupul Cehăluț
Bibliografie: Kacsó 1997, p. 86.

74. Șoimuș – *Teleghi* (HD)
Tip sit: Așezare
Tip vas: vas cu manta
Încadrare culturală: „*descoperiri de tip Deva-Românești*"
Bibliografie: Rișcuța, Marc 2015, p. 42–48, pl. III/a, V/e–f, VI.

75. Șuncuiuș – *Peștera Ungurului* (BH)
Tip sit: nespecificat
Tip vas: nespecificat
Încadrare culturală: nespecificat
Bibliografie: Dumitrașcu 1992, Taf. 4 (*apud* Romsauer 2003, p. 131).

76. Susani (TM)
Tip sit: Așezare
Tip vas: nespecificat
Încadrare culturală: nespecificat
Bibliografie: Stratan, Vulpe 1977, Taf. 28/17a–b.

77. Tășad (BH)
Tip sit: nespecificat
Tip vas: nespecificat
Încadrare culturală: nespecificat
Bibliografie: Kacsó 1981, fig. 143 (*apud* Romsauer 2003, p. 131).

78. Tiream (SM)
Tip sit: Așezare
Tip vas: vas cu manta
Încadrare culturală: Otomani
Bibliografie: Németi 1978, p. 118.

79. Uroi – *Sigheti* (HD)
Tip sit: Așezare
Tip vas: vas cu manta
Încadrare culturală: Wietenberg
Bibliografie: Marc *et alii* 2013, p. 121–122, fig. VI.

80. Vad – *Poduri* (MM)
Tip sit: Așezare
Tip vas: vas cu manta
Încadrare culturală: Suciu de Sus
Bibliografie: Kacsó 1987, p. 66, fig. 15/1–3.

81. Valea lui Mihai – *Groapa cu lut?* (BH)
Tip sit: Așezare
Tip vas: nespecificat
Încadrare culturală: grupul Cehăluț/Otomani
Bibliografie: Kacsó 1997, p. 87, pl. XI/7–8; Bader 1978, p. 57, pl. XXXII/1.

82. Vălenii Șomcutei (MM)
Tip sit: Așezare
Tip vas: vas cu manta
Încadrare culturală: Suciu de Sus
Bibliografie: Romsauer 2003, p. 132.

83. Vărșand – *Movila dintre vii* (AR)
Tip sit: Așezare
Tip vas: nespecificat
Încadrare culturală: Otomani
Bibliografie: Popescu 1956, fig. 73/1–2, 8.

84. Verbicioara (DJ)
Tip sit: Așezare
Tip vas: vas cu manta
Încadrare culturală: Verbicioara
Bibliografie: Berciu 1952, fig. 10; Berciu 1961, p. 142, fig. 6.

85. Vișlea – *Kikutverme* (CJ)
Tip sit: Așezare
Tip vas: vas cu manta
Încadrare culturală: Otomani/Wietenberg.
Bibliografie: Boroffka 1994, Taf. 144/12.

86. Zalău (SJ)
Tip sit: nespecificat
Tip vas: nespecificat
Încadrare culturală: nespecificat
Bibliografie: Kacsó 1981, nota 141 (*apud* Romsauer 2003, p. 132).

87. Zăbala (CV)
Tip sit: Așezare
Tip vas: nespecificat
Încadrare culturală: Wietenberg
Bibliografie: Romsauer 2003, p. 132.

88. Zurbaua 1 (IF)
Tip sit: Așezare
Tip vas: vas cu manta
Încadrare culturală: Tei
Bibliografie: Inedit.

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Descoperirile din spațiul românesc se încadrează în tipologia întocmită de Romsauer (Pl. IV)[26]. Tipurile întâlnite în spațiul analizat sunt A1 (vas înconjurat de o manta cu gură de acces și găuri de ventilație), A2 (vas sprijinit pe doi pereți laterali, uniți printr-un manșon), B1/B2/C1 (vas cu grătar[27]) și D1/D2 (piedestal). Pentru o mai ușoară urmărire a graficelor, am ales să folosesc denumiri generice în legendă, astfel: A1 – *Vas cu manta*; A2 – *Vas cu pereți laterali*; B1/B2 – *Vas cu grătar*; D1/D2 – *Piedestal*. Am adăugat și o categorie separată, numită *Miniatural*. În aceasta se încadrează descoperirile de vase tip A1, ale căror dimensiuni sunt considerabil reduse (sub 15 cm înălțime). În multe cazuri, fragmentarea accentuată a împiedicat încadrarea într-o anumită categorie. Acestea apar în coloana *nespecificat*.

Pentru baza de date am strâns informații din 88 de puncte arheologice. Majoritatea publicațiilor au menționat doar descoperirea unor fragmente de vas *pyraunos*, motiv pentru care stabilirea numărului real de indivizi nu a putut fi realizată. De aceea, analiza s-a concentrat mai mult pe tipurile de vase descoperite și pe relația acestora cu tipul de sit – așezare/necropolă. Analiza s-a concentrat pe 62 de așezări, 11 necropole, la care s-au adăugat descoperiri din 14 puncte de tip nespecificat și o descoperire incertă de depozit/mormânt de incinerație. În 38 de puncte au fost descoperite vase cu manta, în 11 vase cu pereți laterali, în patru cazuri au fost descoperite vase miniaturale, în două piedestaluri și într-un singur caz a fost precizat un fragment de vas cu grătar. Pentru alte 32 de descoperiri nu s-a putut preciza tipul de vas.

Pe hartă (Pl. VI/a) am reprezentat distribuția pe județe a siturilor arheologice în care au fost menționate descoperiri de vase *pyraunoi.* Descoperirile se concentrează în jumătatea vestică a țării, cele mai multe fiind în județele din zona de NNV. Spațiul intracarpatic este legat cultural de centrul Europei, unde au fost semnalate destul de multe descoperiri de vase asemănătoare (Pl. V). La o primă vedere, pare că sudul țării are puține descoperiri, concentrate în zona de SV. Însă modul în care sunt prezentate primele două semnalări din Ilfov[28] pare să indice că piese asemănătoare nu erau atât de rar descoperite în zonă. Sudul țării este legat cultural de spațiul balcanic. Relativ recent au început să fie publicate semnalări de *pyraunoi* și în Bulgaria[29]. Astfel, în perspectiva în care o parte a vechilor descoperiri vor fi valorificate în viitor, se poate ca numărul de *pyraunoi* descoperiți în Muntenia să sporească.

Raportat la tipul de sit (Pl. VI/b), predomină descoperirile din așezări (69,3%), în timp ce descoperirile din necropole sunt mai rare (13,6%). După tipul de vas (Pl. VII/a), cel mai des întâlnit este vasul cu manta (A1), urmat de vasul cu pereți laterali (A2). Vasul *pyraunos* apare ca instrument de gătit, fiind descoperit lângă vetre, în interiorul locuințelor, în strat sau în gropi de resturi menajere. După unele opinii, vasele cuptor de mari dimensiuni erau utilizate pentru gătitul în afara așezării, pentru situațiile în care nu era posibil gătitul pe vetre[30]. Dumitru Berciu le numea chiar „*vase de campanie*”[31].

Există și presupunerea că vasul ar avea un rol cultic. Adrian Ardeț și Dimitrie Negrei atribuie exemplarului descoperit la Caransebeș – *Balta Sărată* un caracter cultic, argumentul fiind modul de depunere[32]. De asemenea, raportându-se la vasele descoperite la Șoimuș – *Teleghi*, autorii descoperirii interpretează decorul de deasupra gurii de acces drept o reprezentare figurativă a unui chip (Pl. IX/b). Din aceleași contexte au fost extrase și alte piese cărora li se poate atribui un caracter cultic, inclusiv un vas zoomorf[33]. O posibilă interpretare de acest fel poate fi dată și piedestalului în formă de potcoavă de la Cernat. Acesta a fost găsit în așezare, împreună cu un obiect conic poziționat aproape de capătul său și un idol antropomorf[34].

Am introdus în analiză și mediul cultural în care au fost descoperite piesele (Pl. VII/b). Astfel, a rezultat că vasul cu manta este întâlnit exclusiv în așezări și este singurul

[26] Romsauer 2003, p. 20–51, pl. 3.
[27] Fragmentul descoperit este prea mic pentru a putea fi încadrat tipologic. Vezi Bader 1978, pl. XLIX/31.
[28] Boroneanț 1981; Sandu 1992.
[29] Leshtakov 2019.
[30] Crăciunescu 2015, p. 138.
[31] Berciu 1952, p. 151.
[32] Ardeț, Negrei 2016.
[33] Rișcuța, Marc 2015, p. 61.
[34] Boroffka 1994, p. 94.

tip întâlnit în mediile Verbicioara, Tei, Periam-Pecica, Otomani, Deva-Românești, Cruceni-Belegiš și Balta Sărată. Vasul cu grătar apare menționat o singură dată într-o așezare Suciu de Sus. Vase cu pereți laterali apar în așezări ale culturilor Suciu de Sus, Gârla Mare și Grupul Cehăluț. Un fapt remarcat și de alții[35] este că există o diferențiere regională între interiorul arcului carpatic și spațiul de la sud de Carpați și Balcani. În Bazinul Carpatic întâlnim recipiente cu vas încorporat, dar și cu grătar sau piedestaluri. La sud se întâlnesc numai recipientele cu vas încorporat.

Piedestalul apare numai în cultura Wietenberg, unde, alături de vasul cu manta (Pl. IX/d), este întâlnit tot în așezări. Acestui tip de suport îi este dificil de atribuit o funcție clară, întrucât poate fi folosit atât pentru a înălța vasul deasupra focului, cât și ca simplu suport, neatins de foc[36]. După tipologia întocmită de Romsauer, piedestalul în formă de potcoavă din cultura Wietenberg reprezintă o categorie distinctă, numită D1a. Exemplarul de formă pătrată (Pl. IX/e), descoperit în mediul Wietenberg la Rotbav[37], se înscrie în tipul D2.

În cazul necropolelor au fost semnalate vase de tip A2, cu pereți laterali. Au fost descoperite în stare fragmentară în cadrul culturii Suciu de Sus[38]. Vase reîntregibile se cunosc din necropola de la Lăpuș (Pl. IX/c)[39]. Fragmente al căror tip nu a putut fi indicat au mai fost semnalate în culturile Lăpuș, Igrița, Gârla Mare și Grupul Cehăluț. În cadrul culturii Gârla Mare, fragmente din același vas au fost folosite drept capace în mormintele m. 64, m. 65 și m. 67 de la Plosca[40]. Fenomenul utilizării fragmentelor de *pyraunos* în inventarul funerar este consemnat atât în Europa centrală, cât și în Balcani, fiind legat aproape exclusiv de mormintele de incinerație[41]. Spre exemplu, un fragment din partea inferioară a instalației este menționat în necropola de incinerație de la Baley, din sud-vestul Bulgariei[42].

În ceea ce privește vasele miniaturale, pentru spațiul analizat au fost semnalate descoperiri strict în cadrul culturii Gârla Mare, în mediul funerar (Pl. IX/f–i). Funcționale, asemenea omoloagelor de mari dimensiuni[43], acestea ridică întrebări privind rolul lor în contextul funerar. În opinia lui Gabriel Crăciunescu, ar putea avea un rol religios sau ar putea reprezenta un simbol al decedatului[44]. Din descrierea exemplarului de la Balta Verde (Pl. IX/h) reiese că a fost făcut dintr-o pastă prost frământată, cu pietricele și pleavă, și ars insuficient[45] – un posibil indiciu că vasul a fost realizat în grabă, pentru a fi inclus în mobilierul funerar. Analogii relevante se întâlnesc în cultura Piliny, unde vasele *pyraunoi* apar exclusiv sub formă miniaturală, în mediu funerar, în mormintele bogat mobilate, însoțite de ofrande de piese miniaturale din bronz sau aur și care adăpostesc uneori rămășițe ale mai multor indivizi[46]. În necropola de la Radzovce (Slovacia), *pyraunosul* a fost descoperit în mormântul principal, diferențiat de restul prin amenajarea cu pietre, poziția centrală în cadrul necropolei, dar și prin inventarul bogat[47].

CONCLUZII

Distribuția geografică a tipurilor de vase *pyraunos* din spațiul actual al României reflectă oarecum orientarea culturală a comunităților preistorice: descoperirile se concentrează în jumătatea vestică a țării, cu legături clare spre centrul Europei, în timp ce sudul este conectat cultural spațiului balcanic, unde cercetările recente încep să evidențieze un număr tot mai mare de piese similare. În acest context, descoperirile din zona județelor Ilfov și Argeș par să indice că vasele *pyraunoi* nu erau atât de rare la sud de Carpați pe cât sugerează stadiul actual al cercetării, existând perspective ca numărul lor să sporească odată cu valorificarea unor descoperiri mai vechi.

Analizele realizate pe vasele descoperite la Zurbaua 1 au oferit indicii cu privire la modul de realizare a acestui tip de vas. Există posibilitatea ca șanțul de la îmbinarea VP cu VS să fie rezultatul utilizării unei nuiele sau a unei sfori cu care s-a trasat nivelul de la care începea vasul suport.

Elementele chimice identificate sunt comune în alcătuirea argilelor[48]. Valorile apropiate ale oxigenului și siliciului din compoziția celor două vase sunt indicatori că acestea au fost realizate dintr-un lut extras din aceeași zonă. Acest lucru va putea fi confirmat dacă, pe viitor, vor fi realizate mai multe analize pe ceramica și argila din situl de la Zurbaua 1.

Din punct de vedere funcțional, vasul *pyraunos* este asociat în primul rând cu activitățile culinare, fiind descoperit preponderent în așezări, în proximitatea vetrelor, în interiorul locuințelor sau în gropi cu resturi menajere. Unele opinii sugerează că exemplarele de mari dimensiuni erau utilizate pentru gătitul în afara așezării, în situații în care nu era posibil gătitul pe vatră, ceea ce le conferă un caracter practic deosebit de versatil. Cu toate acestea, prezența lor în contexte funerare, sub formă fragmentară sau miniaturală, precum și unele modalități de depunere ridică întrebări privind o posibilă interpretare rituală, susținută de asocierea cu piese cu caracter cultic în câteva cazuri.

Analiza tipologică evidențiază o diferențiere regională clară: în Bazinul Carpatic apar toate tipurile cunoscute – vas cu manta, vas cu pereți laterali, vas cu grătar și piedestal – în timp ce la sud de Carpați și în spațiul balcanic sunt atestate exclusiv recipientele cu vas încorporat. Este important de subliniat că, deși sunt atestate mai multe tipuri de vas în

[35] Romsauer 2003, p. 52.
[36] Romsauer 2003, p. 29.
[37] Boroffka 1994, p. 169, Taf. 115/9.
[38] Bader 1976, p. 44, Taf. 7/1–5.
[39] Kacsó 1975, p. 51, fig. 9/1–3.
[40] Motzoi-Chicideanu 2004, p. 239.
[41] Romsauer 2003, p. 91–97.
[42] Alexandrov *et alii* 2016, p. 439.
[43] Crăciunescu 2015, p. 133.
[44] Crăciunescu 2015, p. 138.
[45] Berciu, Comșa 1956, p. 303.
[46] Guba 2012, p. 101.
[47] Guba 2012, p. 105.
[48] Sandu *et alii* 2010, p. 533.

cadrul aceleiași culturi, nu au fost identificate până acum vase de două sau mai multe tipuri în același sit. Vasul cu manta rămâne cel mai frecvent tip, prezent în toate mediile culturale analizate. Vasele miniaturale, un element întâlnit și în Europa centrală, au fost descoperite în spațiul analizat exclusiv în mediul funerar al culturii Gârla Mare, reprezentând o categorie aparte, cu posibile conotații religioase sau simbolice.

În ansamblu, analiza celor 88 de puncte arheologice evidențiază că vasul *pyraunos* reprezintă un element cultural semnificativ al epocii bronzului pe teritoriul României, a cărui distribuție, tipologie și context de descoperire reflectă atât rețelele de influență culturală ale epocii, cât și complexitatea practicilor cotidiene și funerare ale comunităților preistorice.

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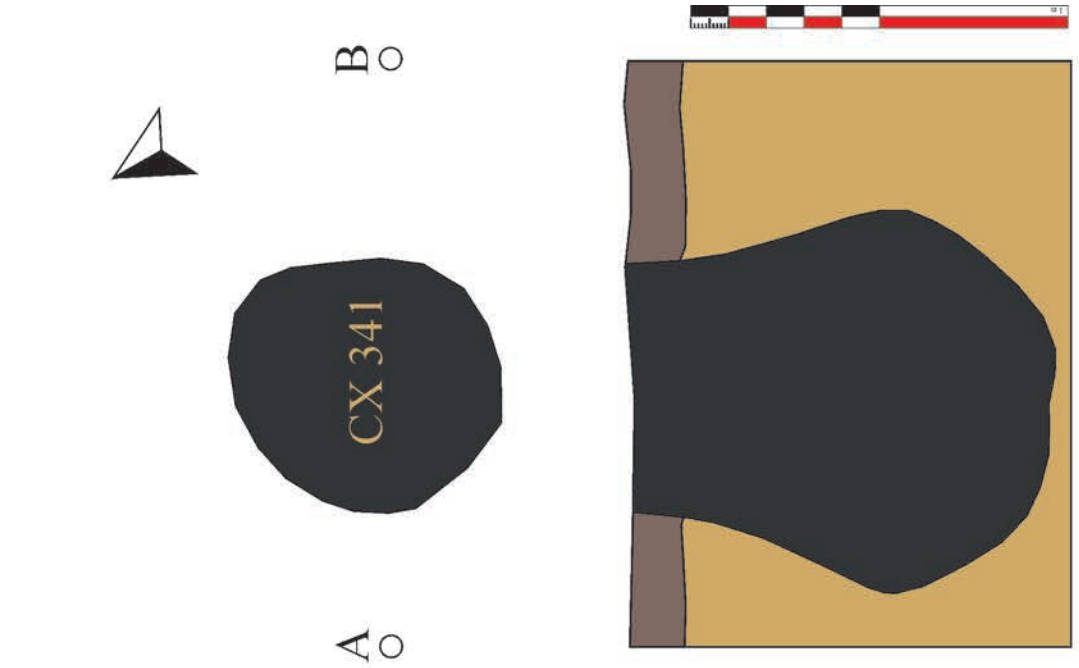
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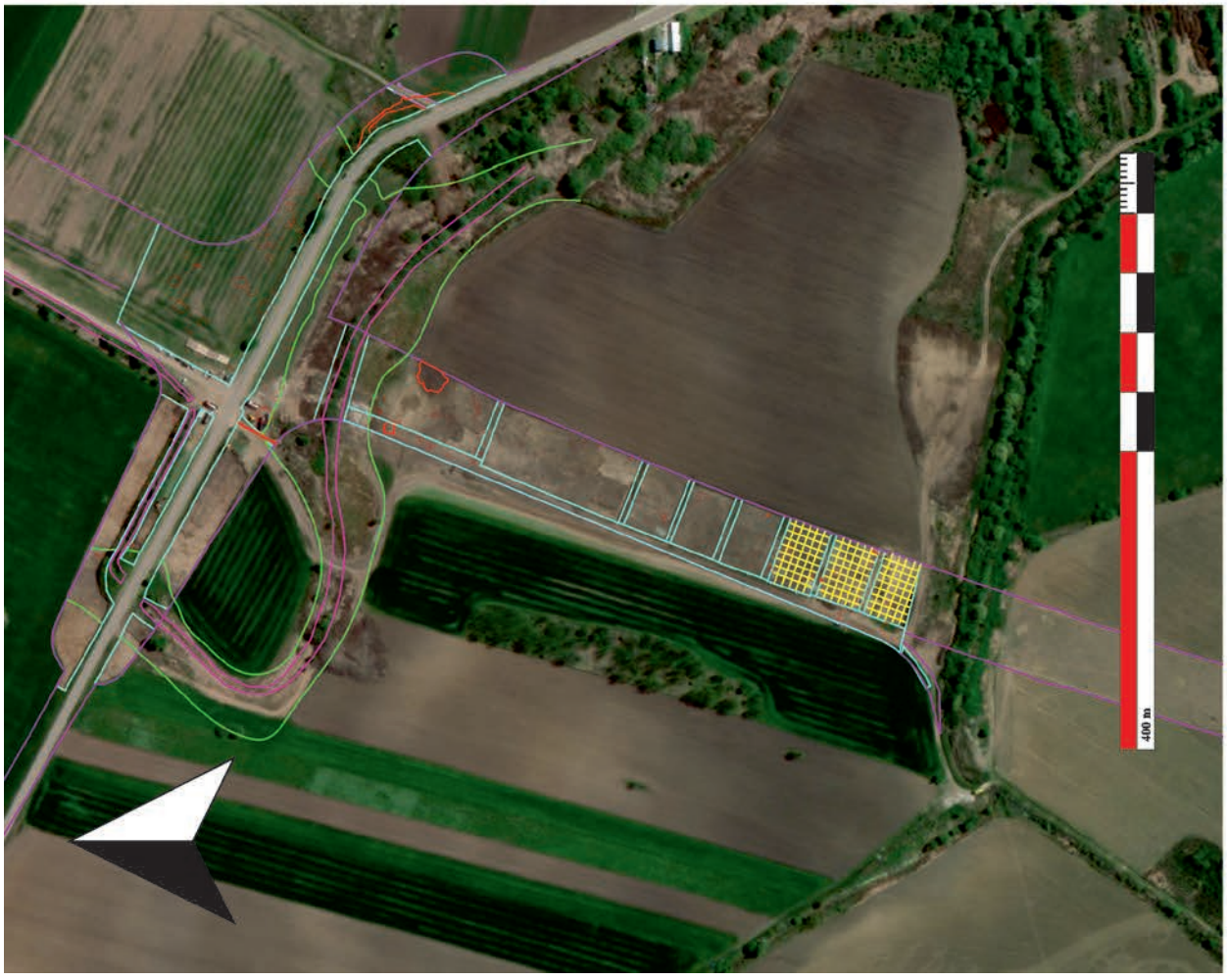
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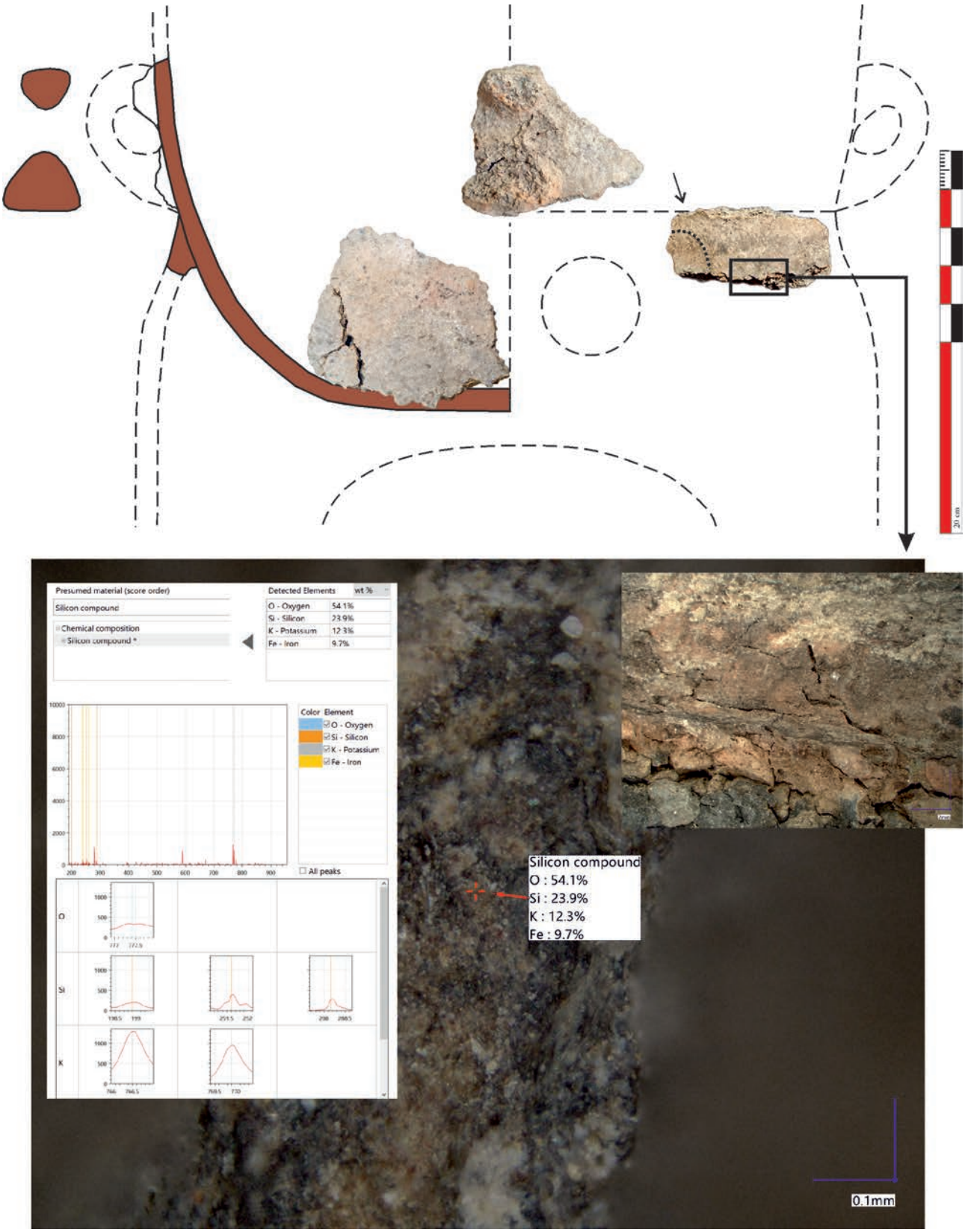
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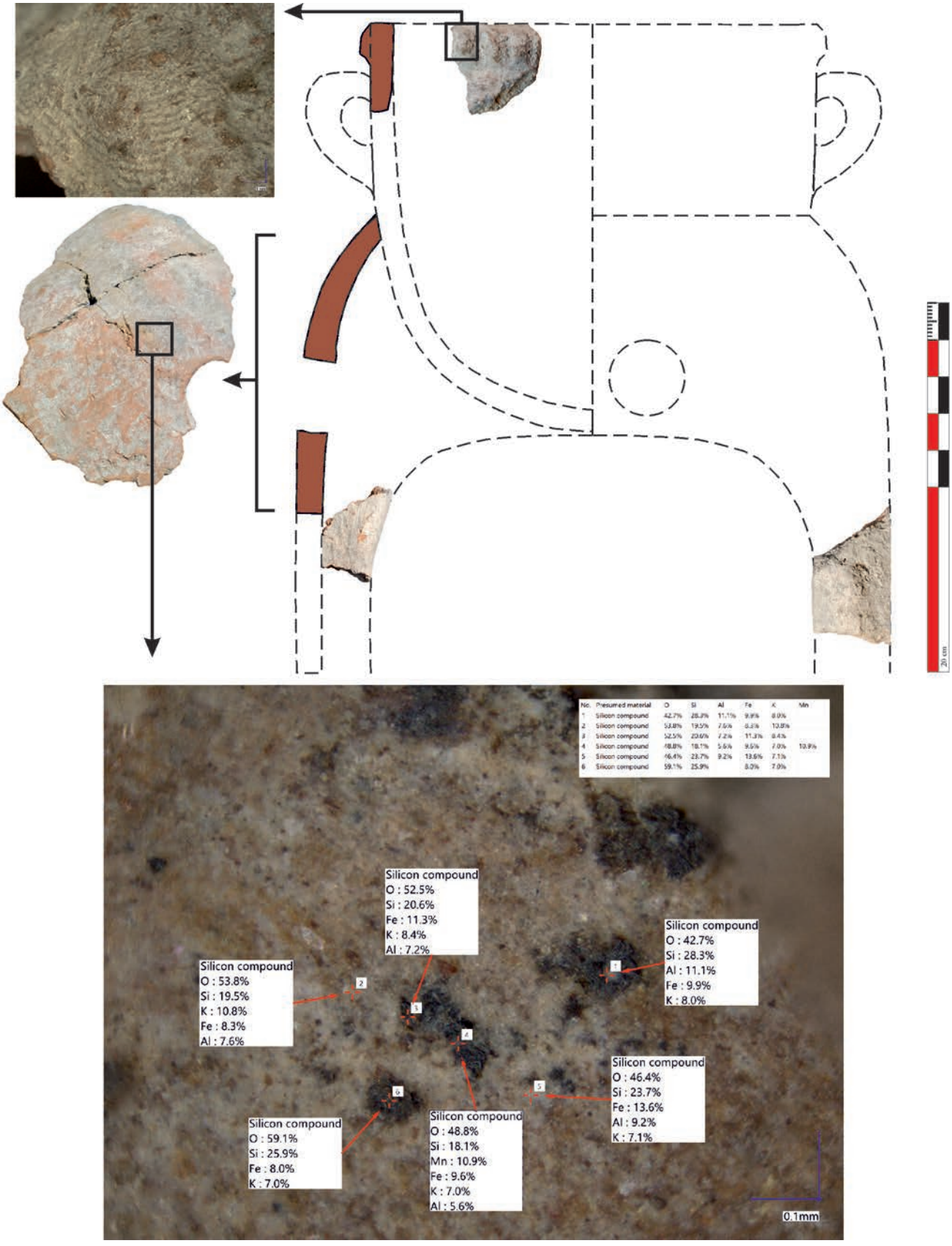
Planșa I. *Poziționarea pe hartă a sitului de la Zurbaua 1; Complexul 341.*

Plate I. *Location of the Zurbaua 1 site on the map; Feature 341.*



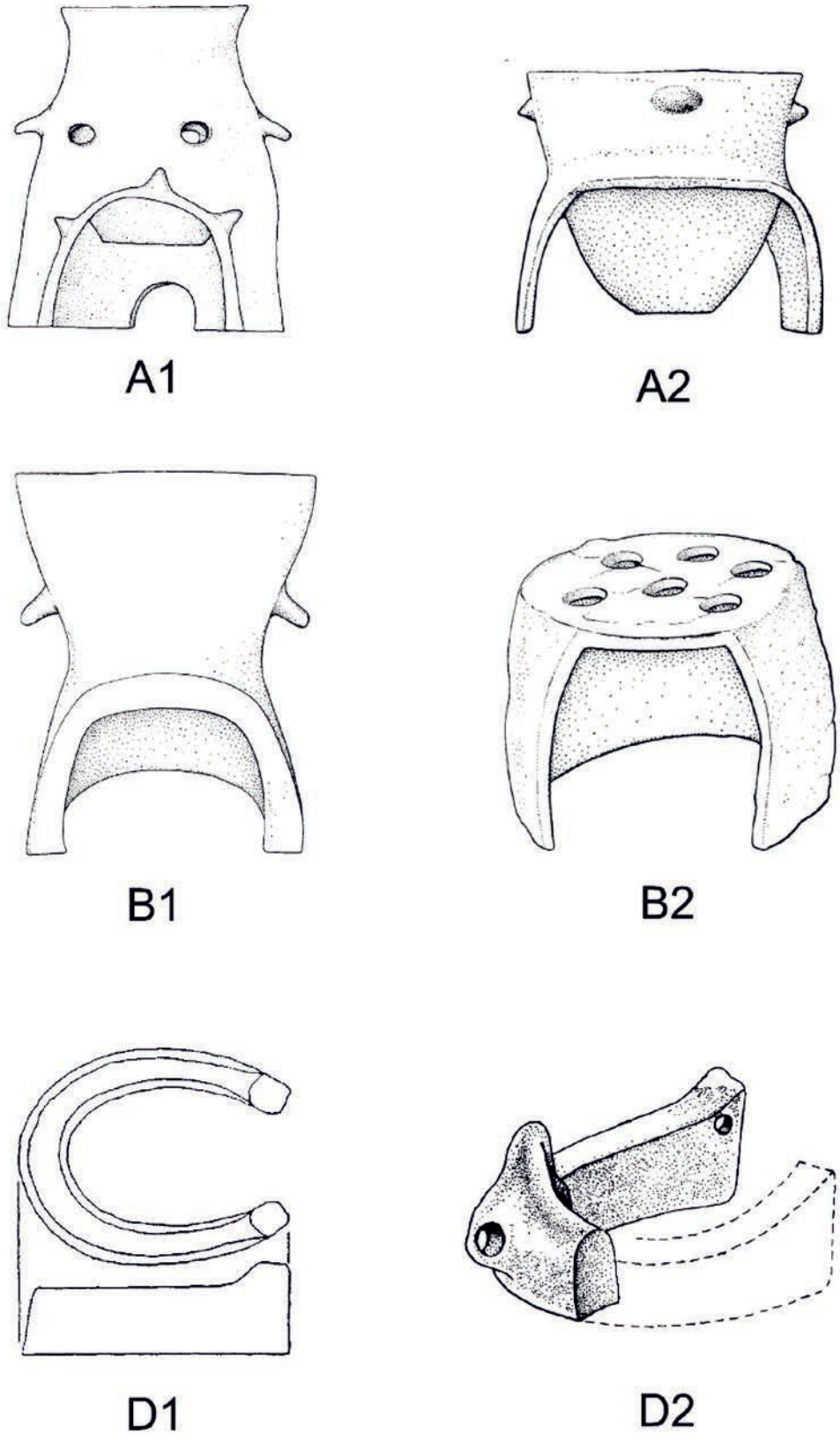
Planșa II. Vasul 1: *Reconstituire grafică; Analize microscopice.*

PlateII. Vessel 1: *Graphic reconstruction; Microscopic analyses.*



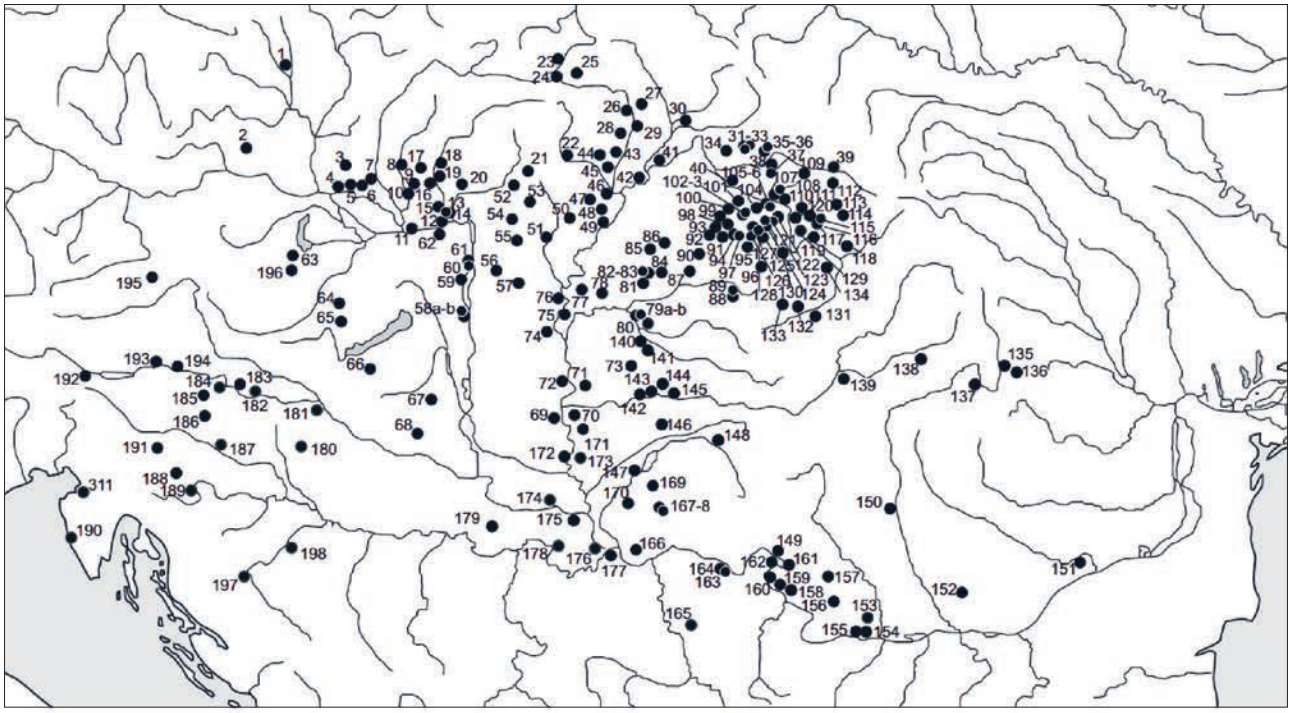
Planșa III. *Vasul 2: Reconstituire grafică; Analize microscopice.*

Plate III. Vessel 2: *Graphic reconstruction; Microscopic analyses.*



Planșa IV. *Tipologia vaselor* pyraunos *de pe teritoriul României (după Romsauer 2003, obr. 2).*

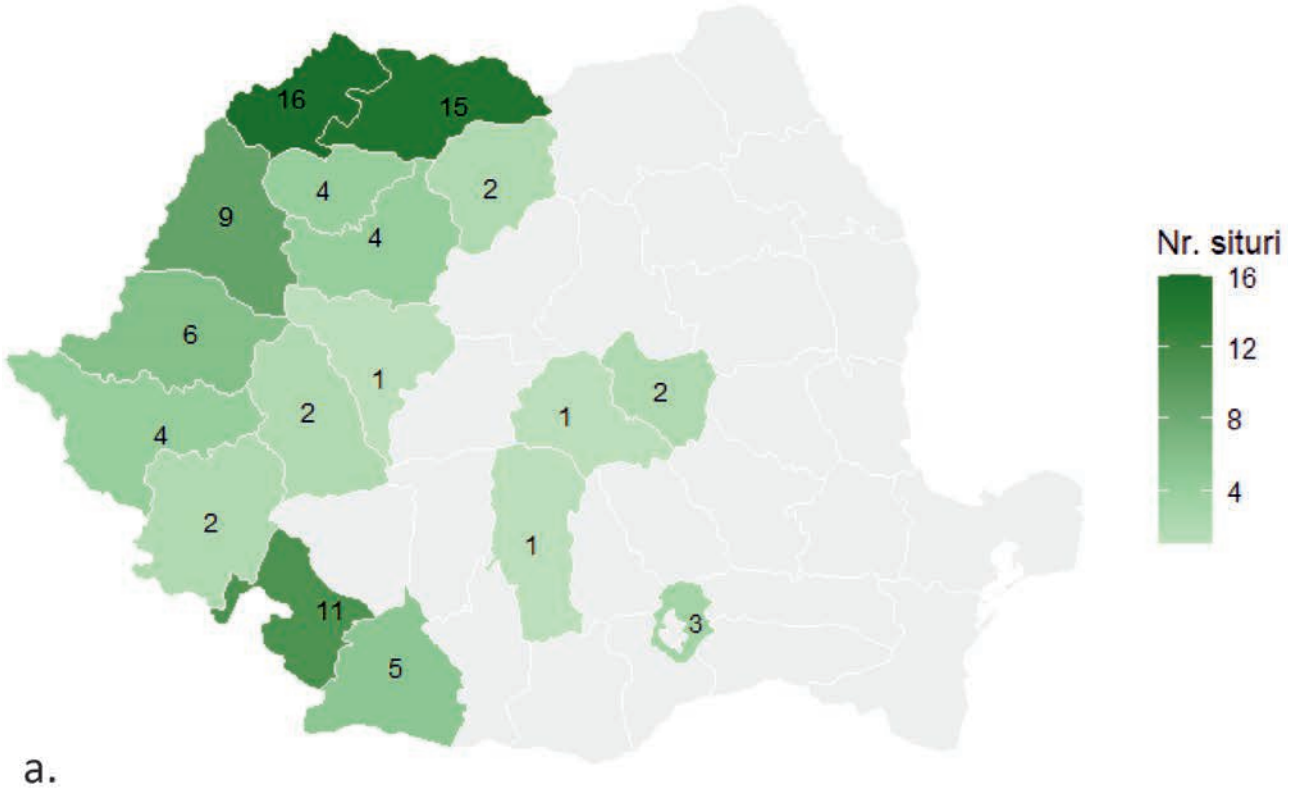
Plate IV. *Typology of* pyraunos *vessels from the territory of Romania (after Romsauer 2003, obr. 2).*



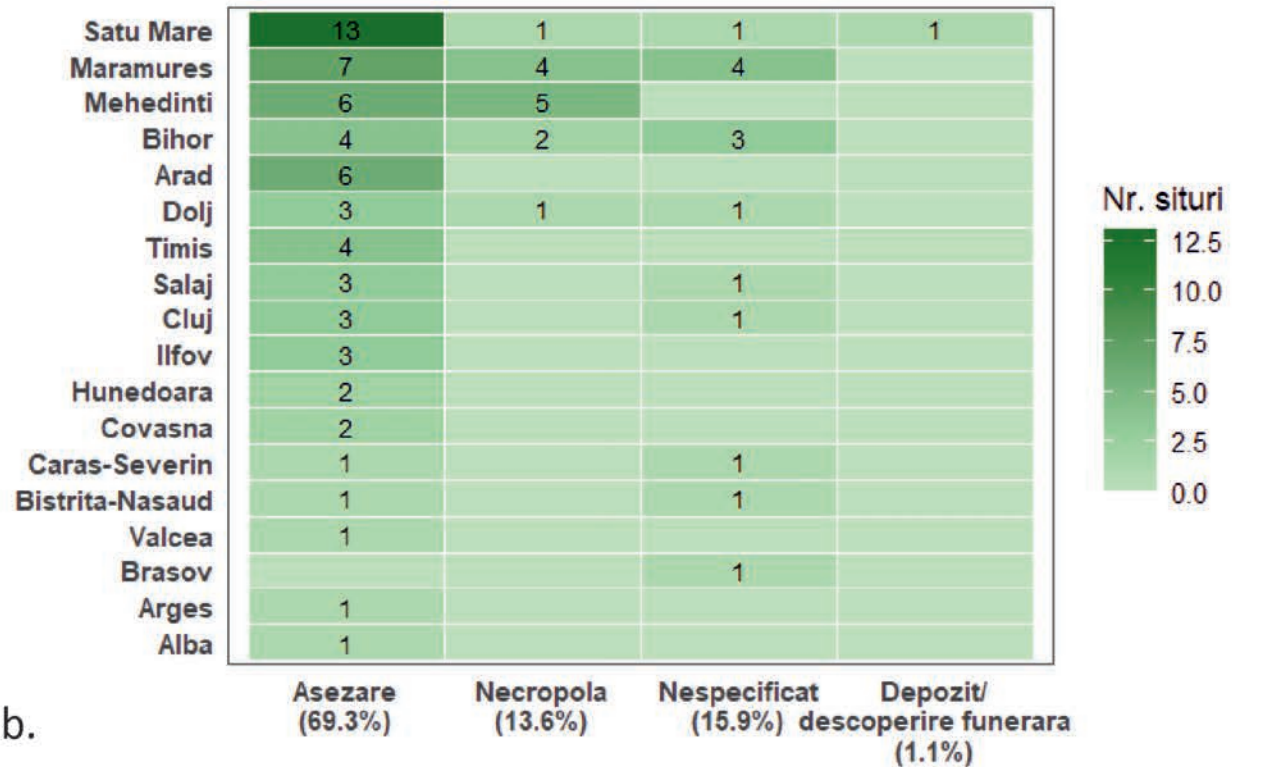
1 BRNO-OBŘANY *(CZ)*
2 GROßREIPERSDORF *(A)*
3 BUDMERICE *(SK)*
4 CHORVÁTSKY GROB
5 ČATAJ
6 HOSTE
7 SLÁDKOVIČOVO
8 NITRA
9 MAŇA
10 ŠURANY (N. Hrádok)
11 IŽA
12 ŠTÚROVO
13 MALÁ NAD HRONOM
14a-b MALÉ KOSIHY
15 KAMENÍN
16 ŠAROVCE
17 VRÁBLE
18 RYBNÍK
19 HORNÁ SEČ
20 SANTOVKA (Maďarovce)
21 RADZOVCE
22 VČELINCE
23 VEĽKÁ LOMNICA
24 GÁNOVCE
25 SPIŠSKÝ ŠTVRTOK
26 KOŠICE (Barca)
27 ROZHANOVCE
28 VEĽKÁ IDA
29 NIŽNÁ MYŠĽA
30 IŽKOVCE
31-3 BEREHOVO *(UA)*
35-6 KVASOVO
34 DEDOVO
37 DJAKOVO
38 ČEPA
39 SOLOTVINO
40 JÁNKMAJTIS *(H)*
41 KENÉZLŐ
42 TISZATARDOS
43 INÁNCS
44 EDELÉNY
45 ALSÓVADÁSZ
46 MUHIPUSZTA
47 EMŐD
48 MEZŐCSÁT
49 ÁROKTŐ
50 FÜZESABONY
51 JÁSZDÓZSA
52 PILINY
53 NAGYBÁTONY
54 BUJÁK
55 HATVAN
56 KAKUCS
57 CEGLÉD
58a-b DUNAÚJVÁROS
60-1 BUDAPEST
59 SZÁZHALOMBATTA
62 SÜTTŐ
63 SOPRON
64 CELLDÖMÖLK
65 JÁNOSHÁZA
66 SOMOGYVÁR
67 LENGYEL
68 PÉCS
69 RÓSZKE
70 ÓSZENTIVÁN
71 HÓDMEZŐVÁSÁRHELY
72 BAKS
73 KÉTEGYHÁZA
74 ALPÁR
75 NAGYRÉV
76 TÓSZEG
77 TÚRKEVE
78 TÖRÖKSZENTMIKLÓS
79a-b BÉKÉS
80 SARKAD
81 BAKONSZEG
82-3 BERETTYÓÚJFALU
84 GÁBORJÁN
85 DEBRECEN
86 HAJDÚSÁMSON
87 BIHAREA (RO)
88 ŞUNCUIUŞ
89I GRIŢA-PEŞTERA
90 ROŞIORI
91 OTOMANI
92 VALEA LUI MIHAI
93 CURTUIUŞENI
94 DINDEŞTI
95 SUPLACU DE BARCĂU
96 CRASNA
97 TĂŞAD
98 PIŞCOLT
99 CIUMEŞTI
100 FOIENI,
101 BERVENI
102-3 CAREI
104 CULCIU MIC
105-6 CULCIU MARE
107 MEDIEŞU AURIT
108 IOJIB
109 BOINEŞTI
110 SEINI
111 BAIA MARE
112 GIULEŞTI
113 LĂPUŞ
114 SUCIU DE SUS
115 VAD
116 COPALNIC-MĂNĂSTUR
117 LIBOTIN
118 CICEU-CORABIA
118 MESTEACĂN
119 LĂPUŞEL
121 OARŢA DE SUS
122 ARINIŞ
123 OARŢA DE JOS-
124 BICAZ
125 DERŞIDA
126 CEHĂLUŢ
128 ACĂŞ
129 VĂLENII ŞOMCUTEI
130 ZALĂU
131 CLUJ-NAPOCA
132 VIŞTEA
133 DOROLŢU
134 CĂPRIOARA
135 CERNAT
136 ZABALA
137 ROTBAV
138 SIGHISOARA
139 OBREJA
140 VĂRŞAND
141 SOCODOR
142 PECICA
143 ARAD
144 HORIA
145 PĂULIŞ
146 CORNEŞTI
147 FOIENI
148 SUSANI
149 INSULA BANULUI
150 OCNELE MARI
151 RADOVANU
152 MERI
153 PORTĂŢEŞTI
154 CÂRNA
155 BISTREŢ
156 VÂRTOP
157 VERBICIOARA
158 IZVOARELE
159 BALTA VERDE
160 OSTROVU MARE
161 OSTROVUL CORBULUI
162 MALA VRBICA *(YU)*
163 BOLJETIN
164 MALE LIVADICE
165 PLAŽANE
166 OMOLJICA
167-8 VRŠAC
169 VATIN
170 ILANDŽA
171 RABE
172 MOŠORIN
173 FARKAŽIIN
174 NOVI SAD
175 BEŠKA
176 BELEGIŠ
177 BEOGRAD
178 GOMOLAVA
179 BOSUT
180 KRIŽEVCI *(HR)*
181 SVETI PETAR LUDBREŠKI
182 ORMOŽ
183 PTUJ
184 POŠTELA
185 BRINJEVA GORA *(SLO)*
186 RIFNIK
187 LIBNA
188 GRADIŠČE pri Trebnjem
189 KUČAR
190 MOKODONJA
191 STIČNA
199 PRILEP *(MK)*
200 KUÇ i ZI *(AL)*
201 PRODAN
202 LIMNOTOPOS *(GR)*
203 KASTANAS
204 ASSIROS
205 OLYNTHOS
206 VERGINA

Planșa V. *Harta descoperirilor de vase* pyraunos *din Europa centrală și de est (după Romsauer 2003, Harta 1).*

Plate V. *Map of* pyraunos *vessel discoveries in central and eastern Europe (after Romsauer 2003, Harta 1).*



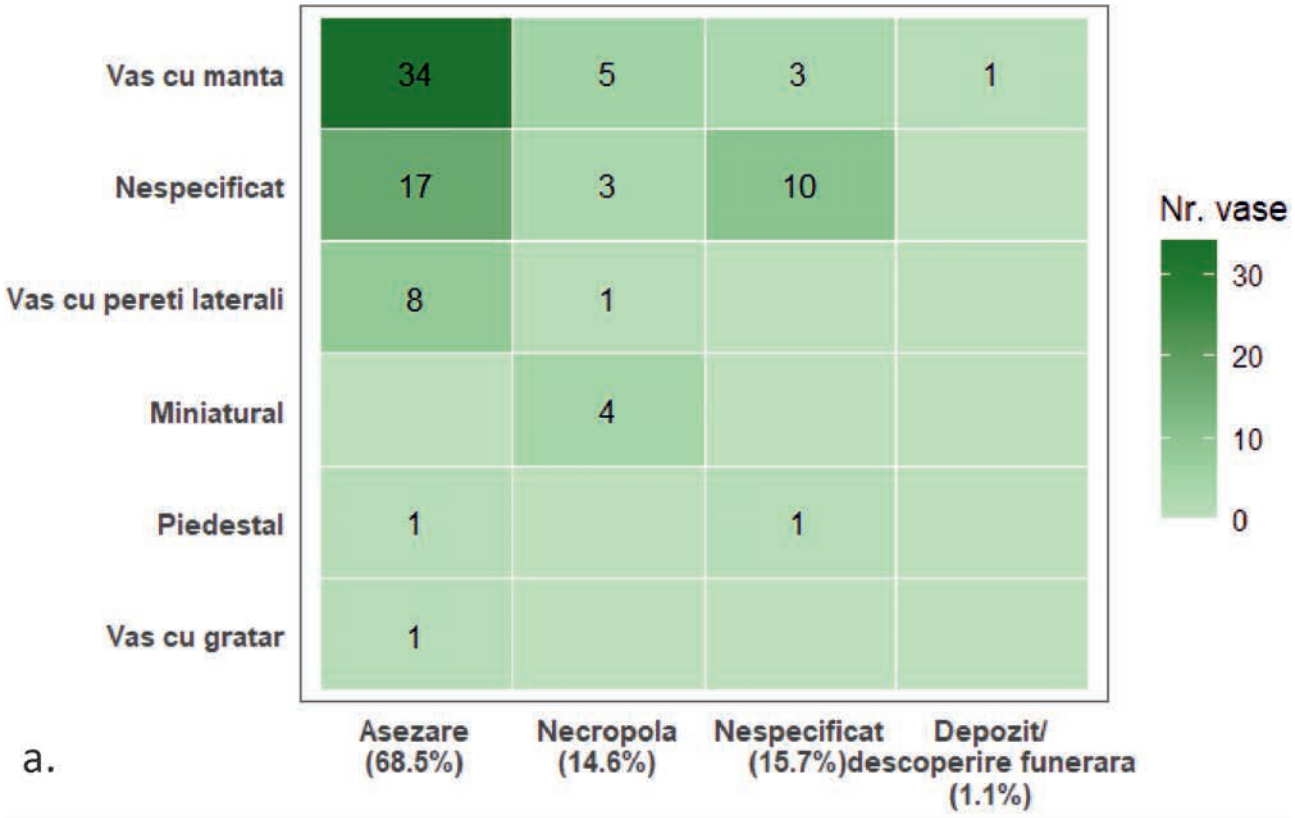
a.

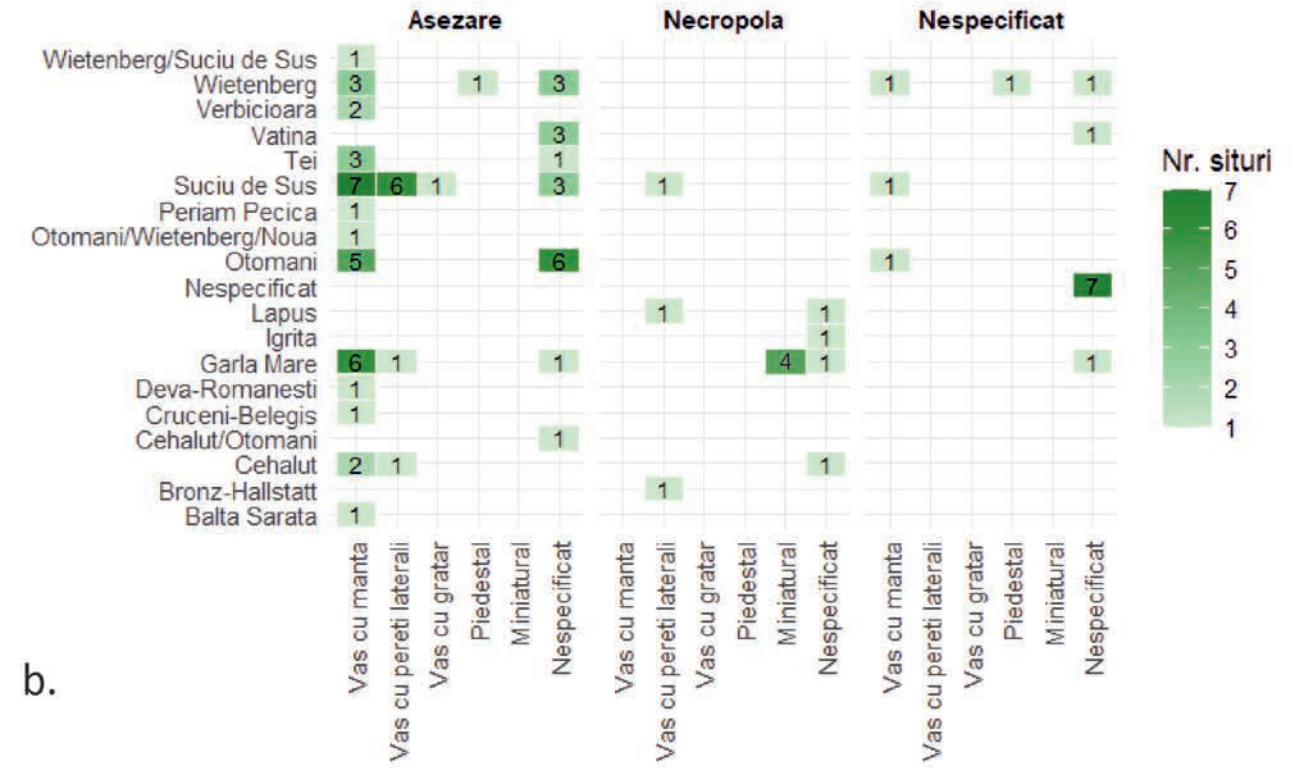


b.

Planșa VI. a. *Repartiția densității descoperirilor de vase* pyraunos *din România;* ***b.*** *Grafic 1. Repartiția descoperirilor de vase* pyraunos *în funcție de județ și mediul de descoperire.*

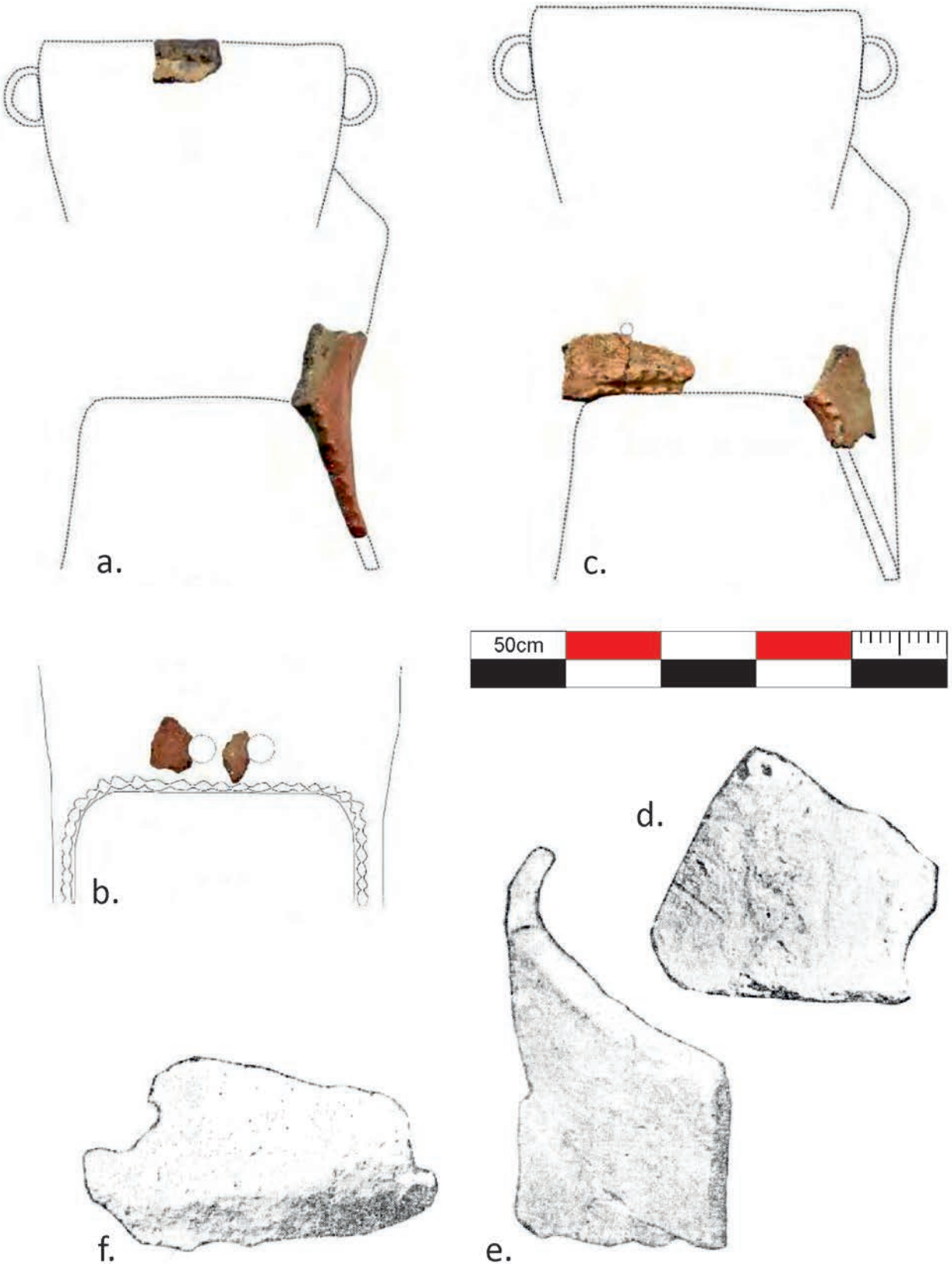
Plate VI. a. *Distribution of the density of* pyraunos *vessel discoveries in Romania;* ***b.*** *Graph 1. Distribution of* pyraunos *vessel discoveries by county and discovery context.*





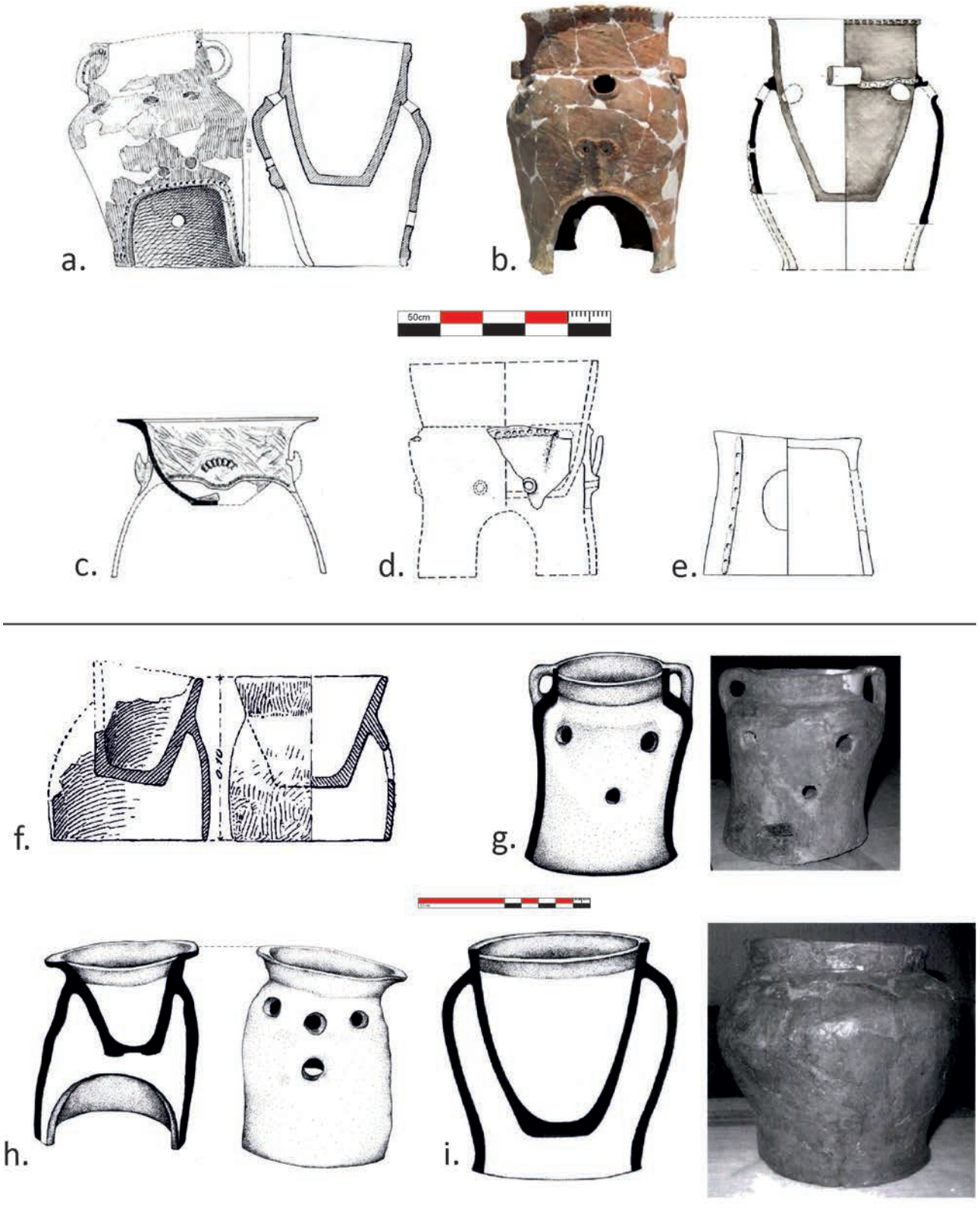
Planșa VII. a. *Grafic 2. Densitatea descoperirilor de vase* pyraunos *raportată la tipul de vas și mediul de descoperire;* ***b.*** *Grafic 3. Raportul dintre mediul cultural, tipul de vas și mediul de descoperire.*

Plate VII. a. *Graph 2. Density of* pyraunos *vessel discoveries according to vessel type and discovery context;* ***b.*** *Graph 3. The relationship between cultural context, vessel type and discovery context.*



Planșa VIII. *Descoperiri de vase* pyraunos *din cultura Tei:* ***a–c.*** *Vase de la Podu Broșteni* – Poiana Popii*;* ***d–f.*** *Fragmente de la Lunca-Bârzești* – Punctul 2 *– fără scară (a–c. după Ștefan 2024, pl. CXXIII/9, CXXV/11, CXXXVIII/4; d–f. după Sandu 1992, pl. III/12, V/1–2).*

Plate VIII. Pyraunos *vessel discoveries from the Tei culture:* ***a–c.*** *Vessels from Podu Broșteni* – Poiana Popii*;* ***d–f.*** *Fragments from Lunca-Bârzești* – Point 2 *– not to scale (a–c. after Ștefan 2024, pl. CXXIII/9, CXXV/11, CXXXVIII/4; d–f. after Sandu 1992, pl. III/12, V/1–2).*



Planșa IX. *Vase* pyraunos *descoperite pe teritoriul României:* ***a.*** *Verbicioara;* ***b.*** *Șoimuș* – Teleghi*;* ***c.*** *Lăpuș;* ***d.*** *Dorolțu;* ***e.*** *Rotbav* – La Pârâuț*;* ***f.*** *Balta Verde;* ***g–h.*** *Ostrovu Mare* – Bivolării*;* ***i.*** *Gârla Mare* – km. fl. 864+400 *(a. după Berciu 1961, fig. 6; b. după Rișcuța, Marc 2015, pl. VI/a; c. după Kacsó 1975, fig. 9/3; d–e. după Boroffka 1994, Taf. 70/9, 115/9; f–i. după Crăciunescu 2015, pl. I–III).*

Plate IX. *Pyraunos vessels discovered on the territory of Romania:* ***a.*** *Verbicioara;* ***b.*** *Șoimuș* – Teleghi*;* ***c.*** *Lăpuș;* ***d.*** *Dorolțu;* ***e.*** *Rotbav* – La Pârâuț*;* ***f.*** *Balta Verde;* ***g–h.*** *Ostrovu Mare* – Bivolării*;* ***i.*** *Gârla Mare* – km. fl. 864+400 *(a. after Berciu 1961, fig. 6; b. after Rișcuța, Marc 2015, pl. VI/a; c. after Kacsó 1975, fig. 9/3; d–e. after Boroffka 1994, Taf. 70/9, 115/9; f–i. after Crăciunescu 2015, pl. I–III).*

WHAT'S UNDER THE LID: A CONTRIBUTION TO THE STUDY OF SOME DETAILS OF THE VĂLCHITRĂN, CHERVEN BRYAG AND CĂLĂRAȘI TREASURES (102 YEARS LATER)

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Keywords: *Late Bronze Age, stone moulds, Coslogeni, Vălchitrăn, Călăraşi*
Abstract*: The present paper is a brief contribution to the study of the remarkable finds from Vălchitrăn, Cherven Bryag, and Călăraşi. The focus of the study is on half of a stone mould, which is probably related to the gold and silver lids from the above-mentioned collective and individual finds. Based on the analysis of the shape and dimensions of the stone mould, it is assumed that it was most likely used to make a bronze construction placed at the base of a precious metal lid, similar to the widely popular ones made of gold and silver. The discovery of the mould and a stone sceptre similar to the one from the Uluburun shipwreck allows us to assume narrower chronological framework for the mould itself, and indirectly for the gold and silver artefacts from the territory of present-day Bulgaria and Romania.*

Cuvinte-cheie: *Bronzul târziu, matrițe din piatră, Coslogeni, Vălchitrăn, Călărași*
Rezumat: *Lucrarea de față reprezintă o scurtă contribuție la studiul descoperirilor remarcabile de la Vălchitrăn, Cherven Bryag și Călărași. Obiectul la care se face referire aici este o jumătate de matriță din piatră, care ar putea fi legată de discurile din argint și aur descoperite în spațiile mai sus menționate. Pe baza analizei formei și dimensiunilor acestei matrițe, se poate presupune că a fost utilizată pentru realizarea unui suport din bronz care să susțină discul făcut dintr-un metal prețios. Descoperirea matriței împreună cu un sceptru din piatră similar cu cel descoperit pe epava de la Uluburun ne permite să presupunem cadre cronologice mai restrânse pentru matriță și, indirect, pentru artefactele din aur și argint de pe teritoriile actuale ale Bulgariei și României.*

INTRODUCTION[1]

Over the past century, hoards and single finds composed of precious metals, including the Vălchitrăn gold treasure discovered near the village of the same name near Pleven (Mikov 1958; Chukalev, Dimitrova 2018) the hoards from Călăraşi (Bondoc 2006; Constantinescu 2006), Cherven Bryag (Stefanova 2018), Rădeni, Kryzovlin (Vulpe, Mihailescu-Bîrliba 1986; Popescu, Oanță-Marghitu 2018) and others, continue to intrigue scholars and raise questions related to their origin, cultural affiliation, interpretation, and chronology. This study is a modest contribution to the attempt to resolve questions regarding certain details in the construction of some of the elements of the aforementioned treasure items, which could be of significant importance for clarifying their relative chronology and cultural connections.

THE MOULD OF GLĂVAN

The ancient collection[2] of the National Institute of Archaeology with Museum–Bulgarian Academy of Sciences (NAIM-BAS) stores an unknown and unpublished, fully preserved half of a stone mould, with noticeable small chips at the corners. It was discovered with the well-known sceptre from Glăvan (Vassileva 2018, p. 254, fig. 2), secondarily re-deposited in a burial mound from the second half of the Iron Age (5th–3rd century BC) (Kitov 1990, p. 36)[3]. The limited information concerning the circumstances of the finds does not permit an in-depth analysis. The presence of the two artefacts (discovered together) within the mound fill, outside the confines of any funerary structures, may be explained in several ways. The first possibility is that both artefacts were originally embedded in the soil that was excavated and subsequently used for the construction of the tumulus. It may be assumed that this soil was sourced from the immediate vicinity in order to minimise the time required for its transportation to the selected location of the mound. It cannot be

[1] The publication is part of the implementation of the project "Non-destructive archaeology: an interdisciplinary study of the settlement pattern of the Ludogorsko Plateau in the Bronze and Early Iron Age", contract between NAIM–BAS and the Bulgarian National Science Fund no. КП-06-Н80/12 from 15.12.2023.

[2] I would like to express my warm gratitude to Assist. Prof. Dr. Slava Vasileva, curator of the Antiquities Fund at NAIM-BAS, for the opportunity to learn about this interesting artifact.

[3] The excavator interprets the mould for casting a bronze sceptre without substantiating the assertion in detail, see Kitov 1990, p. 36.

excluded that, within this area and/or at the specific location of the tumulus, structures from an earlier period once existed and were disturbed or compromised during the accumulation of the mound. It is also conceivable that the two objects were intentionally deposited within the mound fill for ritual purposes. All of these interpretations remain preliminary and hypothetical. The possibility of the reuse of artefacts of significantly earlier date within later contexts is not unfamiliar in the territories of present-day Bulgaria, with numerous and varied examples attested. These include both settlement-derived objects and finds from funerary complexes. Emblematic cases are known from the settlement mound at Sveti Kirilovo (Detev 1942, p. 237–243), Brestak (Mirchev 1969, p. 104, 110, tabl. III.1.–и) and the necropolis at Duvanlii (Filov 1934, p. 137–140). For this reason, the possibility that the two objects were used and/or curated over a period of eight to nine centuries may not be dismissed.

It is made of talc-schist, and its surface shows intense burn marks. Its shape is trapezoidal with a semicircular cross-section and a perfectly smooth surface. Its dimensions are: length: 15.7 cm; maximum width: 12.3 cm; width at the preserved end: 11.7 cm; maximum thickness: 5.8 cm; thickness at the preserved end: 4.9–5 cm; thickness at the end with a broken corner: 5.3 cm; diameter of the circle: 9.2 cm; depth of the carved part, at the periphery of the circle (cast part): 0.2 cm (Fig. 1)[4]. On the flat surface of the mould, as well as along its sides, there are no perforations for fastening wedges, nor are there any alignment marks indicating the fitting of the mould to a corresponding half or lid. It is round in shape, with an opening at the top for pouring the molten metal. Inside the disc, there is a rectangular negative in the centre of the bed, as well as two pairs of four relief areas (which are worn to varying degrees as a result of use) – the outer ones are irregularly quadrilateral in shape, arched, while the inner ones have equilateral triangle shape, with their vertices pointing towards the centre of the circular space. When the object was cast, they formed openwork openings giving it an internal cross shape, while the rectangular negative was cast in the shape of a dowel. It cannot be excluded that the mould was used for casting a semi-finished product or blank, which subsequently underwent additional technological operations, such as cutting, hammering, levelling, and surface polishing, until the desired final form of the object was achieved. The find has no parallels among the stone moulds known to that point. The only similarities in shape and cross-section are with some moulds designed for casting double and ordinary axes – Ada Tepe (Popov 2018, p. 402–415, 511, cat. № 327), Breznik etc. (Chernykh 1978, p. 206, T. 42: 3; Panayotov 1980, p. 190). The shape of the casting is rare or unique because, as mentioned above, no similar moulds nor any cast bronze objects have been found. Nevertheless, certain elements in the construction of some of the artefacts comprising the Vălchitrăn treasure and the lid shaped objects from Cherven Bryag and Călăraşi make it possible to formulate hypotheses that allow for the interpretation of the mould from Glăvan and determination (as far as possible) of the relative chronology of at least part of the Vălchitrăn treasure and of the finds from Cherven Bryag, and Călăraşi (Bondoc 2006; Stefanova 2018; Mehofer *et alii* 2024).

The disc-shaped form of the Glăvan mould is very similar to the bronze bases or inserts implemented in the hollow areas of the disc-shaped objects (called "lid-shaped") from the above-mentioned collective and individual finds. They are well documented and described in the latest Bronze Age corpus, published recently (Alexandrov *et alii* 2018). Thanks to the several published observations, some of the assumptions in the following lines can be made (Mikov 1958; Penkova, Mehofer 2018, p. 208–214; Chukalev, Dimitrova 2018, p. 378–382; Mehofer *et alii* 2024, p. 307–323).

There are two large and five small golden discs with bulbs from Vălchitrăn in total. The two largest ones have a two-component bronze structure, made by casting (Mikov 1958, p. 11–15, fig. 5–6; Penkova, Mehofer 2018, p. 211; Mehofer *et alii* 2024, p. 310–312, 314, fig. 3, 4, 7). It is openwork, cross-shaped, with a central opening filled with amber. Similar bronze forms are also observed on the silver lids from Călărași (Bondoc 2006, p. 280, fig. 1–3; Popescu, Oanţă-Marghitu 2018, p. 114, 118, fig. 13) and Cherven Bryag (Stefanova 2018, p. 224, fig. 2). They differ in that they are not cross-shaped, like those on the Vălchitrăn lids, but are single with an opening in the middle. All three lids from Vălchitrăn, Călărași, and Cherven Bryag have bronze inserts at the base of the disc, and each of them has a different shape. For all the examples cited, it is noted that they are positioned at the base of the discs and are made by casting, with the lost wax casting method being suggested for Călărași (Bondoc 2006, p. 281; Penkova, Mehover 2018, p. 211). None of the bronze objects cited have a known mould for their casting.

Based on the data presented, the following observations can be made. The similarities between the shape of the mould from Glăvan and the bronze structures from Vălchitrăn, Cherven Bryag, and Călăraşi suggest that the mould from Glăvan was intended for casting a similar design for "another set of lids" (?), which have not yet been identified.

In considering other possible interpretations of the mould from Glăvan, an association with the openwork spoked wheels of the 1st millennium BC inevitably arises that is, whether it is possible to interpret the mould as a potential tool to produce such objects. Such a hypothesis should be discussed in depth. Regardless of the visual similarities, mainly due to the presence of openwork perforations, the finished object would differ significantly from the published examples. The differences can be observed primarily in two directions. First, in the central part of the mould from Glăvan, a small rectangular negative

[4] I would like to express my deep gratitude to Chavdar Chomakov for taking images of the mould.



Figure 1. *Glăvan. The mould (photo Chavdar Chomakov).*

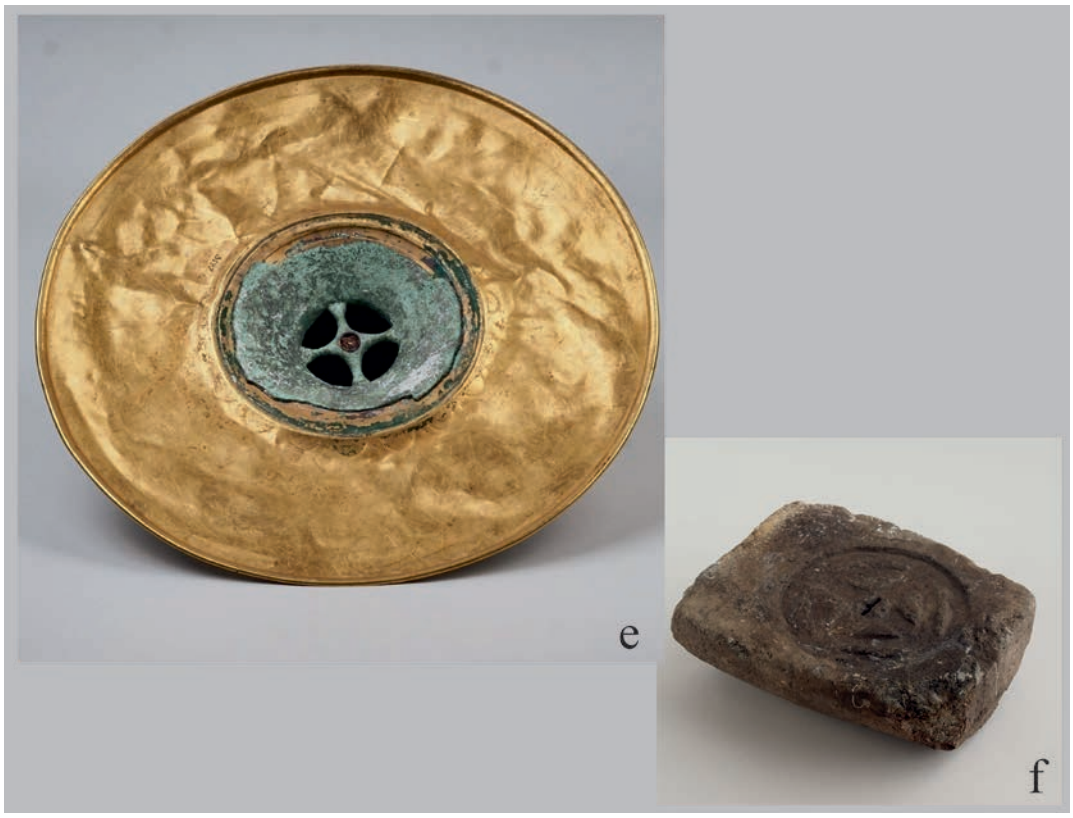


Figure 2. *Glăvan, Vălchitrăn. Images of the mould and the bronze base construction of golden disc (Inv. No. 3197).*



Figure 3. *Glăvan. The mould – details (photo Chavdar Chomakov).*



Figure 4. *Map of the sites mentioned in the paper (Denitsa Sandeva).*

is formed on a slightly profiled base. Upon casting, the negative would appear in high relief as a pin, while its base and periphery would form a concavity or socket with a convex shape, very close to that of the bases of the lids from Vălchitrăn (Mikov 1958, p. 12, fig. 5). In this way, it was clearly not intended to have, and accordingly lacks, a modelled seat for a cast or even composite hub (regardless of whether it has a double-sided or single-sided perforation) for the finished wheels, as is the case in all examples. Second, upon casting, the finished object would have arcuate external openwork perforations and triangular internal openwork perforations. For comparison, in the bronze wheels, the spokes are rod-shaped, clearly expressed and modelled. They have a circular cross-section, while the openings/voids between the spokes are open and clearly defined (Petrescu-Dâmbovița 1977, p. 347, 365, pl. 347, pl. 383; Dima, Borangic 2018, p. 15–32; Danielisová *et alii* 2020, p. 33–36, fig. 1q, fig. 3; Dima 2020, p. 23–31; Ondrkál *et alii* 2020, p. 2, 7, fig. 8). Differences are also observed in relation to the circular appliqués and objects from Oradea, Vinča, Vidovice, Brodski Varoš, Privina Glava (Gavranović 2013, p. 158, Abb. 11–7; Hansen 1994, p. 252–258, Abb. 160–161), as well as with the mould from Varvara (Ćurčić 1902, p. 50–51, fig. 8), which is intended for casting a circular object with eight spokes. On the basis of these observations, it may be hypothesised that the pin may have been used for attachment to the upper part of the inner base of the construction of a metal lid or for fixing an amber bead at its centre, as is the case with Vălchitrăn lids (Mehofer *et alii* 2024, p. 311, fig. 3–4).

Determining the chronology of the stone mould, and thus narrowing down the ranges of the lid shaped artefacts made of precious metals from the aforementioned locations, is greatly facilitated by the fact that the well-known stone sceptre from Glăvan was also found in the embankment of the burial mound, along with the stone mould, although both objects have until now been claimed to have no clear context (Kitov 1990, p. 36; Vassileva 2008; Vassileva 2018, p. 25). However, its discovery in the mound does not strip it of its context. The proximity to other similar finds – from Lyulin (Vassileva 2018, p. 253–254, fig. 1), Uluburun (Bass 1996, p. 68, 72), Drajna de Jos (Vulpe 1970, Taf. 41, No. 563–565; Vulpe 1975) etc. – points to a date in the Late Bronze Age[5], for which the *terminus post quem* can be assumed to be the date of the sceptre from Uluburun in 1316 BC, or 1320 +/-15 calBC. This dating is based on the Egyptian electron ring, Canaanite bracelets, Canaanite medallion, gold scarab of Queen Nefertiti, Mycenean pottery found in the ship and last dating models providing by ^{14}C dating (Bass 1996, p. 74–75; Vassileva 2018, p. 256; Manning *et alii* 2009, p. 178–184, fig. 13–17).

Thus, although indirectly, it can be assumed that the mould from Glăvan could be dated to the end of the 14th and throughout the 13th century BC. On this basis, with a high probability, it can be hypothesised that this date can also be accepted for the discs from Vălchitrăn, Cherven Bryag, Călăraşi and the other sites in the region.

DISCUSSION

The presence of a stone mould, whose purpose is most likely associated with the inner bronze forms of noble metal lids, raises a number of important questions related to the cultural determination and identification of such artefacts from sites like Vălchitrăn, Cherven Bryag, and Călăraşi.

The discovery of the stone mould with a stone sceptre, remarkably similar to the one from Uluburun, suggests that the mould (as well as the sceptre) may have been part of an intense relocation of people and objects during the Late Bronze Age. The presumed route along which this took place may overlap with the routes of today's Aytos and Karnobat passes. These two passes connect the plains and lowlands on both sides of the Stara Planina Mountain range.

The area north of Stara Planina Mountain, in northeastern Bulgaria, is characterised by a particularly high number of collective and individual finds dated to the Late Bronze Age. These include metal objects distributed across three chronological horizons, as well as the stone moulds for manufacturing these metal objects. A prime example is the find from Pobit Kamak (Dergachev 2011; Hristova 2018; Leshtakov 2018), as well as some newly discovered individual stone moulds from the region of modern villages near the town of Kubrat – Medovene, Kamenovo etc. (Minkov *et alii* 2024). Alongside these artefacts are objects whose origins are linked to the Tei and Coslogeni cultures. The material manifestations of the first mentioned culture are ceramic vessels in burial complexes on the territory of present-day eastern Bulgaria, as well as settlements, such as the settlement mound at Dyadovo[6] and the fortified settlement at Visegrad (Dremsizova-Nelchinova 1984, p. 114, fig. 13)[7], which reach as far south as the Gallipoli Peninsula – in the area of Troy and Tell Maidos (Hristova 2010, p. 19; Sazci, Mutlu 2018–2019, p. 330, Abb. 15). The stone sceptres characteristics of the Coslogeni culture are known on both sides of the Stara Planina Mountain range (Hristova 2010; Alexandrov, Taneva 2013; Zidarov, Agulnikov 2016). Another sign of population and material dislocation is the presence of bone psalias for horse harnesses, located in sites in both northeastern and southeastern Bulgaria (Minkov 2023). To these can also be added bronze ingots in the form of stretched ox-hides from eastern and northeastern Bulgaria, of clearly Aegean-Anatolian origin. These examples illustrate

[5] The suggested primary date for the sceptre is 13–12 c. BC.

[6] Unpublished finds currently exhibited in the exhibition materials from Tell Dyadovo, Nova Zagora district.

[7] This constitutes evidence both for migrations through these territories and for the presence of ceramic material from an earlier period within the area of the fortified settlement, namely the Middle Bronze Age. See Dremsizova-Nelchinova 1984, p. 114, fig. 13.

north-south vertical migrations on both sides of the Balkan Mountains. At the same time, there was also east-west horizontal population movement within the vast boundaries of the Danube Plain along the Danube River, evidenced by the distribution of hoards and single finds of bronze artefacts and precious metal objects. Their connection consists both in the homogeneity of certain artefacts and in distinct indicative links between separate deposits located at a considerable distance from each other; examples of such links are the arc-shaped pectoral plates from Emen (Chukalev 2018, p. 355–358), Tabashka Cave (Valentinova 2018, p. 352–354), the find from Panayot Hitovo, Rositsa/ Alexander Stamboliiski (Elenski 2010, p. 121–128; Konova 2018, p. 359–363) and the gold object kept at the Regional Museum of History in Haskovo (Leshtakov *et alii* 2010, p. 35), as well as the connection between the bulbs from the lids of the Vălchitrăn treasure (and similar lids mentioned in the study) and one of the moulds from the collective find at Pobit Kamak. This suggests the existence of a dense network of intense transregional relations and interactions between the different cultural areas. It is perfectly plausible that the mould from Glăvan may be a direct connection between the cultural centres of the Coslogeni culture and the carriers and transporters of materials coming from rich cargo ships, such as the shipwreck at Uluburun.

With a high degree of presumption and probability, it can be said that the locations of the hoards of metal and other objects from northern Bulgaria represented the southern periphery of the main core of Bronze Age metallurgy, the peak of which was located in the Carpathian-Danube basin. This is also confirmed by the mapping of collective finds in the territory of present-day Romania. It was during this highly developed period exchange of ideas, materials, and artefacts could have been transferred by the Coslogeni populations who had migrated to the modern Bulgarian lands. Thus, the aforementioned hoards and collective finds cannot be unequivocally associated with the characteristics of the material culture of Coslogeni. Nevertheless, it may be hypothesised that, during processes of population migration of the eponymous culture south of the Danube, the physical transfer of the discussed objects and artefacts was possible. At present, it cannot be asserted that this necessarily implies a cultural definition or attribution, beyond the fact that they represent items subjected to transfer across a traceable spatial distance. Scarce evidence of this has already been found at newly registered archaeological sites such as those at Gyaur Punar, Tutrakan (Alexandrov *et alii* 1998), Orlovets (Petrova *et alii* 2021), Kamenovo (Minkov *et alii* 2024), Voditsa (Georgiev *et alii* 2021), Durankulak (Atanasov *et alii* 2006), and others. Despite the different profiles of the cited sites, interpreted as settlements or sites with special functions, stone moulds, bone psalia, and mass pottery material typical of the Coslogeni culture's pottery repertoire are present. This shows further development of a sedentary lifestyle and integration into the local geographical and cultural environment. This statement is supported by parallel artefacts, located deep into the southern parts of today's Bulgarian territories, namely the stone sceptres from the Yambol area and the stone sceptre and mould near the village of Glăvan.

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NOTĂ ASUPRA UNOR PIESE DE METAL PREISTORICE DIN NORD-VESTUL MUNTENIEI

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Keywords: *Bronze Age, Early Iron Age, metallurgy, bronze, gold, Wallachia*
Abstract: *The authors present four prehistoric metal objects recently discovered in north-western Wallachia with the help of metal detector: three bronze items (two socketed axes and a spearhead) and a golden hair-ring. Beside the chemical compozition analysis, some aspects as typology, chronology and analogies of such artifacts are discussed. The increased number of those kind of discoveries from recent years outlines a more dynamic picture of metal circulation during the Bronze Age and Early Iron Age at the Lower Danube.*

Cuvinte-cheie: *epoca bronzului, prima epocă a fierului, metalurgie, bronz, aur, Muntenia*
Rezumat: *Autorii prezintă patru piese din metal preistorice descoperite recent în nord-vestul Munteniei cu ajutorul detectorului de metale: trei obiecte din bronz (două topoare de tip celt și un vârf de lance) și un inel de buclă din aur. Pe lângă analiza compoziției chimice a metalelor, sunt discutate o serie de aspecte cum ar fi tipologia, cronologia și analogiile unor asemenea artefacte. Numărul tot mai mare al unor astfel de descoperiri din ultimii ani ne conturează un peisaj mai dinamic al circulației metalelor în epoca bronzului și la începutul epocii fierului la Dunărea de Jos.*

INTRODUCERE

În ultimii ani, odată cu intensificarea activității detectoriștilor, piesele de metal descoperite „întâmplător” s-au înmulțit considerabil și în nord-vestul Munteniei, o parte dintre ele fiind valorificate în cadrul unor contribuții de către noi în colaborare cu diverși colegi interesați de subiect[1]. În nota de față ne-am propus să valorificăm trei piese din bronz și una din aur (două topoare de tip celt, un vârf de lance și un inel de buclă) care provin din această zonă. Lotul este relativ eterogen din punct de vedere al tipologiei pieselor și al cronologiei acestora, acoperind perioadele mijlocie și târzie ale epocii bronzului, și, eventual, începutul epocii fierului. Dintre toate punctele, numai Recea întrunește condițiile unui sit clasic, celelalte trei fiind zone împădurite, aflate pe mici înălțimi, constituind poate puncte propice unor depuneri speciale de obiecte.

METODA DE ANALIZĂ A COMPOZIȚIEI METALULUI

Analizele asupra pieselor au fost efectuate utilizând tehnica de fluorescență a razelor X (XRF) și a fost aplicată cu ajutorul unui spectrometru portabil marca Bruker Tracer 5i. Spectrometrul a încărcat tubul generator de rodiu cu o tensiune de 40 keV rezultând un fascicul spre probă cu un spot circular cu diametrul de 8 mm. Răspunsul caracteristic a fost înregistrat cu un detector SDD plasat în spatele tubului generator. Spectrele rezultate au fost analizate cu programul furnizat de producătorul aparatului.

Dintre cele patru piese analizate, pentru trei dintre piese au fost identificate două elemente ca principalele elemente care alcătuiesc aliajul, anume cuprul și staniul. Cele trei piese de bronz prezintă procente foarte diferite de staniu și cupru. Valorile pornesc de la 2% și variază până la 32%. Aceste diferențe pot indica faptul că piesele au fost fabricate în perioade de timp diferite. Celtul mare prezintă un procent de staniu de 2%. Conform literaturii, un procent de staniu de peste 2% poate fi considerat ca un adaos intenționat[2]. Procentele diferite de cupru și staniu, identificate în compoziția pieselor analizate, pot fi interpretate și ca o intenție de a fabrica piese cu destinații diferite. Procentele de staniu sunt foarte diferite, variază, și odată cu aceste procente variază și proprietățile pieselor. Un procent mai ridicat de staniu poate fi tradus printr-o duritate crescută a piesei finite, similar, un procent mai redus, poate fi interpretat ca o duritate mai redusă. Astfel, vârful de lance prezintă un procent mai ridicat de staniu, probabil pentru a obține o duritate crescută, având în vedere utilizarea respectivei piese. Nu putem exclude nici posibilitatea ca în timpul analizei să fi fost prinsă o parte din patină, acest fapt influențând procentul mare de staniu.

Cea de-a patra piesă analizată este reprezentată de un inel de buclă realizat din aur. Rezultatele obținute indică un

[1] Ștefan, Măndescu 2021; Măndescu, Ștefan 2021; Ștefan *et alii* 2024; Măndescu *et alii* 2024.

[2] Oudbashi, Wanhill 2021, p. 24–27.

procent de peste 81% de aur, 17% de argint și un procent redus de cupru. O astfel de compoziție este foarte similară cu compoziția aurului aluvionar, care pare să fi fost utilizat pentru realizarea acestei piese[3].

DESCRIEREA PIESELOR

1. **Inel de buclă din aur.** Piesa a fost descoperită cu detectorul de metale în localitatea Recea (com. Recea, jud. Argeș) (Fig. 1, 2). Are dimensiunile de 0,9 × 1,00 cm, înălțimea de 1 cm, greutatea de 3 g și aparține tipului A, conform clasificării Eugeniei Zaharia (Fig. 3/a–b). Piesa este într-o stare de conservare foarte bună și are următoarea compoziție chimică: Au – 81,88%; Ag – 17,56%; Cu – 0,55%.
2. **Celt.** Piesa a fost descoperită cu detectorul de metale în apropierea localității Albota (jud. Argeș), în locul numit *Pădurea Bumbuieni* (Fig. 5, 6), la adâncimea de cca 20 cm. Are corpul zvelt, iar urechiușa laterală este ruptă sau nu s-a format în timpul turnării. Pe fiecare față se observă două triunghiuri cu vârful în jos, piesa prezentându-se într-o stare de conservare relativ bună, cu mici defecte de turnare (goluri în suprafață), dar și urme de deteriorare moderne. Din cauza deteriorării din zona gurii, nu este clar dacă laturile dinspre interior ale triunghiurilor merg până sub gura celtului sau formează o arcadă (Fig. 4/a–b). Gura este deteriorată, în zona acesteia metalul având o porozitate accentuată. Celtul are o patină groasă, de culoare verde, și are următoarele dimensiuni: lungime maximă – 9,5 cm, lățime maximă – 3,6 cm, diametrul interior al manșonului – 2,7 × 2,1, lungimea tăișului – 3,5 cm. Piesa cântărește 182 g și are următoarea compoziție elementală[4]: Cu – 96,98%; Sn – 2,2%; Ni – 0,22%; Sb – 0,14%; As – 0,10%; Cr – 0,04%; Ag – 0,03%; Pb – 0,03%; Si – 0,10%.
3. **Celt.** Piesa a fost descoperită cu detectorul de metale într-o pădure din apropierea localității Valea Ursului (jud. Argeș) (Fig. 8, 9), la adâncimea de cca 5 cm. Are tortiță laterală neperforată, iar corpul este scurt, pe fiecare față având câte două triunghiuri cu vârful în jos, adâncite, pe marginile fiecărei fețe, vârful triunghiurilor coborând până în zona mediană (Fig. 7/a–b). Piesa prezintă o patină de culoare verde, cu un aspect lucios și o ușoară asimetrie a tăișului, având următoarele dimensiuni: lungime maximă – 6,8 cm, lățime maximă – 3,9 cm, diametrul interior al manșonului – 2,6 × 1,9 cm, lungimea tăișului – 2,4 cm. Celtul cântărește 82 g și are următoarea compoziție elementală: Cu – 84,92%; Sn – 13,11%; Ni – 0,4%; Pb – 0,35%; As – 0,29%; Sb – 0,25%; Fe – 0,05%; Ag – 0,04%; Si – 0,41%; Cr – 0,01%.
4. **Vârf de lance.** Piesa a fost descoperită cu detectorul de metale în apropiere localității Topoloveni (jud. Argeș), în cartierul *Țigănești*, într-o pădure (Fig. 11, 12), la adâncimea de cca 15 cm. Piesa a ajuns la noi parțial deteriorată (Fig. 10/a–b), dar avem fotografii din momentul descoperirii când era relativ întreagă (Fig. 10/c–d). Lama este prezentă pe mai mult de jumătate din lungimea totală a piesei, marginile acesteia arcuindu-se moderat. Către baza lamei a fost observată o gaură pentru fixarea mânerului (probabil mai exista încă una în partea opusă care astăzi este pierdută); tot către bază piesa se îngusta, mai degrabă ca o adaptare tehnologică decât din rațiuni tipologice. Lungimea păstrată a piesei este de 8,8 cm (întreagă avea în jur de 9,4 cm), lungimea lamei – 5,5 cm, lățimea maximă a lamei – 2 cm, diametrul interior al manșonului – 1,6 × 1,3 cm. Perforația are dimensiunile de 0,25 × 0,25 cm. Greutatea păstrată piesei este de 39 g, iar compoziția elementală este următoarea: Cu – 63,10%; Sn – 32,62%; As – 0,65%; Mg – 0,46%; Pb – 0,37%; Sb – 0,35%; Ni – 0,24%; Ag – 0,11%; Zn – 0,09%; Si – 1,8%.

ANALOGII ȘI ÎNCADRĂRI CRONOLOGICE

Așa cum am precizat mai sus, inelul de buclă din aur aparține tipului A conform clasificării Eugeniei Zaharia din binecunoscutul său studiu de acum aproape șapte decenii[5]. O piesă aproape identică, dar de dimensiuni mai mari, a fost descoperită recent, tot cu detectorul de metale, lângă localitatea Topoloveni, jud. Argeș[6]. Așa cum am precizat cu acea ocazie, analogii foarte bune pentru acest tip de piesă le găsim în tezaurul de la Răcătău, care a fost atribuit fazelor Ic3–Ic2 ale culturii Monteoru[7]. De asemenea, piese asemănătoare au fost descoperite în Ungaria – tezaurul de la Szelevény-Menyasszonypart[8].

O cercetare de suprafață efectuată pe locul descoperirii inelului de buclă din aur de la Recea de către colegii A. Ioniță și C. Constantin în anul 2025 a relevat existența unei așezări din epoca bronzului, cu ceramică specifică culturii Tei.

Celtul de la Albota – *Pădurea Bumbuieni* aparține variantei B1 în clasificarea lui Mircea Rusu[9]; exemplarul nostru nu are însă urechiușa reliefată, ci numai un ciot, probabil din cauza unui defect de turnare. Deși piesa nu este perfect conservată, o putem atribui cu probabilitate tipului B1r în clasificarea lui Oliver Dietrich, cea mai apropiată analogie fiind un celt de la Cheile Turzii (posibil depozit)[10]. Pentru tipul B1 a fost propusă o circulație în perioada

[3] Cristea-Stan 2012.

[4] În cazul pieselor de bronz, măsurătorile s-au făcut pe o mică porțiune curățată de patină; pentru piesa din aur s-a utilizat softul pentru metale prețioase.

[5] Zaharia 1959, p. 113, Fig. 4/6.

[6] Ștefan *et alii* 2024, p. 119, Fig. 13/a, b.

[7] Ștefan *et alii* 2024, p. 128; Căpitanu, Ursachi 1979, p. 135–148; Istina 2018, p. 204–205, nr. cat. 13.2, 13.5, 13.6 și 13.7.

[8] Kemenczei 1999, nr. cat. 17.

[9] Rusu 1966, p. 25, Fig. 2/B1.

[10] Dietrich 2021, p. 344, nr. cat. 0731, pl. 172/0731.



Figura 1. *Locul descoperirii inelului de buclă din aur (Google Earth).*

Figure 1. *Place of discovery for the golden hair-ring (Google Earth).*

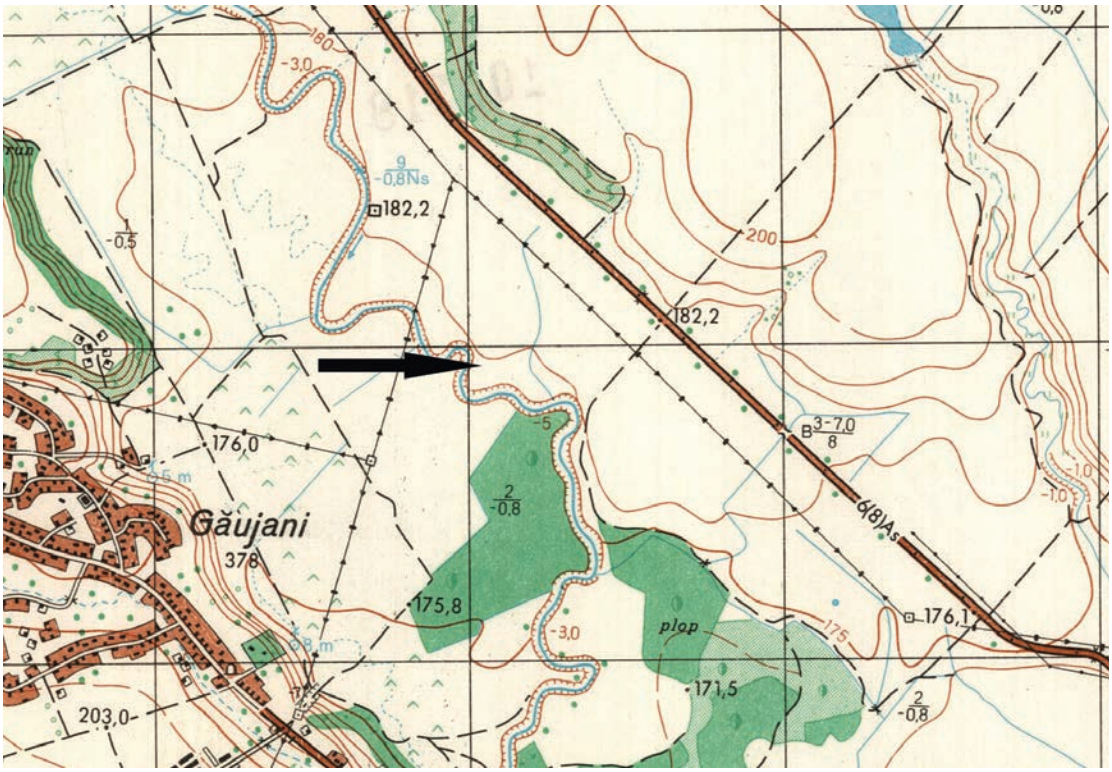


Figura 2. *Locul descoperirii inelului de buclă din aur (harta militară, Sc. 1:25.000).*

Figure 2. *Place of discovery for the golden hair-ring (Military Map, 1:25.000 scale).*

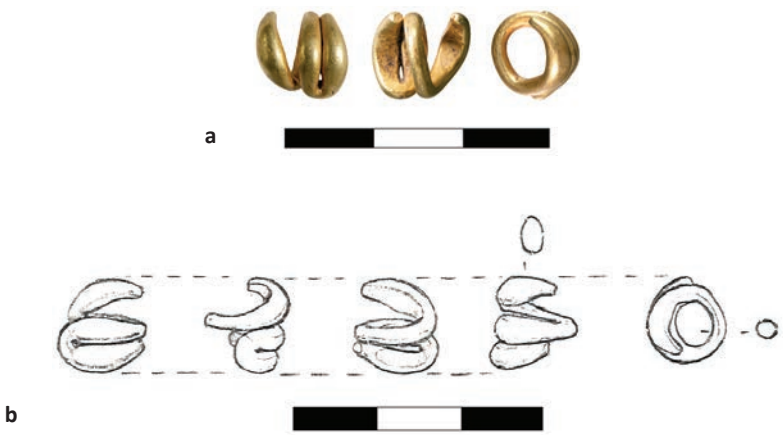


Figura 3/a–b. *Inelul de buclă din aur de la Recea (Desen E. Hila; foto C. Nicolae).*

Figure 3/a–b. *The golden hair-ring from Recea (Drawing E. Hila; photo C. Nicolae).*



Figura 4/a–b. *Celtul de la Albota* – Pădurea Bumbuieni *(Desen E. Hila; foto C. E. Ștefan).*

Figure 4/a–b. *The socketed axe from Albota* – Pădurea Bumbuieni *(Drawing E. Hila; photo C. E. Ștefan).*

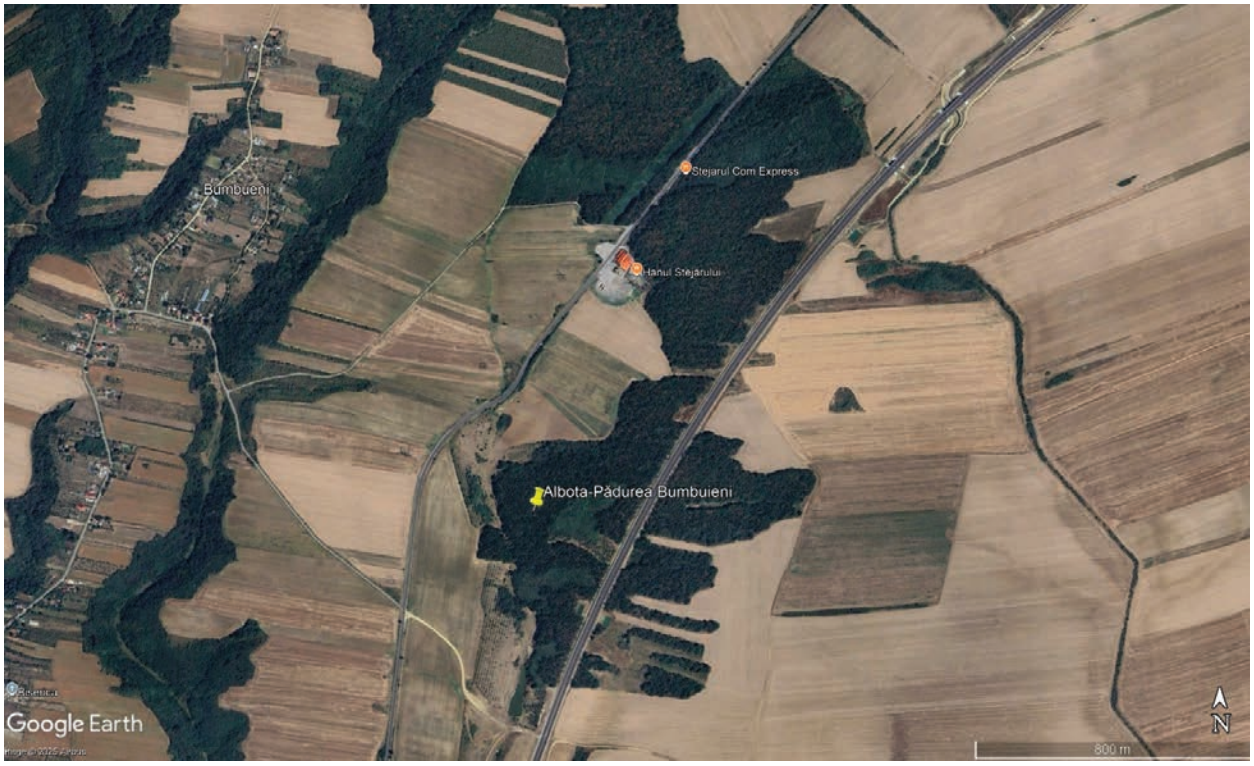


Figura 5. *Locul descoperirii celtului de la Albota* – Pădurea Bumbuieni *(Google Earth).*

Figure 5. *Place of discovery for the socketed axe from Albota* – Pădurea Bumbuieni *(Google Earth).*

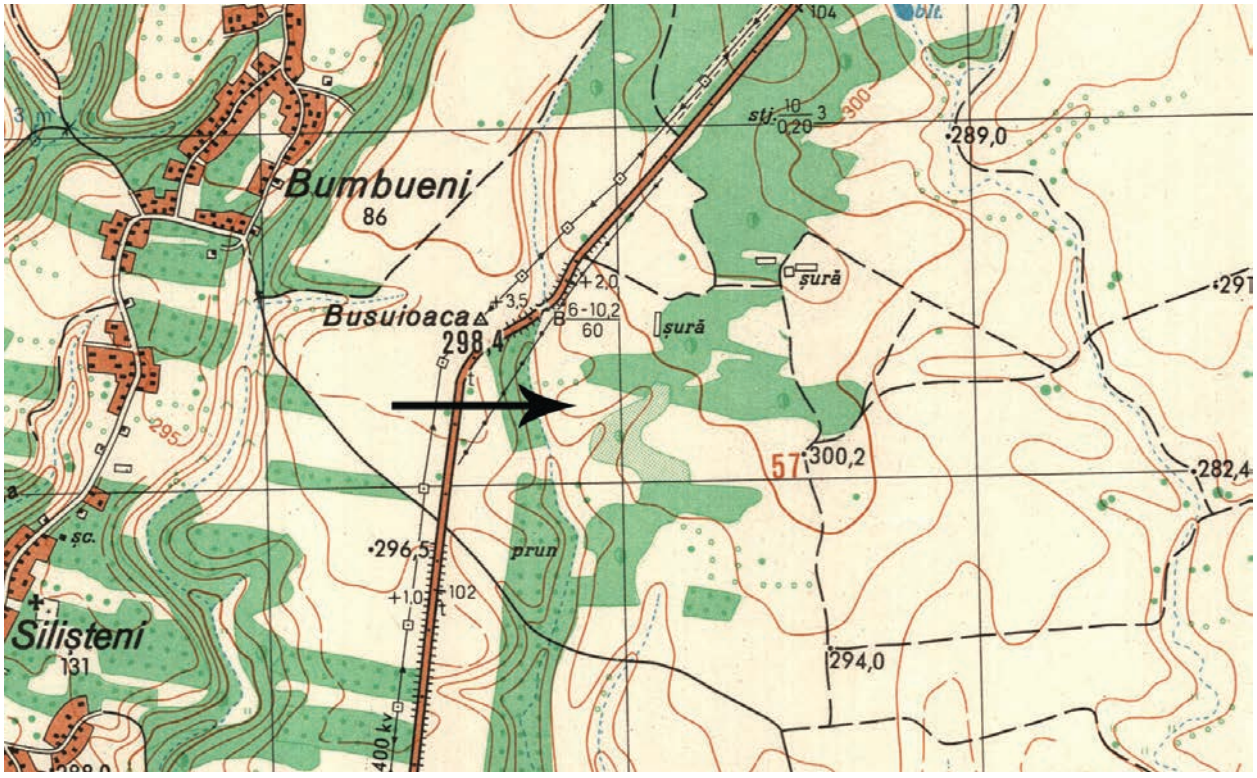


Figura 6. *Locul descoperirii celtului de la Albota* – Pădurea Bumbuieni *(harta militară, Sc. 1:25.000).*

Figure 6. *Place of discovery for the socketed axe from Albota* – Pădurea Bumbuieni *(Military Map, 1:25.000 scale).*



Figura7/a–b. *Celtul de la Valea Ursului (Desen E. Hila; foto C. E. Ștefan).*

Figure 7/a–b. *The socketed axe from Valea Ursului (Drawing E. Hila; photo C. E. Ștefan).*

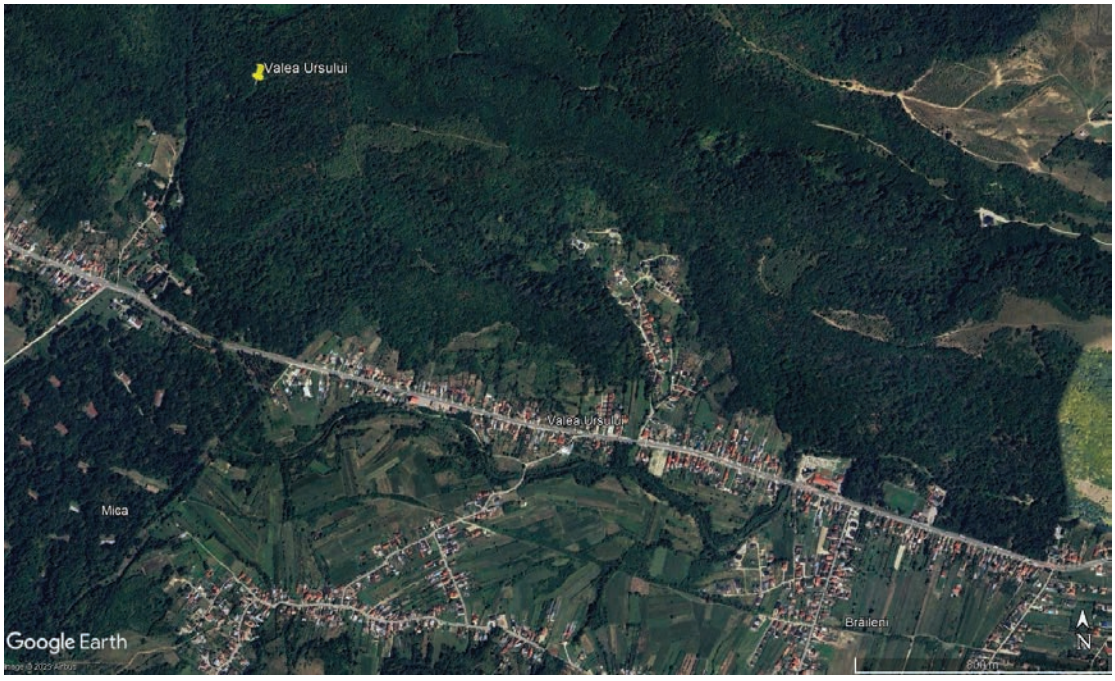


Figura 8. *Locul descoperirii celtului de la Valea Ursului (Google Earth).*

Figure 8. *Place of discovery for the socketed axe from Valea Ursului (Google Earth).*

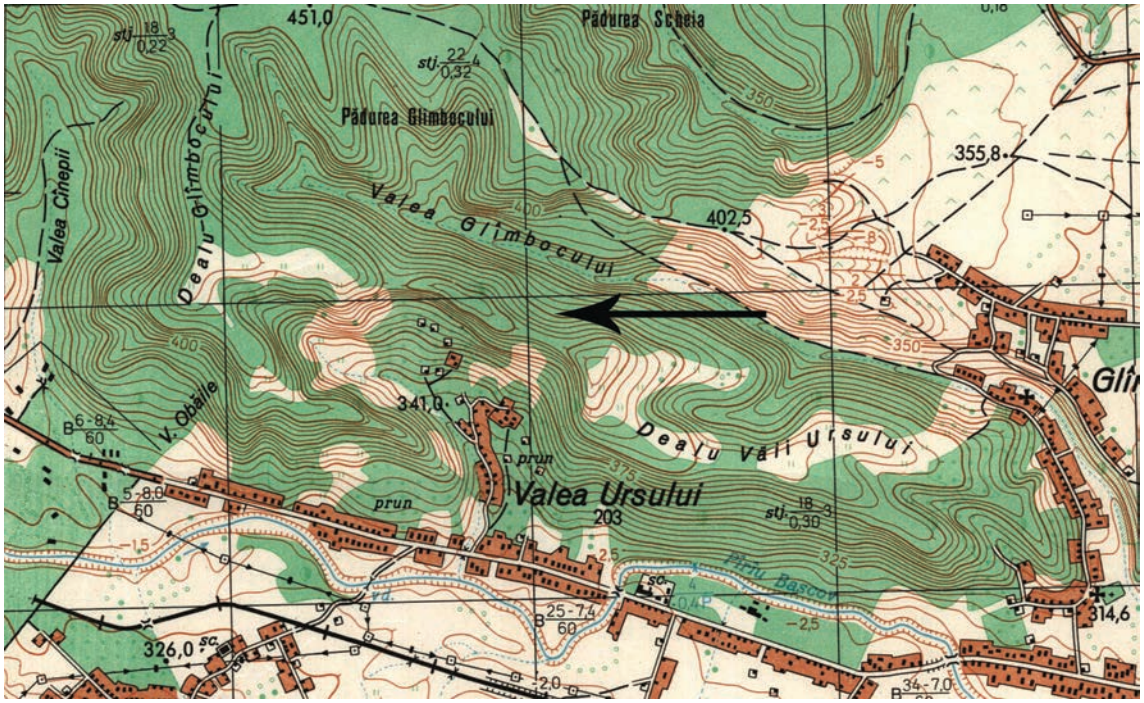


Figura 9. *Locul descoperirii celtului de la Valea Ursului (harta militară, Sc. 1:25.000).*

Figure 9. *Place of discovery for the socketed axe from Valea Ursului (Military Map, 1:25.000 scale).*

Br D – Ha A1[11], fiind răspândit în Transilvania (cu o concentrare de piese în zona Mureșului mijlociu) și în nordul Moldovei, exemplare de acest tip fiind documentate în depozitele de la Aiud, Gușterița II, Șpălnaca II sau Uioara de Sus[12]. Piesa fiind deteriorată în partea superioară, nu putem exclude cu totul prezența unor arcade pe fețele late ale acesteia, iar celtul s-ar încadra în tipul C2 la Dietrich. În acest caz, o bună analogie ar constitui-o exemplarul de la Vulturești, jud. Olt, ceea ce ne duce către epoca bronzului târziu[13].

Celtul de la Valea Ursului aparține variantei B2 în accepțiunea lui Mircea Rusu[14], în timp ce după Oliver Dietrich îl putem atribui variantei B2g, cea mai apropiată analogie fiind o piesă de la Buciumi, jud. Sălaj[15]. Apropiată ca formă este și piesa de la Călugăreni, jud. Mureș, corespunzătoare variantei B2i la Dietrich[16]. Tipul B2 poate fi plasat într-un orizont cronologic corespunzător epocii bronzului târziu, fiind răspândit în principal în aria transilvană, dar și în Moldova, unele exemplare fiind descoperite în medii Noua sau Wietenberg târziu[17].

O discuție despre utilizarea celturilor am făcut-o deja cu ani în urmă, așa că nu mai este necesară o reluare a temei, deoarece nu au mai apărut elemente noi de atunci care să ne modifice opiniile[18]. Ne mulțumim să semnalăm un studiu foarte interesant, pe care atunci nu l-am avut în vedere, în care sunt replicate celturi în cadrul unui proiect de arheologie experimentală, iar urmele de uzură sunt comparate cu cele de pe piesele preistorice descoperite în Anglia (zona Yorkshire) și sud-estul Scoției[19]. De asemenea, un studiu mai recent ne arată că mai degrabă tehnologia de prindere a mânerului din lemn decât *design*-ul celturilor a fost factorul-cheie care a determinat creșterea eficienței și performanței acestora[20]. Rezultatele sunt promițătoare și pot constitui baza unor analize viitoare efectuate pe piesele din sud-estul Europei.

În ceea ce privește vârful de lance, analogiile sunt mai greu de găsit, deoarece forma este destul de simplă. Aspectul general și perforațiile laterale ne duc cu gândul la exemplarul descoperit de curând la Mirosloveni, jud. Gorj, pentru care autorii specifică o circulație îndelungată în spațiul carpato-danubian și propun o datare în Ha B1 (cu analogii în depozitele de la Moigrad I și Porumbenii Mari) sau B2 (analogii în depozitul Turia III)[21]. Republicarea depozitului de la Cehei – *Pustă* (cunoscut mai înainte sub denumirea de Moigrad I), în condiții grafice mai bune, ne arată într-adevăr analogii bune pentru piesa noastră în vârfurile de lance prezente în această descoperire[22]. În clasificarea lui Leshtakov, vârful nostru de lance s-ar

[11] Dietrich 2021, p. 349–353.
[12] Dietrich 2021, p. 350 și harta 35.
[13] Berciu 1976, p. 174/175, Fig. 5/7; Dietrich 2021, p. 476, nr. cat. 1567, pl. 351/1567 (a se vedea și Harta 52).
[14] Rusu 1966, p. 25, Fig. 2/B2.
[15] Dietrich 2021, p. 357, nr. cat. 0794, pl. 187/0794.
[16] Dietrich 2021, p. 357–358, nr. cat. 0799, pl. 188/0799.
[17] Dietrich 2021, p. 366–368 și harta 37.
[18] Ștefan 2008, p. 30–32.
[19] Roberts, Ottaway 2003.
[20] Dolfini *et alii* 2023.
[21] Popescu *et alii* 2025, p. 27–28.
[22] Soroceanu, Heeb 2015, mai ales exemplarul de la Pl. 10.

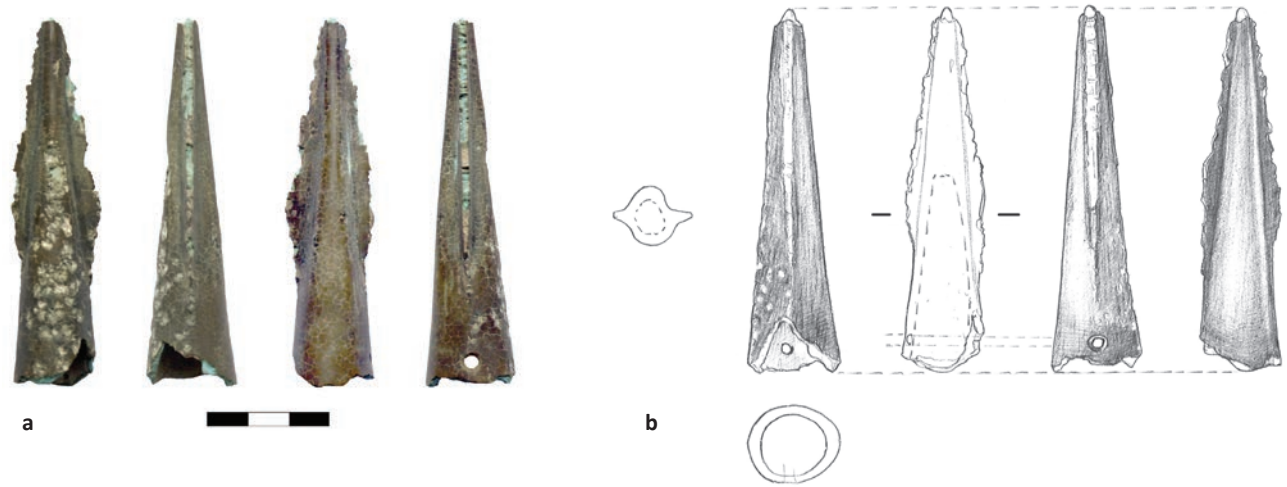


Figura 10/a–b. *Vârful de lance de la Topoloveni –* Țigănești *(Desen E. Hila; foto C. E. Ștefan).*

Figure 10/a–b. *The spearhead from Topoloveni –* Țigănești *(Drawing E. Hila; photo C. E. Ștefan).*



c d

Figura 10/c–d. *Vîrful de lance în momentul descoperirii.*

Figure 10/c–d. *The spearhead at the moment of discovery.*

încadra probabil la Forma H, Tipul III.5, analogii bune reprezentându-le piesele de la Blucina și Ratare[23]. Leshtakov consideră că Tipul III din Forma H apare cândva în Bronz D și este încă în uz în Hallstatt B[24].

Pentru unele observații referitoare la procesul tehnologic, piesele au fost supuse unei analize la microscopul digital Keyence VHX–X1 aflat în dotarea Institutului de Arheologie „Vasile Pârvan" din București[25]. Cele mai interesante observații au fost făcute pentru inelul de buclă din aur. S-au putut documenta urmele de ciocănire de pe brațele inelului apărute în timpul confecționării piesei (Fig. 13/a–c, e), dar și de pe unul dintre capete (Fig. 13/d), precum și zona din punctul de inflexiune între două dintre brațe, unde metalul a

[23] Leshtakov 2015, Pl. 81/A, 11.
[24] Leshtakov 2015, p. 240.
[25] Mulțumiri colegei Anca-Diana Popescu pentru aceste analize, dar și pentru bibliografie și îndrumări.



Figura 11. *Locul descoperirii vârfului de lance de la Topoloveni –* Țigănești *(Google Earth).*

Figure 11. *Place of discovery for the spearhead from Topoloveni –* Țigănești *(Google Earth).*

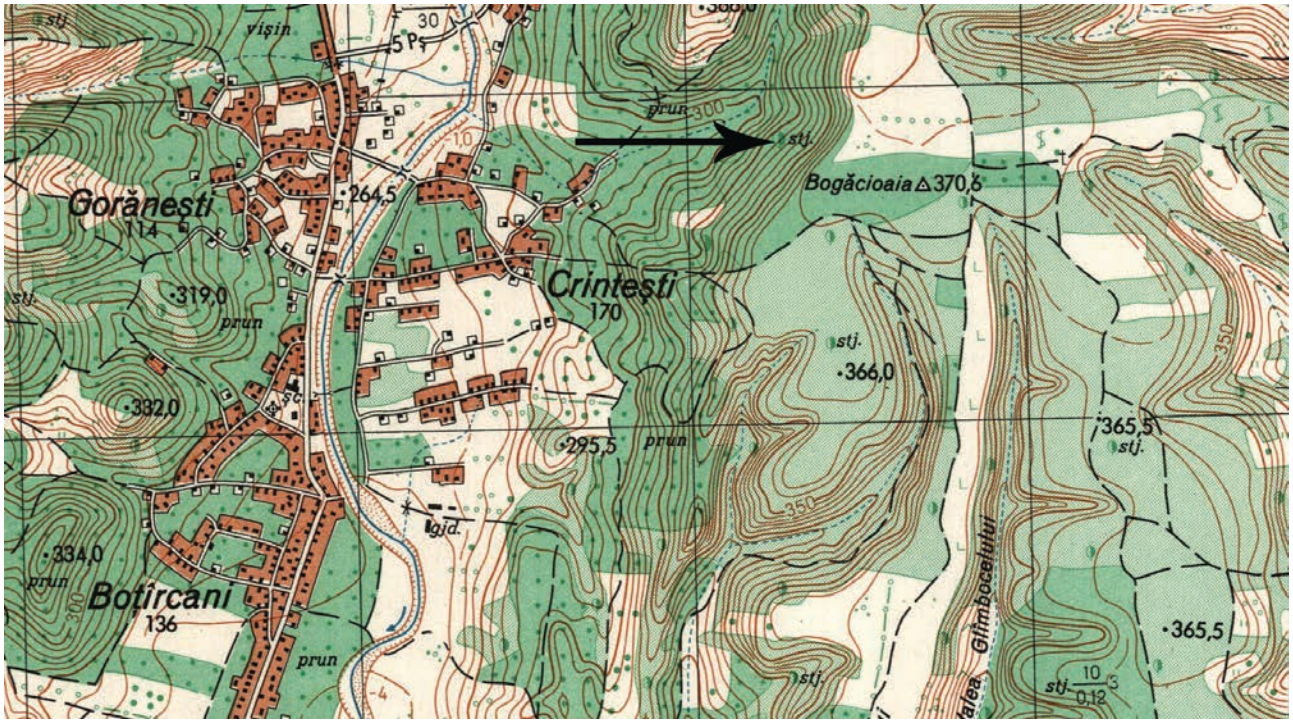


Figura 12. *Locul descoperirii vârfului de lance de la Topoloveni –* Țigănești *(harta militară, Sc. 1:25.000).*

Figure 12. *Place of discovery for the spearhead from Topoloveni –* Țigănești *(Military Map, 1:25.000 scale).*

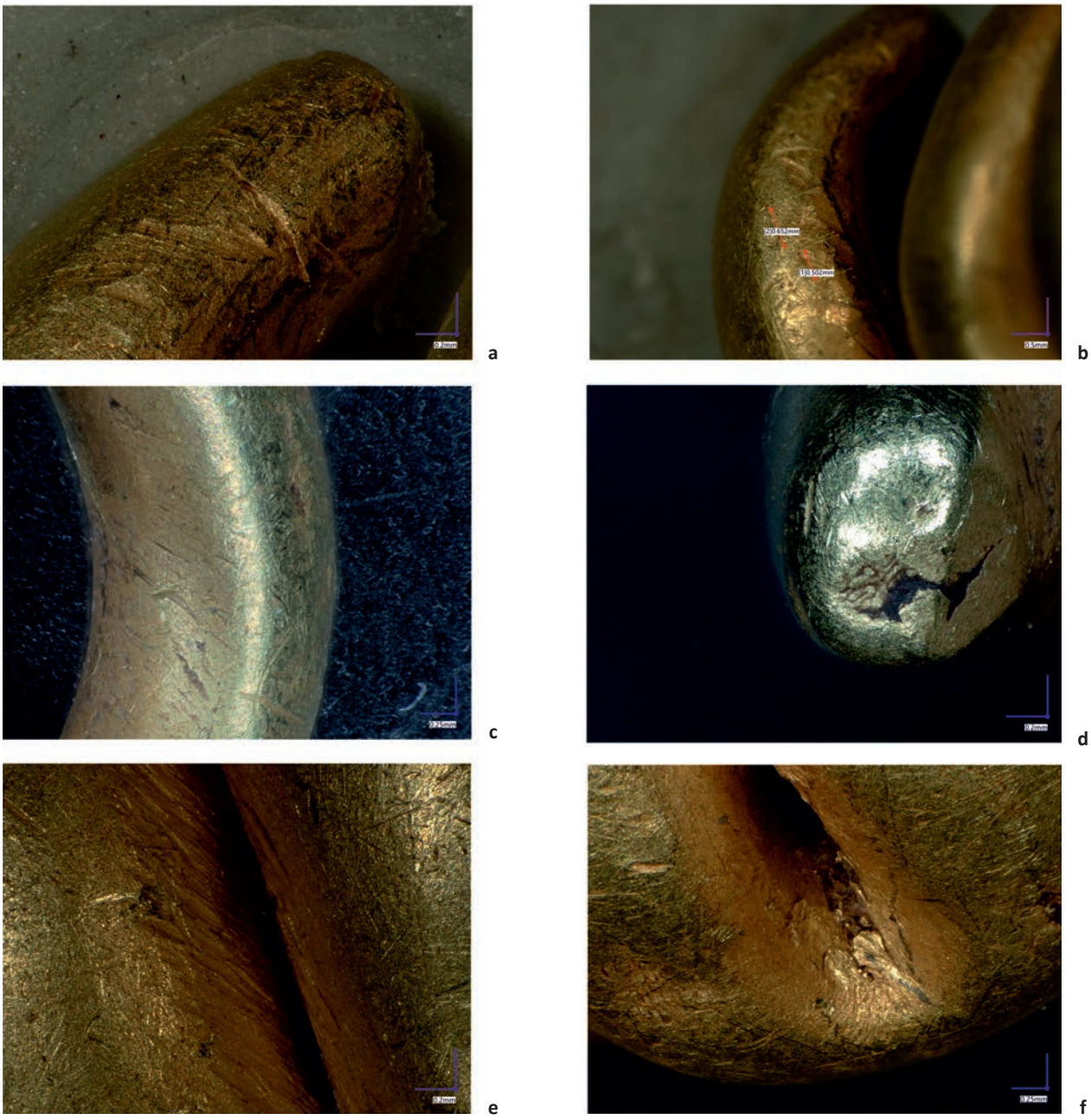


Figura 13. *Inelul de buclă din aur. Detalii din procesul manufacturării.* ***a.*** *Urme de lovituri către unul dintre capete (150x);* ***b.*** *Urme de lovituri pe unul dintre brațe (50x);* ***c.*** *Urma unei lovituri pe interiorul unui braț (100x);* ***d.*** *Urme de lovituri pe unul dintre capete (150x);* ***e.*** *Urme de lovituri pe unul dintre cele două brațe (150x); f. Detaliu cu punctul de inflexiune dintre două brațe (100x).*

Figure 13. *The golden hair-ring. Details of the manufacturing process.* ***a.*** *Beating traces near one of the heads (150x);* ***b.*** *Beating traces on one of the arms (50x);* ***c.*** *Beating traces on the inside of an arm (100x);* ***d.*** *Beating traces on one of the heads (150x);* ***e.*** *Beating traces on one of the arms (150x);* ***f.*** *Detail with the inflection point between two of the arms (100x).*

crăpat ușor (Fig. 13/f). Cel mai probabil, materia primă a fost turnată într-un tipar prin care s-a obținut o mică bară din aur, unul dintre capete a fost îndoit, apoi bara astfel transformată a fost la rândul ei îndoită și bătută în jurul unui obiect dur, cilindric, obținându-se forma finală. Analiza spectrală a unei zone roșiatice[26] de pe unul din brațele inelului de buclă (Fig. 14/a) a condus la detectarea a două zone cu intruziuni argintii, de dimensiuni submilimetrice (Fig. 14/b, c, f), care s-au dovedit a fi iridiu (Fig. 14/d, e). Aceste intruziuni sunt un bun indiciu că aurul din care a fost confecționată piesa ar fi aluvionar, așa cum o arată unele studii[27].

[26] Cel mai probabil, o contaminare datorată solului în care a zăcut piesa.

[27] Jansen *et alii* 2016.

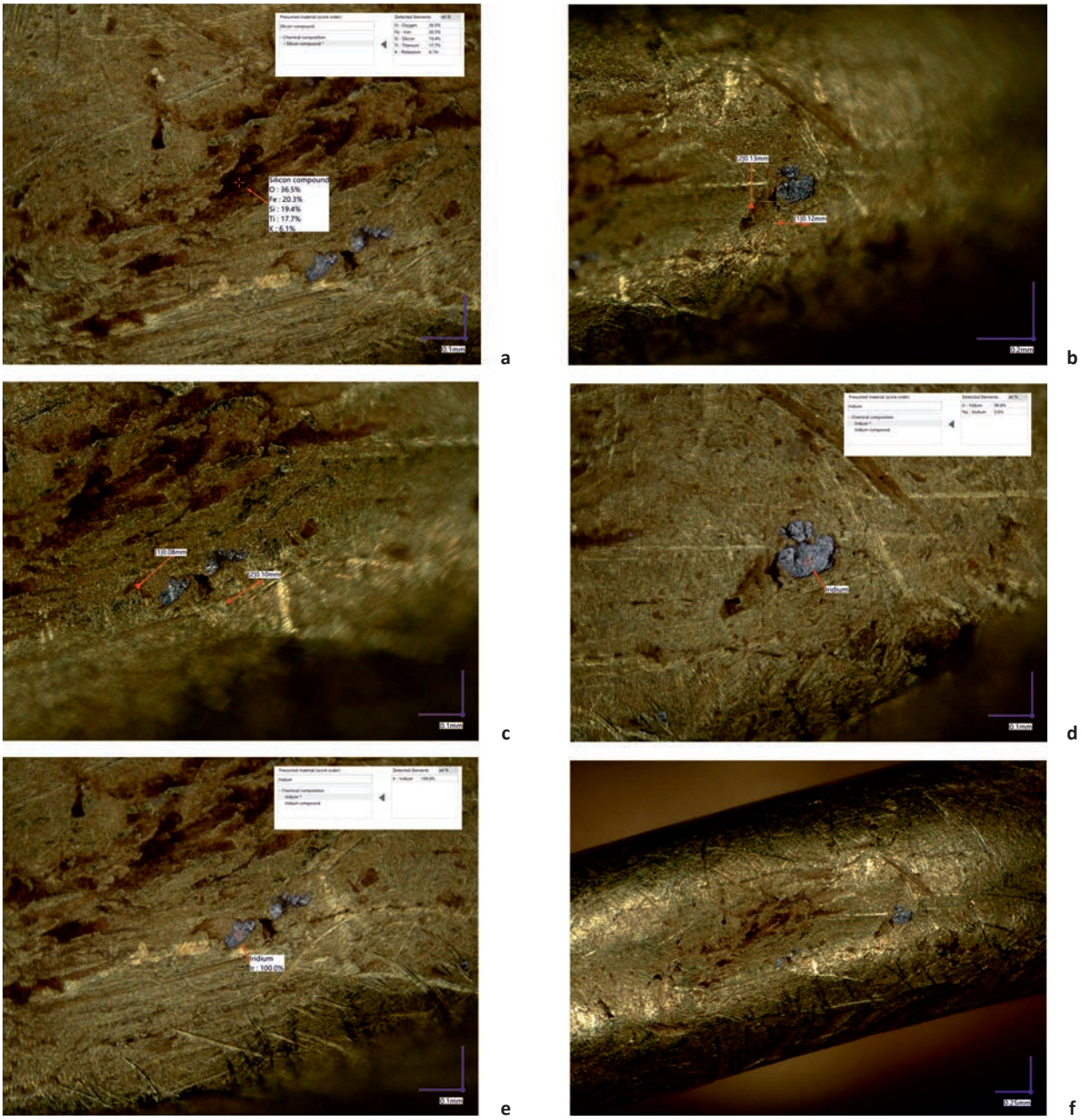


Figura 14. *Inelul de buclă din aur.* ***a.*** *Analiza spectrală zonei roșiatice (300x);* ***b, c.*** *Dimensiunile intruziunilor argintii (200x, respectiv 300x);* ***d, e.*** *Analizele spectrale ale intruziunilor argintii (300x);* ***f.*** *Zona cu intruziunile argintii (100x).*

Figure 14. *The golden hair-ring.* ***a.*** *The spectral analysis of the reddish area (300x);* ***b, c.*** *The dimensions of silvery intrusions (200x, 300x respectively);* ***d, e.*** *The spectral analyses of the silvery intrusions (300x);* ***f.*** *The area with silvery intrusions (100x).*

Analiza celtului de la Valea Ursului ne-a relevat o piesă care a fost folosită foarte puțin sau deloc. Tăișul este bont (Fig. 15/c), cu foarte puține striații pe una din părți (Fig. 15/b), iar către capătul manșonului, metalul este foarte subțire, ceea ce l-a făcut ușor de deteriorat (Fig. 15/a). Al doilea celt, de la Albota, pare să fi fost un rebut, fiind destul de avariat, cu un aspect foarte poros și multe defecte de turnare (Fig. 16/a, b). Vârful de lance a ajuns la noi deteriorat, mai ales în partea inferioară (lipsește o parte din tubul de prindere a cozii), dar și pe părțile laterale ale lamei și în zona vârfului. Au fost observate striuri longitudinale, provenite probabil de la netezirea piesei după turnare (Fig. 17/a, b). Din examinarea microscopică a găurii laterale păstrate (gaură prin care se introducea un cui pentru o mai bună fixare a mânerului de lemn), s-a constatat că aceasta a fost realizată după turnare, prin împingerea și perforarea metalului dinspre exterior (Fig. 17/c).

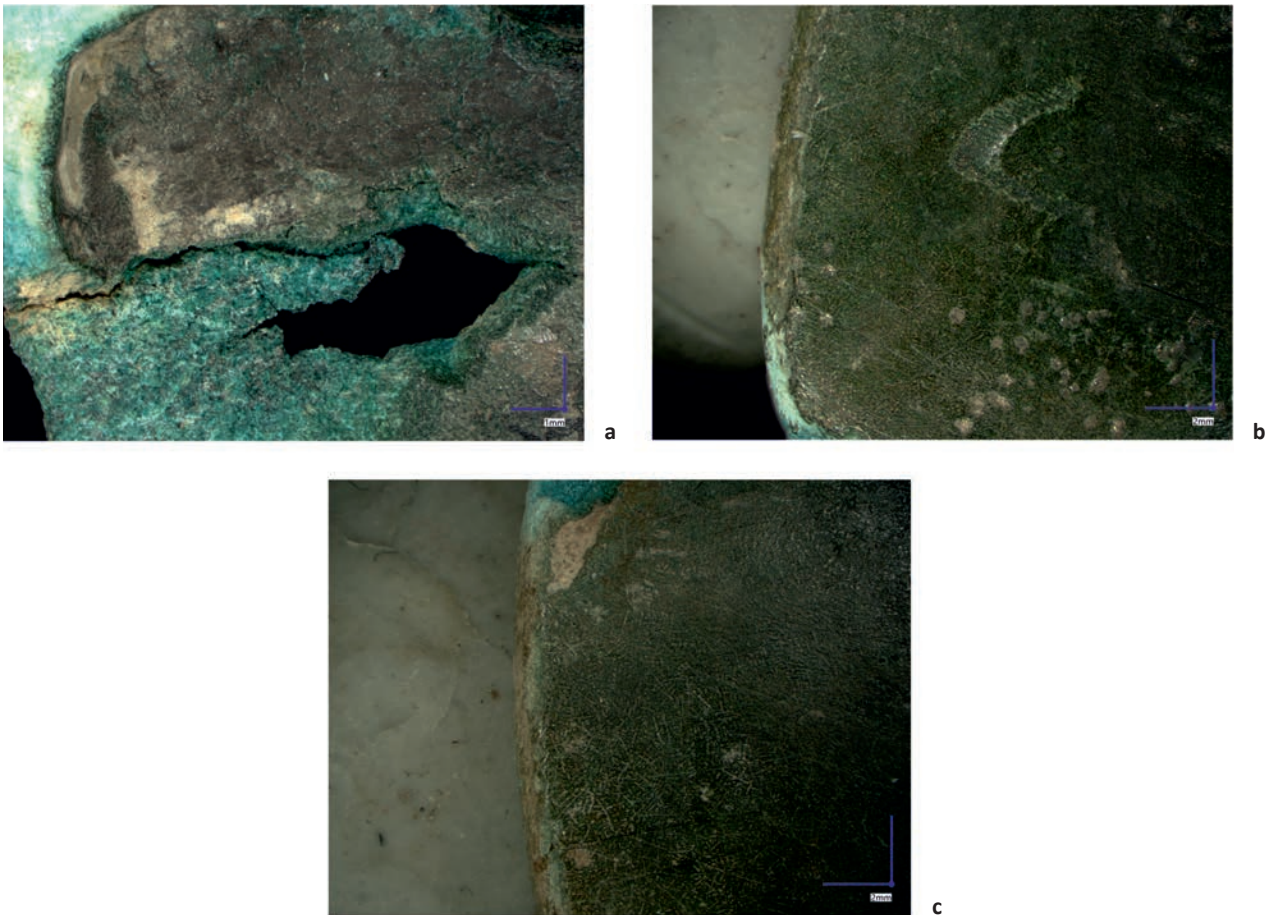


*Figura 15. Celtul de la Valea Ursului. **a.** Zona deterioarată de lângă manșon (30x); **b.** Zona cu striații de pe tăiș (20x); **c.** Cealaltă parte a tăișului (20x).*

*Figure 15. The socketed axe from Valea Ursului. **a.** The damaged area near sheath (30x). **b**. The area with ridges on the cutting edge (20x); **c.** The other side of the cutting edge (20x).*

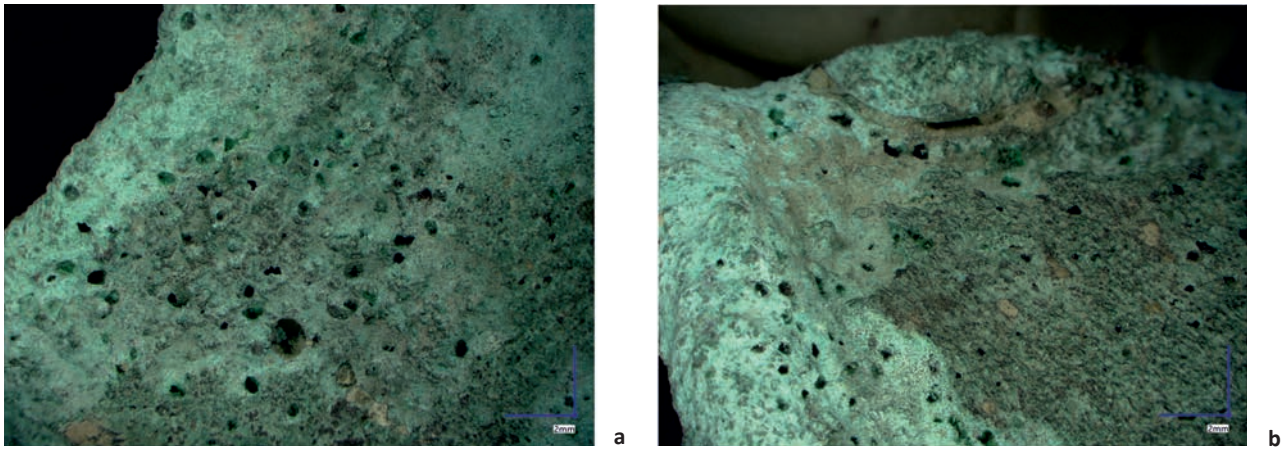


*Figura 16. Celtul de la Albota. **a.** Zona cu porozitate de sub manșon (20x); **b.** Zona cu porozitate de lângă tortiță (20x).*

*Figure 16. The socketed axe from Albota. **a.** The porous area under the sheath (20x); **b.** The porous area near the lug (20x).*

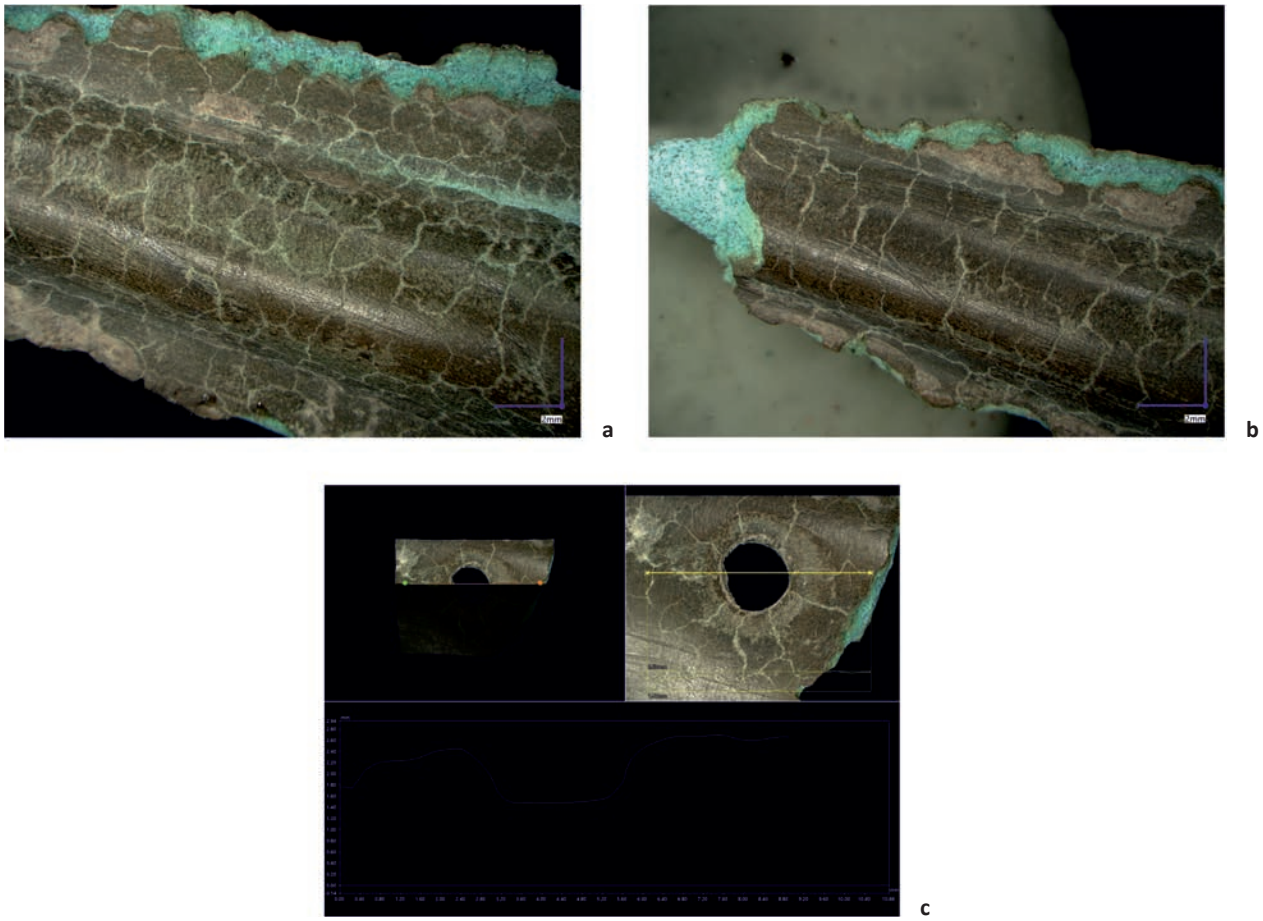


Figura 17. *Vârful de lance.* ***a.*** *Zona din mijloc a frunzei (20x);* ***b.*** *Zona de lângă vârf (20x); c. Detalii ale orificiului de fixare a cozii.*

Figure 17. *The spearhead.* ***a.*** *The middle area of the leaf (20x);* ***b.*** *The area near the tip (20x); c. Details of the rivet hole.*

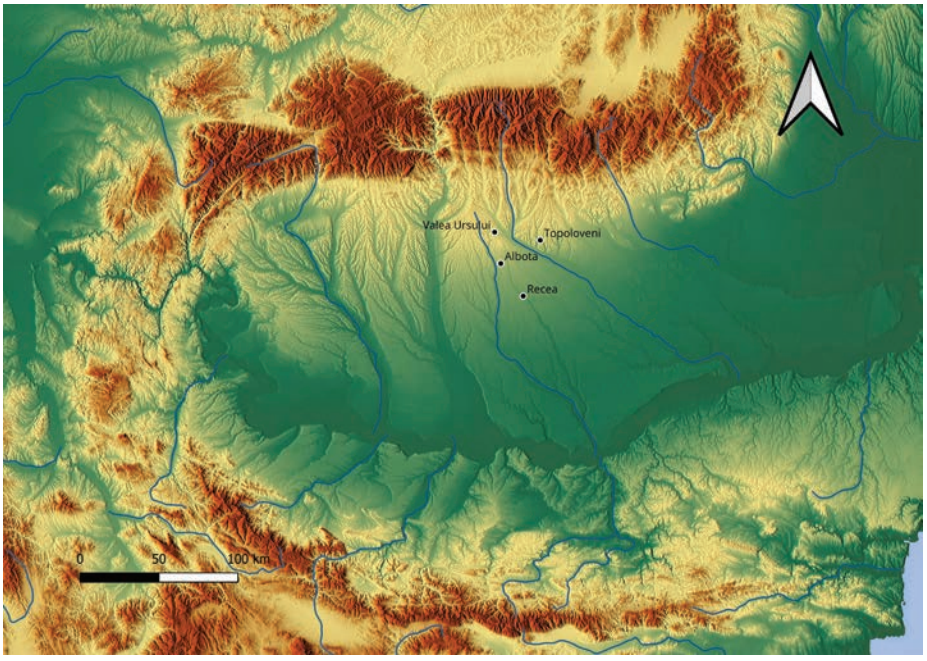


Figura 18. *Locurile de descoperire ale celor patru obiecte din metal.*

Figure 18. *Places of discoveries of the four metal objects.*

CONCLUZII

Dacă în urmă cu câteva decenii zona Argeșului era aproape o pată albă în ceea ce privește prezența obiectelor de metal preistorice, situația s-a schimbat în ultimii ani, activitatea așa-zișilor „căutători de comori", insuficient reglementată, a dus la descoperirea mai multor piese de metal (cupru, bronz sau aur). Documentarea acestora ne arată un peisaj mult mai dinamic al circulației pieselor de metal între comunitățile preistorice, în cazul unora dintre piese conturându-se chiar un schimb la mare distanță. Lipsa unor descoperiri de tipare în zona Argeșului ne îndepărtează de ideea unei producții locale, în timp ce prezența unor piese izolate în locuri precum dealurile împădurite poate semnifica depuneri speciale.

Cartarea locurilor de descoperire pentru cele patru artefacte (Fig. 18) ne arată o arie relativ bogată în descoperiri de metal preistorice aflată aproximativ între cursul superior al Teleormanului și cel mijlociu al Argeșului. În ce măsură este o imagine reală sau doar o „fotografie" de moment datorată activității neobosite a detectoriștilor, rămâne de văzut în viitor.

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NOTE ON THE COMMON WARES FROM "PISTIROS"

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***Keywords**: Pistiros, Thrace, Greek pottery, 4th c. BC., common wares, determination of origin, XRF lab results*
***Abstract**: Among the Greek pottery finds from the alleged Pistiros emporion, lab results have evidenced a Thasian origin for one half of the common wares brought to light.*

***Cuvinte-cheie:** Pistiros, Tracia, ceramică greacă, secolul IV BC, articole de uz curent, determinarea originii, rezultate XRF*
***Rezumat:** Printre descoperirile de ceramică greacă provenite din ceea ce se presupune a fi emporionul de la Pistiros, rezultatele analizelor de laborator au evidențiat o origine thasiană pentru jumătate din obiectele de uz curent scoase la lumină.*

In a recent paper[1], having obtained a selection of samples of fine wares and transport amphoras from the alleged "Pistiros" *emporion*, we have indicated, through archaeometric data, their predominantly Attic (black-glaze) and North-Aegean (trade-amphoras) origin rather than that of a West-Pontic *facies*.

Thus, it appeared it would be advisable to extend these preliminary inquiries to the case of common wares brought to light concurrently, thus increasing the number of samples to 66 items. The aim of this enlargement was to test the share of those *a priori* of local manufacture, as interpreted by Jan Bouzek himself[2] and evidenced by the discovery of only one potter's kiln[3].

Now, as reflected by the general dendrogram of the XRF analysed samples (Pl. I), the share of actual common wares themselves separated into two clusters [B] and [C], the chemical patterns of which appear *a priori* noncomplementary. Do we face here two distinct locally made variants or, at least one of them is an imported group? The question had at once to be asked, due to the inclusion within the largest of these two clusters of common wares ([C]), of two samples of roof-tiles (PST 15–16) for which a North Aegean chemical pattern had already been previously evidenced, as well as a third one from the upper part of an amphora of Thasian Circle aspect (PST 12)[4], all three considered *a priori* by the excavators as locally made common wares.

Having obtained none of the samples of sherds collected from the context of the excavated kiln, and no samples from the local clay beds, we had to rely on comparisons with external reference groups, to determine the exact share of possibly imported groups in comparison with locally made ones.

Considering the dominant Attic share already obtained in the light of the data-processing of fine wares, we have also submitted common wares from Pistiros[5] to comparisons with our references for Thasos and Maroneia.

The obtained comparative results, illustrated by the dendrogram (Pl. II), revealed for our samples of common wares from Pistiros a distribution into three separate entities. The first cluster [A] associates a little more than half of them with one of our Thasian reference-groups, also including some specimens of roof-tiles and architectural terracottas, thus gathering the imports from the North-Aegean sphere. It is also the case of a only one of our samples which has joined cluster [D3] gathering references for Maroneia.

Conversely, the remaining of our wheel-made common wares distributed between clusters [C] and [E], and including none of our reference samples from the North-Aegean sphere, may well be interpreted either as grouping locally made vessels or imported ones from an undetermined origin. As for the last small cluster of common wares [E], also not associated with any of our North-Aegean references, it consists of coarse cooking

[1] Dupont *et alii* 2025.

[2] Bouzek 2007.

[3] Taneva 2013.

[4] The fact that this upper part of an amphora was found within the remains of the only potter's kiln brought to light (Taneva 2013) cannot be considered as plainly conclusive, because such a find can well be posterior to the period of activity of this potter's workshop and consequently not necessarily ranging among the local products.

[5] Bouzek, 2010b.

vessels, some of them handmade, thus most probably of local manufacture[6].

To sum up these preliminary lab results obtained on common wares from Pistiros, the main one is obviously represented by the Thasian origin evidenced for half of them, thus contrasting with the results obtained on the finds of fine wares, rather ascribable to Attic manufacture[7], even though North-Aegean workshops also produced black-glazed wares[8]. Also noteworthy appears the similarity in the range of products between Pistiros and its Thasian supplier, covering from table wares to roof-tiles, thus suggesting that the amount of architectural terracottas brought to light may have been supplied by the same Thasian workshop, rather than locally made, as assumed until now[9]. As for the route of delivery of these Thasian products to the hinterland of Thrace, the fact that samples from Doriskos can also be related to our Thasian reference group is suggestive of a sail upstream the Hebros Valley. Thus, it still remains to be clarified the case of our minor second branch [B] of common wares, representing either genuine locally made ones or imported items from another, still unidentified centre, with Troad and Propontis centres ranging among the most potential candidates.

As for the *emporion* hypothesis for the alleged "Pistiros" settlement, the fact that even common wares were imported (either erratically or through a mini distribution network?), this would rather fit with the hypothesis of steady contacts between Greeks and Thracian locals. More instructive about it would be to determine by archaeometric studies, the origin of more roof-tiles, said to have covered most of the excavated houses of the settlement[10]. If it turns out that most of them also reveal a Thasian chemical pattern, one would then be inclined to interpret this as suggesting the North-Aegean origin of their dwellers, thus rather in favour of a context of a settled *emporion*, and better supporting Jan Bouzek's former well-argued pleas *pro it*[11], instead of the actual reversal *contra*[12] trend.

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[6] Bouzek 2010.

[7] Thus validating the attribution already assumed by Trefny 2013, p. 41.

[8] However, even if it is the case on Thasos itself, for 29% of locally made ones, Attic imports still represent 71% of the black-glazed wares among the finds (Blondé 2000, p. 196).

[9] Bouzek *et alii* 2013, p. 94. Conversely, p. 96, the much better quality of architectonic terracottas leads him to establish a parallel with the North-Aegean sphere, thus surely involving a long stay on site of Thasian roofers.

[10] Musil 1996, p. 47.

[11] Bouzek 2007b, see *esp*. p. 235–236; Bouzek, Domaradzka 2016, *esp*. p. 12.

[12] See Dimova, Tzochev 2025.

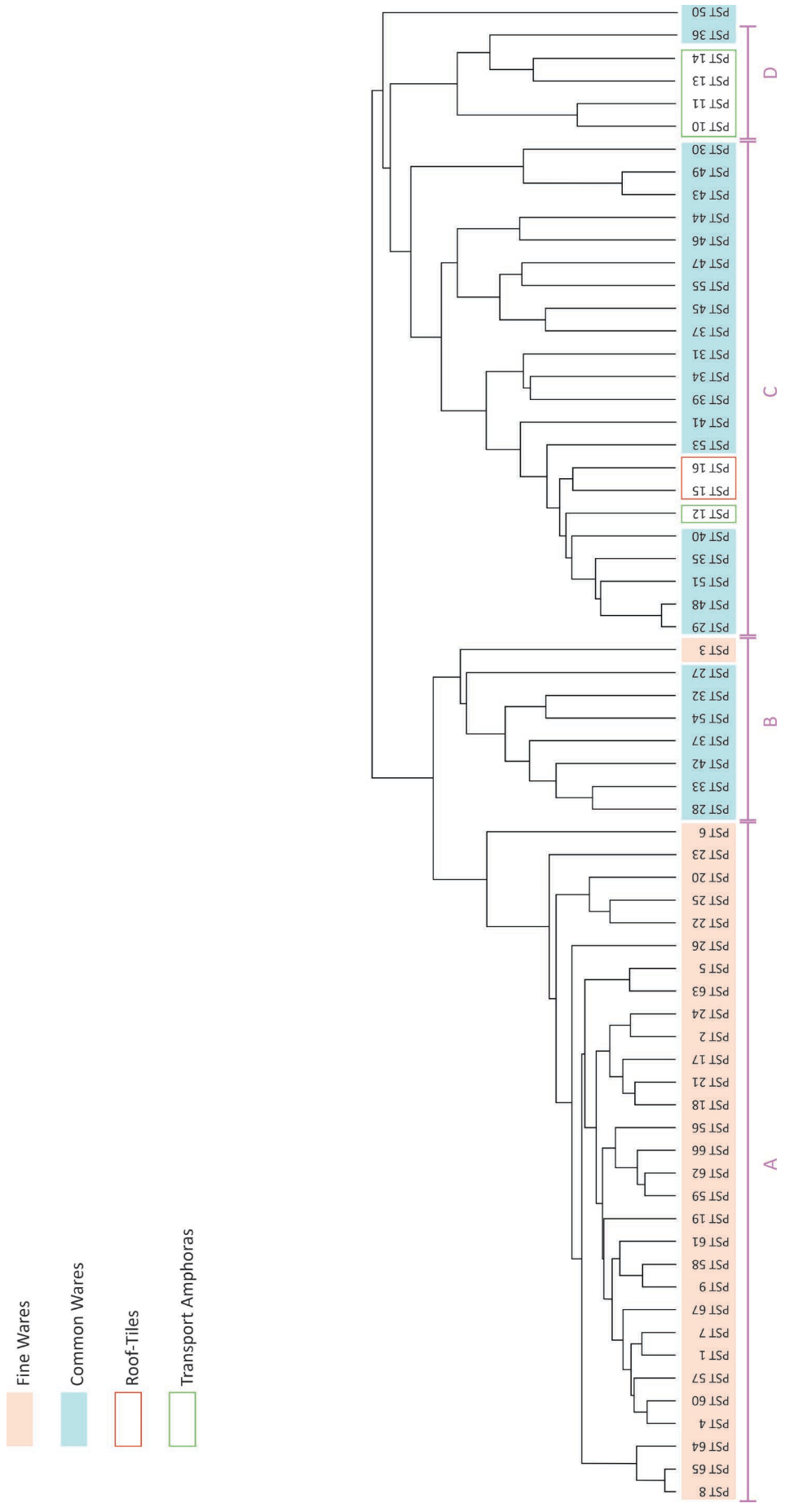


Plate I. *Pistiros: fine vs. common wares. Dendrogramme of the XRF chemical data.*

List of chemical data in the order of the dendrogramme.

Nom	CaO	Fe_2O_3	TiO_2	K_2O	SiO_2	Al_2O_3	MgO	MnO	Na_2O	P_2O_5	Zr	Sr	Rb	Zn	Cr	Ni	La	Ba	V	Ce	Y	Th	Pb	Cu
PST 8	5.49	8.19	0.896	3.72	59.00	16.98	4.45	0.0890	0.70	0.24	172	275	161	121	458	337	39	579	141	71	32	11	21	56
PST 65	5.31	8.11	0.901	3.69	59.40	16.95	4.35	0.0890	0.70	0.24	172	272	160	125	464	337	41	611	139	73	32	11	22	45
PST 64	5.17	8.16	0.917	3.77	58.29	17.66	4.43	0.0989	0.69	0.54	169	253	162	108	496	360	38	1032	144	73	33	11	23	44
PST 4	6.55	8.59	0.904	3.88	55.55	18.47	4.99	0.1153	0.47	0.21	143	257	169	130	503	368	41	646	152	73	31	7	22	71
PST 60	5.93	8.98	0.912	3.93	55.61	18.47	4.65	0.1164	0.40	0.69	144	266	169	122	545	410	42	953	153	74	33	10	25	81
PST 57	5.89	8.45	0.916	3.73	56.50	18.10	4.84	0.1107	0.53	0.61	156	288	164	127	514	371	44	1192	143	71	33	10	22	47
PST 1	7.71	8.46	0.883	3.79	55.32	17.97	4.78	0.1104	0.53	0.18	144	249	163	125	503	391	37	638	142	75	31	9	21	56
PST 7	7.27	8.36	0.893	3.76	55.53	18.04	4.99	0.0954	0.50	0.31	150	282	165	134	473	351	36	634	149	76	31	11	29	76
PST 67	6.43	8.97	0.906	3.99	54.96	18.47	4.33	0.1182	0.49	1.04	143	277	170	144	557	380	38	958	140	75	31	11	22	71
PST 9	8.88	8.84	0.897	3.73	53.03	17.92	5.44	0.1043	0.46	0.39	140	270	163	119	569	421	34	908	143	68	31	13	18	62
PST 58	9.13	8.92	0.887	3.75	53.10	18.03	5.11	0.1034	0.39	0.29	137	281	167	133	541	412	36	651	154	66	31	7	19	77
PST 61	7.59	8.35	0.889	3.74	55.85	17.67	4.71	0.1155	0.54	0.28	143	235	157	118	499	371	37	757	145	64	32	10	19	61
PST 19	7.73	9.22	0.903	3.64	52.76	19.18	5.56	0.1057	0.45	0.17	138	243	165	135	555	426	36	644	157	79	26	19	27	85
PST 59	4.44	8.89	0.953	3.98	57.23	18.75	4.68	0.0967	0.52	0.18	161	171	170	131	586	417	42	667	159	70	29	9	21	69
PST 62	5.48	8.89	0.937	4.05	55.99	18.54	4.87	0.1051	0.63	0.22	153	214	173	129	569	406	32	736	156	70	29	10	21	73
PST 66	4.84	9.00	0.958	3.92	55.99	19.03	5.09	0.1050	0.46	0.32	152	207	174	126	585	389	38	802	148	76	31	10	24	53
PST 56	5.14	9.08	0.915	3.85	55.49	18.52	5.47	0.0871	0.58	0.57	139	239	177	142	483	394	39	993	155	64	34	9	157	48
PST 18	7.10	8.50	0.873	3.44	54.93	17.75	5.95	0.1231	0.70	0.35	154	320	160	121	529	395	46	808	142	84	28	20	22	75
PST 21	7.81	8.58	0.884	3.52	54.09	18.11	5.75	0.1003	0.69	0.23	151	267	158	129	486	380	43	536	144	84	27	16	23	67
PST 17	6.84	7.99	0.873	3.52	56.18	18.10	5.03	0.1038	0.58	0.53	156	323	160	124	458	346	26	724	155	80	28	16	21	69
PST 2	6.11	8.50	0.915	3.77	56.68	17.68	4.92	0.1325	0.62	0.39	159	247	159	117	514	373	40	770	165	74	32	9	19	65
PST 24	6.67	8.54	0.906	3.44	55.34	18.05	5.52	0.1332	0.70	0.42	162	253	158	119	525	382	40	779	160	80	29	19	26	69
PST 63	5.76	8.58	0.907	3.74	56.80	17.87	4.93	0.1605	0.65	0.33	152	198	158	127	482	369	37	702	152	71	31	10	25	63
PST 5	6.57	8.28	0.883	3.80	57.22	17.43	4.36	0.1608	0.57	0.45	152	271	159	119	488	373	34	764	141	65	31	11	22	57
PST 26	5.13	8.68	0.918	3.20	57.03	18.90	4.99	0.0888	0.57	0.25	159	242	145	141	464	359	34	590	149	87	29	22	30	85

Nom	CaO	Fe_2O_3	TiO_2	K_2O	SiO_2	Al_2O_3	MgO	MnO	Na_2O	P_2O_5	Zr	Sr	Rb	Zn	Cr	Ni	La	Ba	V	Ce	Y	Th	Pb	Cu
PST 22	5.13	8.48	0.896	3.47	57.66	18.15	4.83	0.1474	0.60	0.34	160	229	157	117	513	369	42	1026	136	85	27	21	25	66
PST 25	6.26	8.11	0.895	3.08	57.63	17.44	4.82	0.1444	0.63	0.69	174	293	135	121	467	338	40	974	130	88	29	24	26	63
PST 20	4.07	7.85	0.899	3.36	60.85	16.84	4.50	0.1267	0.87	0.40	190	188	138	112	448	335	36	558	123	80	28	18	20	55
PST 23	8.67	7.60	0.845	3.20	55.37	16.61	6.17	0.1373	0.73	0.37	158	428	141	136	447	338	32	759	144	75	27	18	18	72
PST 6	6.10	8.25	0.883	3.70	57.97	17.08	4.60	0.1138	0.71	0.35	159	264	155	242	470	341	40	688	141	64	32	11	21	64
PST 28	3.67	6.94	0.798	3.46	59.44	19.69	3.11	0.1972	1.53	0.91	163	274	150	133	95	46	45	1305	158	94	37	28	46	43
PST 33	3.90	7.50	0.835	3.59	57.78	19.94	4.09	0.1704	1.56	0.43	143	176	170	144	103	53	43	744	143	93	38	28	39	36
PST 42	2.89	6.70	0.763	3.44	59.20	21.78	2.77	0.1542	1.41	0.68	133	262	154	120	77	38	65	895	127	106	36	28	45	29
PST 38	6.14	7.54	0.774	3.47	56.75	18.77	3.69	0.1411	1.22	1.21	133	333	149	140	99	52	50	1555	170	71	36	17	30	41
PST 54	2.21	6.76	0.825	3.09	62.85	19.45	2.19	0.1993	1.82	0.36	195	327	142	127	83	40	58	942	140	98	38	23	55	39
PST 32	1.92	7.16	0.829	3.09	61.41	20.84	2.00	0.2677	1.92	0.30	164	430	147	144	80	38	67	1039	144	115	35	37	73	67
PST 27	6.50	6.18	0.679	3.34	58.31	18.95	3.85	0.1667	1.42	0.40	100	221	187	114	79	40	37	791	115	65	29	26	37	30
PST 3	5.74	9.19	0.846	3.47	51.78	22.33	5.38	0.1855	0.70	0.19	102	104	191	153	127	66	57	557	160	101	44	25	43	61
PST 29	2.43	6.09	0.605	2.74	64.89	17.95	2.18	0.1397	2.57	0.20	189	369	130	90	58	27	50	928	105	78	32	25	41	24
PST 48	2.46	6.11	0.602	2.77	64.98	17.93	2.13	0.1436	2.42	0.23	188	381	123	92	58	27	42	1006	104	80	33	16	41	19
PST 51	2.72	5.45	0.579	2.94	65.33	17.64	2.09	0.0900	2.41	0.51	190	424	117	96	60	26	39	1079	109	78	30	18	44	22
PST 35	2.32	5.86	0.663	2.89	64.13	18.79	2.32	0.0988	2.49	0.22	171	325	142	95	68	30	47	864	109	85	34	24	40	26
PST 40	1.57	6.12	0.716	2.78	65.89	18.50	2.26	0.0986	1.78	0.12	210	151	146	92	86	39	36	569	119	74	33	15	39	20
PST 12	2.09	6.15	0.703	2.53	63.55	19.19	2.65	0.1141	2.68	0.15	202	276	124	86	69	34	56	763	114	102	36	28	45	45
PST 15	2.09	5.13	0.612	2.39	65.75	18.09	2.15	0.0738	3.05	0.45	187	322	99	112	60	28	53	956	92	87	32	24	40	41
PST 16	2.08	4.72	0.647	2.27	66.72	17.83	1.88	0.1349	2.92	0.59	196	270	102	73	55	27	50	1127	84	86	31	24	42	42
PST 53	2.91	5.71	0.658	2.79	67.97	15.71	1.52	0.1080	1.69	0.70	215	332	95	89	122	58	46	902	107	81	36	13	14	27
PST 41	2.19	4.51	0.777	3.41	65.48	19.18	1.41	0.0915	2.45	0.31	214	294	163	93	70	25	41	912	93	68	34	20	40	21
PST 39	4.16	7.60	0.832	2.98	61.91	18.19	2.65	0.1335	0.95	0.36	170	200	142	87	266	168	44	801	159	74	32	10	23	45
PST 34	6.85	6.48	0.779	3.55	59.29	16.78	3.88	0.1162	1.46	0.51	181	476	153	87	137	107	48	1104	137	89	25	29	30	435
PST 31	3.24	6.48	0.877	3.58	62.22	17.60	1.82	0.1591	1.87	1.89	212	481	122	94	93	40	38	1417	141	75	30	19	26	40
PST 37	3.77	5.78	0.548	2.89	63.94	16.66	1.33	0.1049	2.40	2.17	133	696	80	64	47	23	31	2874	125	48	21	7	20	46

Nom	CaO	Fe_2O_3	TiO_2	K_2O	SiO_2	Al_2O_3	MgO	MnO	Na_2O	P_2O_5	Zr	Sr	Rb	Zn	Cr	Ni	La	Ba	V	Ce	Y	Th	Pb	Cu
PST 45	2.29	5.15	0.516	3.42	66.25	17.82	1.29	0.0878	2.41	0.48	158	615	104	90	63	30	38	1319	107	73	29	16	51	37
PST 55	2.26	4.65	0.490	2.74	70.47	16.21	1.30	0.0475	1.27	0.40	162	219	99	63	69	30	30	742	96	53	28	11	32	14
PST 47	3.26	4.86	0.413	2.86	66.56	18.38	1.30	0.0816	1.80	0.33	101	343	72	55	30	10	28	752	99	44	15	8	9	17
PST 46	3.40	6.58	0.457	2.11	60.75	19.99	3.62	0.1769	2.20	0.56	124	227	70	89	42	24	29	672	124	53	34	22	24	28
PST 44	3.70	6.75	0.576	2.23	63.99	18.46	1.77	0.1189	1.84	0.39	133	357	66	59	51	21	33	623	167	49	21	8	12	48
PST 43	3.51	5.32	0.667	4.21	62.64	18.48	1.06	0.0843	2.94	0.76	174	1001	107	74	44	19	53	1504	165	103	32	15	39	58
PST 49	3.25	5.56	0.593	3.92	63.14	18.63	0.94	0.0803	2.91	0.67	155	980	103	70	40	14	56	1386	161	100	25	21	38	44
PST 30	2.86	5.50	0.588	3.60	64.94	17.92	1.11	0.0753	2.72	0.39	214	766	103	69	53	20	42	1170	142	77	23	21	32	49
PST 10	12.50	4.09	0.467	2.77	61.82	14.48	1.17	0.0733	1.90	0.51	144	447	124	56	70	40	37	1128	64	69	19	14	26	40
PST 11	13.68	4.83	0.550	2.91	58.87	14.89	1.68	0.1036	1.82	0.43	157	643	122	72	110	71	33	1062	83	71	19	17	20	45
PST 13	13.26	6.50	0.792	3.18	54.11	16.31	3.76	0.1086	1.33	0.42	171	252	133	96	149	90	43	1012	125	78	23	17	34	57
PST 14	14.10	6.02	0.717	2.41	57.85	15.14	2.01	0.1122	1.20	0.27	155	384	95	94	78	42	24	527	133	61	22	13	17	54
PST 36	12.59	6.88	0.735	2.47	58.99	14.01	3.17	0.1831	0.41	0.34	177	208	104	84	535	332	34	704	118	63	28	17	17	36
PST 50	3.19	7.34	0.729	2.47	63.81	17.34	2.46	0.1576	1.69	0.63	132	198	86	193	81	40	30	873	129	40	31	9	88	32

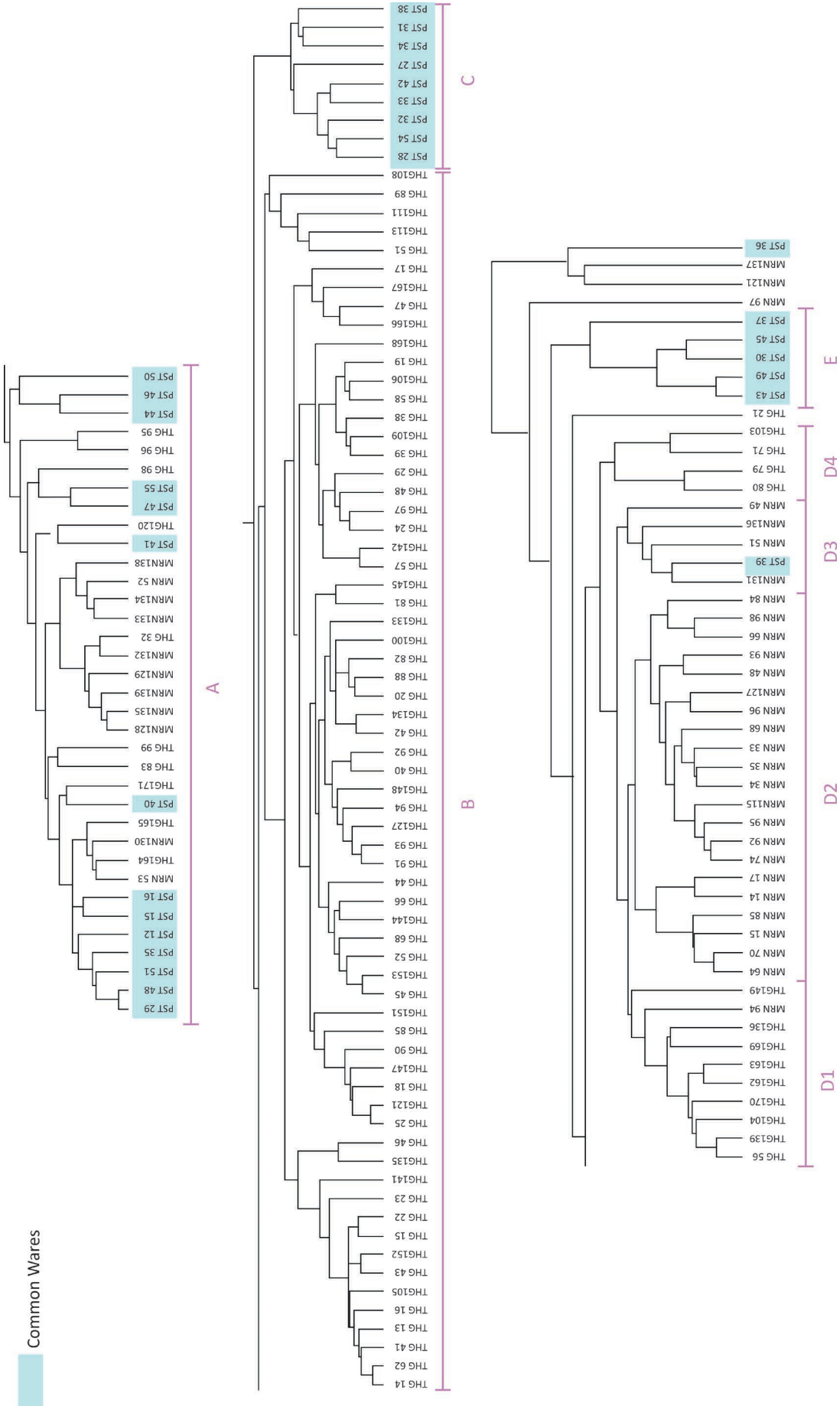


Plate II. *Pistiros: common wares vs. North-Aegean references. Dendrogramme of the XRF chemical data.*

List of chemical data in the order of the dendrogramme.

Nom	CaO	Fe_2O_3	TiO_2	K_2O	SiO_2	Al_2O_3	MgO	MnO	Na_2O	P_2O_5	Zr	Sr	Rb	Zn	Cr	Ni	La	Ba	V	Ce	Y	Th	Pb	Cu
PST 29	2.43	6.09	0.605	2.74	64.89	17.95	2.18	0.1397	2.57	0.20	189	369	130	90	58	27	50	928	105	78	32	25	41	24
PST 48	2.46	6.11	0.602	2.77	64.98	17.93	2.13	0.1436	2.42	0.23	188	381	123	92	58	27	42	1006	104	80	33	16	41	19
PST 51	2.72	5.45	0.579	2.94	65.33	17.64	2.09	0.0900	2.41	0.51	190	424	117	96	60	26	39	1079	109	78	30	18	44	22
PST 35	2.32	5.86	0.663	2.89	64.13	18.79	2.32	0.0988	2.49	0.22	171	325	142	95	68	30	47	864	109	85	34	24	40	26
PST 12	2.09	6.15	0.703	2.53	63.55	19.19	2.65	0.1141	2.68	0.15	202	276	124	86	69	34	56	763	114	102	36	28	45	45
PST 15	2.09	5.13	0.612	2.39	65.75	18.09	2.15	0.0738	3.05	0.45	187	322	99	112	60	28	53	956	92	87	32	24	40	41
PST 16	2.08	4.72	0.647	2.27	66.72	17.83	1.88	0.1349	2.92	0.59	196	270	102	73	55	27	50	1127	84	86	31	24	42	42
MRN 53	3.77	5.42	0.715	2.43	64.55	18.15	1.76	0.0899	2.78	0.15	205	320	110	66	98	70	44	765	87	74				
THG164	2.83	4.98	0.669	2.70	66.42	17.70	1.90	0.0891	1.91	0.61	200	336	116	85	110	67	39	739	85	90	26	10	36	31
MRN130	5.05	5.04	0.618	2.80	65.40	17.09	1.79	0.0787	1.77	0.20	178	270	127	71	89	71	32	704	91	75				
THG165	4.52	5.75	0.693	2.40	62.74	18.78	2.24	0.0904	2.22	0.38	167	332	108	87	116	61	41	692	87	94	28	9	48	31
PST 40	1.57	6.12	0.716	2.78	65.89	18.50	2.26	0.0986	1.78	0.12	210	151	146	92	86	39	36	569	119	74	33	15	39	20
THG171	5.57	5.67	0.725	3.49	63.67	16.68	2.63	0.0695	0.91	0.42	178	159	135	110	88	51	39	618	98	92	26	9	38	40
THG 83	2.02	4.90	0.558	2.56	66.73	19.05	1.47	0.0316	0.43	2.07	184	134	83	64	62	50	46	985	80	77				
THG 99	1.58	6.21	0.729	2.41	67.96	18.28	1.48	0.0646	0.27	0.89	168	94	88	92	123	100	48	469	101	78				
MRN128	9.01	5.12	0.594	2.86	62.02	16.07	2.03	0.0768	1.88	0.18	153	316	129	80	98	86	33	695	80	63				
MRN135	8.37	5.14	0.630	2.66	62.25	16.46	2.04	0.0846	2.02	0.17	167	395	119	73	94	83	31	690	85	67				
MRN139	6.64	5.55	0.662	2.91	62.96	16.90	2.27	0.0762	1.63	0.20	171	387	129	90	108	90	42	748	90	67				
MRN129	7.94	4.50	0.551	3.08	64.58	15.56	1.60	0.0691	1.79	0.14	157	272	117	67	89	82	26	816	81	62				
MRN132	10.60	5.35	0.632	2.41	59.84	16.51	2.21	0.0693	2.07	0.15	167	366	94	72	109	85	32	557	93	65				
THG 32	9.98	4.99	0.576	2.74	61.38	15.83	2.01	0.0807	1.88	0.38	152	322	98	62	103	77	37	596	89	76				
MRN133	6.07	5.81	0.683	2.65	64.02	16.26	2.54	0.1139	1.48	0.17	198	251	109	85	152	119	31	762	109	61				
MRN134	5.31	5.85	0.719	2.47	64.39	15.65	3.06	0.1165	2.08	0.16	200	260	104	79	198	161	36	582	114	66				
MRN 52	6.46	6.45	0.736	2.22	63.49	16.64	2.16	0.1431	1.40	0.15	176	227	115	98	144	109	33	574	112	68				
MRN138	6.42	6.25	0.648	2.63	61.75	17.66	2.79	0.0668	1.38	0.19	161	271	123	88	147	160	37	876	114	70				
PST 41	2.19	4.51	0.777	3.41	65.48	19.18	1.41	0.0915	2.45	0.31	214	294	163	93	70	25	41	912	93	68	34	20	40	21
THG120	2.43	4.53	0.685	3.86	64.47	20.96	1.35	0.0456	0.26	1.22	169	130	142	65	127	98	46	869	94	69				
PST 47	3.26	4.86	0.413	2.86	66.56	18.38	1.30	0.0816	1.80	0.33	101	343	72	55	30	10	28	752	99	44	15	8	9	17
PST 55	2.26	4.65	0.490	2.74	70.47	16.21	1.30	0.0475	1.27	0.40	162	219	99	63	69	30	30	742	96	53	28	11	32	14
THG 98	4.25	3.50	0.563	3.63	68.22	16.19	2.52	0.0784	0.51	0.43	168	62	129	36	64	41	23	291	81	57				

Nom	CaO	Fe_2O_3	TiO_2	K_2O	SiO_2	Al_2O_3	MgO	MnO	Na_2O	P_2O_5	Zr	Sr	Rb	Zn	Cr	Ni	La	Ba	V	Ce	Y	Th	Pb	Cu
THG 96	9.59	4.93	0.694	2.02	63.25	14.04	2.67	0.1194	0.73	1.73	165	295	62	69	136	108	24	1102	90	73				
THG 95	10.31	4.69	0.638	1.97	63.94	12.84	3.59	0.0813	1.29	0.49	179	359	52	62	149	98	21	626	75	68				
PST 44	3.70	6.75	0.576	2.23	63.99	18.46	1.77	0.1189	1.84	0.39	133	357	66	59	51	21	33	623	167	49	21	8	12	48
PST 46	3.40	6.58	0.457	2.11	60.75	19.99	3.62	0.1769	2.20	0.56	124	227	70	89	42	24	29	672	124	53	34	22	24	28
PST 50	3.19	7.34	0.729	2.47	63.81	17.34	2.46	0.1576	1.69	0.63	132	198	86	193	81	40	30	873	129	40	31	9	88	32
THG 14	0.52	6.47	0.920	3.91	63.18	22.57	1.47	0.1109	0.42	0.22	314	93	178	124	74	65	79	804	93	111				
THG 62	0.72	6.27	0.945	3.96	62.75	22.55	1.56	0.1005	0.74	0.21	323	95	181	127	75	60	74	828	95	110				
THG 41	0.83	6.62	1.000	3.78	62.45	22.70	1.28	0.1070	0.41	0.63	326	97	177	135	84	73	72	854	100	102				
THG 13	0.79	6.78	0.955	4.01	61.57	23.18	1.53	0.1080	0.35	0.53	314	100	190	135	76	70	80	917	103	117				
THG 16	0.90	6.29	0.951	4.18	62.78	22.05	1.57	0.1079	0.53	0.44	342	106	193	130	77	68	85	944	90	121				
THG105	0.99	7.11	0.971	3.87	60.37	23.74	1.79	0.1233	0.38	0.44	304	98	186	152	82	71	78	905	94	107				
THG 43	0.81	6.74	1.003	3.73	62.36	22.64	1.55	0.1093	0.51	0.35	324	99	180	134	86	73	61	797	122	112				
THG152	1.01	6.90	1.009	3.51	61.74	22.51	1.39	0.1273	0.81	0.78	314	106	190	148	79	87	81	813	119	106				
THG 15	0.73	6.83	0.951	3.69	62.18	23.12	1.50	0.1081	0.48	0.22	290	92	170	131	83	67	72	759	113	107				
THG 22	0.90	6.75	0.973	3.59	62.20	22.92	1.29	0.0871	0.33	0.75	295	97	161	121	86	64	68	952	99	109				
THG 23	0.78	7.42	1.077	3.32	60.47	24.45	1.58	0.0666	0.24	0.42	300	83	170	136	97	71	73	718	128	102				
THG141	1.23	6.82	1.024	3.47	59.69	22.47	0.92	0.0500	0.32	3.77	335	118	152	104	92	71	62	1266	87	104				
THG135	0.91	6.03	0.740	3.88	60.01	25.94	1.23	0.0310	0.63	0.43	202	80	157	96	62	45	65	845	73	101				
THG 46	1.60	5.69	0.800	3.92	60.26	24.24	0.81	0.0332	0.42	2.03	254	127	148	109	62	47	71	1058	88	110				
THG 25	0.92	6.66	0.799	2.92	62.69	22.45	2.55	0.1147	0.58	0.17	226	72	114	115	97	62	65	526	115	92				
THG121	1.01	6.38	0.802	2.99	62.30	22.71	2.74	0.1096	0.63	0.18	239	75	116	109	100	62	51	536	110	89				
THG 18	1.11	6.20	0.817	3.29	61.29	23.39	2.63	0.1022	0.63	0.38	249	80	123	121	91	67	67	672	89	89				
THG147	1.47	6.79	0.864	3.11	62.13	21.61	2.19	0.0921	1.23	0.33	239	105	117	104	97	88	70	745	100	86				
THG 90	0.88	5.65	0.740	3.02	65.12	21.30	2.20	0.0945	0.73	0.11	228	89	111	100	91	65	60	572	90	87				
THG 85	3.03	4.97	0.643	3.05	61.50	22.82	1.64	0.1059	0.29	1.79	224	84	108	145	74	53	60	773	76	93				
THG151	1.77	5.97	0.691	2.77	62.62	23.37	0.83	0.0415	0.64	1.14	173	99	110	92	60	80	52	808	79	73				
THG 45	2.13	6.29	0.895	2.84	61.61	21.28	1.05	0.0507	0.56	3.08	276	161	98	133	96	70	61	1036	86	83				
THG153	1.81	6.25	0.902	2.80	62.55	21.11	1.11	0.0507	0.88	2.34	280	140	110	139	92	86	63	868	96	86				
THG 52	2.08	6.63	0.906	2.99	62.50	20.75	1.53	0.0804	0.77	1.54	272	132	102	107	91	72	68	1201	88	91				
THG 68	1.37	5.78	0.857	2.67	65.03	19.42	0.86	0.0584	0.49	3.23	278	138	93	127	88	66	58	1219	81	101				
THG144	2.36	6.25	0.834	2.43	63.13	19.39	1.55	0.0923	0.75	2.97	237	135	102	137	84	87	64	1245	106	87				
THG 66	1.84	6.86	0.817	2.54	58.66	21.13	1.22	0.0692	0.50	6.11	237	187	96	123	104	82	66	1420	88	90				
THG 44	2.05	6.53	0.795	2.56	64.11	19.77	1.14	0.1082	0.49	2.26	222	117	88	115	99	71	51	850	88	97				

Nom	CaO	Fe_2O_3	TiO_2	K_2O	SiO_2	Al_2O_3	MgO	MnO	Na_2O	P_2O_5	Zr	Sr	Rb	Zn	Cr	Ni	La	Ba	V	Ce	Y	Th	Pb	Cu
THG 91	2.28	7.42	0.961	2.95	60.75	21.42	1.73	0.1149	0.74	1.40	275	130	100	127	101	86	61	1226	94	101				
THG 93	2.42	7.34	0.946	3.02	60.73	21.40	1.94	0.1175	0.85	1.03	272	118	108	137	102	84	62	1204	119	100				
THG127	2.12	7.55	0.967	2.62	59.53	21.29	2.40	0.1036	0.95	2.26	244	144	103	145	106	84	65	1109	106	92				
THG 94	2.55	7.24	0.870	2.65	60.55	21.31	2.35	0.0784	0.97	1.24	227	127	114	124	107	81	53	982	109	89				
THG148	2.09	7.64	0.877	2.34	61.03	21.90	1.74	0.1420	0.76	1.27	226	106	93	122	106	104	71	1139	95	86				
THG 40	1.04	8.10	0.933	2.60	60.59	23.25	2.33	0.1405	0.62	0.24	254	83	111	130	113	95	55	606	109	104				
THG 92	1.40	7.65	0.926	2.76	61.86	21.80	2.21	0.1315	0.78	0.30	234	91	123	145	105	91	59	713	111	90				
THG 42	1.78	6.40	0.956	3.11	62.83	21.70	1.20	0.0714	0.47	1.27	296	110	137	118	83	69	71	911	105	100				
THG134	0.71	6.47	0.944	3.32	64.68	21.54	1.46	0.0869	0.45	0.17	288	90	149	111	78	63	62	663	114	102				
THG 20	1.16	7.70	1.019	3.29	61.06	22.54	1.54	0.0885	0.65	0.77	293	96	138	131	102	90	77	733	92	102				
THG 88	1.39	7.52	0.996	2.94	60.98	22.42	2.02	0.0904	0.88	0.56	295	109	123	118	105	77	60	920	99	97				
THG 82	1.64	7.32	1.061	3.09	58.69	23.23	1.93	0.0955	0.88	1.85	275	125	132	149	116	81	72	977	109	95				
THG100	1.76	6.29	0.873	3.03	59.98	23.30	1.69	0.1279	0.95	1.79	258	116	124	139	99	72	61	880	109	98				
THG133	1.57	7.42	1.050	3.06	61.15	21.09	2.97	0.0909	1.21	0.20	273	128	142	110	99	57	60	697	136	98				
THG 81	1.30	6.57	0.849	2.68	62.87	21.90	1.65	0.1225	0.58	1.30	249	109	105	193	93	77	72	827	82	103				
THG145	1.74	6.55	0.871	2.83	63.15	20.47	1.77	0.1623	0.78	1.46	255	117	138	169	86	87	79	996	110	100				
THG 57	1.66	5.38	0.827	2.94	66.95	18.23	1.32	0.0409	1.29	1.15	255	144	95	76	72	49	54	1133	85	96				
THG142	1.56	5.23	0.828	2.91	67.03	18.17	1.38	0.0399	1.47	1.17	241	139	104	80	66	70	75	1099	87	80				
THG 24	1.67	5.40	0.778	3.44	66.52	18.82	1.17	0.0901	0.80	1.12	255	135	114	107	76	69	73	917	79	95				
THG 97	2.56	5.92	0.826	3.25	63.35	19.27	2.11	0.0879	1.28	1.14	232	163	119	115	96	76	62	894	92	90				
THG 48	1.38	7.12	0.879	3.18	64.08	18.48	1.39	0.0884	1.38	1.82	247	128	128	107	108	81	57	795	104	97				
THG 29	0.83	5.75	0.813	3.82	66.87	19.40	1.52	0.0975	0.50	0.22	283	91	149	106	61	64	61	774	78	105				
THG 39	0.48	4.68	0.854	2.97	70.00	19.58	0.81	0.0163	0.31	0.16	294	59	103	136	74	50	62	467	88	92				
THG109	0.80	5.67	0.845	2.65	69.07	18.63	0.92	0.0271	0.58	0.64	285	86	106	115	82	47	56	669	89	89				
THG 38	0.63	4.71	0.757	2.98	70.38	18.94	0.80	0.0139	0.47	0.18	265	71	92	108	78	48	61	455	71	87				
THG 58	0.94	5.49	0.796	2.79	69.38	17.84	1.51	0.0552	0.91	0.14	246	95	110	91	79	56	47	599	99	92				
THG106	0.59	5.01	0.786	3.01	69.29	19.31	1.21	0.0940	0.45	0.10	252	64	117	113	66	52	62	500	102	98				
THG 19	0.63	6.52	0.833	2.54	68.94	18.31	1.24	0.0688	0.59	0.19	265	72	113	120	86	72	61	507	105	99				
THG168	1.66	4.84	0.696	3.12	67.67	19.16	1.36	0.0575	1.07	0.20	241	101	154	76	65	34	59	724	74	110	32	17	44	22
THG166	1.68	7.18	0.830	2.60	62.54	21.99	1.27	0.0795	1.03	0.60	194	313	127	93	166	135	51	689	114	93	33	13	57	42
THG 47	3.54	6.62	0.782	2.90	61.86	20.10	1.61	0.0743	1.58	0.75	206	332	120	88	131	102	43	805	100	74				
THG167	8.00	7.10	0.783	2.24	56.21	20.62	1.85	0.0754	1.24	1.68	197	272	100	93	156	103	39	697	89	81	33	20	32	59
THG 17	3.22	7.54	0.902	2.84	61.97	19.47	1.71	0.1233	0.86	1.20	165	152	78	121	172	107	41	728	103	67				

Nom	CaO	Fe_2O_3	TiO_2	K_2O	SiO_2	Al_2O_3	MgO	MnO	Na_2O	P_2O_5	Zr	Sr	Rb	Zn	Cr	Ni	La	Ba	V	Ce	Y	Th	Pb	Cu
THG 51	0.35	4.19	0.641	3.36	69.37	20.81	0.74	0.0190	0.20	0.18	226	46	109	156	63	46	56	403	70	91				
THG113	1.05	5.65	0.674	2.33	66.14	21.46	2.05	0.0974	0.16	0.25	224	57	96	190	66	68	84	399	81	99				
THG111	1.58	4.88	0.698	2.95	68.30	17.98	0.91	0.0279	0.56	1.88	226	120	102	190	58	49	57	1226	69	76				
THG 89	0.52	6.30	0.562	1.77	68.56	21.31	0.72	0.0178	0.00	0.16	122	31	88	136	83	63	67	198	80	80				
THG108	2.24	6.96	0.719	1.83	62.34	21.55	0.73	0.0339	0.09	3.27	194	89	83	141	93	71	54	1544	89	69				
PST 28	3.67	6.94	0.798	3.46	59.44	19.69	3.11	0.1972	1.53	0.91	163	274	150	133	95	46	45	1305	158	94	37	28	46	43
PST 54	2.21	6.76	0.825	3.09	62.85	19.45	2.19	0.1993	1.82	0.36	195	327	142	127	83	40	58	942	140	98	38	23	55	39
PST 32	1.92	7.16	0.829	3.09	61.41	20.84	2.00	0.2677	1.92	0.30	164	430	147	144	80	38	67	1039	144	115	35	37	73	67
PST 33	3.90	7.50	0.835	3.59	57.78	19.94	4.09	0.1704	1.56	0.43	143	176	170	144	103	53	43	744	143	93	38	28	39	36
PST 42	2.89	6.70	0.763	3.44	59.20	21.78	2.77	0.1542	1.41	0.68	133	262	154	120	77	38	65	895	127	106	36	28	45	29
PST 27	6.50	6.18	0.679	3.34	58.31	18.95	3.85	0.1667	1.42	0.40	100	221	187	114	79	40	37	791	115	65	29	26	37	30
PST 34	6.85	6.48	0.779	3.55	59.29	16.78	3.88	0.1162	1.46	0.51	181	476	153	87	137	107	48	1104	137	89	25	29	30	435
PST 31	3.24	6.48	0.877	3.58	62.22	17.60	1.82	0.1591	1.87	1.89	212	481	122	94	93	40	38	1417	141	75	30	19	26	40
PST 38	6.14	7.54	0.774	3.47	56.75	18.77	3.69	0.1411	1.22	1.21	133	333	149	140	99	52	50	1555	170	71	36	17	30	41
THG 56	6.94	7.97	0.945	3.57	55.71	17.99	4.32	0.1088	1.39	0.87	193	182	136	117	184	131	32	764	132	79				
THG139	6.40	7.70	0.923	3.70	55.98	17.92	4.77	0.1183	1.29	1.01	187	164	138	138	173	119	40	796	119	78				
THG104	7.03	7.72	0.943	3.37	53.22	20.19	4.21	0.1316	0.95	2.02	172	194	109	126	189	133	38	914	122	69				
THG170	4.90	7.89	0.952	3.24	56.60	19.66	4.66	0.1605	1.15	0.58	184	141	107	124	180	123	42	649	141	88	31	0	306	46
THG162	6.27	8.20	0.921	3.49	53.39	20.75	3.46	0.1215	1.41	1.78	209	159	136	126	159	99	43	680	109	92	36	17	42	67
THG163	6.82	7.76	0.867	3.47	54.90	19.62	3.97	0.1285	1.76	0.51	192	184	134	143	156	88	45	556	134	95	35	16	37	93
THG169	8.50	6.78	0.774	3.98	57.15	17.11	3.82	0.1093	1.35	0.25	175	149	145	102	126	69	28	493	143	85	29	13	32	47
THG136	5.56	7.43	0.957	4.24	55.91	18.24	5.57	0.0820	1.24	0.59	196	138	151	89	175	125	31	595	134	69				
MRN 94	6.30	8.72	0.788	3.81	52.47	21.48	5.19	0.1152	0.78	0.14	185	117	163	121	292	160	28	774	146	40				
THG149	7.26	6.66	0.895	2.93	56.05	20.03	2.87	0.1157	1.23	1.77	230	139	110	210	96	68	50	828	92	87				
MRN 64	6.41	8.09	0.762	2.12	57.73	18.52	4.97	0.1575	0.89	0.17	156	165	87	137	260	145	20	622	148	45				
MRN 70	8.57	8.17	0.777	2.10	56.70	17.68	4.63	0.1449	0.88	0.16	147	192	102	131	246	138	20	590	161	49				
MRN 15	7.99	8.27	0.837	2.17	55.55	18.42	5.85	0.1100	0.36	0.26	176	158	73	107	287	154	18	598	154	54				
MRN 85	4.92	8.77	0.805	2.51	56.92	18.91	5.79	0.1360	0.83	0.23	169	195	105	127	315	169	26	568	168	46				
MRN 14	13.99	7.34	0.686	1.81	53.17	18.08	4.20	0.1462	0.31	0.12	141	162	65	119	211	122	5	491	130	59				
MRN 17	15.35	7.31	0.711	2.00	50.64	19.13	4.00	0.1459	0.39	0.14	141	141	75	169	265	141	1	544	135	56				
MRN 74	8.31	8.52	0.831	2.71	54.16	20.18	3.84	0.2046	0.86	0.20	191	192	117	148	205	124	25	649	165	58				
MRN 92	8.00	9.32	0.858	2.91	52.94	20.91	3.47	0.2072	0.78	0.44	161	142	124	147	175	121	39	638	175	60				
MRN 95	6.11	9.10	0.873	2.84	54.06	22.04	3.64	0.2487	0.73	0.17	186	143	125	153	179	117	34	629	156	52				

Nom	CaO	Fe_2O_3	TiO_2	K_2O	SiO_2	Al_2O_3	MgO	MnO	Na_2O	P_2O_5	Zr	Sr	Rb	Zn	Cr	Ni	La	Ba	V	Ce	Y	Th	Pb	Cu
MRN115	9.82	8.02	0.932	3.00	52.48	21.54	3.09	0.2373	0.57	0.12	184	128	143	152	165	125	61	643	185	65				
MRN 34	3.63	8.84	0.839	2.31	59.29	19.06	4.18	0.1576	1.28	0.23	164	203	96	131	213	133	23	621	177	50				
MRN 35	4.39	8.46	0.909	2.46	58.40	20.49	3.46	0.1822	0.84	0.22	197	160	116	127	192	124	42	587	186	69				
MRN 33	5.12	8.36	0.905	2.51	57.99	19.60	3.78	0.2194	0.99	0.33	178	199	122	131	215	138	32	889	164	50				
MRN 68	3.14	8.67	0.796	2.35	62.38	18.31	2.73	0.2458	1.07	0.15	173	175	115	135	150	104	31	513	171	54				
MRN 96	12.64	8.33	0.807	2.59	52.65	18.32	3.03	0.1792	1.04	0.26	150	171	120	128	128	87	24	546	150	59				
MRN127	10.11	8.59	0.767	2.40	55.10	18.02	3.19	0.2010	1.05	0.44	155	120	95	156	124	82	29	388	182	54				
MRN 48	3.87	9.65	0.835	2.92	56.39	20.39	3.89	0.1586	1.58	0.12	152	165	103	190	177	103	31	624	172	52				
MRN 93	5.97	9.41	0.818	2.74	54.14	20.47	4.77	0.1580	1.04	0.28	158	165	125	212	279	159	24	611	180	45				
MRN 66	3.61	8.94	0.914	3.02	58.57	20.38	3.03	0.2768	0.92	0.16	188	159	144	148	167	115	38	644	188	64				
MRN 98	2.41	9.17	0.897	2.81	59.89	20.80	2.54	0.3584	0.84	0.10	199	146	126	153	157	120	47	572	180	66				
MRN 84	2.08	8.52	1.023	3.42	60.19	20.35	2.65	0.2089	1.23	0.16	218	105	165	128	148	128	43	561	183	77				
MRN131	7.60	7.33	0.762	2.53	60.58	15.90	3.29	0.1218	1.47	0.21	151	335	98	101	211	197	29	724	157	61				
PST 39	4.16	7.60	0.832	2.98	61.91	18.19	2.65	0.1335	0.95	0.36	170	200	142	87	266	168	44	801	159	74	32	10	23	45
MRN 51	5.52	6.51	0.789	2.33	67.08	13.89	2.31	0.1042	1.12	0.17	195	151	121	88	249	211	29	468	100	57				
MRN136	6.20	6.15	0.749	2.44	63.98	15.35	2.97	0.2856	1.44	0.23	187	246	102	88	186	191	32	831	121	73				
MRN 49	15.14	6.47	0.764	2.84	52.06	17.69	3.93	0.1345	0.55	0.22	171	256	141	92	262	199	32	596	132	85				
THG 80	3.55	9.41	1.119	3.87	49.06	22.14	3.66	0.1085	1.04	5.76	199	183	140	211	214	158	45	1405	114	73				
THG 79	3.88	9.45	1.136	3.43	49.64	21.69	4.98	0.1099	1.06	4.37	180	186	117	177	223	158	57	1378	130	87				
THG 71	9.48	8.79	1.020	2.40	47.37	20.03	5.30	0.1011	0.96	4.28	174	217	41	143	213	134	39	1596	140	79				
THG103	10.68	8.24	0.957	2.47	50.12	18.73	5.23	0.1523	1.33	1.86	160	213	91	121	188	113	31	1242	149	86				
THG 21	2.96	9.59	1.201	1.82	58.37	20.37	2.13	0.0635	2.05	1.27	232	176	59	83	138	52	46	703	194	71				
PST 43	3.51	5.32	0.667	4.21	62.64	18.48	1.06	0.0843	2.94	0.76	174	1001	107	74	44	19	53	1504	165	103	32	15	39	58
PST 49	3.25	5.56	0.593	3.92	63.14	18.63	0.94	0.0803	2.91	0.67	155	980	103	70	40	14	56	1386	161	100	25	21	38	44
PST 30	2.86	5.50	0.588	3.60	64.94	17.92	1.11	0.0753	2.72	0.39	214	766	103	69	53	20	42	1170	142	77	23	21	32	49
PST 45	2.29	5.15	0.516	3.42	66.25	17.82	1.29	0.0878	2.41	0.48	158	615	104	90	63	30	38	1319	107	73	29	16	51	37
PST 37	3.77	5.78	0.548	2.89	63.94	16.66	1.33	0.1049	2.40	2.17	133	696	80	64	47	23	31	2874	125	48	21	7	20	46
MRN 97	24.15	6.36	0.691	2.24	46.19	16.44	2.89	0.1097	0.57	0.22	140	119	100	199	102	70	6	579	138	47				
MRN121	15.81	6.88	0.518	1.01	52.23	14.62	8.21	0.0918	0.27	0.17	98	124	56	125	591	223	22	371	130	28				
MRN137	4.92	8.77	0.879	0.85	55.50	22.17	5.63	0.1090	0.96	0.06	142	118	47	78	512	215	20	217	191	36				
PST 36	12.59	6.88	0.735	2.47	58.99	14.01	3.17	0.1831	0.41	0.34	177	208	104	84	535	332	34	704	118	63	28	17	17	36

FIBULE CARE (NE) PRIVESC

CONECTIVITĂȚI SUPRAREGIONALE DIN PERSPECTIVA FIBULELOR CU OCHI (*AUGENFIBELN*) DIN ROMÂNIA

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Keywords: *Eye fibulae (Augenfibeln), Early Roman period, Romania, supraregional connectivities, research history*
Abstract: *At the current stage of the research, nine fibulae have been identified on the current territory of Romania that can be classified in the third series of Oscar Almgren's classification (eye-fibulae). These fibulae illustrate four distinct types (Almgren 45, 52, 53 and 57–59) and come from five different sites (Appendix 1). The fibula from Zalău (Fig. 1/9) belongs to an early type (Almgren 45) and can be framed in the B1 phase of the Roman Period. All other eye fibulae (Fig. 1/1–8) belong to types specific to the B1b and B2a phases of the Roman Period. Except for the fibula from Zalău, which comes from the intra-Carpathian region, the others have been discovered inside or in the immediate vicinity of extra-Carpathian settlements that were inhabited before the foundation of the Roman province of Dacia. Three specimens (of different types) were discovered in Ocnița and other three in Poiana. From each other site comes only one eye-fibula. So far, eye fibulae have not been discovered incontexts of the Province of Dacia. Most likely, the founding of this province represents a* terminus ante quem *for the production and use of eye fibulae in southeastern Europe.*

The distribution of late types of eye fibulae in Moesia (Fig. 3) can be correlated with the expansion of Roman military control along the lower Danube east of Oescus after 46 AD. This raises the question of whether the presence of several eye-fibulae at Ocnița and Poiana (Fig. 3/15–16) can be correlated with the movements of some Roman military detachments to Buridava and Piroboridava (Huntis pridianum). *This tempting hypothesis is difficult to prove. The chronological framing of the eye-fibulae from Poiana and Ocnița does not contradict this hypothesis. The Roman cultural influence in these two north-Danubian centres can be convincingly supported archaeologically. The absence of eye-fibulae in Transylvania and, in particular, in the monumental centers of the Orăștie Mountains is significant. In fact, fibulae from the Early Roman Period are relatively rare in this region. It is likely that the Dacian power structure in south-western Transylvania was no longer able to connect to the supra-regional exchange networks of the second half of the first century AD. The Roman authorities were able to exercise firm control over the distribution of provincial goods. The hypothesis of an economic "war" prior to the Dacian-Roman Wars should not be neglected.*

It should be noted that the eye-fibulae from Poiana have different origins. Two of the specimens (those of Almgren 53 type, Fig. 1/5–6) come from provincial workshops (probably from Moesia). The Almgren 57–59 specimen (sample of Oscar Almgren's "Prussian" sub-series, Fig. 1/7) is possibly a product of the Wielbark or Dollkeim – Kovrovo groups. This specimen could have reached Poiana along the same routes, almost two centuries later, would be followed by the founders of the Sântana de Mureș – Chernyakhov culture (peregrinatio gothica). Thus, the Poiana center reveals itself to us as a crossroads of contacts between "north" and "south". Here the products of the two eye-fibulae manufacturing chains met: the "Classical" chain of the limes provinces and the "Prussian" (Gothic) chain of the Baltic regions. This aspect suggestively reflects the connection of the Poiana centre to the trans-continental networks for the distribution of prestigious goods at the end of the first century AD.

Cuvinte-cheie: *Fibule cu ochi (Augenfibeln), epoca imperială timpurie, România, conectivități supraregionale, istoricul cercetării*
Rezumat: *În stadiul actual al cercetării, nouă fibule cu ochi au fost identificate pe teritoriul actual al României și pot fi clasificate în seria a III-a a clasificării lui Oscar Almgren. Exemplarele din România ilustrează patru tipuri distincte (Almgren 45, 52, 53 și 57–59) și provin din cinci situri diferite (Anexa 1). Fibula din Zalău (Fig. 1/9) aparține unui tip timpuriu (Almgren 45) și poate fi încadrată în faza B1 a epocii romane imperiale. Toate celelalte fibule cu ochi (Fig. 1/1–8) aparțin tipurilor specifice fazelor B1b și B2a ale epocii imperiale. Cu excepția exemplarului de la Zalău, descoperit în regiunea intracarpatică, celelalte fibule au fost descoperite în interiorul sau imediat în apropierea așezărilor extracarpatice locuite înaintea întemeierii provinciei Dacia. Câte trei exemplare au fost descoperite la Ocnița și Poiana. La Brad și la Răcătău a fost descoperită câte o singură fibulă cu ochi. Până acum, fibulele cu ochi nu au fost descoperite în contextele provinciei romane Dacia. Cel mai probabil, fondarea acestei provincii reprezintă un* terminus ante quem *pentru producerea și utilizarea fibulelor cu ochi în sud-estul Europei.*

Distribuția tipurilor târzii ale fibulelor cu ochi în centre din Moesia (Fig. 3) poate fi corelată cu extinderea controlului militar roman de-a lungul Dunării Inferioare la est de Oescus după anul 46 p. Chr. Ne putem întreba dacă prezența mai multor fibule cu ochi la Ocnița și Poiana (Fig. 3/15–16) poate fi corelată cu deplasarea unor detașamente militare romane la Buridava și Piroboridava (Huntis pridianum). *Această ipoteză tentantă este greu de demonstrat. Încadrarea cronologică a fibulelor cu ochi de la Poiana și Ocnița nu contrazice însă această ipoteză. Influența culturală romană în centrele de la nord de Dunăre poate fi susținută convingător din punct de vedere arheologic. Absența fibulelor cu ochi în Transilvania și, în special, în centrele monumentale ale Munților Orăștie este semnificativă. De fapt, fibulele romane timpurii sunt relativ rare în această regiune. Probabil că structura de putere dacică din sud-vestul Transilvaniei nu s-a mai putut conecta la rețelele supra-regionale de schimb din a doua jumătate a secolului I p. Chr. Autoritățile romane puteau exercita un control ferm asupra distribuției bunurilor provinciale dincolo de* limes. *Ipoteza unui „război" economic anterior Războaielor Daco-Romane nu trebuie neglijată.*

Trebuie remarcată originea diferită a fibulelor cu ochi de la Poiana. Două dintre exemplare (cele de tip Almgren 53, Fig. 1/5–6) provin din ateliere provinciale (probabil din Moesia). Exemplarul de tip Almgren 57–59 (mostră a sub-seriei „prusace" din clasificarea lui Oscar Almgren, Fig. 1/7) a fost produs probabil în aria culturilor Wielbark sau Dollkeim – Korovovo și a putut ajunge la Poiana pe acele itinerarii care, aproape două secole mai târziu, aveau să fie urmate de întemeietorii culturii Sântana de Mureș – Chernyakhov (peregrinatio gothica). *Astfel, centrul Poiana ni se dezvăluie ca o răscruce a contactelor între „nord" și „sud". Aici s-au întâlnit produsele celor două filiere de manufacturare a fibulelor cu ochi: filiera „clasică" a provinciilor de pe limes și filiera „prusacă" (gotică) a regiunilor baltice. Acest aspect reflectă racordarea centrului de la Poiana la rețelele supraregionale de distribuție a bunurilor de prestigiu de la sfârșitul secolului I p. Chr.*

DEZBATERI ÎNDELUNGATE ÎN CERCETAREA INTERNAȚIONALĂ

Fibulele pot ridica vocea (*fibulae clamabunt*)[1], fibulele povestesc (*fibulae loquuntur*)[2], dar se întâmplă că fibulele ne mai și privesc. Și aceasta, în ambele înțelesuri pe care le îngăduie limba română: *fibulae ut res studiorum* (fibulele ca obiect de studiu), dar și *fibulae nos spectant* (fibule care ne observă), pentru că unele exemplare pot să aibă… ochi.

Termenul *Augenfibeln* („fibule cu ochi") a fost introdus în literatura de specialitate de limbă germană de către Richard Hausmann în anul 1896[3]. Denumirea a fost inspirată de ornamentele circulare perforate sau poansonate de pe corpul unor fibule de epocă imperială timpurie identificate inițial în Estonia. Arcul și piciorul acestor fibule au forma unei benzi, iar portagrafa prelungă este sau nu ajurată. Resortul se poate dezvolta în continuarea arcului (fibula este realizată dintr-un singur element din metal; germ. *eingliederig*) sau poate fi realizat separat (fibula se compune din două elemente din metal; germ. *zweigliederig*). Coarda resortului este sprijinită de un cârlig. Exemplarele lipsite de cârlig sunt rare. Cele mai multe fibule cu ochi au fost realizate din bronz; puține sunt exemplarele din argint[4] sau din fier.

În celebra sa clasificare, Oscar Almgren a inclus fibulele cu ochi în seria a III-a care reunește o (sub-)serie principală (*die Hauptserie*, figurile/tipurile 45–53)[5] și două (sub-)serii secundare: „livono-estoniană" (*die livländisch-estländische Nebenserie*, figurile/tipurile 55–56) și „prusacă" (*die preußische Nebenserie*, figurile/tipurile 57–63)[6]. Cercetările ulterioare au relevat diversitatea tehnologică, morfologică și ornamentală a fibulelor „cu ochi" și au aprofundat cronologia diferitelor tipuri sau variante[7].

Principalul criteriu de clasificare a tipurilor din seria a III-a a fost modul de redare a ochilor: perforații deschise lateral, situate la marginea bazei plăcii arcului (tipul Almgren 45), perforații închise situate în interiorul bazei plăcii arcului (tipurile Almgren 46–47), perechi de cercuri concentrice poansonate, uneori plasate în mici alveole (tipurile Almgren 48–52)[8]. Unul dintre paradoxurile taxonomice ale fibulelor cu ochi a fost determinarea unei categorii de exemplare „lipsite de ochi" (germ. *mit verschwundenen Augen*, *Augenfibeln ohne Augen*, *Augenlose Augenfibeln*)[9]. Fibulele „fără ochi" ale sub-seriei principale corespund tipului Almgren 53[10].

Determinarea surselor de inspirație pentru morfologia fibulelor cu ochi din seria principală este problematică[11]. Susceptibile predecesoare ale fibulelor cu ochi (denumite impropriu „prototipuri") au fost considerate tipurile Almgren 18, 21–22[12] și, în special, Almgren 44[13]. Analogiile strânse dintre tipurile Almgren 44 și Almgren 45/46 (formele timpurii ale sub-seriei clasice/principale) i-au determinat pe unii autori să le omologheze pe cele dintâi ca fibule cu ochi[14]. În orice caz, tipul Almgren 44 se distinge ca formă intermediară între fibulele sinuoase (germ. *geschweifte Fibeln*)[15] și fibulele cu ochi timpurii[16]. Tranziția de la exemplarele cu arcul îngust (Walther-Schierl – varianta I / Almgren 44a) datate în faza B1a la exemplarele cu arcul lat (Walther-Schierl – varianta II / Almgren 44b), datate atât în faza B1a, cât și în faza B1b, pare să fi stimulat apariția fibulelor cu ochi „vest-germanice" (Almgren 47). Cele mai târzii fibule Almgren 44 (Walther-Schierl – varianta III, germ. *Fibeln mit tradierter sichelförmiger Zier* – fibule cu ornamente reliefate în formă de seceră) sunt specifice fazei B1b, când se datează și majoritatea fibulelor cu ochi clasice timpurii[17]. Cu alte cuvinte, cele două tradiții morfologice s-au putut influența reciproc.

Dinamica spectaculoasă a producției și răspândirii fibulelor cu ochi a fost analizată aprofundat de Erhard Cosack și de Emilie Riha la sfârșitul anilor '70 ai secolului trecut și a fost nuanțată de contribuții ulterioare. Prototipurile fibulelor cu ochi (în particular tipul Almgren 44) și forma clasică cea mai timpurie (Almgren 45) au fost concepute în Germania centrală la începutul epocii imperiale timpurii (faza B1a)[18]. Modelul a fost preluat curând de atelierele din provinciile *limes*-ului renan și de la Dunărea superioară și mijlocie, unde repertoriul formal și ornamental a fost diversificat prin tehnici elaborate. În acest context au fost manufacturate formele Almgren 45–50

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1 Spânu 2021.

2 Iarmulschi, Munteanu 2025.

3 Hausmann 1896, p. 22–24, acceptat de Almgren 1897 (lucrare de doctorat susținută la Upsala), Kiekebusch 1908, Schwantes 1924 ș.a.; *cf.* Almgren 1923, p. 21–22, p. 247. Diferite versiuni ale istoricului cercetării pot fi regăsite la Peškař 1972, p. 70–71; Cosack 1979, p. 59, Kunow 1998b; Schuster 2006, p. 21–27; Walther, Schierl 2018, p. 92–93.

4 Cosack 1979, p. 64; Droberjar 2023, p. 131–133.

5 Almgren 1923, p. 23–28.

6 Almgren 1923, p. 28–33; *cf.* Kunow 1998b, p. 94; Völling 2005, p. 80. Trebuie semnalat tabelul de concordanță dintre diferitele clasificări, propus de Schuster 2006, p. 26, tab. 2.

7 Kunow 1998b, p. 95–104; distincții morfologice semnificative au efectuat: Schwantes 1924; Jamka 1964; Ambroz 1966, p. 35; Peškař 1972, p. 70–74; Ettlinger 1973, p. 68–69; Cosack 1979, p. 58–65; Riha 1979, p. 68–70; Pfeiffer-Frobnert 1998; Mączyńska 2004; Völling 2005; Chilińska-Früboes 2017; Walther, Schierl 2018, p. 94–99; Droberjar 2023, p. 132–133.

8 Almgren 1923, p. 23–25; Riha 1979, p. 68; Riha 1994, p. 65–67.

9 Almgren 1923, p. 21; Jamka 1964, p. 27 și p. 102 (*zamkniętymi oczkami* / *with closed eyes*, spre deosebire de *otwartymi oczkami* / *with open eyes*); *cf.* Bechert 1973, p. 17; Boelicke 2002, p. 62; Völling 2005, p. 76 ș.a.

10 Almgren 1923, p. 23; Riha 1979, p. 68; Riha 1994, p. 65–67.

11 Cosack 1979, p. 59, cu literatura anterioară.

12 Peškař 1972, p. 71; Riha 1979, p. 68–71; Walther, Schierl 2018, p. 93–94.

13 Almgren 1923, p. 22–23; Jamka 1964, p. 30–35; Eggers 1973, p. 480; Cosack 1979, p. 61–62; Kunow 1998a, p. 89; Popa 2004, p. 492; Schuster 2006, p. 21 ș.a.

14 Walther, Schierl 2018, p. 91; Droberjar 2023, p. 131–132 ș.a. *Cf*. Kunow 1998a.

15 O sinteză la Spânu 2025.

16 Walther, Schierl 2018, p. 94.

17 Walther, Schierl 2018, p. 100–101.

18 Cosack 1979, p. 61–62; Riha 1979, p. 68; *cf.* Godłowski 1994, p. 481; Walther, Schierl 2018, p. 99–101.

(mai timpurii / B1a / Augustus–Tiberius)[19], dar și formele Almgren 51–53 (mai târzii / B1b / Claudius–Nero)[20]. Relativ puține exemplare ale acestei serii au mai fost folosite în timpul domniilor lui Vespasian, Domitian sau Traian, respectiv la sfârșitul fazei B1 (B1c) și în faza B2a[21]. Meșterii formați în Imperiu s-au deplasat și au activat și în *barbaricum*. Rezultatul activității lor îl reprezintă replicile bohemice ale tipurilor Almgren 45–50[22]. Ipoteza activității unor meșteri provinciali în *barbaricum* este susținută de unele informații literare (Tacitus, *Annales* II. 62), dar și de observații nuanțate asupra tehnicilor de execuție și ornamentare a fibulelor bohemice. În orice caz, fibulele meșterilor provinciali au fost imitate dincolo de *limes*.

Din regiunile învecinate *limes*-ului, în special din Bohemia, formele clasice târzii ale fibulelor cu ochi (respectiv formele Almgren 52–53) au fost distribuite în Europa central-estică, în special de-a lungul „Drumului Ambrei", până în regiunile baltice, unde au servit ca modele pentru sub-seriile „prusacă" (Almgren 57–61 / Riha 2.3.4.) și „livono-estoniană" (Almgren 55–56). Adoptarea modelului central-european în regiunile baltice a coincis cu o „migrare" a „ochilor" de la baza arcului pe placa piciorului și, uneori, cu o multiplicare a perechilor de ornamente circulare[23]. Formele prusace timpurii (Almgren 57–59) au fost manufacturate în perioada în care, în Europa centrală, seria clasică a fibulelor cu ochi era treptat abandonată (faza B2a)[24]. Formele prusace târzii (Almgren 60–61) indică o perpetuare a modelului fibulelor cu ochi și în faza B2b și chiar în fazele B2–C1 și C1a (în cazul tipului Almgren 61)[25]. Tot în fazele B2a și B2b pot fi datate și variantele regionale Almgren 62–63 ale sub-seriei „prusace"[26]. La rândul lor, formele Almgren 55–56 din Letonia și Estonia au cunoscut o folosire îndelungată, prelungită de-a lungul întregii faze B2, până după mijlocul secolului al II-lea p. Chr.[27] De altfel, evoluția de la forme timpurii la forme târzii a fost întrevăzută încă de la începutul secolului XX[28].

Începând cu anii '70 ai secolului trecut, descoperirile cu fibule „prusace" au fost circumscrise noțiunii de Cultură Wielbark, atribuită goților timpurii[29], dar și unor culturi din regiunile învecinate, precum Dollkeim–Kovrovo în Peninsula Kaliningrad (Samland / Sambia)[30] sau Bogaczewo în regiunea lacurilor Masoviei[31]. Producția formelor „prusace" a fost intensivă și unele exemplare au fost distribuite dincolo de regiunile baltice, în culturile Przeworsk și Zarubincy, în Europa Centrală și chiar în provinciile de *limes*, de exemplu la Appiaria în Moesia[32]. Astfel, se poate considera că modelele inițiale („clasice") și derivatele lor ulterioare („prusace") au traversat continentul „în lung și în lat" și au fost distribuite prin intermediul unor rețele, pe cât de complexe, tot pe atât de spectaculoase. Răspândirea diferitelor tipuri de fibule cu ochi nu oglindește doar relația unilaterală Imperiu – *barbaricum*, ci și relații inverse *barbaricum* – Imperiu.

Indiferent cât de complicat ar putea să pară acest scenariu, un fapt este cert: familia tipologică a fibulelor cu ochi este produsul unor relații intense și dinamice între manufacturi din *Germania megale*[33] și din provinciile romane[34]. Această dinamică a generat o diversitate semnificativă de forme, dar și decalaje cronologice în producerea și uzul diferitelor tipuri de fibule cu ochi.

Diferitele forme de fibule „cu ochi" s-au răspândit și dincolo de regiunile dominate de centrele producătoare, până în Europa nordică[35] și de est[36]. Până în ultimul deceniu al secolului XX, în cercetarea internațională a fibulelor cu ochi, Bulgaria, România și regiunile nord-pontice păreau pete albe, aparent lipsite de descoperiri[37]. Publicații recente impun revizuirea acestei imagini. Dacă în contextele „sarmatice" nord-pontice, Kirsten Hellström nu a identificat nicio fibulă cu ochi[38], în grupele învecinate stepei, respectiv în cultura Zarubincy (faza târzie) și în cea Maiotică, Viktor Kropotov a repertoriat mai multe exemplare[39]. În zona de influență greco-romană (Crimea, gurile Donului, Odessa) se regăsesc tipuri târzii ale sub-seriei principale a fibulelor cu ochi (Almgren 52–53). În cultura Zarubincy predomină exemplarele „prusace" (tipurile Almgren 59–61)[40].

Răspândirea fibulelor cu ochi la Dunărea Inferioară relevă două aspecte semnificative. Pe de o parte, trebuie remarcate concentrările de descoperiri cu fibule cu ochi din Moesia[41]. Gruparea de descoperiri din nord-vestul Bulgariei

[19] *Cf.* Godłowski 1994, p. 481; Kunow 1998b, p. 107, 110, nota 26.

[20] *Cf.* Ettlinger 1973, p. 68; Riha 1979, p. 68; Riha 1994, p. 66; Godłowski 1994, p. 481.

[21] Almgren 1897, p. 27; Böhme 1972, p. 11; Ettlinger 1973, p. 69; Riha 1979, p. 68–69; Godłowski 1994, p. 481; Kunow 1998b, p. 104–106; Petković 2018, p. 67 ș.a.

[22] Cosack 1979, p. 61–62; Mączyńska 2004, p. 213. Răspândirea fibulelor Almgren 45–46 a fost interpretată ca expresie a relațiilor politice dintre Imperiu și *barbaricum* (*e.g.* Steidl 2013, p. 167–168). Walther, Schierl 2018, p. 102–108 percep fibulele „cu ochi" ca indicator al procesului de aculturație.

[23] Almgren 1923, p. 30.

[24] Chilińska-Früboes 2017, p. 47–50 (cu literatura anterioară); *cf*. Jamka 1964, p. 60–75; Peškař 1972, p. 73; Kropotov 2010, p. 330.

[25] Godłowski 1994, p. 481; Pfeiffer-Frobnert 1998, p. 130–132; Chilińska-Früboes 2017, p. 50–-58; Mączyńska 2004, p. 213.

[26] Chilińska-Früboes 2017, p. 57–58.

[27] Nowakowski 1998, p. 122.

[28] Kiekebusch 1908; *cf.* Schuster 2006, p. 26–27.

[29] Wołągiewicz 1977; Wolfram 1979.

[30] Chilińska-Früboes 2017; *cf.* Nowakowski 1996; Mączyńska 2004, p. 214, p. 224–231, Beilage 3.

[31] Mączyńska 2004, p. 213 (cu literatura).

[32] Haralambieva 2002a, p. 38–39, nr. 14–15. *Cf*. Riha 1979, 70; Riha 1994, p. 67; Mączyńska 2004, p. 214.

[33] Steidl 2013, p. 166–167, fig. 9. Noțiunile de *Germania megale/magna* sau *libera* au fost dezbătute critic de Alföldy 1997 și Steinacher 2022, p. 293; *cf.* Urban 1989.

[34] Tejral 2009, p. 173–175; Steidl 2013, p. 167–168.

[35] Kunow 1998b (cu literatura anterioară); Andrzejowski 2020, p. 12–13, fig. 4.

[36] Ambroz 1966, p. 35, grupa 9, pl. 6/16, 20 și 21; Kropotov 2010, p. 328–330, fig. 96/4; Beljavec 2016.

[37] Kunow 1998b, p. 94, fig. 1.

[38] Hellström 2018.

[39] Kropotov 2010, p. 331 („forma 3"); *cf.* Hellström 2018, p. 16.

[40] Kropotov 2010, p. 331; *cf*. Mączyńska 2004, p. 214.

[41] Pentru Bulgaria: Haralambieva 2002a, p. 36–41, fig. 1, pl. I–II; Genceva 2004, p. 124, pl. 29/3–5; Haralambieva 2014, p. 181, p. 200–201,

ar putea indica activitatea unui posibil atelier la Ratiaria. Existența altui atelier a fost propusă la Ryahovo (*Appiaria*)[42]. Acest atelier a putut funcționa numai după extinderea Moesiei către est (după anul 46 p. Chr.), cel mai probabil în timpul domniei lui Vespasian[43]. Pe de altă parte, trebuie remarcată absența fibulelor „cu ochi" în Transilvania. Asupra acestui aspect voi reveni în cele ce urmează.

DEZBATERILE PASAGERE DIN CERCETAREA ROMÂNEASCĂ

Vreme îndelungată, interesul cercetării românești pentru clasificarea și dezbaterea fibulelor romane a fost cât se poate de estompat. De exemplu, în discursul lui Ioan Glodariu din anii '70 ai secolului trecut, dedicat relațiilor comerciale dintre „Dacia preromană" și „lumea romană"[44], lipsește orice referire (!) la fibulele de epocă imperială timpurie. Una dintre fibulele „cu ochi" de la Poiana era pe atunci deja publicată și fusese discutată în literatura internațională[45]. Dezbaterea pertinentă privind fibulele romane din contextele „Daciei preromane" avea să fie inaugurată de generația următoare de cercetători transilvăneni[46].

În anii '70 și '80 ai secolului trecut, câteva referiri semnificative la fibulele cu ochi au fost avansate de cercetători de la București și Iași. În 1975, Mircea Babeș includea fibulele cu ochi descoperite în așezări din Dacia preromană printre indicatorii cronologici ai orizontului IV al culturii locale, alături de monede emise în intervalul Vespasian–Traian și de „variantele orientale" ale fibulelor puternic profilate[47]. Deși varietatea tipologică a fibulelor cu ochi nu era precizată, relevanța cronologică a exemplarelor din România era intuită cu o admirabilă justețe. Totodată, studiul din 1975 a fost cea dintâi contribuție a unui autor român dedicată unor realități arheologice preromane în care era citată tipologia lui Oscar Almgren[48]. Trecuse mai bine de jumătate de secol de la publicarea ediției a II-a a acestei clasificări. Opinia lui Mircea Babeș și referirile bibliografice aveau să fie neglijate de alți autori. Discursul lui Dumitru Berciu despre fibulele cu ochi de la Ocnița reprezintă o mostră de inconsecvență plenară. În monografia sa, Dumitru Berciu a dezbătut doar exemplarul „cu ochi", dar a omis exemplarul „fără ochi"[49]. Exemplarul „cu ochi" ar „aparține unei variante mai vechi" (argumentul stratigrafic invocat este inconsistent), dar, în note, autorul face referiri neconvingătoare la forme (mai târzii) ale sub-seriilor livono-estoniană (Almgren 55) și prusacă (Almgren 57–58)[50]. Silviu Sanie are meritul de a fi încadrat inspirat o fibulă de la Poiana în „seria prusacă" (termen preluat din monografia lui Ivan Peškař, probabil pe baza unei sugestii a lui Radu Vulpe, dar nu de la sursa primară – studiul lui Oscar Almgren)[51]. Tot Silviu Sanie a introdus în literatura de specialitate exemplarul de la Răcătău[52].

Clasificarea lui Oscar Almgren și-a făcut cu greu loc în cercetarea românească după căderea Cortinei de Fier. În ultimul deceniu al secolului trecut, deosebirea dintre fibule „cu ochi" și fibule („cu ochi", dar) lipsite de „ochi" a fost singurul criteriu de clasificare. Tipologia bipartită a lui Aurel Rustoiu (tipul 23a: „fibule având «ochii» reprezentați"; tipul 23b: „fibule care nu au «ochii» reprezentați")[53] era inspirată de o mențiune a lui Sorin Cociș[54], care, la rândul său, preluase diferențierea de la Tilmann Bechert[55]. Referirile la studiul fundamental al lui Oscar Almgren nu erau absente doar în monografia lui Aurel Rustoiu[56]. Alți autori români au citat clasificarea savantului suedez în mod eronat[57] sau ambiguu[58].

Câteva fibule cu ochi din România au fost datate cu obstinație în prima jumătate a secolului I p. Chr.[59] Argumentația a fost nesatisfăcătoare, din cauza familiarizării defectuoase cu dezbaterile internaționale și a unui protocronism imanent. S-a pierdut prea ușor din vedere că nu orice fibulă cu ochi este automat un exemplar clasic și

nr. 24–26, p. 221, pl. V/24–26; Zhivkov, Dimitrov 2023, p. 202–203, fig. 3/5, 4/11. Pentru Serbia: Petković 2018, p. 67, p. 119, pl. 1/1. Surprinde absența fibulelor cu ochi în Dobrogea (Cociș 2011).

[42] Haralambieva 2002a, p. 35–36, acceptată de Genceva 2004, p. 124; *cf.* Petković 2010, p. 354. Cociș *et alii* 2022, p. 337, acceptă originea sud-dunăreană a unei fibule cu ochi de la Ocnița, dar pun la îndoială ipoteza unui atelier moesic.

[43] Sarnowski *et alii* 2012, p. 81–83; Matei-Popescu 2013, p. 226–230; Duch 2017, p. 373. Ivanov 1997, p. 593, presupune o primă fază a fortificațiilor de pământ în perioada Claudius–Vespasian și o fază ulterioară de reclădire din piatră a castrelor. Modelul cel mai concludent a fost identificat la *Novae* (Sarnowski 1990, p. 349–352, fig. 2). Fortificația de la *Appiaria* ar fi fost începută în vremea lui Domitian (Gudea 2005, p. 429, nr. 22), dar două unități auxiliare sunt atestate aici încă din vremea lui Vespasian (Matei-Popescu 2013, p. 226).

[44] Glodariu 1976.

[45] Jamka 1964, p. 69, nota 436. Opinia cercetătorului polonez nu a avut ecouri în literatura românească.

[46] Cociș 1984; Rustoiu 1997.

[47] Babeș 1975, p. 136–137, fig. 7.

[48] Anterior, doar Diaconu 1971, p. 239, nota 2 (în studiul dedicat fibulelor cu piciorul întors pe dedesubt, de epocă romană și post-romană) mai amintise *pro forma* de clasificarea lui Almgren 1923.

[49] Berciu 1981, p. 52, p. 211, pl. 36/2 (fibula „cu ochi"), p. 211, pl. 36/11, p. 213, pl. 38/10 (fibula „fără ochi").

[50] Berciu 1981, p. 53, notele 3 și 5.

[51] Sanie 1981, p. 63, îl citează pe Peškař 1972, p. 73–74. Aceeași fibulă fusese prezentată de Vulpe *et alii* 1951, p. 206, ca „tip prusian din sec. II al e.n.", fără vreo referire la studiul lui Oscar Almgren (raportul din 1951 nu avea aparat critic!). Termenul „prusian" nu putea fi preluat decât din contribuția savantului suedez. În contribuțiile ulterioare, Radu Vulpe avea să renunțe la expresia „tip prusian", dar avea să reitereze datarea (Vulpe 1957, p. 150, fig. 5/4; Vulpe 1976, p. 110, fig. 5/5).

[52] Sanie 1981, p. 63, fig. 11/5 (desen fără scară).

[53] Rustoiu 1997, p. 57.

[54] Cociș 1984, p. 150, citat de Rustoiu 1997, p. 73, nota 291.

[55] Bechert 1973, p. 17.

[56] Vulpe *et alii* 1951; Vulpe 1957; Vulpe 1976; Sanie 1981; Căpitanu 1984 ș.a.

[57] *E.g*. Ursachi 1995, p. 230, nota 936.

[58] Teodor, Țau 1996, p. 64; Vulpe, Teodor 2003, p. 58–59; Sîrbu, Măndescu 2022, p. 220.

[59] Ursachi 1995, p. 230; Teodor, Țau 1996, p. 64; Vulpe, Teodor 2003, p. 59 (datare acceptată de Sîrbu, Măndescu 2022, p. 220). Opinia lui Ștefan 2022, p. 292, potrivit căruia singura fibulă cu ochi de la Poiana care îi este cunoscută ar indica intervalul 50 a. Chr. – 25 p. Chr. (!), este lipsită de probitate științifică.

totodată timpuriu (Almgren 45)[60]! Ar fi trebuit lămurit mai întâi căruia dintre tipurile seriei a III-a a lui Oscar Almgren îi aparțin diferitele exemplare evocate. Un studiu recent dedicat fibulelor de la Ocnița[61] inaugurează în istoriografia românească întrebuințarea consecventă a tipologiei lui Oscar Almgren. Trecuseră aproape o sută de ani de la publicarea ediției a II-a (!) a prestigioasei clasificări a savantului suedez.

EXAMINAREA CRITICĂ ȘI REVIZUIRI ALE FONDULUI DOCUMENTAR

Scurt istoric al descoperirilor din România

Primele fibule cu ochi descoperite și publicate în România provin din săpăturile lui Radu Vulpe în așezarea protoistorică de la Poiana (campania din 1950). Doar una dintre aceste fibule a fost ilustrată prompt în rapoartele din acea vreme[62]. Alte exemplare au fost descoperite în anii '70 ai secolului trecut, în așezările pre-traianice de la Brad, Răcătău și Ocnița. Reluarea săpăturilor de la Poiana de către Silvia Teodor a prilejuit descoperirea unui nou exemplar pe „Cetățuie" (1990), iar căutătorii de comori au identificat recent un alt exemplar la Ocnița. În toate aceste cazuri, contextele s-au dovedit inexpresive sau au fost prezentate nesatisfăcător.

Fibulele cu ochi descoperite în România până la sfârșitul secolului XX proveneau exclusiv din spațiul extracarpatic, iar Transilvania părea o *terra deserta*. Trei descoperiri din „vestul" României (două de dată relativ recentă și alta, mai veche, dar până acum inedită) ar putea fi invocate contrar acestei constatări. Examinarea critică a acestor descoperiri este necesară, la fel cum pentru determinarea numărului de exemplare din fiecare sit și pentru precizarea tipologiei lor sunt necesare revizuiri critice.

Fibule cu ochi în vestul României

O fibulă „cu ochi" (Fig. 1/9) a fost descoperită prin săpături preventive la cca 10 km vest de castrul de la *Porolissum*[63]. Exemplarul ar proveni dintr-o așezare cu materiale de tip Przeworsk, dar contextul particular al descoperirii este ambiguu[64]. Ioan Stanciu și Alexandru Matei identifică fibula ca exemplar Almgren 53 și o percep ca indicator al extinderii culturii Przeworsk în preajma Daciei romane după Războaiele Marcomanice. Încadrarea tipologică ar fi justificată de absența ornamentelor circulare poansonate. Datarea propusă (începutul fazei C1) este foarte târzie, probabil pentru a nu lasă loc ipotezei pătrunderii elementelor Przeworsk în Sălaj anterior Războaielor Marcomanice. Fibula de la Zalău prezintă totuși o pereche de perforări cu deschidere laterală. Aceste perforări sunt „ochii" specifici fibulelor Almgren 45, datate în faza B1a a epocii imperiale. Pentru revizuirea încadrării tipologice pledează și morfologia proeminenței dezvoltate atât pe aversul, cât și pe reversul arcului – o altă caracteristică a tipului Almgren 45.

O semnificație similară cazului de la Zalău a fost conferită unei fibule descoperite în poziție secundară la Lazuri „Lubi Tag", județul Satu Mare (Fig. 2/1). Exemplarul, încadrat de Ion Stanciu și Alexandru Matei în grupa a V-a din clasificarea lui Almgren[65], a fost reinterpretat, neconvingător, ca „fibulă cu ochi" de către Coriolan Opreanu și Vlad Lăzărescu[66]. Fibula de la Lazuri nu are cârlig, coarda se înfășoară în jurul arcului, tranziția dintre arc și picior nu este marcată de vreo proeminență, ornamentele circulare („ochii") lipsesc. Aceste caracteristici nu permit încadrarea piesei de la Lazuri în seria a III-a din clasificarea lui Almgren, chiar dacă sinuozitatea corpului bandiform ar putea aminti de aspectul general al fibulelor cu ochi.

Fibula cu ochi din Colecția Pongrácz (Fig. 1/10, Anexa 1, nr. 10) a fost trecută până acum cu vederea în cercetarea românească. Lipsită de ornamente circulare perforate sau poansonate, această fibulă poate fi încadrată în tipul Almgren 53. Exemplarul colecționat de Imre Pongrácz nu a fost descoperit în România, ci provine, cel mai probabil, din zona actualelor municipalități Kladovo și Negotin din Serbia[67].

Fibulele cu ochi de la Ocnița

Una dintre fibulele de la Ocnița, atribuită echivoc de către Dumitru Berciu tipurilor Almgren 55 / 57–58, prezintă „ochi" poansonați ferm lângă resort (Fig. 1/2). Analogia cu formele Almgren 49–52 ar fi mai justă și ar indica o datare la mijlocul/sfârșitul secolului I p. Chr. (fazele B1b – B2a). Celelalte exemplare de la Ocnița pot fi încadrate în forma clasică târzie fără ochi Almgren 53. Aceeași încadrare tipologică a fost propusă și pentru un exemplar descoperit de căutătorii de comori[68].

Ilustrația ambiguă oferită de Dumitru Berciu l-a determinat pe Aurel Rustoiu să interpreteze eronat o fibulă

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[60] De exemplu, sigla „A III. 45" indică exclusiv (!) tipul cel mai timpuriu al fibulelor cu ochi, Almgren 45 (prima jumătate a secolului I p. Chr., *cf*. Eggers 1955, p. 197, fig. 1/14, p. 200 și p. 234), și nu se referă la întreaga serie.

[61] Cociș *et alii* 2022, p. 336–337, determină corect fibula descoperită recent la Ocnița ca exemplar Almgren 53. Pentru datare, aceiași autori îl citează doar pe Rustoiu 1997, p. 57, care sintetizase într-o singură frază încadrările dezbătute anterior de Ettlinger 1973, p. 29 și Riha 1979, p. 68–71 (citate de Rustoiu 1997, p. 73 în nota 296). Nu ar fi trebuit uitată consistenta contribuție la cronologia fibulelor cu ochi efectuată de Almgren 1923, p. 23–28.

[62] Vulpe *et alii* 1951, p. 206; Vulpe 1957, p. 150; Vulpe 1976, p. 110.

[63] Matei, Stanciu 2000, p. 90, pl. 337/1; Stanciu, Matei 2004, p. 763, pl. IX/1.

[64] Fibula ar face parte din inventarul locuinței 4a, al cărei plan a fost „presupus pe baza gropilor de stâlpi" (Matei, Stanciu 2000, p. 90). În legenda planșei 337, se menționează că fibula ar proveni din „zona locuinței 4a"!

[65] Matei, Stanciu 2000, p. 60, pl. 336/8; Stanciu, Matei 2004, p. 762, pl. IX/7.

[66] Opreanu, Lăzărescu 2015, p. 34.

[67] Colecționarea de către Imre Pongrácz a numeroase antichități din nord-estul Serbiei este notorie (Tănase, Mare 2001, p. 181).

[68] Cociș *et alii* 2022, p. 336–337.

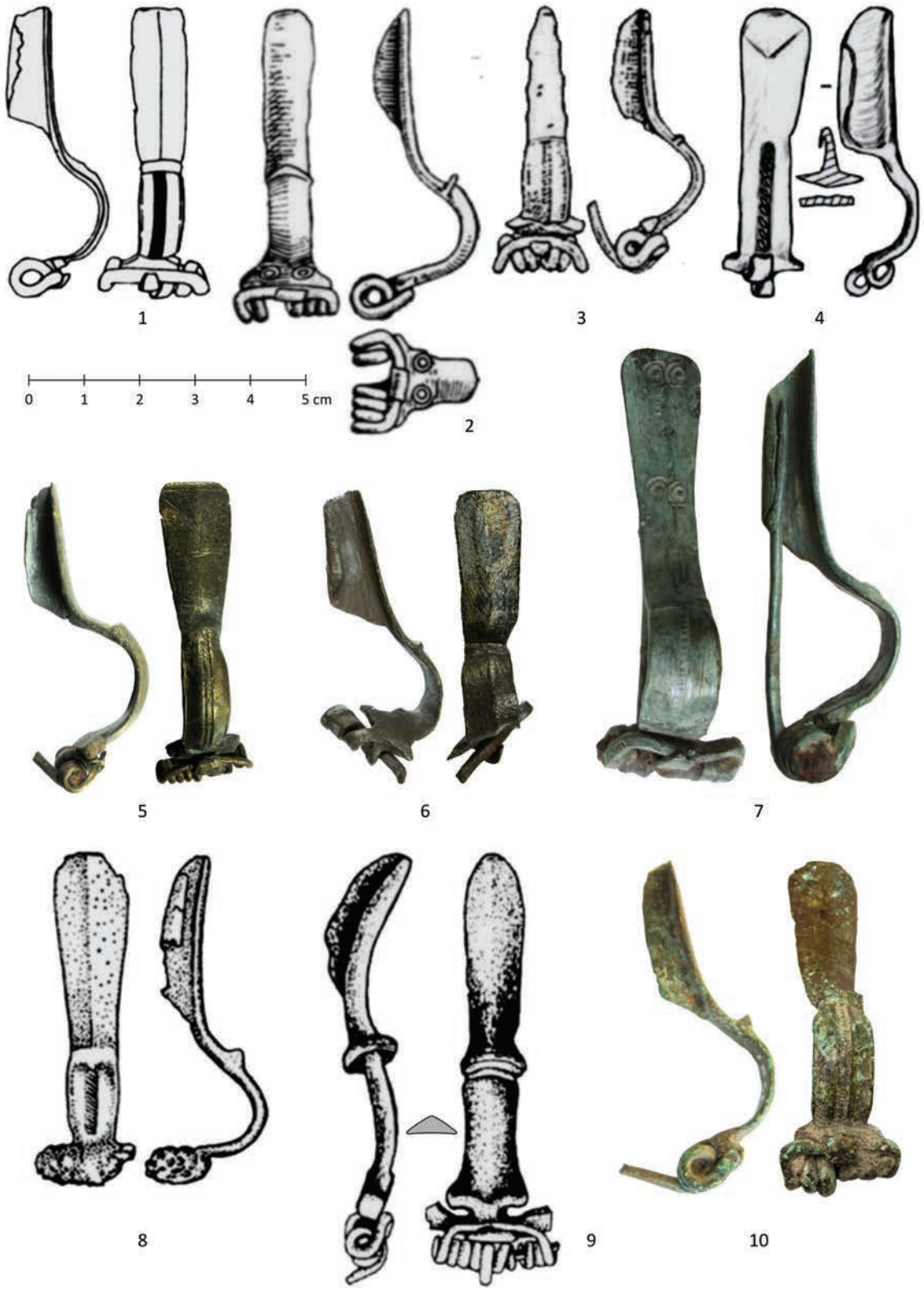


Figura 1. *Fibule cu ochi conservate în România (numerele corespund repertoriului din Anexa 1). 1. Brad (după Ursachi 1995, p. 500, pl. 205/1); 2–4. Ocnița (2–3 după Berciu 1981, p. 53, pl. 36/2 și 11; 4 după Sîrbu, Măndescu 2022, p. 253, fig. 2/5); 5–7. Poiana (fotografii: Daniel Spânu); 8. Răcătău de Jos (după Sanie 1981, p. 63, pl. 11/5); 9. Zalău (după Matei, Stanciu 2000, p. 517–518, pl. 336/8); 10. Localitate necunoscută din Serbia de est, probabil de pe malul Dunării (fotografii: Daniel Spânu).*

Figure 1*. Eye fibulae preserved in Romania (the numbers correspond to the catalogue in Appendix 1). 1. Brad (after Ursachi 1995, p. 500, pl. 205/1); 2–4. Ocnița (2–3 after Berciu 1981, p. 53, pl. 36/2 and 11; 4 after Sîrbu, Măndescu 2022, p. 253, fig. 2/5); 5–7. Poiana (photographs: Daniel Spânu); 8. Răcătău de Jos (after Sanie 1981, p. 63, pl. 11/5); 9. Zalău (after Matei, Stanciu 2000, p. 517–518, pl. 336/8); 10. Unknown locality in eastern Serbia, probably on the bank of the Danube (photographs: Daniel Spânu).*

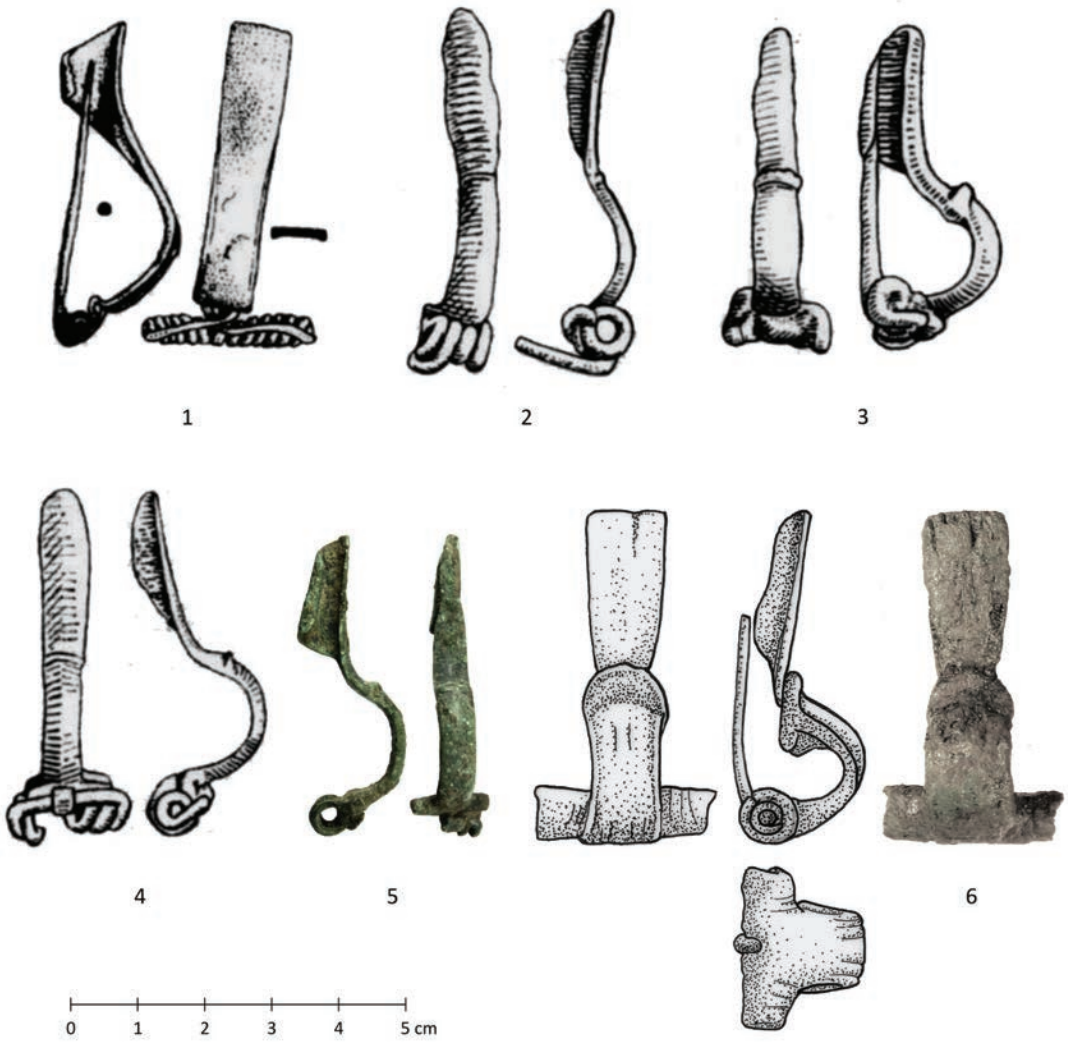


Figura 2. *Fibule care au fost sau pot fi confundate cu fibulele cu ochi. 1. fibula de la Lazuri (după Matei, Stanciu 2000, p. 517, pl. 336/8); 2–4. fibule Almgren 20 de la Ocnița (după Berciu 1981, p. 53, pl. 36/3, 36/8, 36/12); 5. fibula Almgren 20 de la Poiana (fotografii: Daniel Spânu); 6. fibula de tip Riha 4.5.1 de la Ocnița (desen după original de Cristina Georgescu și fotografie de Daniel Spânu).*

Figure 2. *Fibulae that have been, or may be, confused with eye fibulae. 1. the fibula from Lazuri (after Matei, Stanciu 2000, p. 517, pl. 336/8); 2–4. Almgren 20 fibulae from Ocnița (after Berciu 1981, p. 53, pl. 36/3, pl. 36/8, pl. 36/12); 5. Almgren 20 fibula from Poiana (photographs: Daniel Spânu); 6. Riha 4.5.1-type fibula from Ocnița (drawing after the original by Cristina Georgescu and photograph by Daniel Spânu).*

de la Ocnița ca fibulă cu ochi[69]. De fapt, structura piesei, cu resortul protejat într-o casetă tubulară (Fig. 2/6), corespunde tipului Riha 4.5.1.[70]. Tot ca fibule cu ochi (dar „fără ochi") au fost interpretate de către Aurel Rustoiu și trei exemplare determinate de Dumitru Berciu ca „fibule puternic profilate" / de tip Almgren 82 (Fig. 2/2–4)[71]. La rândul său, Vjačeslav Kotigoroško invoca eronat două dintre aceleași fibule ca analogii ale fibulei Almgren 47–48 (cu ochi incizați) de la Mala Kopanea[72]. De fapt, cele trei exemplare de la Ocnița (Fig. 2/2–4), lipsite de ornamente circulare (de „ochi"), prezintă un arc mai îngust și un picior mai svelt decât fibulele Almgren 53 și pot fi încadrate adecvat în tipul Almgren 20/Riha 2.7. De altfel, Emilie Riha atrăsese atenția asupra similitudinilor și riscului confuziei dintre fibulele Almgren 20 și Almgren 53[73]. Un alt exemplar al tipului

[69] Rustoiu 1997, p. 57, p. 113, lista 20, nr. 3, p. 223, fig. 67/5 (ornamentele protecției tubulare a resortului au fost interpretate ca spire); *cf*. Berciu 1981, p. 103, fig. 22/5 (ilustrație fără scară, descriere tehnică sau determinare tipologică). Fibula din bronz (5 cm lungime, 2,8 cm lățime) a fost reexaminată de Mircea Babeș în decembrie 2006, a fost desenată de doamna Cristina Georgescu de la Laboratorul Conservare-Restaurare al Institutului de Arheologie din București și a fost fotografiată de autorul acestor rânduri.

[70] Riha 1979, p. 101–102, pl. 20/526–527.

[71] Rustoiu 1997, p. 223, fig. 67/2–4 (acceptat de Cociș *et alii* 2022, p. 337); Berciu 1981, p. 52, nota 9, p. 211, pl. 36/3, 8 și 12.

[72] Kotigoroško 1994, p. 309, Kotigoroško 1995, p. 96, nu a observat că fibulele ilustrate de Berciu 1981, p. 211, pl. 36/8 și 36/12 nu au ochi și că morfologia lor corespunde tipului Almgren 20. Aceeași confuzie și la Sîrbu, Măndescu 2022, p. 220.

[73] Riha 1979, p. 71 (cu o datare în perioada Claudius–Domitian); *cf*. Almgren 1923, p. 107. Confuzia dintre tipurile Almgren 20 și Almgren 53 o regăsim și la Haralambieva 2014, p. 200, nr. 24, pl. V/24 (o fibulă

Almgren 20/Riha 2.7., descoperit mai recent la Ocnița, a fost recunoscut și încadrat tipologic în mod consecvent în contribuții recente[74]. Dacă acceptăm reîncadrarea unor fibule de la Ocnița ca exemplare ale tipului Almgren 20 (Fig. 2/2–4) și, respectiv, ale tipului Riha 4.5.1. (Fig. 2/6), atunci numărul fibulelor cu ochi de aici se reduce la trei (Fig. 1/2–4, Anexa 1, nr. 2–4).

Fibulele cu ochi de la Poiana

Trei fibule de la Poiana se încadrează în grupa a III-a a clasificării lui Oscar Almgren (Fig. 1/5–7, Anexa 1, nr. 5–7). Două dintre acestea (Fig. 1/5–6, Anexa 1, nr. 5–6) sunt mai mici (5,4, respectiv 5,3 cm lungime) și prezintă caracteristicile formei Almgren 53 (Riha 2.3.4.)[75]. Arcul fațetat are o secțiune triunghiulară. Tranziția de la arc la picior este marcată printr-o proeminență discretă (doar la exterior). Capătul arcului este lățit și îngroșat înainte de resort și de cârlig. Ornamentele circulare („ochii") lipsesc. Exemplarele Almgren 53 de la Poiana au fost realizate dintr-un bronz de culoare brun-ocru, spre deosebire de fibula mare, de culoare verde (Anexa 1, nr. 7).

În cazul uneia dintre fibulele mici de la Poiana (Anexa 1, nr. 6), arcul este decorat cu un motiv șnurat pseudofiligranat, iar placa piciorului prezintă un triunghi gravat. Pentru motivul șnurat se cunosc analogii la Brad, Ocnița și Răcătău de Jos (Fig. 1/1, 3–4, 8)[76], dar și la Belene, Voinikovo sau dintr-o localitate necunoscută din Bulgaria[77]. Foarte probabil, fibulele Almgren 53 de la Poiana, dar și Brad, Răcătău și Ocnița au fost redistribuite prin intermediul centrelor provinciale sud-dunărene sau poate chiar au fost produse într-un atelier moesic[78].

A treia fibulă de la Poiana (Fig. 1/7, Anexa 1, nr. 7) este mai înaltă (7,8 cm). Arcul are aspectul unei benzi și nu este lățit în preajma resortului. Tranziția de la arc la picior este foarte slab marcată printr-un prag atrofiat, aproape insesizabil. Axa mediană a arcului a fost marcată printr-un șir de proeminențe (o variantă simplificată de brâu șnurat). Contururile plăcii piciorului și ale arcului sunt neregulate. Arcul este lipsit de ornamente circulare. Două perechi de „ochi" asimetrici, redați prin poansonare, apar pe placa piciorului. Lipsa de rigoare morfologică și ornamentală indică o manufactură barbară. Culoarea verde a bronzului indică un aliaj cu procent ridicat de cupru. Și acest aspect poate fi interpretat ca specific unei producții barbare. De fapt, fibula mare de la Poiana prezintă caracteristici comune cu exemplare din sub-seria „prusacă" a fibulelor cu ochi (Almgren 57–59 / Jamka seria B, tipul IV / Riha 2.4.)[79]. Analogiile indică mai degrabă o încadrare în faza B2a a epocii imperiale timpurii (aproximativ perioada Vespasian–Traian) și nu în secolul al II-lea p. Chr., așa cum afirma Radu Vulpe[80]. Se poate pune întrebarea dacă fibula nr. 7 provine dintr-un centru de producție baltic (Prusia orientală, nordul Poloniei). Dacă această ipoteză este justă, fibula de la Poiana a fost distribuită la est de Carpați prin intermediul unor rețele controlate de purtătorii culturilor Przeworsk, Lipița sau Zarubincy.

Sub incidența potențialei confuzii dintre tipurile Almgren 53 și Almgren 20 se află și o fibulă de la Poiana (Fig. 2/5)[81]. Secțiunea semiovală a arcului îngust și piciorul ascuțit sunt specifice formei Almgren 20. Această determinare impune revizuirea datării propuse în literatură (prima jumătate a secolului I p. Chr.) și încadrarea fibulei în perioada Claudius–Domitian[82].

Sinteza revizuirilor critice

În stadiul actual al cercetării, pe teritoriul României au fost identificate nouă fibule care pot fi clasificate în seria a III-a a tipologiei lui Oscar Almgren. Aceste fibule provin din cinci situri diferite și pot fi încadrate în patru tipuri distincte (*cf*. Anexa 1):

	Almgren 45	*Almgren 52*	*Almgren 53*	*Almgren 57–59*
Brad			1	
Ocnița		1	2	
Răcătău de Jos			1	
Poiana			2	1
Zalău	1			

Cu excepția fibulei identificate la Ocnița de căutătorii de comori (Fig. 1/4, Anexa 1, nr. 4), toate fibulele cu ochi descoperite în România provin din săpături planificate. Câte trei exemplare (indiferent de tip) au fost descoperite la Ocnița și la Poiana. Din celelalte situri provine câte o singură fibulă cu ochi. Cu excepția fibulei de la Zalău,

de la Kladorub / *Conbustica*) sau la Zhivkov, Dimitrov 2023, p. 202, fig. 3/5a (o fibulă de la Rassovo). Pentru edificare, *cf*. Riha 1979, p. 71–72, pl. 8/nr. 220–222 (exemple elocvente pentru tipul Almgren 20 / Riha 2.7.).

[74] Cociș *et alii* 2022, p. 335, nr. 12, pl. II/12; Sîrbu, Măndescu 2022, p. 220, nr. 10.

[75] Unul dintre exemplare a fost determinat just ca fibulă cu ochi (Vulpe, Teodor 2003, p. 217, nr. 158), celălalt (Bobi *et alii* 1992, p. 31, nr. 252, p. 50, pl. IV/252) nu se regăsește în monografia dedicată așezării de la Poiana.

[76] Sanie 1981, p. 63, pl. 11/5; Sîrbu, Măndescu 2022, p. 253, fig. 2/5; Cociș *et alii* 2022, p. 335, pl. II/11ab; Ursachi 1995, p. 230 (f), p. 500, pl. 205/1; *cf.* Rustoiu 1997, p. 223, fig. 67/7–8.

[77] Haralambieva 2002a, p. 40–52, pl. I/6, II/9, 11.

[78] *Cf*. Cociș *et alii* 2022, p. 337.

[79] Încadrarea în sub-seria prusacă a mai fost propusă de Jamka 1964, p. 69, nota 436 și reiterată (fără argumente și fără referiri bibliografice explicite) de Sanie 1981, p. 63. Fibula de la Poiana se aseamănă unor exemplare baltice ilustrate de Chilińska-Früboes 2017, p. 90–93, pl. $1/3_1$ (Almgren 57), pl. 2/2a, $3/4.2_1$ (Almgren 58/59).

[80] Vulpe *et alii* 1951, p. 206, fig. 24/9; Vulpe 1957, p. 150, fig. 5/4; Vulpe 1976, p. 110, fig. 5/5 (în legendele figurilor).

[81] Teodor, Țau 1996, p. 100, nr. 189, p. 82, fig. 16/16; Vulpe, Teodor 2003, p. 219, nr. 189, p. 585, fig. 106/16; fără determinare tipologică; date contextuale suplimentare la Vulpe 1950, p. 88. Fibula a fost descoperită pe „Cetățuie", la 9 septembrie 1950, în suprafața K5, la demontarea martorului KK^1, la –1,70 m adâncime (probabil într-o groapă). Muzeul de Istorie „Teodor Cincu" din Tecuci, inv. 14190 (fost 2455).

[82] Riha 1979, p. 71.

izolată în spațiul intracarpatic, toate celelalte fibule cu ochi de pe teritoriul actual al României provin din așezări pre-traianice extracarpatice. Situl de la Poiana se distinge ca descoperirea cea mai răsăriteană din arealul nord-danubian al fibulelor cu ochi[83].

Fibula de la Zalău poate fi încadrată în faza B1, respectiv în orizontul IV din periodizarea lui Thomas Völling – orizontul, prin excelență, al fibulelor cu ochi (*Augenfibelhorizont*)[84]. Celelalte fibule cu ochi aparțin fie unor tipuri „târzii" ale sub-seriei clasice (Almgren 52–53), fie unor tipuri „timpurii" ale sub-seriei prusace (Almgren 57–59). De altfel, aceste forme sunt relativ sincrone[85] și au fost încadrate în faza B2a a epocii imperiale, respectiv în orizontul V al periodizării lui Thomas Völling[86]. Datarea fibulelor cu ochi pe baza apartenenței lor la diferite niveluri de locuire de la Ocnița, Brad sau Poiana[87] nu este convingătoare, deoarece schemele stratigrafice au fost determinate artificial. Revizuirea tipologiei fibulelor cu ochi din estul și sudul României și posibilitatea încadrării lor în intervalul Vespasian–Traian certifică și nuanțează anumite puncte de vedere exprimate în cercetarea mai veche[88]. Aceste fibule se disting ca indicatori ai acelei faze de locuire a așezărilor de pe Siret și de la Ocnița care a premers cucerirea romană a Daciei.

RELEVANȚA CRONOLOGICĂ ȘI CULTURALĂ A FIBULELOR CU OCHI DE LA DUNĂREA INFERIOARĂ

În consistentul repertoriu dedicat de Sorin Cociș fibulelor din Dacia romană, fibulele cu ochi sunt absente[89]. Cu alte cuvinte, fibulele cu ochi lipsesc din contexte provinciale. Această conjunctură nu este nici întâmplătoare, nici rezultatul vreunei lacune de documentare. Foarte probabil, întemeierea provinciei Dacia reprezintă un *terminus ante quem* (respectiv un *terminus post quem non*) pentru producția și folosirea exemplarelor sub-seriei clasice a fibulelor cu ochi în sud-estul Europei.

Dintre tipurile atestate în România, cel reprezentat la Zalău este cel mai timpuriu. Fibula Almgren 45 putea să ajungă aici înaintea Războaielor Marcomanice, dar și înaintea întemeierii orașului roman *Porolissum* (respectiv înaintea cuceririi romane a Daciei!), prin mecanisme independente de evenimentele istorice sau de peregrinările comunităților Przeworsk[90]. Exemplarul de la Zalău nu este singura fibulă cu ochi datată în faza B1 a epocii imperiale din Bazinul Tisei. Un exemplar Almgren 47–48 a fost semnalat și la Mala Kopanea[91]. Este dificil de precizat dacă fibula de la Zalău a fost produsă într-un atelier provincial sau în afara Imperiului (probabil Bohemia). Ambele ipoteze sunt plauzibile. Pe de o parte, contactele culturale dintre comunitățile din regiunile intracarpatice ale României și Imperiul timpuriu sunt indicate de importul unor fibule provinciale sau de unele mostre de veselă de lux precum cea din depozitul de la Guștería[92]. De altfel, fibule de tip Almgren 45 au fost documentate în *Moesia*, la Ćuprija (*Horreum Margi*) și Svishtov (*Novae*)[93]. Pe de altă parte, răspândirea brățărilor de tip Șimleu Silvaniei[94] certifică legăturile comunităților din Transilvania cu regiunile central-europene, dar și cu regiunile limitrofe Mării Baltice și Mării Nordului la începutul epocii imperiale. Astfel de contacte puteau mijloci importul la est de Tisa al unor fibule produse în *Germania megale*.

Distribuția și manufacturarea tipurilor târzii ale fibulelor cu ochi „clasice" în centre din Moesia pot fi corelate cu extinderea controlului militar roman de-a lungul Dunării inferioare începând cu instalarea Legiunii a VIII-a Augusta la *Novae* încă din anul 44 p. Chr.[95]. Corelarea dintre fibulele cu ochi de la Ocnița și Poiana (Fig. 3 / 14–15) și prezența unor detașamente militare romane la Buridava și Piroboridava (evocată de *Huntis pridianum*)[96] rămân o ipoteză tentantă, dar dificil de demonstrat. Totuși, încadrarea cronologică a tipurilor de fibule cu ochi atestate la Poiana și Ocnița nu contravine acestei ipoteze. În orice caz, influența culturală romană asupra acestor centre poate fi susținută arheologic în mod convingător.

Absența fibulelor cu ochi în Transilvania și, în special, în centrele monumentale din Munții Orăștiei este semnificativă (Fig. 3). De altfel, tipurile de fibule romane imperiale timpurii sunt surprinzător de rare în regiunile intracarpatice. Această împrejurare ar putea fi explicată, mai puțin probabil, prin valorificarea precară a rezultatelor săpăturilor din ultima sută de ani sau printr-o ipotetică abandonare a cetăților în ajunul cuceririi traiane a Daciei[97]. Mult mai probabilă ar fi ipoteza izolării, deliberate sau

[83] Pentru descoperiri nord-pontice, aflate la est de Poiana: Kropotov 2010, p. 331 („Forma 3") și p. 329, fig. 97/II.

[84] Völling 2005, p. 91, fig. 12.

[85] Sincronizarea formelor Almgren 53 și Almgren 57/59 este confirmată de inventarul mormântului 13 de la Hryniewcze Wielkie (Dąbrowska 1973, p. 172; Rudnicki 2009, p. 322; pentru încadrarea tipologică: Hellström 2018, p. 35). Tot în acest mormânt se regăsesc și fibule lanceolate (*cf*. Munteanu *et alii* 2024).

[86] Völling 2005, p. 95; *cf*. Haralambieva 2002b, p. 93.

[87] Berciu 1981, p. 52; Vulpe *et alii* 1951, p. 180–181; Vulpe, Teodor 2003, p. 20, p. 59.

[88] Babeș 1975, p. 136.

[89] Cociș 2004; *cf*. Cociș *et alii* 2022, p. 337.

[90] Purtătorii unor fibule produse în *barbaricum* puteau pătrunde în Imperiul timpuriu: *cf.* Petković 2010, p. 354: „Doch wurden germanische Augenfibeln weder in einer größeren Zahl importiert, noch lokal hergestellt, und sie dürfen deswegen als Spuren romanisierter Germanen beim römischen Militär des 1. Jh. betrachtet werden".

[91] Kotigoroško 1994, p. 309 (descriere), p. 314, fig. I/14; Kotigoroško 1995, p. 96 (descriere), p. 208, fig. 52/14; deși ilustrația este inexpresivă, în text sunt menționați explicit „ochii" incizați (poansonați) pe arc.

[92] Rustoiu 1995; Spânu 2019; 2020; 2022; 2025. Pentru depozitul de la Guștería: Horedt 1965.

[93] Petković 2010, p. 48, fig. 9; Haralambieva 2002a, p. 36, nr. 1–2, pl. I/1–2.

[94] Rudnicki 2012, p. 463–479, fig. 1. Fibulele cu ochi ale sub-seriei principale și brățările de tip Șimleu Silvaniei au în comun aceeași tehnică de realizare: turnarea în bronz.

[95] Sarnowski *et alii* 2012, p. 81–83; Duch 2017, p. 376.

[96] Fink 1958. Pentru identificările *Buridava* – Ocnița și *Piroboridava* – Poiana: Syme 1959, p. 31 (cu literatura).

[97] Babeș 1975, p. 138, nota 56.

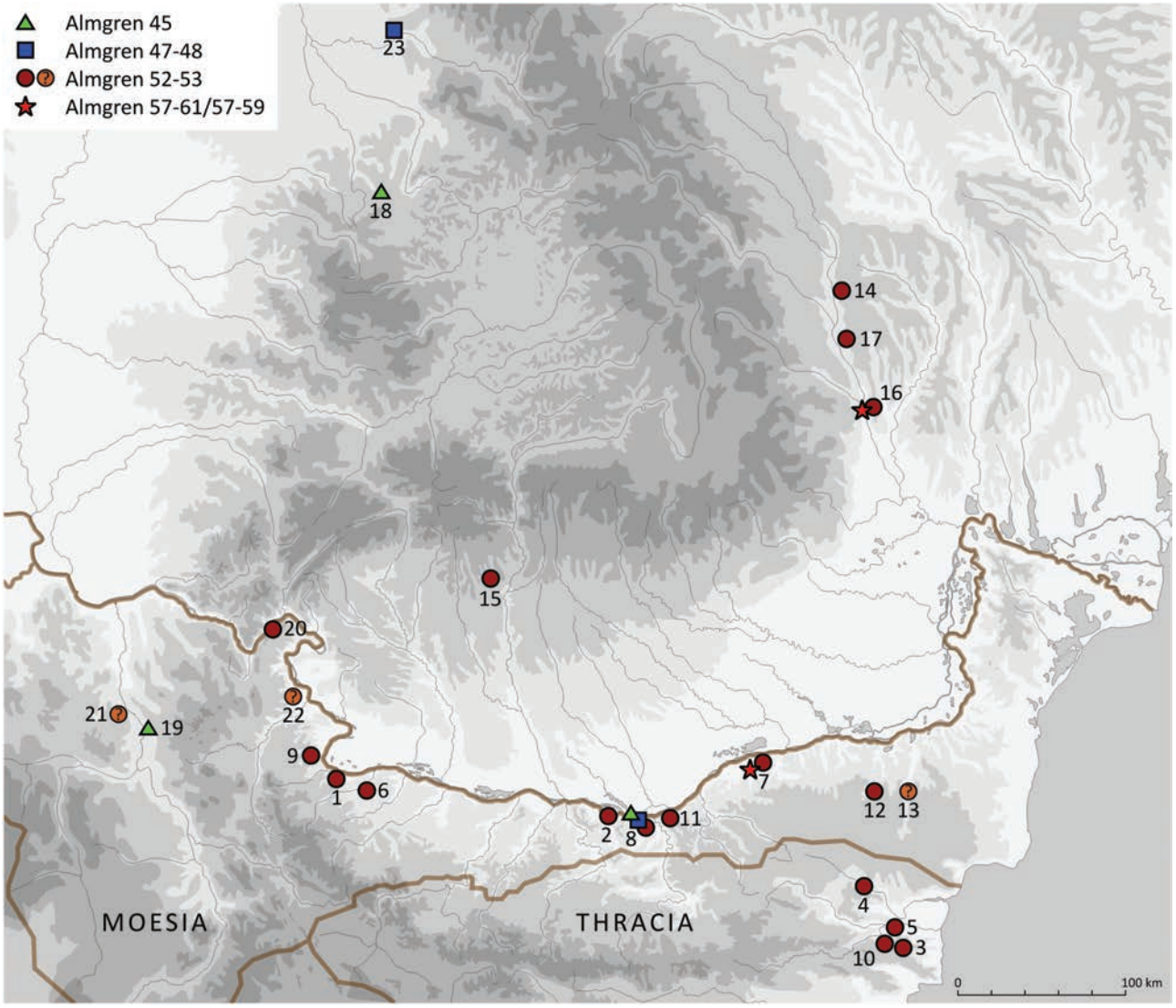


Figura 3. *Răspândirea fibulelor cu ochi la Dunărea de Jos și în regiunile limitrofe. Numerele corespund localităților repertoriate în Anexa 2. Prelucrare grafică: Daniel Spânu.*

Figure 3. *Distribution of eye fibulae in the Lower Danube region and the neighbouring areas. The numbers correspond to the sites listed in Appendix 2. Graphic processing: Daniel Spânu.*

prin constrângere, a nucleului de putere din sud-vestul Transilvaniei. Acest nucleu nu a mai avut capacitatea să se racordeze la rețelele de schimburi supraregionale în cea de-a doua jumătate a secolului I p. Chr. Foarte probabil, autoritățile romane exercitau un control ferm asupra distribuției produselor provinciale. Ipoteza unui „război" economic anterior beligeranței daco-romane propriu-zise nu trebuie neglijată.

Nu în ultimul rând, trebuie subliniată proveniența diferită a fibulelor cu ochi de la Poiana. Două dintre exemplare provin din ateliere provinciale (probabil moesice). În schimb, exemplarul de tip Almgren 57–59 (Fig. 1/7) ar putea fi interpretat ca produs al culturilor Wielbark sau Dollkeim–Kovrovo. Această fibulă putea să ajungă la Poiana pe acele itinerarii care, aproape două secole mai târziu, aveau să fie urmate de purtătorii culturii Sântana de Mureș – Chernyakhov (*peregrinatio gothica*). În secolul I p. Chr., intermedierea putea fi asigurată de grupele Przeworsk, Lipița sau Zarubincy. Dacă cele două ipoteze privind proveniența fibulelor de la Poiana sunt juste, atunci centrul de pe malul Siretului se dezvăluie ca o răscruce între „nord" și „sud". Aici s-au întâlnit produsele celor două filiere de manufacturare a fibulelor cu ochi: filiera „clasică" a provinciilor de *limes* și filiera „prusacă" (gotică) a regiunilor baltice. Se poate contempla felul în care fibulele cu ochi de la Poiana reprezintă vectori culturali care prevestesc (*fibulae praedicunt*) atât cucerirea romană a Daciei, cât și creșterea de mai târziu a puterii gotice. În orice caz, importul acestor fibule reflectă racordarea centrului de la Poiana la rețelele supraregionale de distribuție a bunurilor de prestigiu de la sfârșitul secolului I p. Chr.

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ANEXA 1. FIBULELE CU OCHI CONSERVATE ÎN ROMÂNIA

Brad, comuna Negri, județul Bacău

1. Fibulă Almgren 53 (Fig. 1/1); 5,2 cm lungime, bronz; resort dezvoltat în continuarea arcului; brâu cu poansonări pe mediana arcului. Descoperire realizată în sectorul „Acropolă", secțiunea IX-A, caroul 5, adâncimea –1,30 m, „ar aparține nivelului IV dacic" (sau groapă?). Complexul Muzeal „Iulian Antonescu", Bacău, inv. 8693. Literatură: Ursachi 1987, p. 119, fig. 12/8 (fotografie neclară); Ursachi 1995, p. 230, f., p. 500, pl. 205/1 (desen explicit), p. 562, pl. 329/9 (fotografie neclară).

Ocnița, localitate componentă a orașului Ocnele Mari, județul Vâlcea

2. Fibulă Almgren 52 (Fig. 1/2); 5,8 cm lungime, bronz; resort dezvoltat în continuarea arcului; o pereche de ornamente circulare la baza arcului. Descoperire realizată în anul 1978, în șanțul XXXVIII/78, „în orizontul mijlociu al nivelului III" din „așezarea civilă" (nu se indică adâncimea, caroul ș.a.). Literatură: Berciu 1981, p. 53, pl. 36/2, pl. 38/11.
3. Fibulă Almgren 53 (Fig. 1/3); dimensiunile nu sunt indicate (4,8 cm lungime?); bronz; resort dezvoltat probabil în continuarea arcului; brâu cu poansonări pe mediana arcului. Descoperire realizată în nivelul III din „așezarea civilă" (date suplimentare despre descoperire nu au fost indicate). Literatură: Berciu 1981, p. 53, pl. 36/11, pl. 38/10 (ilustrație fără scară).
4. Fibulă Almgren 53 (Fig. 1/4); 5,2 cm (Cociș *et alii* 2022, p. 358) sau 5,3 cm (Sîrbu, Măndescu 2022, p. 220), bronz; resort dezvoltat în continuarea arcului; brâu cu poansonări pe mediana arcului. Descoperire realizată de căutătorii de comori în perioada 2013–2015 pe situl „Dealul Cosotei" sau în zonele învecinate („Valea Bradului" ș.a.). Muzeul Județean „Aurel Sacerdoțeanu", Râmnicu Vâlcea. Literatură: Sîrbu, Măndescu 2022, p. 220, nr. 9, p. 253, fig. 2/5; Cociș *et alii* 2022, p. 336–337, tipul VII, p. 358, cat. nr. 11, p. 335, pl. II/11ab.

Poiana, județul Galați

5. Fibulă Almgren 53 (Fig. 1/5); 5,4 cm lungime, bronz; ac rupt și pierdut; resort în continuarea arcului înfășurat pe un ax din fier; ornament șnurat pseudofiligranat pe mediana arcului; triunghi gravat pe placa piciorului. Descoperire realizată pe situl „Cetățuia", suprafața P^1L1, campania 1990, context neprecizat; Muzeul de Istorie „Teodor Cincu" din Tecuci, inv. 15674 (fost 2446). Literatură: Teodor, Țau 1996, p. 99, nr. 158, fig. 14/5; Vulpe, Teodor 2003, p. 217, nr. 158, fig. 104/5.
6. Fibulă Almgren 53 (Fig. 1/6); 5,3 cm lungime, bronz; arc distorsionat; jumătate din resort împreună cu acul rupt și pierdut; resort dezvoltat în continuarea arcului. Descoperire realizată pe situl „Cetățuia"; datele descoperirii sunt incerte (probabil din săpăturile lui Radu Vulpe din 1950); potrivit însemnării de pe eticheta însoțitoare, fibula a fost descoperită la -2,40 m adâncime (probabil în umplutura unei gropi); Muzeul de Istorie „Teodor Cincu" din Tecuci, inv. (vechi) nr. 573; anterior anului 1971, fibula s-a aflat la Muzeul Național de Antichități din București (inv. II.6119). Literatură: Bobi *et alii* 1992, 31, nr. 252, p. 50, pl. IV/252.
7. Fibulă Almgren 57–59 (Fig. 1/7); 7,8 cm lungime, bronz verde; exemplar păstrat integral; resort în continuarea arcului înfășurat pe un ax din fier; brâu cu poansonări pe mediana arcului; două perechi de ornamente circulare pe placa piciorului . Poiana, situl „Cetățuia", campania 1950, suprafața KF, adâncimea -0,50 m; Muzeul Național de Istorie a României din București, inv. 16397 (anterior la Muzeul Național de Antichități din București, inv. II.6118). Literatură: Vulpe *et alii* 1951, p. 206, fig. 24/9; Vulpe 1957, p. 150,

fig. 5/4; Vulpe 1976, p. 110, fig. 5/5; Teodor, Țau 1996, p. 64 (mențione); Vulpe, Teodor 2003, p. 59 (mențione).

Răcătău de Jos, comuna Horgești, județul Bacău

8. Fibulă Almgren 53 (Fig. 1/8); 6 cm lungime, bronz și axul resortului din fier puternic corodat; resort dezvoltat probabil în continuarea arcului; brâu cu poansonări pe mediana arcului. Descoperire realizată în stratul de cultură al sitului „Cetățuia", la -0,70 m adâncime (nu sunt publicate alte date contextuale). Complexul Muzeal „Iulian Antonescu", Bacău, inv. 7823. Literatură: Sanie 1981, p. 63, pl. 11/5; Căpitanu 1984, p. 71, fig. 9/7.

Zalău, județul Sălaj

9. Fibulă Almgren 45 (Fig. 1/9); 7,8 cm lungime, bronz; acul lipsă; potrivit afirmațiilor din literatură, resortul este realizat separat de arc (Matei, Stanciu 2000, p. 90); două perforări cu deschideri laterale la baza arcului. Descoperire realizată cu prilejul unor săpături de salvare la Zalău, Bulevardul Mihai Viteazu, nr. 104–105, într-o așezare cu materiale ale culturii Przeworsk. Fibula ar proveni din aria locuinței 4a (secțiunea III/1996, carourile 10–18, caseta 5/S.III-1996; secțiunea II/1997, carourile 9–15, caseta A/S. II-1997, caseta B/S. II-1997). Nu se precizează poziția stratigrafică a fibulei în raport cu podeaua locuinței. Literatură: Matei, Stanciu 2000, p. 90, p. 518, pl. 337/1; Stanciu, Matei 2004, p. 763, pl. IX/1.

Localitate necunoscută din Serbia

10. Fibulă Almgren 53 (Fig. 1/10); 6 cm lungime; bronz; ac rupt și portagrafa deteriorată; resort dezvoltat în continuarea arcului; brâu cu poansonări pe mediana arcului. Descoperire realizată în estul Serbiei. Fibula a fost achiziționată în jurul anului 1900 și a fost desenată de către Imre Pongrácz pe o planșă cu imagini ale unor piese descoperite în împrejurimile localităților Prahovo și Radujevac (Negotin, districtul Bor), Kostol (Kladovo, districtul Bor) și Kuvingrad (Doljevac, districtul Nišava); mențiune manuscrisă Imre Pongrácz. Muzeul Național al Banatului, Timișoara, inv. 1861 (Colecția Imre Pongrácz, pl. I–f, nr. 180); inedit; piesă documentată prin amabilitatea doamnei Dr. Daniela Tănase, noiembrie 2025.

ANEXA 2. LOCALITĂȚI CU DESCOPERIRI DE FIBULE CU OCHI CARTATE ÎN FIG. 3.

Bulgaria

1. Archar (*Ratiaria*), Vidin – două fibule Almgren 53 (Haralambieva 2014, p. 200–201, nr. 25–26, p. 221, pl. V/25–26).
2. Belene, Veliko Tarnovo – două fibule Almgren 53 (Haralambieva 2002a, p. 37–38, nr. 8–9, pl. 1/8–9).
3. Bozveliysko, Varna – fibulă Almgren 53 (Haralambieva 2002a, p. 38, nr. 10, pl. 1/10).
4. Nevsha, Varna – fibulă Almgren 53 (Haralambieva 2002a, p. 38, nr. 13, pl. 1/13).
5. Petrov Dol, Varna – fibulă Almgren 53 (Haralambieva 2002a, p. 37, nr. 5, pl. 1/5).
6. Rassovo, Montana – fibulă Almgren 53 (Zhivkov, Dimitrov 2023, p. 202, fig. 3/5b).
7. Ryahovo (*Appiaria*), Ruse – două fibule Almgren 57–61 (Haralambieva 2002a, p. 37, nr. 3–4, pl. 1/3–4); fibulă Almgren 53 (Haralambieva 2002a, p. 38–39, nr. 14–15, pl. 1/14–15).
8. Svishtov (*Novae*), Veliko Tarnovo – fibulă Almgren 45 (Haralambieva 2002a, p. 36, nr. 1, pl. 1/1); fibulă Almgren 47 (Haralambieva 2002a, p. 36–37, nr. 2, pl. 1/2); fibulă Almgren 53 (Haralambieva 2002a, p. 39, nr. 16, pl. 1/16).
9. Sinagovtsi, Vidin – fibulă Almgren 53 (Zhivkov, Dimitrov 2023, p. 203, fig. 4/11).
10. Tutrakantsi, Varna – fibulă Almgren 53 (Haralambieva 2002a, p. 37, nr. 7, pl. 1/7).
11. Vardim, Veliko Tarnovo – fibulă Almgren 53 (Haralambieva 2002a, p. 38, nr. 11, pl. 1/11).
12. Voinikovo, Dobric – fibulă Almgren 53 (Haralambieva 2002a, p. 38, nr. 12, pl. 1/12).
13. Localitate necunoscută din nord-estul Bulgariei – fibulă Almgren 53 (Haralambieva 2002a, p. 37, nr. 6, pl. 1/6).

România

14. Brad, Bacău – fibulă Almgren 53 (*cf.* Anexa 1, nr. 1).
15. Ocnița, Vâlcea – fibulă Almgren 52 și două fibule Almgren 53 (*cf.* Anexa 1, nr. 2–4).
16. Poiana, Galați – două fibule Almgren 53 și o fibulă Almgren 57–59 (*cf*. Anexa 1, nr. 5–7).
17. Răcătău de Jos, Bacău – fibulă Almgren 53 (*cf.* Anexa 1, nr. 8).
18. Zalău, Sălaj – fibulă Almgren 45 (*cf.* Anexa 1, nr. 9).

Serbia

19. Ćuprija (*Horreum Margi*), Pomoravlje – fibulă Almgren 45 (Petković 2010, p. 48–49, nr. 73, fig. 9, pl. IV/4).
20. Kladovo (situl Haidučka Vodenica) – fibulă Almgren 53 (Petković 2010, p. 49, nr. 74, pl. IV/5).
21. Localitate necunoscută – fibulă Almgren 53 păstrată la Muzeul din Jagodina (Petković 2010, p. 49, nr. 75, pl. IV/6).
22. Localitate necunoscută din estul Serbiei (malul Dunării?) – fibulă Almgren 53 (*cf.* Anexa 1, nr. 10).

Ucraina

23. Mala Kopanea (Malaja Kopanja), Vînohradiv, Transcarpatia – fibulă Almgren 47–48 (Kotigoroško 1994, p. 309, p. 314, fig. I/14; Kotigoroško 1995, p. 96, p. 208, fig. 52/14).

FOUR ROMAN LAMPS WITH GLADIATORIAL THEMES FROM KOCAELİ (NORTH-WESTERN TURKEY)

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Dedicated to the victims of the 1999 Kocaeli earthquake on its 27th anniversary

Keywords: *Terracotta lamps, gladiatorial themes, iconography, lamp studies, Roman period, Kocaeli, Nicomedia, Bithynia, Turkey, Anatolian archaeology, Roman archaeology*
Abstract*: Gladiators were a popular subject on Roman lamps in Asia Minor between the early first and late third centuries AD. In the collection of the Archaeological Museum of Kocaeli, in north-western Turkey, four mould-made pictorial lamps are exhibited, depicting gladiator-related scenes and equipment on their concave discus. Two lamps figure gladiatorial duels,* i.e.*, two gladiators engaged in combat; one is decorated with a frieze of gladiatorial armour and the other displays a gladiator (or a hunter) striding to the right, thrusting forward with a spear and fighting against a bear. Although the provenance of these four pictorial lamps is unknown, they most probably originated from funerary contexts in Roman Bithynia.*

Cuvinte-cheie: *opaițe de teracotă, gladiatori, iconografie, studii despre opaițe, perioada romană, Kocaeli, Nicomedia, Bitinia, Turcia, arheologie anatoliană, arheologie romană*
Rezumat: *Gladiatorii au fost un subiect popular pe lămpile romane din Asia Mică între începutul secolului I și sfârșitul secolului al III-lea d.Hr. În colecția Muzeului Arheologic din Kocaeli, din nord-vestul Turciei, sunt expuse patru opaițe realizate în matriță, care înfățișează scene și echipamente legate de gladiatori, dispuse pe discurile lor concave. Două opaițe înfățișează dueluri între gladiatori, adică doi gladiatori angajați în luptă; una este decorată cu o friză cu armuri de gladiatori, iar cealaltă înfățișează un gladiator (sau un vânător) mergând spre dreapta, înaintând cu o suliță și luptând împotriva unui urs. Deși proveniența acestor patru opaițe este necunoscută, cel mai probabil acestea provin din contexte funerare din Bitinia romană.*

1. INTRODUCTION

In the Roman period gladiatorial scenes appear, *e.g.*, on stone monuments, wall paintings, mosaics and objects of daily use such as metal (especially silverware), ceramic and glass vessels[1]. Representations of gladiators and their paraphernalia became a subject on lamps mainly in the Early Roman period and continued on into the Late Antiquity[2]. In Asia Minor numerous groups of combatants, either fighting each other or against animals, also appear frequently on terracotta lamps which are already described and discussed extensively (for their distribution, *cf.* Map 1)[3]. Especially two fighting gladiators, *i.e.*, "gladiatores duo cum scutis" (two gladiators with shields), were a popular decorative theme on Roman lamps overall[4]. As Donald M. Bailey observes, this scene appears with greater frequency on pottery from the Flavian to the Trajan era, which is also the period in which many amphitheatres were built throughout the Empire, evidently in connection with great popular favour for these activities[5].

Repeated use of gladiatorial themes in the iconographic repertory of the terracotta lamps is seen in numerous sites in Asia Minor (Map 1), especially in its western, north-western and southern parts, which closely copied lamp shapes introduced in other centres in the West

[1] Generally, on the iconography and materiality of Roman gladiators, *cf*. (in chronological order) Robert 1940; Coulston 1998; Coarelli 2001 (and other papers in Regina 2001); Lopez 2005; Vujović 2011.

[2] For the studies of lamps with gladiatorial themes, *cf.* Wollmann 1917; Couissin 1930; Blázquez 1958; Goldstein 1969; Rosenthal-Heginbottom 1981; Hellmann 1987; Puya García de Leaniz 1988; Morillo Cerdán 2001; Caron 2003; Williams 2004; Bémont 2005; Dejean 2011; Miączewska 2015; Genot 2020. In Williams 2004, the fragments from Egypt, where there was a famous gladiatorial school in Alexandria, from the Moustaki Collection, were partially Italian imports and partly local copies; these have not studied in Egypt either. For lamps with gladiatorial themes in the British Museum, *cf.* Bailey 1980, p. 51–55, pl. 75, fig. 1342, pl. 84, fig. 1400; and *idem* 1988, p. 55–58; and from Delos, *cf.* Broneer 1930, cat. no. 644, pl. 10, fig. 507.

[3] A brief, but useful study on Roman lamps with gladiatorial themes in Asia Minor is on the lamps from the slope houses in Ephesus, *cf.* Ladstätter 2002 published in an exhibition volume dedicated to gladiator related evidence from Ephesus. Also *cf.* note 6 below.

[4] Gladiators were sometimes used on lamps as symbols of the uncertainty of life: a burial from Southwark, London contains the remains of a woman with pinecones etc, a gladiator lamp and three depicting Anubis, almost certainly a follower of Isis who is attested epigraphically in Southwark.

[5] Bailey 1980.



Map 1. *Places in north-western Anatolia mentioned in the text (by L. Özlüoğlu, 2025).*

of the Empire[6]. It is very probable that many of these lamps were the products of moulds taken from imported Italian lamps, but the prototypes for all subsequent gladiatorial scenes are neither sufficiently known nor thoroughly examined. Commonly represented gladiator classes on the lamps from Asia Minor were the Samnite, *hoplomachus*, *murmillo* and *Thraex*, all of whom wear various distinctive helmet types, and bear a sword and a shield that is usually formed with distinguishing parts. Also, the *retiarius* and *secutor* were frequently pictured on these lamps, which can be grouped into a separate category.

With most of the lamps with gladiatorial themes, a great deal of the distinctiveness is generally accomplished by the use of a vocabulary of visual symbols with their heraldic equipment; in some lamps, however, it is difficult to differentiate between gladiators and hunters, or warriors and gladiators, as in most cases all three groups hold spears, lances, swords or shields. In Asia Minor, in scenes of gladiatorial combat, an architectural setting is almost always lacking on lamps, but most of the time, figures were placed on a groundline. It seems that the lampmakers, who used gladiatorial scenes as decoration, changed the position of the weapons purposely so as to be able to show the action more clearly.

Although pictorial lamps were also made in specific shapes associated with gladiatorial equipment, for example in the shape of a helmet[7], such lamps are rare in Turkish museums and sites.

In the collection of the Archaeological Museum of Kocaeli (ancient Nicomedia) in north-western Turkey, four mould-made pictorial lamps are exhibited, which depict gladiator-related scenes and equipment on their concave discus. Especially picture lamps with gladiatorial scenes on their discus have a common form, as our cat. nos. 1 and 2 below, which closely resemble the typology of Italian lamps of the first century AD. Thus, these four lamps treated at Kocaeli were probably local (Bithynian?) copies of western types of lamps with gladiatorial scenes. Although the provenance of these four pictorial lamps is unknown,

[6] *E.g.* in Pergamum, *cf.* Heimerl 2001, p. 145, nos. 581–582 (from the first half of the second century AD); in Priene, *cf.* Zahn 1904, p. 455, fig. 562; and for a lamp mould from Cnidus, *cf.* Walters 1914, cat. no. 1399, with drawing no. 331. Other findspots in Turkey with gladiatorial lamps are, in alphabetical order, *e.g.* Aezani (discus fragments of two lamps excavated in Tomb 1 of the northern necropolis, season 2016, supposedly *hoplomachus* class), Juliopolis in south-eastern Bithynia (exhibited in the Museum of Anatolian Civilizations, Ankara), Miletus (three lamps of the first–second century AD excavated in the necropolis around Değirmendere, in a burial "in corridor" G6b and chamber tomb of G6c in 2014), Myra and Andriake (season 2022), Patara (season 1996), Stratonicea (excavated in Tomb 2, season 1996) and Troy (exhibited in the Archaeological Museums of Istanbul). Also, in the Museums of Afyonkarahisar, Muğla, Silifke (acc. no. 1079) and Uşak (*cf.* below) such lamps are exhibited.

[7] Helmet-formed lamps are richly attested in the lychnological literature, *cf.* Greifenhagen 1975; Pinsker 2000; Ronke 2012; Bogdanović, Vujović 2015.

they could most probably have originated from funerary contexts in Roman Bithynia.

2. CATALOGUE OF FOUR LAMPS FROM KOCAELI

1. Lamp with volute-nozzle and figured discus depicting two gladiators in combat (Fig. 1)

L. 13.1 cm, W. 8.0 cm, H. 2.9 cm. Band handle missing. Buff clay; orange to brown glaze. Upper part coated with plum wash.

A "Volutenlampe"; its main typological features are a rounded nozzle with volutes, a concave discus with a relief decoration, which is enclosed by two concentric circles, leaving a plain, narrow, steeply sloping rim with no moulding embellishments. This well-defined form represents one of the most popular Roman pictorial lamps of the first century AD in western Asia Minor, and corresponds approximately to Broneer's Type XXII19 and Loeschcke's Type I.20.

The scene upon the discus depicts two gladiators in combat on a groundline, perhaps reflecting the final phase of their struggle. It is composed elegantly to fill the whole of the circular space: a gladiator on the left, frontal, head three-quarters left, wearing an elaborate helmet and short boots. On the left arm, a large shield; the right padded arm is stretched out to the right of the body, holding a short sword to deliver a back-handed slash. The left leg is raised as if stepping up onto the right leg of his opponent, the gladiator on the right, who has fallen on one knee, thus, defeated and still holding a shield on his left arm, which has partially fallen. On lamps, such gladiatorial combat scenes on foot feature one attacking fighter earing a crested helmet striding over and, in some cases, stepping on a vanquished fighter who is down but still fighting, sometimes with a drawn short sword.

Both gladiators hold a rectangular shield (*scutum*) on their left arm and short swords (*sica* or *gladius*) in their right hand. They have protective armour on their arms and legs. Furthermore, it is distinguishable that the gladiator on the left might be wearing a peaked and feathered crested helmet, a *subligaculum* (gathered loincloth), a tall metal shoulder-guard (*galerus*, mostly worn by *retiarii*) and a bandaged-arm guard (manica) on his right shoulder and arm, as well as a metal knee pad (*ocrea*) on his left knee, and cotton or linen bandages on his right knee.

Stylistically, both gladiators are crudely modelled, but it is not easy to identify the type of fighters. The key factor to identify their gladiatorial class is the shield, which might lead to the most accurate interpretation of the figures: the gladiator on the left is of the type known as *Thraex*, *i.e.*, a Thracian-armed gladiator, who fought with a short sword and wore a *manica* on his right shoulder and a rectangular shield on his left arm. The one on the right might be a *secutor*.

Main comparanda. This pose is found on numerous lamps, *e.g.*, one illustrated in Walters 1914, p. 85, cat. no. 558. The complete representation is given on a red-on-white lamp, Zahn 1904, p. 455, fig. 562[8].

In the Archaeological Museum of Uşak in ancient Lydia, there are three local red lamps with a later typology (late second century AD), which have an almost identical scene to the one on Kocaeli lamps nos. 1 and 3 (Figs 5–6)[9].

AD 50–ca. 100.

2. Ephesian red-on-white lamp with volute-nozzle and figured discus depicting an assortment of gladiatorial armour in five pairs (Fig. 2)

L. 12.4 cm, W. 7.8 cm, H. 2.7 cm. Handle broken. A red-on-white lamp with fine, creamy clay; not shiny red glaze over white slip[10].

Shaped almost entirely like the preceding one. The discus is accented by two sets of concentric grooves which encircle it (Diam. 5.1 cm). Rounded nozzle with volutes; the terminals carried down as ribs.

A crisply moulded discus relief with an assortment of ten pieces of gladiatorial armour in five pairs, including a pair of greaves at the top, a pair of arm guards and two short swords, one curved (Thracian?), on opposite sides of the discus, encircles it in a clockwise sweep. The weapons are apparently those of Thracian and Samnite (or *murmillo*) gladiators.

The use of gladiatorial armour in various combinations displayed on the discus of a lamp is not an unfamiliar motif in Asia Minor. It seems most popular in the second half of the first century AD. Although this armour has immediate parallels in gladiatorial equipment, there is also the possibility that some motifs represent real weapons strewn on the battlefield. A display in this manner can be found on Roman coinage of Asia Minor as well.

Comparandum. A lamp from Cyprus at the Metropolitan Museum of Art, New York, acc. no. 74.51.1849, AD 40–80[11].

It seems fairly certain that such lamps were made in Ephesus in the late first century and early second century AD.

3. Another lamp with a worn figured discus depicting two gladiators in combat (Fig. 3)

L. 9.6 cm, W. 7.1 cm, H. 2.5 cm. Complete lamp. Yellowish-soft buff clay, very worn mould.

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[8] Also *cf.* Perlzweig 1961, p. 87, cat. no. 170.

[9] Acc. nos. 7.29.70 and 6.1.76. Orange-buff clay; thin red glaze. Two framing rings with a deep groove between. Sloping rim with two spirals springing from the centre of heart-shaped nozzle. Pierced handle, grooved in front and back. The discus is very well-preserved. Clearly a local imitation of similar lamps from the West.

[10] Such lamps were discussed first in Perlzweig 1961 and by H. Williams through the finds from Kenchreai, Greece.

[11] A marble plate depicting an assortment of gladiatorial armour was found in St. John's basilica in Ephesus, *cf.* Hörmann 1951, p. 257f, pl. 63, fig. 1.



Figure 1. *No. 1. Lamp with volute-nozzle and figured discus depicting two gladiators in combat (photo by E. Lafli, 2018).*



Figure 2. *No. 2. Red-on-white lamp with volute-nozzle and figured discus depicting an assortment of gladiatorial armour in five pairs (photo by E. Lafli, 2018).*



Figure 3. *No. 3. Another lamp with a worn figured discus depicting two gladiators in combat (photo by E. Lafli, 2018).*



Figures 4a–b. *No. 4. A small lamp depicting a gladiator* (venator) *or hunter fighting against a bear (photo by E. Lafli, 2018).*



Figure 5. *A red lamp with a later typology (late second century AD), but almost identical scene as the one on Kocaeli lamps nos. 1 and 3. The Archaeological Museum of Uşak, western Turkey (photo by E. Lafli, 2026).*



Figure 6a–b. *Same as Fig. 5; acc. no. 7.29.70 (photo by E. Lafli, 2026).*

Figural discus with two very narrow framing rings. Row of blurred, small ovolo patterns on the wide and flat shoulder, sloping on the outside. Plain, rounded, short nozzle develops seamlessly; flat, knob-like solid handle.

In its deep discus the gladiators are shown in the same stance with almost identical stylistic features as the left gladiator on no. 1 above, although the lamps differ typologically. Two gladiators are facing each other in combat; the left one is penetrating the right one, who is very weathered and abraded. The left gladiator has not fallen but stands and holds a sword. The one to the left wears a sleeveless upper garment and two thigh-length greaves. The one to the right holds a short sword in his right hand ready to strike; his arm has protective padding. He has advanced his right leg with his foot behind the leg of his opponent and seems about to trip. Both gladiators have crested helmets, and both carry short rectangular shields, but it is not possible to determine whether they are shod or not. The small filling hole is punched between the legs of the left figure.

Good modelling, but the figures and other details are indistinct. Late first century AD.

4. A small lamp depicting a gladiator (*venator*) or hunter fighting against a bear (Figs 4a–b)

Acc. no. 214.

L. 9.1 cm, W. 6.9 cm, H. 3.0 cm. Well-preserved and complete. Brown clay, dark brown, mottled slip; partially cream-white colour. Unglazed. Blackened nozzle and grayish parts.

Flat shoulders, biconical body, wide ring handle, raised edge around wick-hole and flat base. Two engraved lines frame the U-shaped, short nozzle; the discus is framed by a thick and then a thin concentric ring. A small filling hole is located at the centre of the discus, between two figures.

Decoration in the guise of some sort of dots or ovolo on the outer band is worn, and rest of the shoulder is left plain.

As it is widely known, Roman gladiators brutalized brown bears inside arenas. The scenes where gladiators fight against wild animals (*venatio*), such as bears and lions, are numerous. Here, on the discus, a gladiator or hunter is fighting against an opposing bear, both shown in profile: the gladiator on the left is attacking an opposing, standing bear with a long, straight staff, most probably a spear; the right arm of the gladiator is held out straight to the side from his body with the weapon held upright in the crook of his elbow. However, in this particular scene, it is not easy to distinguish whether the combatant is a gladiator or a hunter. There are five shallow, incised vertical lines marking the hair of the gladiator or possibly indicating the upper part of a helmet. Except for his cursorily rounded eyes and nose, the mouth, ears and other facial features of the gladiator are not defined. However, his short hair and beardless face indicate him as a youthful figure. The gladiator wears a short-sleeved tunic (with V-shaped folds at the neckline) that reaches to mid-thigh and ends just above the knees, as well as boots, which are specified by two horizontal lines and come up to mid-calf. Both the costume and boots of the gladiator could not be identified by me in detail. The hair of the opposing bear is indicated by vertical incisions. Two thick diagonal lines beneath the figures effectively create a groundline and separate the scene from two concentric circles encircling the discus.

In Roman tradition, the *venatores* fought in *venationes*, which were scheduled as morning events at the Colosseum and were trained at the *Ludus Matutinus* (morning school). Such scenes, depicting gladiators fighting against an animal, are more frequent on mosaic floors rather than lamps, and are rare among the Roman finds in Turkey.

Comparandum. Perlzweig 1961, p. 124, cat. no. 844, pl. 19, fig. 844 (identified as "venator staving off bear", with a different lamp typology and in a worn state, dated to the third century AD).

Late second century AD.

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None of the photographs of the items are to scale; their dimensions are given in the catalogue. During the preparation of the manuscript, the author used Google Gemini to improve the quality of figures 1–4. The AI tool was used for brightness, contrast and colour balance. The original, unedited images are available upon request.

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THE SUPPLY SYSTEM AND THE LR1 AMPHORAE IN LATE ANTIQUITY: A HISTORICAL AND ARCHAEOLOGICAL ANALYSIS OF THE EASTERN MEDITERRANEAN THROUGH THE OLBA MODEL

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Keywords: *LR1, amphora, Cilicia, Olba,* Diocesis Orientis*, trade, supply network, military campaigns*
Abstract: *This study provides a new interpretation of the emergence of LR1 amphorae in the 4th century AD, linking the development of their canonical form directly to military and logistical imperatives. During the second half of the century, particularly amid the wars along the Sasanian frontier and the Isaurian revolts, both food supply and commercial security in the Eastern Mediterranean faced serious threats. Under these circumstances, the central Roman administration was compelled to implement measures to restore the military supply chain, which, despite its vital importance, had become increasingly dysfunctional. Emperors who established residence in Antioch and treated the city as a* de facto *capital appear to have played an active role in these initiatives. While the Isaurian revolts – largely overlooked in earlier studies – were ongoing, the ports of Korasion and Palaea along the Olba coast were transformed into strategically important supply depots, and the earliest examples of the LR1 form were intensively produced at Elaiussa Sebaste on the same coast. This study argues that the proto-LR1 amphora, much like the Dressel 20 type, emerged primarily from military necessity, and that attributing its development solely to commercial motives is inconsistent with the precarious conditions created by the revolts. The Olba region preserves material evidence of agricultural and architectural development from this period, making it a valuable micro-model for examining the economic transformations of Late Antiquity on a regional scale.*

Cuvinte cheie: *LR1, amforă, Cilicia, Olba,* Diocesis Orientis*, comerț, rețea de aprovizionare, campanii militare*
Rezumat: *Studiul de față oferă o nouă interpretare a apariției amforelor LR1 în secolul al IV-lea d.Chr., prin realizarea unei legături directe între dezvoltarea formei lor canonice și imperative militare și logistice. În a doua jumătate a secolului, în special pe fondul războaielor de-a lungul frontierei sasanide și al revoltelor isauriene, atât aprovizionarea cu alimente, cât și securitatea comercială în Mediterana de Est, au fost serios amenințate. În aceste condiții, administrația centrală romană a fost nevoită să pună în aplicare o serie de măsuri necesare restabilirii lanțului de aprovizionare militară, care, în ciuda importanței sale vitale, era din ce în ce mai disfuncțional. Împărații care și-au stabilit reședința la Antiohia și au tratat orașul ca pe o capitală* de facto *par să fi jucat un rol activ în acest sens. În timp ce revoltele isauriene – în mare parte trecute cu vederea în studiile anterioare – erau în desfășurare, porturile Korasion și Palaea localizate pe țărmul mediteraneean al Ciliciei, în regiunea Olba, au fost transformate în depozite de aprovizionare de importanță strategică, iar cele mai timpurii exemple ale formei LR1 au fost produse intens la Elaiussa Sebaste, așezare aflată în imediata vecinătate. Studiul prezintă argumente în favoarea ideii că amfora proto-LR1, la fel ca și tipul Dressel 20, a apărut în primul rând din necesități militare, iar atribuirea dezvoltării sale exclusiv unor cauze comerciale este incompatibilă cu condițiile precare create de confruntările militare. Așezările antice din regiunea Olba păstrează dovezi materiale ale dezvoltării agricole și arhitecturale datate în această perioadă, ceea ce o transformă într-un studiu de caz valoros pe plan regional pentru examinarea transformărilor economice specifice antichității târzii.*

In the Hellenistic and early Roman periods, the area located between the Kalykadnos and Lamos rivers in southern Anatolia was designated as the Olba region[1] (Fig. 1).

Characterized by steep cliffs, the Olba region functions almost as an open-air museum, where the passage of time is readily observable due to the exceptional preservation and visibility of its archaeological remains, both on the surface and within well-protected sites[2]. These remains, reflecting transformations driven by military, political, and economic developments, render Olba and its surroundings a unique case study – or a micro-model – for understanding the broader evolutionary processes that shaped not only Cilicia but the Eastern Mediterranean as a whole.

Although the region is naturally bounded by seas, mountains, and rivers, and long-term archaeological investigations have illuminated many aspects of its history, agricultural production remains insufficiently explored. This lacuna is particularly significant, as evidence suggests that the region's agricultural capacity, notwithstanding occasional interruptions, expanded steadily and with increasing intensity until the 7th century AD.

Two distinct phases of extraordinary agricultural growth are particularly notable in the region. The first spans approximately a century, beginning with the Hadrianic period in the 2nd century AD and extending through the reign of Alexander Severus in the 3rd century AD[3]. The second, more pronounced phase commenced in the

[1] Strabo XIV.5.2.

[2] For some fundamental works on the archaeological potential of the region, see Hild, Hellenkemper 1990; Machatschek 1967; Heberdey, Wilhelm 1896; Keil, Wilhelm 1931; Mackay 1967; Hill 1996.

[3] The emergence process of large farms in the 2nd century AD; the subsequent increase in production and details of architectural richness connected to it are being prepared for publication as a separate article.

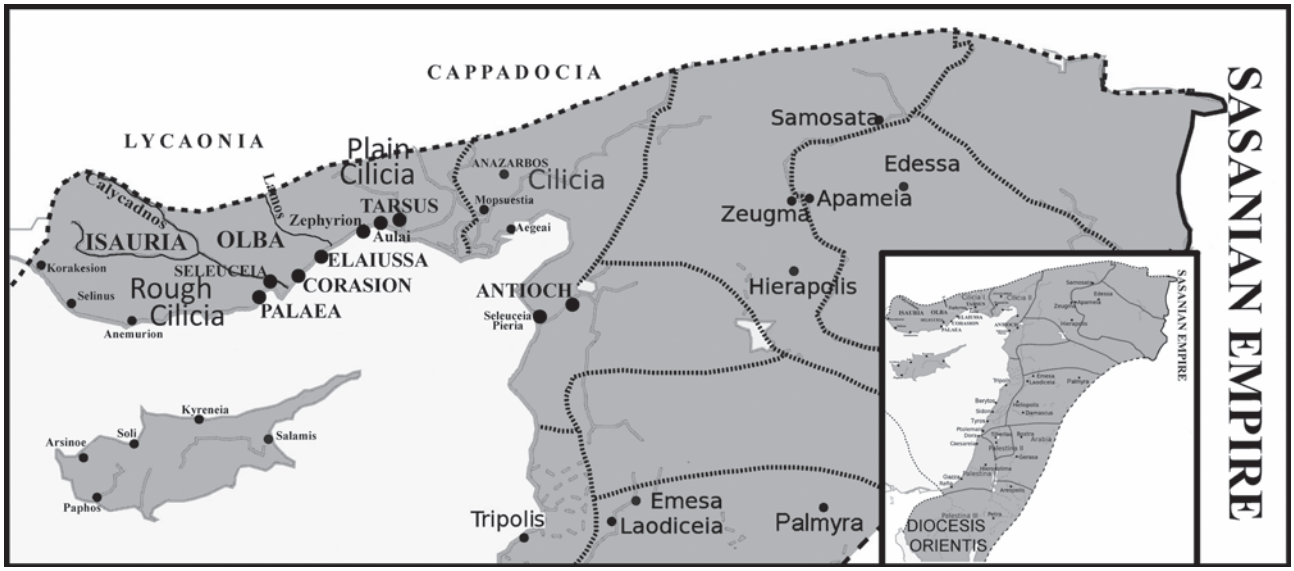


Figure 1. *Region Olba in Southern Anatolia.*

mid-4th century AD, accelerated during the 5th century AD, and subsequently continued without significant interruption. The accumulated cultural heritage of the rural sector from this period reflects the influence of military, political, and economic developments. Evidence of these changes is particularly marked in the density of settlements, churches, villas, and affluent residences[4]. The production of LR1 amphorae, which became widespread throughout Cilicia and forms the focus of this study, provides tangible material evidence linking this architectural and settlement richness to agricultural output. Nevertheless, the underlying causes for the initiation of LR1 production, the remarkable surge in its distribution, and the concurrent expansion of agricultural activity in rural areas remain insufficiently explained[5].

Although other areas of Cilicia, and indeed much of the Eastern Mediterranean, do not match the Olba region in the density of surviving archaeological remains, evidence such as the widespread distribution of LR1 production workshops demonstrates that agricultural output expanded across the Eastern Mediterranean during the 5th century AD and beyond. The broad scale of this growth suggests that local factors alone cannot account for the phenomenon; rather, it reflects underlying forces operating at an imperial level. The increase in production far surpassed local consumption, pointing to a likely connection with the imperial supply network. Accordingly, assessments of agricultural expansion, even when based on localized findings, must be contextualized within the broader historical developments of the Roman Empire. Nevertheless, the dynamics of the 4th century AD – which represent the preparatory phase for this expansive growth – should be considered separately from these subsequent developments.

CILICIA AND THE EASTERN MEDITERRANEAN IN THE 4TH CENTURY AD: CHAOS AND SUPPLY

Following the foundation of Constantinople, the presence of commercial routes linked to the Silk Road and the Spice Route coincided with the westward movement of grain shipments along the corridor connecting Cyprus and Anatolia[6]. Ships departing from Egypt now reached the new capital by following the coasts of Palestine, Syria, and Cilicia, rather than the previous route south of Crete[7]. This shift, together with the unceasing demands of Constantinople, contributed to increased production and commerce throughout the Eastern Mediterranean, including the Cilicia region, during the first half of the 4th century AD[8].

The second half of the century, however, presents a more complex scenario in Cilicia: agricultural production increased, yet the region was simultaneously engulfed in significant instability due to the Isaurian revolts and the Sasanian wars. In this context, it appears unlikely that commercial motives alone can account for the observed production increase, indicating that alternative, primarily administrative and military factors were at work.

Specific evidence, such as the conversion of Palaea port (Tahtalimanı), located just west of the Kalykadnos River, into a storage base[9], along with the transformation of Korasion

[4] Hill 1996; Eichner 2018, p. 267–292.

[5] Iacomi 2010, p. 26; Durukan 2015a, p. 242.

[6] Durukan 2015a, p. 241.

[7] Komar 2016, p. 180.

[8] For LR1 amphorae being the most widespread type among the Saraçhane finds, see Hayes 1992, p. 63–64.

[9] Amm. Marc. 14.2.13; Rizos 2015, p. 293.

(Susanoğlu) on the Olba coast into a significant supply center through the construction of a *horreum*, highlights both the increase in agricultural output and the transformation of the region into a hub for storage and distribution, particularly within Olba and its immediate surroundings.

An inscription indicates that Korasion was founded by Flavius Uranius, governor of Isauria, during the joint reigns of Emperors Valentinianus I, Valens, and Gratianus (367–375 AD)[10]. The presence of a *horreum* in this settlement provides valuable insights into the supply system, while the secure dating of the site further underscores its significance.

Equally noteworthy is the production of the earliest LR1 amphorae in the same period and region, specifically at Elaiussa Sebaste. The substantial quantities of LR1 amphorae recovered at this site, together with associated kiln remains, confirm that Elaiussa Sebaste functioned as both a production and storage center throughout the 4th century AD and beyond[11].

Collectively, these developments, which appear to form part of a coherent strategy, indicate that the system of agricultural production, storage, and distribution along the Cilician coasts was organized under central direction during the second half of the 4th century AD.

THE SASANIAN WARS AND ISAURIAN REVOLTS

Given the pervasive instability in the Eastern Mediterranean during the 4th century AD, it is crucial to examine these motivations within the context of imperial military policies and to determine which challenges generated specific logistical responses. Indeed, the chaotic conditions in the region heightened the strategic significance of Cilicia. Among the primary concerns confronting Rome at this time was the persistent Sasanian threat, which prompted the deployment of substantial military forces along the eastern frontier[12].

In the second half of the same century, a series of major revolts erupted in Isauria[13]. These uprisings, which demanded considerable attention from Rome, illustrate the prolonged nature of conflict that underlines the strategic importance of the Cilicia region. Although often overshadowed by tensions with the Sasanians, these revolts provide essential insights for understanding the establishment of agricultural production and Rome's supply network in Cilicia. To fully comprehend these connections, it is necessary to examine the scale and chronology of the revolts, the prevailing conditions of the period, and the administrative measures undertaken.

The first revolt, occurring in 353–354 AD, saw the Isaurians attack provision depots at the port of Palaea, besiege the city of Seleukeia, seize supply ships along the Kalykadnos River, and place the Roman legions stationed there under the threat of starvation. Nebridius, serving as *Comes Orientis*, intervened with a substantial force and restored order[14]. These events demonstrate that the region was already integrated into the imperial supply chain, that the Isaurians specifically targeted provision depots, and that their attacks extended into the cities of Pamphylia[15].

Subsequent revolts in 359 and 367 AD again saw the Isaurians ravage Cilician and Pamphylian cities, systematically looting urban centers and affluent rural estates. Ultimately, the Romans were compelled to negotiate treaties with the Isaurians, following terms analogous to those used in agreements with foreign adversaries[16].

Although administrative measures were implemented around 370 AD, including the establishment of the province of Lycaonia and the reduction of Isauria's borders, these precautions proved insufficient to prevent further unrest. In 377 AD, Valens, stationed in Antioch, personally intervened and successfully suppressed a revolt that erupted the previous year[17].

Despite the recurring nature of Isaurian uprisings, the events of 404 AD eclipsed all previous disturbances. By this time, the Isaurians – likely supported by Hunnic and Gothic groups – inflicted devastation across an extensive territory. Advancing through Cilicia, the rebels reached Syria, Phoenicia, and Palestine, pushing as far as the Sasanian frontier before returning to Isauria via Mesopotamia. Their raids continued into Pamphylia and Lycia, extended to Cyprus, and even reached Lycaonia, Pisidia, Cappadocia, and Pontus[18].

After this period, Isaurian bands continued to traverse and plunder Asia Minor. A decree issued by Arcadius on 27 April 408 AD specifically mandated that the trials of Isaurian bandits should not be postponed, even during religious festivals[19]. This chronology highlights that the Isaurian threat persisted well beyond the 4th century AD and that the insecurity along the Cilician coasts had repercussions for the broader Eastern Mediterranean.

The persistently volatile province of Isauria, together with the Sasanian frontier, fell, like Cilicia, under the administrative jurisdiction of the *Diocesis Orientis* (Fig. 1).

[10] Keil, Wilhelm 1931, p. 102–107; Hild, Hellenkemper 1990, p. 311; Rizos 2015, p. 293.

[11] On Elaiussa Sebaste and other LR1 production centers, see Ricci 2007, p. 170–171; Ferrazzoli-Ricci 2007, p. 671; Burragato *et alii* 2007, p. 690–691; Schneider 2008, p. 118–120; Ferrazzoli-Ricci 2009, p. 37; Empereur, Picon 1989, p. 239, fig. 18–19; Alkaç 2012, p. 323; Opaiț 2004, p. 295; Pieri 2005, p. 70; Bezeczky 2013, p. 158–159; Gillett, Iacomi 2025, p. 17–19. Furthermore, concerning recent studies on LR1 production centers in the Cilicia region, see Alkaç 2013, p. 107–124; Alkaç 2015, p. 151–159; Şenol, Alkaç 2017, p. 831–843; Aydın *et alii* 2021, p. 137–174; Alkaç, Adıbelli 2024, p. 85–97; Alkaç-Arıcı 2025. Regarding the ceramic dumps identified in the settlements of Zephyrion and Aulai pointing to LR1 production, see Durukan 2015b, p. 15, 50.

[12] Lenski 2002, p. 167–185.

[13] Amm. Marc. 14.2.1–20; Hild, Hellenkemper 1990, p. 35–39; Lenski 2002, p. 198–200; Kurt 2018, p. 808–809.

[14] Hild, Hellenkemper 1990, p. 35–36.

[15] Lenski 1999b, p. 423; Kurt 2018, p. 808; Alkaç 2024, p. 156.

[16] Hild, Hellenkemper 1990, p. 36–38.

[17] Hild, Hellenkemper 1990, p. 37.

[18] Hild, Hellenkemper 1990, p. 38–39.

[19] Hild, Hellenkemper 1990, p. 38.

This arrangement conferred considerable military, political, and strategic significance on the *Diocesis Orientis*, necessitating the establishment of a reliable supply chain. According to the administrative design, border forts were to be provisioned primarily by nearby farms, thereby minimizing transport difficulties. Consequently, the frontier provinces were obliged to supply the garrison units (*limitanei*) stationed within their territories[20].

Given the Sasanian and Isaurian threats, it is difficult to regard any stage of the Eastern Mediterranean supply chain as independent of the Roman state's central decision-making apparatus. On the contrary, the specific circumstances surrounding the conversion of the port of Palaea, immediately west of Seleukeia, into a storage base, the construction of a *horreum* at Korasion, just east of Seleukeia, and the production of the earliest LR1 amphorae at Elaiussa Sebaste on the Olba coast gain added significance when considered in the context of the Isaurian revolts. These activities, forming integral components of the supply chain, were strategically implemented in coastal settlements closest to Roman forces stationed in Isauria.

During the revolt of 353–354 AD, Seleukeia hosted a garrison and three legions in its vicinity[21]. These measures were primarily intended to provision the armies engaged against the Isaurians and to maintain regional security. The evidence thus reinforces the likelihood that the state played a decisive role in the emergence of LR1 amphorae. In a region rendered unsuitable for trade by security risks, complementary investments were made to support military operations. Alongside production, storage, and logistical facilities—which constituted the main elements of the supply system—a specific type of transport container was devised. From this perspective, the emergence of LR1 amphorae should be understood not as an isolated phenomenon, but as an integral component of a broader, centrally coordinated supply network.

In short, the appearance of the LR1 form must be interpreted primarily in relation to military requirements rather than commercial considerations. The historical developments of the 4th century AD suggest a strong connection between this type of amphorae and the regional military and administrative context. A holistic approach that integrates archaeological evidence with historical background offers a new perspective on the role of the state in the emergence and chronological development of the LR1 amphora. To this end, it is essential to examine the historical circumstances that clarify these archaeological correlations.

THE 'DE FACTO' CAPITAL OF THE EAST: ANTIOCH

At this juncture, a crucial detail must be emphasized. For much of the forty-one-year period between Constantine's death (337 AD) and that of Valens (378 AD), Antioch functioned as the residential center and *de facto* capital for the emperors. Specifically, Constantius II (337–361 AD), Julian (363–364 AD), and Valens (364–378 AD) spent significant periods of their reigns in the city. Constantius maintained a continuous residence in Antioch from 338 to 350 AD[22], while Valens governed from the city between 371 and 378 AD[23]. Julian, though ruling for only two years, spent approximately fifteen months in Antioch. During this period, significant developments in the organization of the supply system occurred.

This period, during which Antioch served as the *de facto* capital, coincided with ongoing conflicts along the Sasanian frontier and repeated revolts in Isauria. The emperors' decision to reside in Antioch reflected the necessity for rapid and direct intervention in response to these security challenges. Consequently, the provisioning of both a large civilian population and substantial military forces in Antioch necessarily implies the existence of a robust supply system. Within this context, any examination of the supply network and the chronology of its associated components must focus in particular on the developments that occurred during Antioch's tenure as the imperial seat.

THE REIGN OF JULIAN

By the 4th century AD, the organization of the imperial supply system had become a central concern, recognized as crucial by every emperor, yet remaining unresolved despite repeated reform attempts. The acute crisis faced by Julian in Antioch, resulting from grain shortages and systemic failures in provisioning, constitutes the most striking example of this problem. During his residence in Antioch in preparation for his Sasanian campaign[24], a severe food shortage emerged, attributed both to scarcity and a series of misguided administrative decisions[25].

In response to the shortage, Julian imposed a ceiling price on wheat; however, this measure inadvertently enabled a group of wealthy individuals to acquire the entire supply, exacerbating the crisis. The consequent strain on provisioning the army placed severe pressure on the civilian population of Antioch. Concurrently, inflation and social unrest intensified, prompting the public to openly express their dissatisfaction with the emperor[26].

This tension is narrated with irony in Julian's own *Misopogon*. While the emperor censures the people of Antioch for idleness, indulgence, and luxury, the populace accuses him of stinginess and hostility to pleasure. Beneath these exchanges, however, the core issue is not moral but

[20] Jones 1964, p. 458.

[21] Amm. Marc. 14.2.14; Lenski 1999a, p. 313, n. 21; Kurt 2018, p. 819–820.

[22] Baker-Brian 2023, p. 7.

[23] Kelly 2018, p. 137.

[24] Gibbon 1836, Vol. 2, Chp. XXIV, p. 367; Jones 1964, p. 123.

[25] Amm. Marc. 22.13.4; 22.14.1; Libanius, *Orationes*, 1.103, 126, 208, 15.21, 18.195–198.

[26] Gibbon 1836, Vol. 2, Chp. XXIV, p. 367–369.

practical: the army's substantial demands paralyzed the local economy and precipitated a food crisis[27].

Although the food crisis that unfolded in the city is recounted in Julian's *Misopogon* as well as in the works of prominent contemporary authors, Ammianus and Libanius, none of these sources provides any indication of an effective supply system. Julian's interventions to mitigate the burden of provisioning on the city's population are generally interpreted as conventional measures, reflecting the routine strategies employed by emperors in response to subsistence crises[28]. Moreover, some scholars argue that such measures might not have been implemented at all had the emperor not been personally present in Antioch:

"Another example will show that it is the administrative, and not the geographical status of the imperial residence, which ensured that it was so carefully provided for. In 362–363 Julian resided in Antioch while preparing for war with Persia. Due to the concentration of troops in the city, and also due to a recent drought that had destroyed the crops, a severe shortage broke out in the city. The measures that Julian took to relieve the crisis were remarkable – and needless to say – were not again applied to that city, either before or after this incident. At first he took administrative measures against the crisis, regulated the market prices of the city, and exempted citizens from taxes. Then, when all this had failed, he had large amounts of grain imported from the nearby cities of Chalkis and Hierapolis. Subsequently, he continued to offer a sizeable quantity of corn from his own patrimony and household and finally he had Egyptian grain brought to the city and sold at an extremely low price. This would never had occurred in Antioch, if the emperor had not resided there at that time."[29]

These measures, taken together, illustrate the absence of a stable and institutionalized supply system, forcing the emperor to rely on a sequence of *ad hoc* interventions. Rather than reflecting a coordinated logistical framework, Julian's response reveals a reactive and situational approach to provisioning, shaped by immediate necessity rather than long-term planning.

Viewed from this perspective, the food crisis that unfolded in Antioch in 363 AD assumes particular significance as a *terminus post quem*, revealing the fragility of the existing supply system, the absence of a coordinated logistical network, as well as the reliance on *ad hoc* decisions to manage the crisis.

Under these conditions, Julian's campaign ended in failure, and the harsh treaty imposed on his successor, Jovian, in the same year further compounded Rome's difficulties along the eastern frontier. With key frontier fortresses and strategic sites, such as Nisibis, ceded to the Sasanians, Antioch's centrality increased markedly[30]. Consequently, the urgency of addressing the deficiencies in the supply system became increasingly evident in parallel with the escalation of these challenges.

THE REIGN OF VALENS

By the time of Valens, the list of major challenges confronting the empire had expanded significantly. Alongside the Gothic threat, the Isaurian revolts and the wars against the Sasanians demanded urgent attention[31]. In response, Valens transferred the administrative and military center of the state to Antioch in AD 371 and organized regular summer campaigns along the eastern frontier. He also departed from Antioch both to suppress the Isaurian revolt in 377 and to conduct his final campaign – the Gothic War – in 378[32]. In short, during Valens' reign, Antioch functioned not merely as the emperor's residence but as the military and diplomatic heart of the East, serving as the central hub of frontier defense and imperial authority[33].

Lenski's comprehensive analysis of Valens highlights that notable developments related to the economy are concentrated during this emperor's reign[34], with particular emphasis on the supply system. Both Valentinianus and Valens were aware that certain prior revolts had been triggered by deficiencies in food provisioning. Consequently, ensuring the reliable supply of food not only for the army but also for the metropolises was recognized as essential for maintaining internal security. To this end, they exerted considerable effort to guarantee the seamless functioning of the supply system and, owing to the measures they implemented, experienced no severe disruptions, even during periods of famine[35]:

"To the credit of both emperors, the careful measures they took for provisioning forestalled any potential troubles in the metropoleis. Despite the famine of 370, the Constantinopolitans seem never to have rioted over food under Valens. And in Rome, even a devastating flood in 374 did not interfere with the efficient distribution of food under Valentinian's new system."[36]

In addition, by the second half of the 4th century AD, it had become evident that the number of *horrea* across the empire was insufficient, or that the locations of strategic risk zones had shifted. Simultaneously, while the state bureaucracy – hampered by corruption and theft – imposed restrictions on the construction or repair of other public buildings, it actively encouraged local administrators to erect *horrea* and *stabula* during this period[37]. Throughout his extended residence in Antioch, Valens, seeking solutions to both security and supply challenges, is known to have attempted to improve the logistical organization

[27] Julian, *Misopogon* 368d–370d.
[28] Jones 1964, p. 446; Marvin 2023, p. 310.
[29] Stathakopoulos 2007, p. 216.
[30] Ostrogorsky 1991, p. 47.
[31] Ostrogorsky 1991, p. 47–48.
[32] Jones 1964, p. 153.
[33] Lenski 2002, p. 153–185.
[34] Lenski 2002, p. 185, 287.
[35] Lenski 2002, p. 279–280.
[36] Lenski 2002, p. 281.
[37] Rickman 1971, p. 192; Lenski 2002, p. 281.

by constructing *horrea* at key points, in collaboration with Valentinian, to regulate the transportation of state grain, wine, and oil[38]. A notable example of this policy is the harbor of Korasion on the Olba coast, together with its *horreum*; Flavius Uranius, appointed governor of Isauria by Valens, is recorded as having constructed this complex between 367 and 375 AD[39]. During the same period and along the same coastline, the harbor of Palaea was similarly converted into a storage facility[40]. Although the region's principal cities (Seleuceia and Elaiussa Sebaste) already possessed extensive storage centers, the establishment of these new depots in close proximity to the epicenter of the Isaurian uprisings reflects deliberate efforts to ensure uninterrupted provisioning for the troops.

However, as Rizos noted, while a substantial number of *horrea* were constructed during the first half of the 4th century AD, this policy shifted in the latter half of the century: new *horrea* were erected only when strictly necessary, and the supply system previously sustained through the *annona* gradually gave way to the practice of making cash payments (*adaeratio*) to soldiers[41].

The *horreum* at Korasion, constructed during this period, provides valuable insight into the practical implications of these imperial policies for the Olba coastline and, more broadly, for the Eastern Mediterranean. As is well documented, the Isaurian revolts – beginning in the mid-4th century, recurring intermittently, and continuing into the late 5th century – posed a prolonged, exhausting, and destructive challenge that engaged both emperors and the army. The construction of the Korasion settlement and its *horreum* coincided with the most intense phase of these uprisings. Under such circumstances, commercial activity along the Cilician coast would have been severely constrained. Consequently, it is evident that the harbor and *horreum* at Korasion were not intended for trade or export, but were strategically designed to supply the Roman forces stationed primarily in Isauria, as well as those in Antioch and along the Sasanian frontier. In essence, the Korasion *horreum* reflects a broader effort along the Olba coast to expand the Antioch-centered logistical network and establish a reliable supply chain to meet the army's needs. Similarly, during the reigns of Valens and Valentinian, specific regulations were introduced to oversee and reinforce the cursus publicus, which functioned as the logistical backbone of the *annona militaris*.

"It seems likely that every province was first charged with the maintenance of its own governor and his officium, and of the local stations of the cursus publicus. The latter needed some regulation: in 365 the consular Anatolius reported that in the Suburbicarian provinces fodder for the several post stations was arbitrarily demanded, and laid down a scheme whereby each city should provide fixed quantities at predetermined dates, proper regard being had to the length and difficulty of the journey".[42]

The *cursus publicus* constituted a crucial institution that ensured the rapid and regular delivery of the *annona* required by the garrisons. Efforts to place this system under stricter oversight appear to have been part of a broader program aimed at strengthening the imperial supply network. In this context, during the reigns of Valens and Valentinian, measures were undertaken to repair the logistical backbone of the supply system and to enhance the operational effectiveness of the army.

Notably, no supply crises are recorded during the annual campaigns against the Sasanians and Isaurians in the lead-up to the Gothic War of 378 AD. The fact that some of these operations were conducted by Valens' generals (Arintheus, Terentius, Traianus, and Vadomarius)[43] suggests that by this period the supply system could respond to multiple, overlapping military demands within a centrally coordinated framework. Indeed, authors such as Zosimus and Themistius emphasize the attention devoted to the supply system, particularly during the Gothic campaigns in Thrace, noting that earlier disruptions had precipitated civil unrest and food shortages. Their accounts further underscore the significance of Valens' contributions to the logistical apparatus[44].

THE EMERGENCE AND STATUS OF LR1 AMPHORAE

Events during the reigns of Julian and Valens provide important clues for dating the emergence of LR1 amphorae. This amphora type represents a period in which the supply system functioned more effectively. Literary accounts of the food crisis in Antioch under Julian make no mention of either a well-organized supply network or the existence of LR1 amphorae, underscoring the shortcomings of the system at that time. Therefore, if LR1 amphorae were part of an operational supply network, they did not yet exist in 363 AD.

It is estimated that LR1 amphorae assumed their characteristic form by the mid-4th century AD[45], with the earliest examples attested at Elaiussa Sebaste. This suggests that the amphora group may have been part of the extensive program under Emperor Valens aimed at reforming the supply system. The efficient and timely delivery of provisions and military equipment was a critical aspect of Roman logistical operations. Beyond serving as transport containers for various supplies, amphorae also functioned as standardized units within the logistical record-keeping system, forming an integral link in the overall supply chain.

[38] Rickman 1971, p. 184.
[39] Keil, Wilhelm 1931, p. 102–107; Hild, Hellenkemper 1990, p. 311.
[40] Amm. Marc. 14.2.13; Rizos 2015, p. 293.
[41] Rizos 2013, p. 681.
[42] Jones 1964, p. 458.
[43] Kelly 2018, p. 151.
[44] Zosimus 4.10.3–4; Themistius 10, 138 b-c; Lenski 2002, p. 127–137; Rizos 2013, p. 681.
[45] Opaiț 2010, p. 1017; Reynolds 2005, p. 575; Gillett, Iacomi 2025, p. 42.

Within this framework, it is necessary to consider the state's potential role in the emergence of the LR1 form. The continuous production of amphorae of approximately the same type between the 4th and 7th centuries reflects a systematic phenomenon unlikely to have arisen by coincidence. Some scholars argue that LR1 amphorae represent a regional type, produced by multiple cities independently of state control[46]. However, the chronological parallel between periods in which several emperors personally resided in Antioch due to military necessities – such as the Sasanian wars and the Isaurian revolts – and the appearance of LR1 amphorae suggests a centrally coordinated and programmatic organization within the supply chain rather than mere coincidence. Indeed, the southern coasts of Anatolia were strongly affected by the Isaurian revolts during the period in which these amphorae appeared, making it more meaningful to associate the 4th-century production at Elaiussa Sebaste with military provisioning rather than commercial activity in a region engulfed by chaos. From this perspective, it can be inferred that the emergence and standardization of the LR1 form were largely shaped by the central Roman administration and the logistical hub at Antioch.

To understand the rationale behind this standardization, it is instructive – at least comparatively – to consider the Dressel 20 amphorae. Emerging suddenly in the 30s AD and specifically selected by the Roman state as strategic carriers for military provisioning in Germania, Dressel 20 amphorae were produced in a uniform form for roughly 250 years, reflecting direct state control[47]. In a similar manner, the standardized shape of LR1 amphorae may have functioned as a "brand" representing the products of the Eastern provinces and the state itself, much as Dressel 20 did in the West. This suggests that a mechanism of standardization was likely implemented to ensure state supervision of the supply process. Within this framework, one of the earliest production centers may have been located in the vicinity of Antioch, the *de facto* capital[48]. Moreover, if the initial outputs from Elaiussa Sebaste were intended to provision armies operating in Isauria, it is plausible that Seleuceia ad Kalykadnos, the provincial capital of Isauria, was among the first production sites. However, in the absence of systematic archaeological excavations in Seleuceia, this remains a speculative hypothesis.

In summary, during the second half of the 4th century AD, amid Sasanian tensions and the Isaurian revolts, there was a pressing need for an organized supply system in the *Diocesis Orientis*, with Antioch playing a central role in its development. Notably, under Valens, considerable efforts were devoted to coordinating production, storage, and distribution. It is therefore plausible that the LR1 amphora form was integrated into the supply system during this same period.

CONCLUSION

The emergence of the LR1 amphora type cannot be fully understood without reference to the military and administrative pressures that intensified during the second half of the 4th century AD. In Late Antiquity, both the distribution and the sheer density of LR1 amphorae indicate an agricultural output far surpassing local demand. The evidence presented here (the Isaurian revolts and the Sasanian threat, the establishment of storage bases at Palaea and Korasion, the earliest production of LR1 amphorae at Elaiussa Sebaste, and the food crisis experienced in Antioch) demonstrates that the LR1 form did not originate as a commercial innovation. Rather, it functioned as an integral component of a centrally coordinated provisioning program, primarily designed to sustain the eastern armies. Within this framework, it is crucial to distinguish the developments of the 4th century AD from those that unfolded in the 5th century and beyond.

During the 4th century AD, the transformation of Constantinople into a major metropolis altered the established trade routes, directing merchants from Egypt and the broader Eastern Mediterranean along the Cilician coasts. This reorientation provided favorable conditions for the distribution of agricultural products from Cilician cities across the ancient world. More importantly, these circumstances contributed to the rapid expansion of agricultural production throughout the Eastern Mediterranean, reinforcing the underlying production infrastructure. Yet, this period of commercial opportunity was profoundly reshaped by the Sasanian Wars and the Isaurian revolts, which began in the mid-4th century AD and persisted until the century's end; the existing agricultural infrastructure was increasingly redirected to serve the military supply system.

One of the primary criteria for selecting regions dedicated to agricultural production within the supply system was the imperative to locate them in close proximity to areas where logistical and security challenges were most acute. According to Roman administrative practice, frontier provinces bore responsibility for provisioning the garrisons stationed within their territories[49]. In this context, Cilicia emerged as one of the most suitable production zones capable of meeting the needs of the eastern armies during

[46] Reynolds 2005, p. 575–577.

[47] Bernal-Casasola *et alii* 2023, p. 104–107.

[48] Reynolds rejects this view and argues that Antioch and its immediate surroundings were not involved in the initial production of LR1 amphorae, suggesting instead that the origin should be sought in small settlements located in the highlands of Eastern Cilicia, see Reynolds 2005, p. 578. In contrast, Decker, based on the density of workshops, characterizes Syria during the Late Roman and Early Byzantine periods as "a land overflowing with grain, wine, and oil." Taking into account the discovered kilns and production waste, he also indicates that the area around Antioch could have served as an LR1 production center, see Decker 2001, p. 77, 82. For early LR1 finds at Seleuceia Pieria, see Pieri 2005, p. 80, fig. 38; Gillett, Iacomi 2025, p. 34.

[49] Jones 1964, p. 458.

the 4th century AD. Moreover, the presence of Isauria and the Sasanian frontier (two of the most volatile and strategically sensitive regions of the empire) within the administrative boundaries of the *Diocesis Orientis* rendered the intensification of agricultural production across the Eastern Mediterranean, and particularly in Cilicia, both expected and virtually inevitable.

In this framework, agricultural production and LR1 amphorae functioned as complementary components of a unified supply chain. The development of a coherent supply program within the *Diocesis Orientis* in the fourth century AD thus appears to have been driven by both bureaucratic requirements and military necessity. Cilicia and the Olba region, in turn, became not merely a frontier landscape marked by rebellion and warfare but also the central locus for production, storage, and distribution. The prolonged use of Antioch as the *de facto* administrative center following Constantine's death further amplified the urgency and strategic significance of this supply network. Viewed in conjunction with the supply obligations imposed upon the frontier provinces, the archaeological, philological, and historical evidence collectively supports the conclusion that military and administrative priorities were decisive factors in the emergence of the LR1 amphora form.

In parallel with these developments, LR1 amphorae are estimated to have assumed their canonical form in the mid-4th century AD or shortly thereafter, coinciding with the period of wars and revolts. The identification of early examples, dated to the 4th century AD and referred to as Proto-LR1, produced at Elaiussa Sebaste, holds particular significance for this phase. It is also plausible that early production occurred at major centers such as Antioch, Seleucia, and Tarsus[50]. Nevertheless, the recognition that Proto-LR1 amphorae were produced within the Cilicia region itself is of critical importance. This development coincides with the transformation of Korasion – immediately west of Elaiussa Sebaste – into a strategic harbor with the construction of a *horreum*, and with the conversion of the nearby Palaea harbor (Tahtalimanı) into a storage facility.

The conflicts of the 4th century AD amplified the need for provisioning, prompting the planning of a structured production organization. While scholars such as Reynolds and Tate have questioned the presence of direct state control over production, it is evident that by the second half of the 4th century AD, the state exercised decisive influence over every aspect of the production organization. Moreover, given the insecurity of the period, commercial activity is unlikely to have been a significant factor. In particular, at a time when the Isaurians were capable of devastating the coasts between Cilicia and Pamphylia, linking the increase in agricultural production and the initiation of LR1 amphora manufacture to purely commercial motives appears implausible.

In short, during the second half of the 4th century AD, a period marked by recurrent wars and revolts, agricultural production and associated processes were more likely determined in accordance with state priorities, with LR1 amphora production commencing in parallel. The military and political developments of the time indicate that the organizational framework associated with LR1 amphorae and the broader supply chain was planned during the reign of Valens.

The turbulent conditions created by these historical developments also correspond with the trajectory of construction activities in the region and the local chronology of a major ceramic group that was widely distributed across the Mediterranean. In the Olba region, no distinctive architectural phase can be assigned to the 4th century AD; only a few churches are attested[51], and there is no evidence for high-status residential architecture. The securely dated structures of this period consist mainly of functional installations such as harbors, warehouses, and a *horreum*. By contrast, the 5th century AD represents the most prosperous phase of construction activity, demonstrated by the emergence of large villas and a notably high number of churches, clear indicators of accumulated wealth and expanding commercial activity. Given the instability of the preceding decades, it is more reasonable to date this flourishing architectural landscape to the mid-5th century AD or slightly later.

A similar pattern can be observed in the ceramic record, particularly in the distribution of red-slipped pottery identified in the ancient cities excavated along the Cilician coast. Widely recognized as indicators of commercial exchange, these ceramics offer a meaningful contrast to LR1 amphorae, which are interpreted here as products of a state-directed military supply system.

"Red-slipped ceramics, the most important commercial vessels of the Mediterranean world, have yielded similar results on the southern coasts. The historical density of Cypriot, African and Phokaian ceramics found at Tarsus, Soli and Kelenderis increases from the late 4th–5th century AD. The African and Phokaian ceramics from Elaiussa Sebaste also increase from the end of the 4th century AD. The examples of red-slipped ceramics from these cities dating to the second half of the 4th century AD are limited"[52].

Red-slipped pottery, one of the Mediterranean's most significant archaeological assemblages with considerable chronological importance, provides a valuable indicator of the intensifying commercial activity along the Cilician coast in the late 4th century AD. The absence of this ceramic group throughout the second half of the 4th century, combined with the dating of its earliest examples to the end of the century, suggests that the effects of the Isaurian

[50] For the discovery of a group of amphorae (Proto-LR1) in Tarsus, dated to the second half of the 4th century AD, see Alkaç 2024, p. 157. I would like to thank Erkan Alkaç and Işık Adıbelli for providing information indicating that the production center of these amphorae, currently under analytical study, may have been Elaiussa Sebaste or Tarsus.

[51] Hill 1985, p. 97; Ceylan 2009, p. 52.

[52] Alkaç 2024, p. 157.

threat persisted and that regular, secure trade was unlikely to have been established before that time.

These observations, based on both construction activities and ceramic evidence, highlight the security challenges faced in the Olba region during the second half of the 4th century AD. Under these conditions, it is reasonable to conclude that production and supply were driven more by military needs than by commercial interests, under state supervision.

The available archaeological, historical, literary, and architectural evidence considered together indicates that the emergence of the LR1 form coincided with the development of an increasingly structured supply system. All these developments observed in the Eastern Mediterranean and the Olba region are dated to the second half of the 4th century AD and should therefore be considered separately from the 5th century. While a range of factors may have contributed to the emergence of the LR1 form, the evidence presented here consistently points to state-directed, military-driven production as the primary determining force. The entire process cannot be adequately explained by trade alone; rather, it reflects the specific administrative and logistical conditions of the period and the region.

In the 4th century AD, the emergence of the LR1 form is best understood—much like Dressel 20 amphorae—as the result of a centrally directed decision shaped by military necessity. The available evidence supports this interpretation. During a period marked by the Isaurian revolts and intense Sasanian conflicts, LR1 production appears to have been concentrated within a limited geographical zone. Although the precise duration of state oversight remains uncertain, the Olba region—where the earliest archaeological evidence is concentrated—offers a micro-model for understanding these broader economic and logistical transformations.

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COINS OF A MONUMENTAL STRUCTURE IDENTIFIED AS A TEMPLE-PLAN TOMB AT OLBA

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Keywords: *Cilicia, Olba, monumental structure, monumental tomb, coin*

Abstract: *The first archaeological excavations at the monumental structure in Olba, identified as a temple-plan tomb, were carried out in 2025 and completed within the same year. During these investigations, a total of 45 coins were recovered from different areas and stratigraphic layers. When evaluated together with their findspots and stratigraphic contexts, the early group of coins, dated to the reigns of Antoninus Pius and Licinius II, can be understood to belong to the initial phase of use of the structure. In contrast, the later finds, the majority of which date from the mid-4th century AD to the first quarter of the 5th century AD, indicate that the structure was used for a different function during the Late Roman period following architectural modifications. While the architectural elements bearing cross motifs identified within the structure support this transformation, a coin of Justin II recovered from the surface level points to the period after the abandonment of the structure. These data indicate that the structure was constructed in the mid-2nd century AD, lost its original function in the mid-4th century AD, and continued to be used for different purposes at least until the first quarter of the 5th century AD. In conclusion, the coins recovered from the excavation of the temple-plan tomb clarify the chronological framework of the structure's phases of use and provide a holistic evaluation consistent with the archaeological and architectural evidence.*

Cuvinte-cheie: *Cilicia, Olba, edificiul monumental, mormânt monumental, monedă*

Rezumat: *Primele cercetări arheologice efectuate asupra edificiului monumental de la Olba, identificat drept un mormânt de tip templu (temple-plan tomb), au fost realizate în anul 2025 și finalizate în cursul aceluiași an. În cadrul acestor investigații au fost descoperite 45 de monede provenind din diferite sectoare și contexte stratigrafice. Analizate împreună cu locurile de descoperire și cu poziția lor stratigrafică, emisiunile monetare timpurii, datate în timpul lui Antoninus Pius și Licinius II, pot fi atribuite fazei inițiale de utilizare a edificiului.*

În schimb, descoperirile monetare târzii, majoritatea datând din intervalul cuprins între mijlocul secolului al IV-lea p.Chr. și primul sfert al secolului al V-lea p.Chr., indică faptul că edificiul a fost reutilizat cu o funcționalitate diferită în perioada romană târzie, ulterior unor modificări arhitectonice. Elementele arhitectonice decorate cu motive cruciforme, identificate în interiorul structurii, susțin această transformare funcțională, iar o monedă emisă în timpul lui Justin II, recuperată din nivelul de suprafață, indică o etapă ulterioară abandonării edificiului.

Aceste date demonstrează că structura a fost edificată la mijlocul secolului al II-lea p.Chr., și-a pierdut funcția originară către mijlocul secolului al IV-lea p.Chr. și a continuat să fie utilizată în scopuri diferite cel puțin până în primul sfert al secolului al V-lea p.Chr. În concluzie, materialul numismatic provenit din săpătura mormântului de tip templu contribuie la clarificarea cadrului cronologic al etapelor de utilizare ale edificiului și permite o evaluare integrată, concordantă cu datele arheologice și arhitecturale.

INTRODUCTION

The monumental structure in Olba, identified as a temple-plan tomb, is one of the most iconic structures of the city. It is located on the plain west of the acropolis, approximately 150 m southwest of the theatre (Fig. 1). The monumental structure, located on the plain to the west of the acropolis, was constructed along a northwest–southeast axis. The front façade of the structure faces southeast, towards the ancient road[1] leading south from Olba.

Researchers visiting Olba have made assessments and carried out documentation studies on the monumental structure that constitutes the subject of this study, as well as on many of the city's buildings. However, these studies were limited to the parts of the building visible on the surface. Therefore, the excavations carried out at the structure in 2025 constitute a first both for the city and the region and have enabled the acquisition of significant data regarding the structure. In addition, a cistern was uncovered approximately 2 m to the east of the structure, and the interior of this vaulted cistern is completely filled with soil and stone debris[2].

The first documentation study of the monumental structure in Olba, identified as a temple-plan tomb, was

[1] The traces of the ancient road between Olba and Keşlitürkmenli Neighborhood can still be observed in places today.

[2] The cistern, which could only be partially excavated due to structural stability concerns, may provide significant data in future excavations once protective measures are implemented.



Figure 1. *The place of the monumental structure identified as a temple-plan tomb in the city topography.*

carried out by Gertrude Bell in 1905[3]. Bell identified the structure as a temple. The duo Keil and Wilhelm, who conducted the first serious studies on the structure, suggested in their 1931 publication that the building could be a "Grave House" and produced the first plan, indicating a single-room building with a column base in its southwest corner[4]. Subsequent scholars, MacKay[5], Hild, Hellenkemper[6], and Hallet, Coulton[7], have also provided information on the structure. In recent years, researchers visiting the region have conducted more comprehensive studies on the building.

Söğüt, in his 1998 doctoral study, identified the structure at Olba as a "temple" consisting of two parts—a naos and a pronaos—and dated the building to the late 2nd century AD to the early 3rd century AD[8]. Berns, who produced a plan featuring a single-room building with four columns at its front, described the monumental structure as a "temple tomb" and dated it to the Augustan period, based on architectural similarities with the temple tomb at Elaiussa Sebaste (Cat. 10A1)[9] and the stylistic features of its pilaster column capitals[10]. Cormack described the structure as a "tomb" with *antae*, featuring a *tetrastylos-prostylos* plan and a *cella*, and dated it to the late 2nd century AD to the early 3rd century AD[11].

Erten, who initiated the first scientific studies in Olba through surface surveys[12], noted in his detailed work on the structure that it is not a single-room building but is divided into two by a single central arch. He also suggested that the building could have a *tetrastylos-prostylos* temple plan and may be dated to the late 2nd century AD to the early 3rd century AD[13]. Durukan[14], who classified the temple tombs in the Olba region according to their roof systems and established their chronologies, evaluated the structure at Olba as Type 2A (single-arched roof in the center)[15] due to its single-arch feature, dating it to the reign of Septimius Severus (193–211 AD) [16].

[3] Album 'D': Photographs taken by Gertrude Bell while travelling in Turkey, Gertrude Bell Archive, https://gertrudebell.ncl.ac.uk/a/gb-3-1-4-1?albumpage=8.

[4] Keil, Wilhelm 1931, p. 84–85, Plan 110, Lev. 37, Fig. 109.

[5] MacKay 1976, p. 642.

[6] Hild, Hellenkemper 1990, p. 370.

[7] Hallet, Coulton 1993, p. 54–55, no. 39.

[8] Söğüt 1998, p. 99–101, Kat. no. 18, Lev. 46–48, Drawing No. 38–39.

[9] The aforementioned monumental tomb is designated as T11 in various publications: Machatschek 1967, p. 107, Taf. 52–24, Fig. 68–69; Durukan 2009, p. 347–348, Fig. 4.

[10] Berns 2003, p. 113, 242, Kat. no. 32B1, Lev. 21,4, 22, 1–2, dn. 355.

[11] Cormack 2004, p. 255–256.

[12] Erten 2002, p. 188; Erten 2003, p. 55–57, Drawing No. 1–7, Fig. 1–2; Erten 2004, p. 11–12, Drawing No. 1–3; Erten 2007.

[13] This dating has been proposed based on a comparison with the monumental tomb at Demircili (Imbriogon Kome), which exhibits similar architectural features and contains inscriptions: Erten 2007, p. 151–152.

[14] Twenty-six monumental tombs located in the Olba region were evaluated as part of this study: Durukan 2009.

[15] It has been noted that the slab stones used in the superstructure of the building were supported by a single arch running parallel to the shorter sides: Durukan 2009, p. 359, 369, Fig. 14.

[16] The structure that constitutes the subject of this study was identified as a temple by Bell and Söğüt, while many researchers have associated it with temple-plan monumental tombs, which are widely attested in the region. However, since all of these assessments are based solely on

ARCHAEOLOGICAL EXCAVATIONS

The first excavations at the monumental structure identified as a temple-plan tomb were carried out in 2025 (Fig. 2)[17]. The structure is oriented southwest–northeast, and its entrance is from the southeast. Local limestone blocks were used throughout the entire structure. The monumental structure, with a rectangular plan and a podium measuring 9 m × 14.5 m at the *euthynteria* level, consists of the pronaos and naos sections. The *euthynteria* is composed of blocks measuring 1.25 m in length and 0.35–0.40 m in height. The podium, 1.55 m high, was built with three courses of carefully cut blocks: the lowest forming the base, and the uppermost profiled as a cornice. The podium blocks on the west, east, and north façades of the structure are preserved *in situ* and are in good condition. However, it is observed that plant roots have caused minor damage to some blocks and have displaced others.

The preserved sections of the structure's northwest and northeast walls were constructed with eight courses of finely cut rectangular blocks without mortar. Orthostats form the second course from the bottom. At the upper northeast corner of the wall, which rises 4.85 m from the podium to its highest point, stands a Corinthian pilaster capital.

The southeast-facing entrance is accessed *via* a *crepidoma* with seven steps, whose widths range from 0.28 m to 0.32 m and heights from 0.20 m to 0.23 m. Most of the steps on the western side of the crepidoma, however, have not survived. The pronaos measures 7.20 m × 3 m, while the naos measures 7.20 m × 8 m.

The 2025 excavations yielded significant results regarding both the structure's architectural decoration and its archaeological finds. Thirty-one high-quality stone artifacts, featuring a variety of decorations related to the superstructure and architectural ornamentation, were identified. These include Corinthian column capitals, pilaster capitals, architraves, S-profiled friezes, pediments, *sima*, and cornice blocks. Dentil courses and rosettes are the most frequently observed decorative elements on these stone artifacts.

In addition to the architectural evidence, small archaeological finds that provide important information about the building's phases of use were also recovered. These include a gold earring set with a pearl, numerous glass and ceramic objects, metal finds, lamps, a marble finger fragment likely belonging to a statue or figurine, and the coins that constitute the main focus of this study.

PRELIMINARY ASSESSMENT OF THE ARCHITECTURE OF THE STRUCTURE

Before the building's excavation, the best-preserved sections that have survived to the present are the rear wall, which includes the pilaster capital at the eastern corner, and, to a lesser extent, the east side wall. However, a photograph[18] published by Keil and Wilhelm in 1931 clearly shows that the rear wall had already suffered damage[19]. During the 2025 excavation season, the structure, with its preserved section exposed, ranks among the largest monumental buildings in the region in terms of its dimensions[20].

The naos of the two-part building has a stone-block floor. At the rear of the naos, a platform measuring 7.20 m × 3.25 m was separated from the naos by a wall made of two courses of stone blocks, raised 0.60 m above the podium floor. Excavations in this area revealed a dense ash layer, indicating the former presence of a wooden floor. In addition, the numerous small finds recovered in this area give the impression that this section may have been a basement where offerings brought to the structure were stored. On the southwest side wall of the structure, the base of the *anta* wall separating the naos and the pronaos stands *in situ*. Although not yet clarified, it is possible that there were two columns between the antae. In front of the *antae* lies the pronaos, measuring 7.20 m × 3 m.

The architrave blocks, pediment corner block, ceiling coffers, column fragments, and capitals recovered from the structure, constructed of local limestone, indicate, as noted in previous studies, that the building may have had a *tetrastylos-prostylos* arrangement in the Corinthian order on its front façade.

Access to the pronaos is provided via the seven-step crepidoma, with a doorframe at its lower eastern side that appears to have been a later addition. The exposure of wall courses at the southeast and northwest corners of the structure, indicative of the Late Antique period, suggests that the building was repurposed during these periods through additional constructions.

architectural features observable on the surface, there is no consensus regarding its function. As this study primarily aims to present the coins recovered from the structure together with the initial data obtained from the excavations, a cautious approach has been adopted, and the name of the structure has been expressed as a "monumental structure identified as a temple-plan tomb". The precise function of the structure, that is, whether it is a monumental tomb or a temple, will only be clarified through detailed studies of its architecture incorporating new data obtained from archaeological excavations. Following the completion of these comprehensive evaluations, the architecture of the structure will be published separately in a dedicated study.

[17] A detailed architectural description of the temple, along with the recovered finds and sculptural elements, is currently in the preparation for publication.

[18] Keil, Wilhelm 1931, p. 84–85, pl. 37, Fig. 109.

[19] It is likely that the architectural blocks belonging to the temple were reused in the walls of nearby gardens or village houses. It should also be noted that *spolia* were commonly employed in the construction or repair of architectural structures in antiquity.

[20] The temple's measurements are provided under the heading "Archaeological Excavations".



Figure 2. *The monumental structure identified as a temple-plan tomb before and after the excavations.*



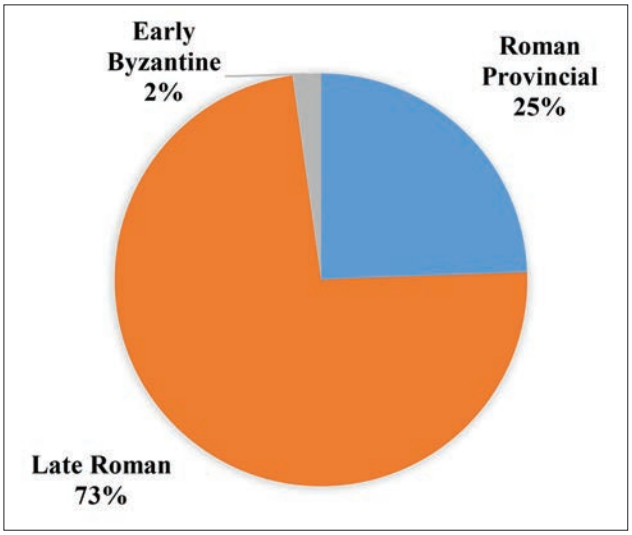
Figure 3. *The distribution of the coins within the monumental structure identified as a temple-plan tomb.*

COINS

A total of 45 coins were recovered during the excavations of the monumental structure in Olba, identified as a temple-plan tomb, which were initiated in 2025 and completed within the same year (Fig. 3). The earliest of these coins is a Roman provincial struck at Diocaesarea in the name of Antoninus Pius (AD 138–161), while the latest coin is a Byzantine issue dated to the reign of Justin II (AD 565–578). The coins are categorized into three main groups: Roman Provincial (11), Late Roman (33), and Early Byzantine (1) (Graph 1).

An examination of the minting locations of the Roman Provincial coins indicates that the majority originate from Olba and other cities in the Cilicia region. Of the 11 Roman Provincial coins, three were struck at Diocaesarea, two each at Corycus, Seleucia ad Calycadnum, and Olba, one at Peltae, while the mint of one heavily corroded coin could not be determined (Cat. Nos. 1–11). Considering the distribution of these Roman Provincial coins by emperors, they were struck between the reigns of Antoninus Pius (AD 138–161) and Valerian I (AD 253–260), with the majority dating to the first half of the 3rd century AD (Table 1).

Among the 33 Late Roman coins recovered from the monumental structure identified as a temple-plan tomb excavations, the earliest example is a coin of Probus, dated to AD 280–281, while the latest was struck in the name of Theodosius II between AD 406 and 408 (Cat. Nos. 12–44). Covering a time span of slightly over a century, the emperors of 18 of these coins can be identified, whereas



Graph 1. *The percentage distribution of the coins from the monumental structure identified as a temple-plan tomb in Olba by period.*

the emperors of 11 coins remain unidentifiable due to their poor condition. However, given the types of their reverses, these 11 coins can be dated to the period between AD 357 and 408. The four Late Roman coins with poorly preserved reverses can also be assigned to the same period based on their metrological features and the stratigraphic layer in which they were found.

Due to their low metal quality and poor preservation, the mint is discernible on only 13 of the Late Roman coins.

	Corycus	Diocaesarea	Seleucia ad Calycadnum	Olba	Peltae	Uncertain	Total
Antoninus Pius, 138–161		1					**1**
Septimius Severus, 193–211		1					**1**
Caracalla, 198–217				1			**1**
Geta, 198–209					1		**1**
Philip I, 244–249	1	1					**2**
Trebonianus Gallus, 251–253			1				**1**
Valerian I, 253–260	1		1				**2**
2nd–3th century				1		1	**2**
Total	**2**	**3**	**2**	**2**	**1**	**1**	**11**

Table 1. *The distribution of the Roman Provincial coins found in the excavations of the monumental structure identified as a temple-plan tomb in Olba by mint and emperor.*

Mint	Antiochia		Constantinople		Cyzicus		Rome	Nico.	Uncertain		**Total**
Denomination	Ant.	AE3	AE3	AE4	Folles	AE3	Folles	AE3	AE3	AE4	
Probus, 276–282	1										1
Diocletian, 284–305					1						1
Constantine I, 306–337							1				1
Licinius II, 317–324								1			1
Constantius II, 337–355				1							1
Valentinian I, 364–375			2								2
Valens, 364–378		1		1		1			1		4
Arcadius, 383–408		1		1					2	1	5
Aelia Eudoxia, 400–404								1			1
Theodosius II, 402–450									1		1
357–363										1	1
364–392										1	1
378–388										1	1
383–403										4	4
395–401									3		3
406–408									1		1
4th–5th century										4	4
Total	1	2	2	3	1	1	1	2	8	12	**33**

Table 2. *The distribution of the Late Roman coins found in the excavations of the monumental structure identified as a temple-plan tomb in Olba by emperor, mint, and denomination.*

The most frequently represented mint is Constantinopolis, with five coins, followed by three coins struck at Antiochia, two each from Cyzicus and Nicomedia, and one from Rome. Examining the distribution of the Late Roman coins by denomination, there is one *antoninianus*, two *folles*, and 15 examples each in the AE3 and AE4 denominations (Table 2).

The single Byzantine coin, a *follis* / 40 *nummia* struck at Nicomedia, was issued in the name of Justin II in AD 570–571 (Cat. No. 45).

CONCLUSION

The numerous architectural sculptural elements and small archaeological finds recovered during the excavations of the monumental structure identified as a temple-plan tomb clearly demonstrate that the building served an important function throughout its period of use. When the architectural features of the structure uncovered in the Olba excavations are evaluated, it is understood that it was constructed in the mid-2nd century AD, lost its original function in the mid-4th century AD, and, following repairs and additions, continued to be used with a different function until the first quarter of the 5th century AD[21]. Apart from the other archaeological finds in the structure, the coins from secure contexts evaluated in this study provide important clues for identifying the traces of different phases within the structure. When the coins recovered from the excavations of the monumental structure are evaluated with consideration of their findspots and levels, it is observed that the first 15 coins in the catalogue, representing the original phases of use of the structure and dated to the reigns of Antoninus Pius (AD 138–161) and Licinius II (AD 317–324), were largely recovered within the structure, from secure contexts reflecting the initial phase of use of the structure. In contrast, the coins, most of which were found in the excavations on the eastern side of the structure or at levels close to the surface, represent the second phase, during which the structure was used for different purposes, with additions, beyond its original function (Cat. Nos. 16–44). This more numerous group of coins, dating from the mid-4th century AD to the first quarter of the 5th century AD, is corroborated by architectural changes observed in the building during the Late Roman period. The column shaft bearing a cross motif found in the structure, together with the architectural arrangement outside the structure, clearly indicates that the building was used for a different function during the Late Roman period.

The single coin of Justin II (AD 570–571), recovered at surface level at the rear of the structure, fell into the area after the building had been abandoned, reflecting a phase in which the structure was no longer in use (Cat. No. 45). An evaluation of the chronological distribution of the coins recovered at Olba, along with previously published examples, shows that those from the Roman and Early Byzantine periods are predominant, whereas coins from the Classical and Hellenistic periods are represented in much smaller numbers[22]. However, the fact that, with the exception of a single specimen, all of the coins recovered from the monumental structure identified as a temple-plan tomb that constitutes the subject of this study are dated to the Roman period supports our assessment that there was no construction in the area where the structure was built prior to the 2nd century AD and that the structure was abandoned and went out of use in the 5th century AD.

In conclusion, the contextual coins analyzed in this study are consistent with the building's construction and use phases, providing significant insights regarding its history.

[21] The Cilicia region came into contact with Christianity in the 1st century AD, and Olba emerged as an important center that was rapidly influenced by the new faith. Both written sources and archaeological evidence underscore the city's significance during the Christian period. Written sources, in particular, emphasize that Olba sent representatives to councils discussing major Christian issues from the 4th century onward; see: Özyıldırım 2012, p. 110–111; Yeğin, Özyıldırım 2020, p. 79.

[22] Sarıiz 2014; Akçay 2017a, p. 69–78; Akçay 2017b, p. 211–227; Erten 2017, p. 129–146; Akçay 2019, p. 137–152; Aksoy 2019; Oyarçin, Yeğin 2025, p. 294–303; Oyarçin 2025, p. 22–37.

CATALOGUE

Roman Provincial Coinage

Cilicia

Olba

Caracalla, AD 198–217
AD 211–217
Obv: [AY K M AYP ANTΩNINOC CEB]
Emperor Caracalla, cuirassed and wearing *paludamentum*, riding horseback advancing right; right arm raised.
Rev: [OΛBEΩN]
Helios, radiate, driving *quadriga* right, holding the reins in left hand and whip in right; billowing cloak behind.
Ref: SNG Levante 664; Staffieri 62, pl. VI, 55.
1*. AE, 26 mm, 12.86 g, Dp. 12, Exc. Inv. O.25.ANT.M.S.15.

2th–3th century AD
Obv: Empty throne of Zeus Olbios.
Rev: OΛBEΩN
Hermes advancing, left, holding purse and *caduceus*.
Ref: RPC I, 3742a.
2*. AE, 20 mm, 4.17 g, Dp. 12, Exc. Inv. O.25.ANT.M.S.23.

Diocaesarea

Antoninus Pius, AD 138–161
Obv: ΑΔΡΙΑΝΩΝ
Draped bust of Hermes (head assimilated to portrait of Marcus Aurelius as Caesar), right; to left, *caduceus*.
Rev: ΔΙΟΚΑΙCΑΡΕΩΝ
Vine-branch with bunch of grapes and two leaves.
Ref: RPC IV.3, 6207; SNG France 2, 857.
3*. AE, 17 mm, 3.71 g, Dp. 12, O.25.ANT.M.S.04.

Septimius Severus, AD 193–211
Obv: [AYTOKP KAIC Λ CEΠTI CEOYHPOC ΠEP CEB]
Laureate, draped and cuirassed bust of Septimius Severus, right.
Eagle standing right, head left, in oval punch.
Rev: A[ΔP ΔIOKAICAP]EΩN
Hexastyle temple; statues of Nike standing on each side and another Nike as *acroterion*; in the pediment, a *bucranium*; to left, a tree on an altar.

Ref: BMC Cilicia 6–7; RPC V.3, online (https://rpc.ashmus.ox.ac.uk/coin/433142).
4*. AE, 28 mm, 14.22 g, Dp. 7, O.25.ANT.M.S.11.

Philip I, AD 244–249
Obv: ΑΥΤ Κ Μ ΙΟΥΛΙΟC ΦΙΛΙΠΠΟC CEB
Radiate, draped and cuirassed bust of Philip I, right.
Rev: ΑΔΡΙ ΔΙΟ[ΚΑΙCΑΡΕΩΝ ΜΗΤΡΟ] - ΚΕΝ / ΝΑ / ΤΩ
Tyche of Diocaesarea seated right on a cubic chair, holding ears of corn, her right foot resting on a swimming river-god; facing her, the Tyche of Olba standing left, holding a rudder and a *cornucopia*.
Ref: BMC Cilicia 17; SNG Pfalz 419–422; SNG Cop. Cilicia, 129; SNG Levante Supp. 179 ; RPC VIII, online (https://rpc.ashmus.ox.ac.uk/type/2053).
5*. AE, 37 mm, 19.48 g, Dp. 6, O.25.ANT.M.S.07.

Seleucia ad Calycadnum

Trebonianus Gallus, AD 251–253
Obv: [ΑV Κ ΓΑΙ ΟVΑΙ ΤΡΕΒΟ] ΓΑLLOC
Radiate, draped and cuirassed bust of Trebonianus Gallus, right.
Rev: CΕΛΕΥΚΕΩΝ ΤΩΝ ΠΡΟC ΤΩ ΚΑΛΥΚΑΔΝΩ
Draped busts of *kalathos*-wearing Tyche on the right and of laureate Apollo on the left, facing each other; *cornucopiae* behind Artemis, palm between.
Ref: SNG France 2, 1046–1052.
6*. AE, 34 mm, 13.41 g, Dp. 6, O.25.ANT.M.S.18.

Valerian I, AD 253–260
Obv: ΑΥ Κ Π[Ο ΛΙΚ ΟΥΑ]ΛΕΡΙΑΝ/ΟC
Radiate, draped and cuirassed bust of Valerian, right.
Rev: CΕΛΕ[ΥΚΕΩ]Ν ΤΩΝ [ΠΡΟC ΚΑΛΥ]ΚΑΔΝΩ
Draped bust of laureate Apollo right, facing draped bust of *kalathos*-wearing Tyche left; branch between; *cornucopia* to right.
Ref: RPC X, online (https://rpc.ashmus.ox.ac.uk/type/60507); SNG Turkey 2, 305.
7*. AE, 34 mm, 15.56 g, Dp. 6, Exc. Inv. O.25.ANT.M.S.16.

Corycus

Philip I, AD 244–249
Obv: ΑΥΤ Κ Μ ΙΟΥΛΙΟC [ΦΙΛΙΠΠΟC] CEB
Laureate, draped and cuirassed bust of Septimius Severus, right.
Rev: Κ[ΡΥΚΙΩΤΩΝ ΑΥΤΟΝΟΜ]
Thalassa standing left, wearing crab-claw headdress, raising right hand, holding aphlaston and rudder.
Ref: BMC Cilicia 17; SNG v. Aulock, 5684; SNG Pfalz 838 ; RPC VIII, Online (https://rpc.ashmus.ox.ac.uk/type/3135).
8*. AE, 33 mm, 16.23 g, Dp. 12, O.25.ANT.M.S.06.

Valerian I, AD 253–260
Obv: ΑΥ Κ ΠΟ ΛΙΚ ΟΥΑΛΕΡΙΑΝΟC
Radiate, draped and cuirassed bust of Valerian, right.
Rev: ΚΩΡΥΚΙΩΤΩΝ ΑΥ ΝΑΥΑΡΧΙC, ΘΕΜΙΑ
Large inscribed prize crown standing on a three-legged table, containing a *caduceus*, a palm branch, and an aplustre; to the right, Dionysus standing left, holding a bunch of grapes over a panther and a *thyrsus*; below the table, a vase.
Ref: SNG v. Aulock, 5686; RPC X, online (https://rpc.ashmus.ox.ac.uk/coin/285733).
9*. AE, 32 mm, 19.44 g, Dp. 5, O.25.ANT.M.S.05.

Phrygia

Peltae
Geta, AD 198–209
Obv: ΠΟ CEΠ ΓΕΤΑC ΚΑΙ
Bare-headed, draped and cuirassed bust of Geta, right.
Rev: [Π]ΕΛ[Τ]ΗΝΩΝ [ΜΑ CΤΡ ΜΗΤΡΟΒΙΟΥ]
Tyche standing left, holding rudder on globe and *cornucopia*.
Ref: RPC V.2, online (https://rpc.ashmus.ox.ac.uk/coin/345758).
10*. AE, 23 mm, 6.02 g, Dp. 6, Exc. Inv. O.25.ANT.M.S.09.

Undefinite Mint and Emperor

2th–3th century AD
Obv: [ ]
Laureate, draped and cuirassed bust of the emperor right. ΚΑ in monogram and small circle within Δ.
Rev: Bad condition.
11. AE, 28 mm, 10.00 g, Dp. [ ], Exc. Inv. O.25.ANT.M.S.25.

Roman Imperial Coins

Probus, AD 276–282

Antiochia
AD 280–281
Obv: IMP C M AVR PROBVS P F AVG
Radiate, draped and cuirassed bust of Emperor, right.
Rev: CLEMENTIA TEMP
Probus, on left, standing right, in military garb, holding a transverse eagle-tipped scepter in left hand and receiving a globe from Jupiter with right hand; Jupiter, on right, standing left, nude except for cloak, holding a long vertical scepter in left hand and offering a globe with right hand; A• in center; XXI in exergue.
Ref: RIC V/2, 920.
12*. AE, *Antoninianus*, 25 mm, 4.30 g, Dp. 6, Exc. Inv. O.25.ANT.M.S.02.

Diocletian, AD 284–305

Cyzicus
AD 295–299
Obv: IMP C C VAL DIOCLETIANVS P F AVG
Radiate, draped and cuirassed bust of Emperor, right.
Rev: CONCORDIA MI-LITVM
Diocletian holding *parazonium*, standing left, receiving Victory on globe from Jupiter holding spear, ΚΓ in center.
Ref: RIC VI, 16a.
13*. AE, *Follis*, 21 mm, 3.09 g, Dp. 6, Exc. Inv. O.25.ANT.M.S.13.

Constantine I, AD 306–337

Rome
AD 313–316
Obv: IMP CONSTANTINVS P F AVG
Laureate, draped and cuirassed bust of Emperor, right.
Rev: SOLI INV-I-CTO COMITI
Sol radiate standing left, *chlamys* across left shoulder, right hand raised, and holding globe in left. C in left field / S in right field. R T in exergue.

Ref: RIC VII, 27.
14*. AE, *Follis*, 21 mm, 2.89 g, Dp. 12, Exc. Inv. O.25.ANT.M.S.14.

Licinius II, 317–324 AD

Nicomedia
AD 321–324
Obv: D N VAL LICIN LICINIVS NOB C
Helmeted and cuirassed bust of the Emperor holding spear and shield, left.
Rev: IOVI CONS - ERVATORI
Iupiter is standing, head to the left, naked except for *chlamys* across left shoulder, holding Victory on globe in right hand and eagle-tipped scepter in left, captive on the ground to the right, eagle to the left holding wreath in beak; X above IIΓ in right field. Mintmark: SMNΓ
Ref: RIC VII, 49.
15*. AE3, 20 mm, 3.25 g, Dp. 11, Exc. Inv. O.25.ANT.M.S.12.

Constantius II, AD 337–355

Constantinople
AD 337–340
Obv: D N CONSTAN - TIVS P F AVG
Laureate head of Emperor, right.
Rev: GLOR - IA EXERC - ITVS
Two soldiers helmeted, standing facing one another, reversed spear in outer hand, inner hand on shield resting on the ground, between them one standard. Mintmark: CON[ ]
Ref: RIC VIII, 26.
16*. AE4, 16 mm, 1.17 g, Dp. 5, Exc. Inv. O.25.ANT.M.S.41.

Valentinian I, AD 364–375

Constantinople
AD 364–367
Obv: D N VALENTI[NI] - ANVS [P F AVG]
Pearl-diademed, draped and cuirassed bust of Emperor, right.
Rev: SECVRITAS-REIPVBLICAE
Victory advancing left, holding wreath and palm branch. Mintmark: CON[ ]
Ref: RIC IX, 21a; LRBC II, 2071.
17*. AE3, 16 mm, 2.37 g, Dp. 6, Exc. Inv. O.25.ANT.M.S.01.

Obv: D N VALENTINI - ANVS P F AVG
Pearl-diademed, draped and cuirassed bust of Emperor, right.
Rev: RESTITV - TOR REIP
Emperor standing facing, head right, holding *labarum* in right hand and Victory on globe in left. Mintmark: CONSPΔ
Ref: RIC IX, 20a.
18*. AE3, 17 mm, 2.17 g, Dp. 12, Exc. Inv. O.25.ANT.M.S.35.

Valens, AD 364–378

Cyzicus
AD 364–375
Obv: D N VALEN- [S P F AVG]
Pearl-diademed, draped and cuirassed bust of Emperor, right.
Rev: [SECVRITAS] - REIPVBLICAE
Victory advancing left, holding wreath and palm branch. Mintmark: [SM]KΔ
Ref: RIC IX, 11b; LRBC II, 2629.
19*. AE3, 18 mm, 2.24 g, Dp. 12, Exc. Inv. O.25.ANT.M.S.42.

Constantinople
AD 364–367
Obv: D N VALENS - [P F AVG]
Pearl-diademed, draped and cuirassed bust of Emperor, right.
Rev: [GLORIA RO-MA]NORVM
Emperor walking right, holding *labarum* and dragging a captive behind him. Mintmark: [C]ON[ ]
Ref: RIC IX, 16b; LRBC II, 2069.
20*. AE4, 15 mm, 1.26 g, Dp. 6, Exc. Inv. O.25.ANT.M.S.43.

Antiochia
AD 364–375
Obv: [D N VALEN]- S P F AVG
Pearl-diademed, draped and cuirassed bust of Emperor, right.
Rev: [SECVRITAS-REIPVB]LICAE
Victory advancing left, holding wreath and palm branch. Mintmark: ANTA
Ref: RIC IX, 12b; LRBC II 2657.
21*. AE3, 14 mm, 1.74 g, Dp. 5, Exc. Inv. O.25.ANT.M.S.08.

Undefinite Mint
AD 364–375
Obv: D N VALEN- [S P F AVG]
Pearl-diademed, draped and cuirassed bust of Emperor, right.
Rev: [SECVRITAS-REIPVBLICAE]
Victory advancing left, holding wreath and palm branch. Mintmark: [ ]
22. AE3, 14 mm, 1.40 g, Dp. 12, Exc. Inv. O.25.ANT.M.S.03.

Arcadius, AD 383–408

Constantinople
AD 388–392
Obv: D N ARCAD[IVS] P F AVG
Bust of emperor, pearl diademed, draped and cuirassed right.
Rev: [SALVS REI – PVB]LICAE
Victory advancing left, with right hand carrying trophy on shoulder, and left dragging captive. Chi-Rho in left field. Mintmark: [C]ONSPA
23*. AE4, 14 mm, 1.01 g, Dp. 12, Exc. Inv. O.25.ANT.M.S.27.

Antiochia
MS, AD 406–408
Obv: [D N ARC]A[DI] –VS P F AVG
Pearl-diademed, draped and cuirassed bust of Emperor, right.
Rev: [GLORI-A ROMA]-NORVM
Three emperors (Arcadius, Honorius and Theodosius II) standing facing, the two outermost holding spears with outer hand and leaning on shields with inner hands, the innermost with head right holding spear in right hand and globe in left hand. Mintmark: ANTA
Ref: RIC X 151; LRBC II, 2801.
24*. AE3, 15 mm, 1.83 g, Dp. 6, Exc. Inv. O.25.ANT.M.S.33.

Undefinite Mint
AD 388–392
Obv: D N ARCADIVS P F AV[G]
Pearl-diademed, draped and cuirassed bust of Emperor, right.
Rev: SAL[VS REI – PVBLI]CAE
Victory advancing left, with right hand carrying trophy on shoulder, and left dragging captive. Chi-Rho in left field.
25. AE4, 13 mm, 1.54 g, Dp. 6, Exc. Inv. O.25.ANT.M.S.38.

AD 395–401
Obv: D N ARCADI – [VS P F AVG]
Pearl-diademed, draped and cuirassed bust of Emperor, right.
Rev: [VIRTVS – EXERCITI]
Emperor standing left, head right, spear in right hand, resting left hand on shield, Victory standing left, palm branch in left hand, crowning emperor with wreath in right.
26. AE3, 17 mm, 2.16 g, Dp. 6, Exc. Inv. O.25.ANT.M.S.28.

MS, AD 406–408
Obv: D N ARCA[DI –VS P F AVG]
Pearl-diademed, draped and cuirassed bust of Emperor, right.
Rev: GLORI-[A ROMA]-NORVM
Three emperors (Arcadius, Honorius and Theodosius II) standing facing, the two outermost holding spears with outer hand and leaning on shields with inner hands, the innermost with head right holding spear in right hand and globe in left hand. Mintmark: [ ]
27. AE3, 16 mm, 1.79 g, Dp. 6, Exc. Inv. O.25.ANT.M.S.34.

Aelia Eudoxia, AD 400–404

Nicomedia
AD 400–401
Obv: AEL EVDO - XIA AVG
Pearl-diademed, draped and cuirassed bust of Empress, right, crowned by hand of God.
Rev: GLORI[A RO – MANORVM]
Empress enthroned facing, hands folded over breast, crowned by the hand of God: cross in right field. Mintmark: SMN[ ]
Ref: RIC X, 80.
28*. AE3, 17,5 mm, 2.12 g, Dp. 12, Exc. Inv. O.25.ANT.M.S.44.

Theodosius II, AD 402–450

Undefinite Mint
MS, AD 406–408
Obv: D N THE[ODO]- [SIVS P F AVG]
Pearl-diademed, draped and cuirassed bust of Emperor, right.
Rev: GLORI[-A ROMA-NORVM]
Three emperors (Arcadius, Honorius and Theodosius II) standing facing, the two outermost holding spears with outer hand and leaning on shields with inner hands, the innermost with head right holding spear in right hand and globe in left hand.
29. AE3, 14 mm, 1.34 g, Dp. 6, Exc. Inv. O.25.ANT.M.S.10.

Undefinite Emperor and Mint

Iulianus II / Contantius II, AD 357–363
Obv: [ ]
Pearl-diademed, draped and cuirassed bust of Emperor, right.
Rev: [SPES REI] – PVB[LICAE]
Emperor helmeted, in military dress standing left holding globe and spear.
30. AE4, 15 mm, 1.41 g, Dp. 6, Exc. Inv. O.25.ANT.M.S.30.

***AD* 364–392**
Obv: [ ]
Pearl-diademed, draped and cuirassed bust of Emperor, right.
Rev: [GLORIA RO-MANORVM]
Emperor walking right, holding *labarum* and dragging a captive behind him.
31. AE4, 16 mm, 2.37 g, Dp. 12, Exc. Inv. O.25.ANT.M.S.36.

***AD* 378–388**
Obv: [ ]
Pearl-diademed, draped and cuirassed bust of Emperor, right.
Rev: VOT / XX / MVLT / [XXX] in four lines within wreath.
32. AE4, 13 mm, 0.73 g, Dp. 12, Exc. Inv. O.25.ANT.M.S.22.

***AD* 383–403**
Obv: [ ]
Pearl-diademed, draped and cuirassed bust of Emperor, right.
Rev: [SALVS REI – PVBLICAE]
Victory advancing left, with right hand carrying trophy on shoulder, and left dragging captive. Chi-Rho in left field.
33. AE4, 15 mm, 1.11 g, Dp. 12, Exc. Inv. O.25.ANT.M.S.17.
34. AE4, 14 mm, 1.54 g, Dp. 12, Exc. Inv. O.25.ANT.M.S.37.
35. AE4, 13 mm, 0.95 g, Dp. 6, Exc. Inv. O.25.ANT.M.S.45.
36. AE4, 12 mm, 1.28 g, Dp. 12, Exc. Inv. O.25.ANT.M.S.29.

Arcadius / Honorius, AD 395–401

Obv: [ ]
Pearl-diademed, draped and cuirassed bust of Emperor, right.
Rev: [VIRTVS – EXERCITI]
Emperor standing left, head right, spear in right hand, resting left hand on shield, Victory standing left, palm branch in left hand, crowning emperor with wreath in right.
37. AE3, 17 mm, 2.76 g, Dp. 6, Exc. Inv. O.25.ANT.M.S.31.
38. AE3, 16 mm, 1.07 g, Dp. 12, Exc. Inv. O.25.ANT.M.S.32. *Rev:* VIRTVS – [EXERCITI]
39. AE3, 15 mm, 1.00 g, Dp. 6, Exc. Inv. O.25.ANT.M.S.21.

Arcadius / Honorius / Theodosius II, AD 406–408

Obv: [ ]
Pearl-diademed, draped and cuirassed bust of Emperor, right.
Rev: [GLOR - IA ROMA – NORVM]
Three emperors (Arcadius, Honorius and Theodosius II) standing facing, the two outermost holding spears with outer hand and leaning on shields with inner hands, the innermost with head right holding spear in right hand and globe in left hand.
40. AE3, 14 mm, 1.27 g, Dp. 6, Exc. Inv. O.25.ANT.M.S.26.

4th–5th century AD

Obv: [ ]
Pearl-diademed, draped and cuirassed bust of Emperor, right.
Rev: Bad condition.
41. AE4, 17 mm, 3.09 g, Dp. [ ], Exc. Inv. O.25.ANT.M.S.40.
42. AE4, 14 mm, 1.43 g, Dp. [ ], Exc. Inv. O.25.ANT.M.S.20.
43. AE4, 14 mm, 1.09 g, Dp. [ ], Exc. Inv. O.25.ANT.M.S.39.
44. AE4, 13 mm, 1.82 g, Dp. [ ], Exc. Inv. O.25.ANT.M.S.19.

Byzantine Coins

Justin II, AD 565–578

Nicomedia
AD 570–571
Obv: D N IVSTI-NVS P P AV
Justin II and Sophia seated on throne facing, both nimbate; he holds a *globus cruciger*, she holds a cruciform scepter.

Rev: M, ANNO to left, + above, Ç to right, below A. Mintmark: NIKO
Ref: DOC I, p. 228, 96a; MIBE II, p. 96, 46a, yr6.
45*. AE3, 16 mm, 2.37 g, Dp. 6, Exc. Inv. O.25.ANT.M.S.24.

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PRELIMINARY ASSESSMENTS OF A NEW COLLECTION OF LATE ROMAN WARE FOUND AT THE THEATRE IN THE CITY OF PRUSIAS AD HYPIUM

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Keywords: *Prusias ad Hypium, theatre, ceramics, Late Roman period, Black Sea region*
Abstract: *This study aims to evaluate, from a typological and chronological perspective, the ceramics discovered during the 2017–2018 excavation at the theatre of the ancient city of Prusias ad Hypium, which reveal a new fashion in tableware decoration during Late Antiquity. Located within the borders of the Bithynia region in antiquity, the city is situated today in the Çiftepınarlar neighbourhood (Konuralp), 8 km north of Düzce province, in the Western Black Sea Region. The ceramics were unearthed during excavations carried out in recent years at the theatre, the city's best-preserved architectural structure, together with Heraklea Pontica amphorae and a coin from the reign of Emperor Arcadius (AD 395–408). This tableware, consisting of large plates, is generally characterised by decorative motifs in shades of red or brown. Within the repertoire of Late Roman tableware from the city of Prusias, these vessels stand out as a new group alongside African, Phocaean and Pontic Red Slip Ware.*

Cuvinte-cheie: *Prusias ad Hypium, teatru, ceramică, perioada romană târzie, regiunea Mării Negre*
Rezumat: *Acest studiu își propune să evalueze, din perspectivă tipologică și cronologică, ceramica descoperită în cadrul săpăturilor arheologice din anul 2017 în teatrul antic din Prusias ad Hypium, pe baza datelor de teren, evidențiind apariția unui nou stil în decorarea vaselor de masă în perioada antichității târzii. Situat în antichitate în granițele regiunii Bithynia, orașul se află astăzi în regiunea vestică a Mării Negre, la aproximativ 8 km nord de Düzce, localitatea Çiftepınarlar (Konuralp). În urma săpăturilor efectuate în ultimii ani la teatru, cea mai bine conservată construcție arhitecturală a orașului, au fost descoperite vase ceramice, alături de amfore de tip Heraklea Pontica și o monedă datată în timpul domniei împăratului Arcadius (395–408 d.Hr.). Vasele de masă, formate din farfurii mari, sunt de obicei caracterizate printr-un decor ornamental în nuanțe de roșu sau maro. În cadrul repertoriului de vase de masă de calitate din perioada romană târzie al orașului Prusias, pe lângă ceramica africană, cea de la Phokaia și ceramica pontică cu angobă roșie, aceste vase se evidențiază ca un nou grup distinct.*

INTRODUCTION

This study aims to evaluate, from a typological and chronological perspective, the ceramics discovered during the 2017–2018 excavation at the theatre of the ancient city of Prusias ad Hypium, which reveal a new fashion in the decoration of tableware during Late Antiquity. Located within the borders of the Bithynia region in antiquity, the city is situated today in the Çiftepınarlar neighbourhood (Konuralp), 8 km north of Düzce Province in the Western Black Sea Region (Fig. 1). The city, referred to as Kieros by the Heraclean historian Memnon[1], was originally under the control of Heraclea; however, when it was incorporated into the royal domain by King Prusias I of Bithynia in the early 2nd century BC, it was re-founded in the king's name and took the name *Prusias pros Hypios*[2]. Following the bequest of the kingdom's territories by Nicomedes IV, who ruled the region during the Hellenistic Period, to Rome in 74 BC, a new era began in the history of the province[3] and the city. With the arrival of Roman rule, the city was also given the Latin name *Prusias ad Hypium*. As with other cities in the region, Prusias's development began during the Roman Imperial Period, in the time of the Flavians; the city experienced its period of greatest prosperity, particularly between the reigns of Antoninus Pius and that of Septimius Severus. As a result of developments that occurred in the 2nd and 3rd centuries AD, Prusias, situated on the route taken by legions sent eastwards, became a stopping point for emperors during their journeys. It was first visited by Emperor Hadrian, and later by other Roman emperors, particularly during the Severan period[4].

It is known from ancient church records that the city of Prusias/Plusias[5], situated within the borders of the province of Honorias in the *Dioecesis Pontica* region during Late Antiquity, retained its importance during this period and, in tandem with the empire's process of Christianisation, became a centre participating in councils at the episcopal level. In addition to the institutional presence of the church organisation, it is also evident that the city underwent a structural transformation during the Early Christian Period[6].

[1] Memnon XVI, XIX, XXVII, XLVII. For information on the history of the city, see Arslan 2007, p. 31, 35, 49, 85.
[2] Ameling 1985, p. 1–3.
[3] For the process of Romanisation in the province, see Marek 2009, p. 37–44; Pitt 2016.
[4] Karakuş 2020, p. 22–23.
[5] Belke 1996, p. 65.
[6] For the city's Late Antique period, see Aydın 2025, p. 47–66.

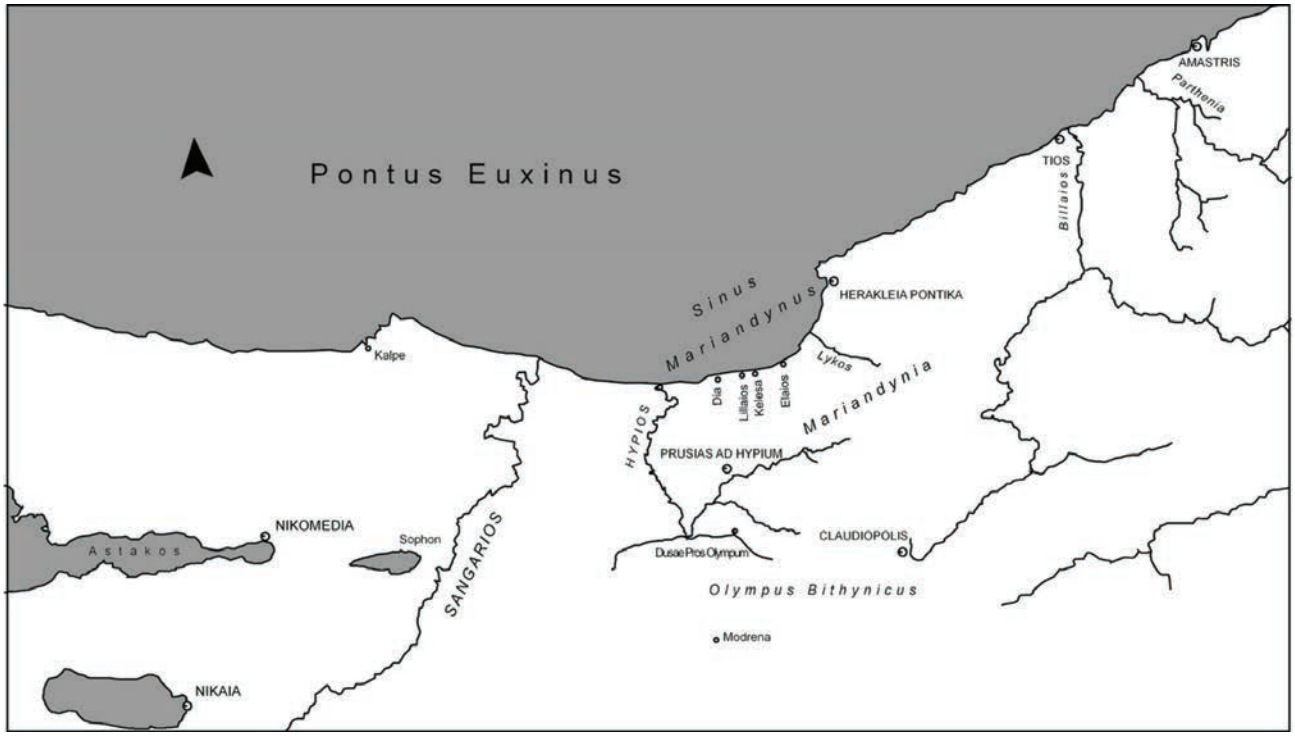


Figure 1. *Map showing the location of the ancient city of Prusias ad Hypium.*

SPATIAL CONTEXT: PRUSIAS AD HYPIUM THEATRE

The limited information available about the theatre, which is the most important ruin of the city of Prusias ad Hypium, comes from travellers who visited the city in the 18th and 19th centuries[7]. The first archaeological excavations at the theatre, built on the southern slope of the hill where the ancient city was located, began in 2013, and, between 2013 and 2015, the east and west media *cavea vomitoria* of the theatre, were uncovered, along with the entrance of the *aditus maximus* on the west side. Archaeological excavation carried out in the *orchestra* area also revealed that this area was covered by approximately 5 m of debris[8]. Between 2017 and 2020, excavation was concentrated on the entire western section of the theatre, including a large part of the *ima cavea*, the first *diazoma*, and the area west of the stage building. These studies provided new data regarding the architecture and chronology of the structure. Archaeological excavations carried out at the theatre have revealed that the structure, which stands out among contemporary theatres built in Anatolia for its unique architectural features, was constructed with vaulted galleries providing access to each *cavea*[9] (Fig. 2).

The Prusias theatre had features similar to those of Hellenistic theatres, while evidence indicating that the stage building was renovated in the 2nd century AD shows that remained in use throughout the Roman Imperial Period and, with some architectural modifications, continued to be used into Late Antiquity[10]. During excavations carried out at the theatre in 2017, an ancient building belonging to the Late Antique period was uncovered in the western *parodos* of the theatre. The western wall of the workshop, located between the stage building and the outer wall of the vaulted passage, is well preserved. This wall was constructed using local stones and some architectural elements of the theatre. Numerous raw bones and a bone object identified as a game piece were recovered from this structure. Taken together, a coin from the reing of Emperor Arcadius (AD 395–408) and the bone finds located beneath the western wall of the structure indicate that this building functioned as a bone workshop in Late Antiquity[11] (Fig. 3/a–b).

The ceramics found during excavations at the ancient theatre of Prusias ad Hypium constitute a large part of the archaeological finds. Among these, the ceramics that shed light on the city's Late Roman Red Slip ware[12] repertoire and enable an assessment of its trade links are of particular significance. In this context, an assessment of the pottery that stands out as a new group of ceramics is presented below.

[7] For information on the structure, see Okan *et alii* 2022, p. 35–37.
[8] Ayengin 2016, p. 287–300.
[9] Sağnak *et alii* 2022, p. 129–137.
[10] Okan *et alii* 2022, p. 33–46; Sağnak *et alii* 2022, p. 127–137.
[11] Okan, Bulut 2019, p. 165–188.
[12] Aydın 2025, p. 57–59.



Figure 2. *Ancient theatre of Prusias ad Hypium (photographic archive of the Prusias ad Hypium Excavations).*

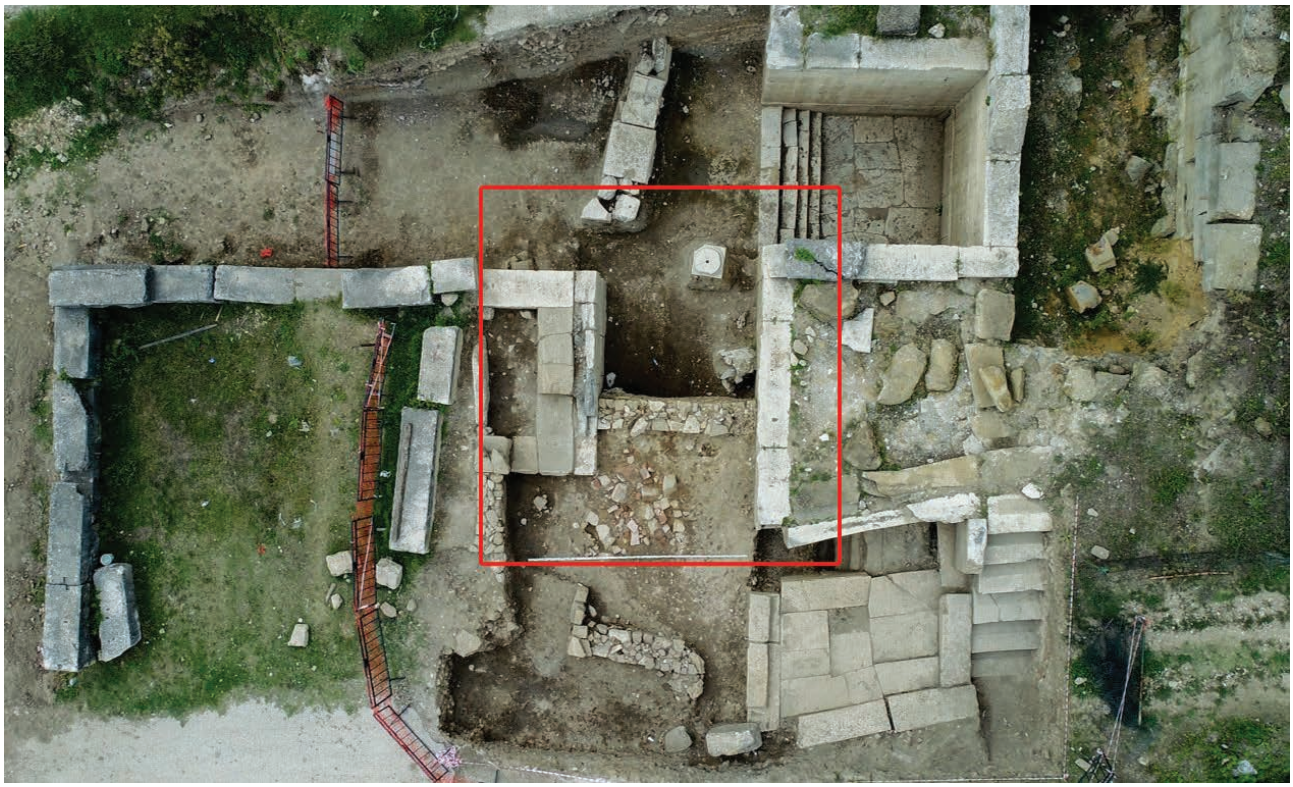
LATE ROMAN BROWN-RED SLIP WARE FROM PRUSIAS AD HYPIUM

The ancient theatre of Prusias, after its use in Late Antiquity, continued to serve different purposes until the 20th century. This situation led to the disturbance of the building's archaeological debris and homogeneous contexts. Nevertheless, the distribution of ceramics uncovered in the C8-A, B, and D excavations conducted west of the theatre in 2017–2018 helps in the overall understanding of the contexts. Within the archaeological context, the ceramics were revealed together with a coin from the reing of Emperor Arcadius, bone finds, Heraklea Pontica amphorae[13], and predominantly cooking ware[14] dated to the Late Roman period.

The currently known examples of tableware consist of dishes. These dishes are large in size, with rim diameters ranging from 20 to 27 cm. When considering examples with a preserved rim profile, it is possible to classify them into three types. In the first type, a thick, rounded rim profile connects to a body that curves gently outwards and continues into a low, ring-shaped base (Pl. I/1). The dishes of the second type have a straight outward-flaring shape, a triangularly thickened rim profile, a slightly outward-opening body, and a low ring base (Pl. I/2–3). In the third type, a slightly downward-flaring, triangularly thickened rim profile transitions into a slightly outward-opening body, which continues into a low ring base (Pl. I/4–6). The preserved body-base profiles provide further examples of the dishes (Pl. II/7–11; Pl. III/12–15).

In addition to small fragments of the tableware (Fig. 4), the decorations found on nearly complete examples provide insight into the overall decorative scheme and appearance of the vessels. The decoration colour varies from red (2.5YR 5/6, 4/6) and yellowish red (5YR 5/6) to brown (7.5YR 5/4, 4/4) and dark reddish brown (5YR 3/3). In most vessels, the decoration applied with a brush to the interior of the body was done in a flat or crescent shape

[13] Okan, Bilir 2020, p. 333–353.
[14] Okan, Aydın 2024, p. 357–362.



a



b

Figure 3a–b. *The Late Antique workshop of the theatre (Okan, Bilir 2020, figs. 4–5).*

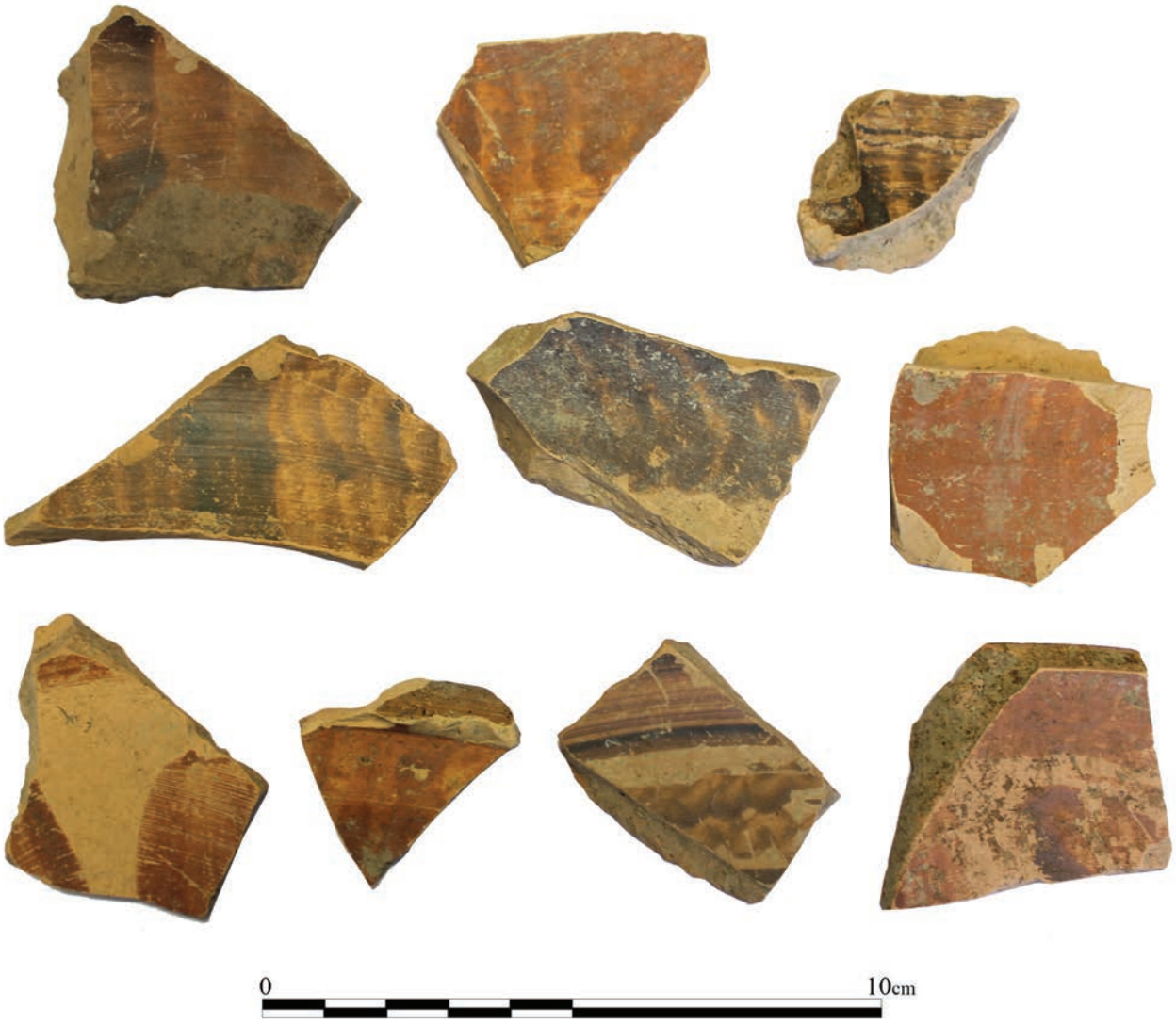


Figure 4. *Decorated fragments of Late Roman pottery from Prusias ad Hypium.*

(Pl. I/1–6; Pl. II/9, 11; Pl. III/12, 14). The decorative patterns on the bases of the pottery also show variety. In Pl. II/7 thick bands filling the base of the dish can be seen intersecting in the middle. Pl. I/2 and Pl. II/8, 10 show shorter decorations made with brush strokes alongside a thick, flat band on the floor of the vase. These short decorations can also be seen on the base of the vessels. Pl. I/1 has a spiral decoration. On the other hand, Pl. I/4 has a spiral decoration on both sides of the thick plain central band. Another example, shown in Pl. III/13 has a thick, flat band added alongside the central spiral ornamentation. Pl. III/12, which is the sole example of this type of decoration, shows the interior of the vessel body is filled with fine, long, brown lines that thicken towards the ends, whilst the floor is divided by a flat, thick band and decorated with dots. Pl. III/15 has a light coloured decoration. The example shown on the body fragment in Pl. III/16 is noteworthy for its painted decoration, applied with a brush and resembling writing characters The vessel shown in Pl. III/17 differs from the other vessels examined in this study in terms of its decoration. A zigzag decorative element is used after the thick band on the floor of the pottery. Vessels with similar decorations were found in Hadrianopolis and are generally dated to the 6th–early 7th centuries AD[15].

The decorations of the tableware, appear to have been applied using a simple technique, or even in a manner that could be described as careless. A similar application is observed on the outside of the vessels. The matt slip is red or brown.

The fabric of the tableware is very fine and homogeneous, containing small amount of sand and sparse lime. Mica is also present in most of the examples. The fabric

[15] Kan Şahin 2019, p. 254–257, pl. 42/928–936.

varies from reddish yellow (5YR 6/6, 7.5YR 7/6) to pink (7.5YR 7/4, 4/6) and light brown (7.5YR 6/4).

The tableware we examined in this study, within the Late Roman ceramic repertoire of the ancient city of Prusias, can be dated to the 4th–5th centuries AD, on the basis of the associated ceramics and numismatic data we previously mentioned.

CONCLUSION

The ancient city of Prusias ad Hypium underwent a dramatic transformation from the Roman Imperial Period onwards, and it is understood that, along with the process of Romanisation, the city experienced notable changes in its architectural[16] appearance and in the administrative aspects of public life[17]. The urban development and rich social life of Prusias continued at least until the 3rd century AD. Excavations carried out at the theatre reveal that the city's ceramic repertoire (including *sigillata* groups, marble ware, cooking pots, etc.) became increasingly diverse over time.

During Late Antiquity, as a result of the process of Christianisation in the city of Prusias and its surrounding region, the city underwent structural transformation in terms of architecture and church organization. Although still limited in quantity, the Late Roman Red Slip ware (Pontic, African, Phocaean and Light Coloured ware) found in the ancient theatre of Prusias provides evidence that commercial activities continued through the Dia (Akçakoca) port, located within its territory. Pontic Red Slip ware represents the Late Roman pottery of the Black Sea region. The distribution pattern of the vessels indicates that trade was conducted by sea and that they were distributed over long distances in the coastal regions of the basin[18]. Fragments of Pontic Red Slip ware found in the theatre feature the ornamentation of Domzalski Form 3[19]. These large dishes were a popular form produced by workshops manufacturing Pontic Red Slip vessels. The dishes are generally dated to the 4th–5th centuries AD[20]. The Prusias examples are significant in that they demonstrate the westward extent of the ware's distribution. As with the Pontic sigillata[21] that reached Prusias during the Roman Imperial Period, the Pontic Red Slip vessels are noteworthy for demonstrating that the city maintained active commercial relations within the Black Sea basin during Late Antiquity.

In Late Antiquity, African (ARS) and Phocaean (PRS) Late Roman Red Slip wares, which had a widespread distribution in the Mediterranean basin, also reached the Black Sea basin. A fragment of an ARS Hayes Form 99A bowl found in the theatre at Prusias constitutes an example dated to the first half of the 6th century AD[22]. Among Phocaean forms, Hayes Form 3 examples are quite common in both the Mediterranean and Black Sea basins. The Hayes Form 3F vessels found in the theatre are dated to the first half of the 6th century AD[23]. A base fragment featuring a cross monogram with an upper vertical arm visible in the tondo, surrounded by several rows of grooves around the cross, also represents an example from the 5th–6th centuries AD[24].

Excavations carried out in recent years at the theatre of the city of Prusias have uncovered an example of Late Roman Light Coloured ware. The Ergürer Form 2 fragment is dated to the 4th–5th centuries AD by analogy with parallel samples[25]. Although their place of production is still unknown, the vessels were widely distributed, across the Aegean and the Black Sea basins, particularly in the Propontis region[26]. This example is significant in that it demonstrates the presence of this ceramic group in the Western Black Sea region.

The Late Roman tableware found in the theatre indicates that, during Late Antiquity, the ancient city of Prusias was in contact with ceramic production centres in the Mediterranean, Aegean and Black Sea basin and nearby regions. The tableware examined in this study is also significant because it reveals that there was a new trend in decoration during Late Antiquity. Although the precise centre of manufacture of this pottery is yet unknown, we suggest that this ceramic group may have originated in the Pontic region. On the one hand, future studies will contribute to determining the form repertoire of the ceramics; on the other hand, petrographic studies will enable a better understanding of possible production and distribution models of the ceramic group.

CATALOGUE[27]

Cat. No. 1 (Pl. I/1)
Inv. No: T_2017/C8–A.21.
Location: PaH Theatre C8/A Trench.
RD: 25 cm, BD: 18 cm, PH: 6.2 cm.
Description: The fabric is pink (5YR 7/4), with sand, lime and mica.
Colour of the surface: 5YR 6/6 Reddish Yellow.
Decorative colour: 2.5YR 6/6 Light Red.

Cat. No. 2 (Pl. I/2)
Inv. No: T_2017/C8–A.22.
Location: PaH Theatre C8/A Trench.
RD: 20 cm, BD: 12 cm, PH: 4.6 cm.

[16] For the city's architectural structures, see Fernoux 2004, p. 389–390, tab. 19.
[17] For the city's public life, see Doğancı 2013, p. 177–178.
[18] Domżalski 2021, p. 158–169.
[19] Aydın 2025, p. 57, fig. 3.
[20] Domżalski 2021, p. 84–85.
[21] Aydın, Okan 2021, p. 7–18.
[22] Hayes 1972, p. 155.
[23] Aydın 2025, p. 58, fig. 4/4–5; Hayes 1972, p. 338.
[24] Aydın 2025, p. 58, fig. 6; Hayes 1972, p. 363–368.
[25] Ergürer 2014, p. 179.
[26] Ergürer 2014, p. 176; Tekkök Karaöz 2023, p. 105.
[27] The following abbreviations were used: PaH = Prusias ad Hypium; RD = rim diameter; BD = base diameter; PH = preserved height.

Description: The fabric is light brown (7.5YR 6/4), with sand, lime and mica.
Colour of the surface: 7.5YR 6/6 Reddish Yellow, 5YR 5/4 Reddish Brown.
Decorative colour: 7.5YR 3/2 Dark Brown.

Cat. No. 3 (Pl. I/3)
Inv. No: T_2017/C8–B.23.
Location: PaH Theatre C8/B Trench.
RD: 27 cm, BD: 18 cm, PH: 6.5 cm.
Description: The fabric is very pale brown (10YR 7/4), with sand, lime and mica.
Colour of the surface: 5YR 5/6 Yellowish Red, 5YR 4/1 Dark Gray.
Decorative colour: 5YR 4/2 Dark Reddish Gray.

Cat. No. 4 (Pl. I/4)
Inv. No: T_2017/C8–A.25.
Location: PaH Theatre C8/A Trench.
RD: 27 cm, BD: 18 cm, PH: 6.8 cm.
Description: The fabric is pink (7.5YR 7/4), with sand, lime and mica.
Colour of the surface: 5YR 5/6 Yellowish Red, 5YR 4/4 Reddish Brown.
Decorative colour: 5YR 5/6 Yellowish Red.

Cat. No. 5 (Pl. I/5)
Inv. No: T_2017/C8–D.17.
Location: PaH Theatre C8/D Trench.
RD: ?, PH: 3.2 cm.
Description: The fabric is pink (7.5YR 7/4), with sand and lime.
Colour of the surface: 7.5YR 5/6 Strong Brown.
Decorative colour: 7.5YR 5/4 Brown.

Cat. No. 6 (Pl. I/6)
Inv. No: T_2017/C8–B.15.
Location: PaH Theatre C8/B Trench.
RD: ?, PH: 4.8 cm.
Description: The fabric is pale brown (10YR 6/3), with sand, lime and mica.
Colour of the surface: 7.5YR 6/4 Light Brown.
Decorative colour: 7.5YR 5/4 Brown.

Cat. No. 7 (Pl. II/7)
Inv. No: T_2017/C8–A.02.
Location: PaH Theatre C8/A Trench.
BD: 14 cm, PH: 1.2 cm.
Description: The fabric is pink (7.5YR 7/4), with sand, lime and mica.
Colour of the surface: 7.5YR 7/4 Pink.
Decorative colour: 2.5YR 6/8 Light Red.

Cat. No. 8 (Pl. II/8)
Inv. No: T_2017/C8–B.01.
Location: PaH Theatre C8/B Trench.
BD: 9 cm, PH: 2.2 cm.
Description: The fabric is reddish yellow (5YR 6/6), with sand, lime and mica.
Colour of the surface: 5YR 5/8 Red.
Decorative colour: 2.5YR 5/6 Red.

Cat. No. 9 (Pl. II/9)
Inv. No: T_2017/C8–D.04.
Location: PaH Theatre C8/D Trench.
BD: 20 cm, PH: 2.1 cm.
Description: The fabric is pink (7.5YR 7/4), with sand, lime and mica.
Colour of the surface: 7.5YR 5/6 Strong Brown.
Decorative colour: 7.5YR 5/4, 4/4 Brown.

Cat. No. 10 (Pl. II/10)
Inv. No: T_2017/C8–B.05.
Location: PaH Theatre C8/B Trench.
BD: 17 cm, PH: 3.1 cm.
Description: The fabric is light brown (7.5YR 6/4), with sand, lime and mica.
Colour of the surface: 5YR 5/6 Yellowish Red, 5YR 6/6 Reddish Yellow.
Decorative colour: 2.5YR 5/6 Red.

Cat. No. 11 (Pl. II/11)
Inv. No: T_2017/C8–A.06.
Location: PaH Theatre C8/A Trench.
BD: 24 cm, PH: 4.4 cm.
Description: The fabric is reddish yellow (5YR 6/6), with sand and lime.
Colour of the surface: 7.5YR 5/4, 4/4 Brown.
Decorative colour: 2.5YR 5/6 Red.

Cat. No. 12 (Pl. III/12)
Inv. No: T_2017/C8–D.24.
Location: PaH Theatre C8/D Trench.
BD: 8 cm, PH: 2 cm.
Description: The fabric is very pale brown (10YR 7/4), with sand, lime and mica.
Colour of the surface: 7.5YR 3/2 Dark Brown, 7.5YR 5/6 Strong Brown.
Decorative colour: 10YR 4/2 Dark Grayish Brown.

Cat. No. 13 (Pl. III/13)
Inv. No: T_2017/C8–B.08.
Location: PaH Theatre C8/B Trench.
BD: 16 cm, PH: 5.3 cm.
Description: The fabric is pink (7.5YR 7/4), with sand, lime and mica.
Colour of the surface: 5YR 5/6, 5/8 Yellowish Red.
Decorative colour: 7.5YR 5/6 Strong Brown.

Cat. No. 14 (Pl. III/14)
Inv. No: T_2017/C8–D.03.
Location: PaH Theatre C8/D Trench.
BD: 18 cm, PH: 6 cm.
Description: The fabric is reddish yellow (7.5YR 7/6), with sand, lime and mica.
Colour of the surface: 2.5YR 5/6 Red.
Decorative colour: 5YR 3/3 Dark Reddish Brown, 2.5YR 5/6 Red.

Cat. No. 15 (Pl. III/15)
Inv. No: T_2017/C8–A.07.
Location: PaH Theatre C8/A Trench.
BD: 23 cm, PH: 2.5 cm.
Description: The fabric is very pale brown (10YR 7/3), with sand and lime.
Colour of the surface: 10YR 4/2 Dark Grayish Brown.
Decorative colour: 10YR 4/2 Dark Grayish Brown.

Cat. No. 16 (Pl. III/16)
Inv. No: T_2017/C8–A.11.
Location: PaH Theatre C8/A Trench.
PH: 4.7 cm.
Description: The fabric is reddish yellow (5YR 7/6), with sand, lime and mica.
Colour of the surface: 5YR 5/6 Yellowish Red.
Decorative colour: 2.5YR 4/4 Reddish Brown, 2.5YR 5/6 Red.

Cat. No. 17 (Pl. III/17)
Inv. No: T_2017/C8–B.20.
Location: PaH Theatre C8/B Trench.
BD: 24 cm, PH: 3 cm.
Description: The fabric is reddish yellow (5YR 7/6), with sand, lime and mica.
Colour of the surface: 2.5YR 5/6 Red.
Decorative colour: 2.5YR 5/6 Red.

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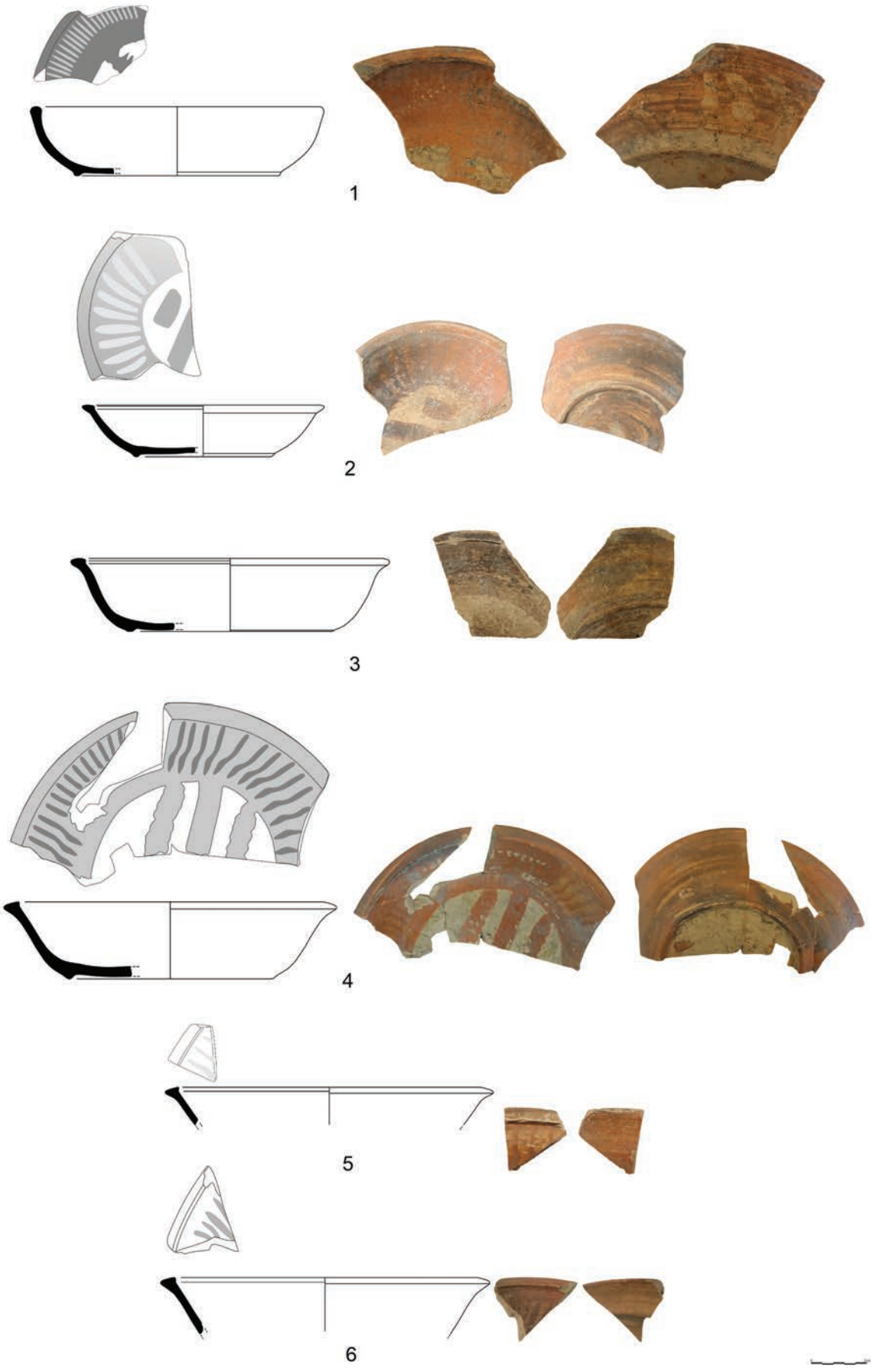


Plate I. *A selection of Late Roman ware found in Prusias, dishes type 1: 1; type 2: 2–3; type 3: 4–6.*

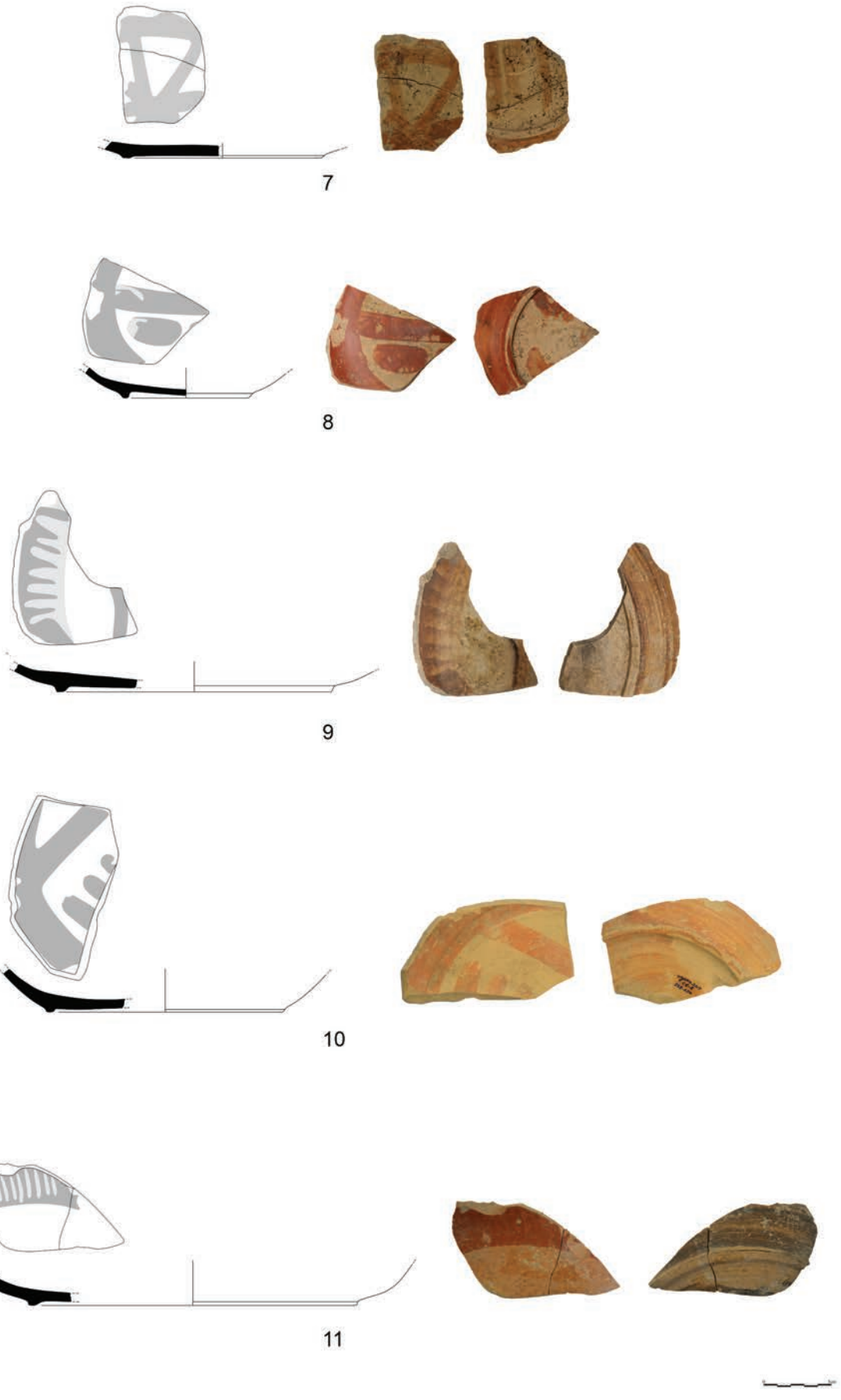


Plate II. *A selection of Late Roman ware found in Prusias, base fragments.*

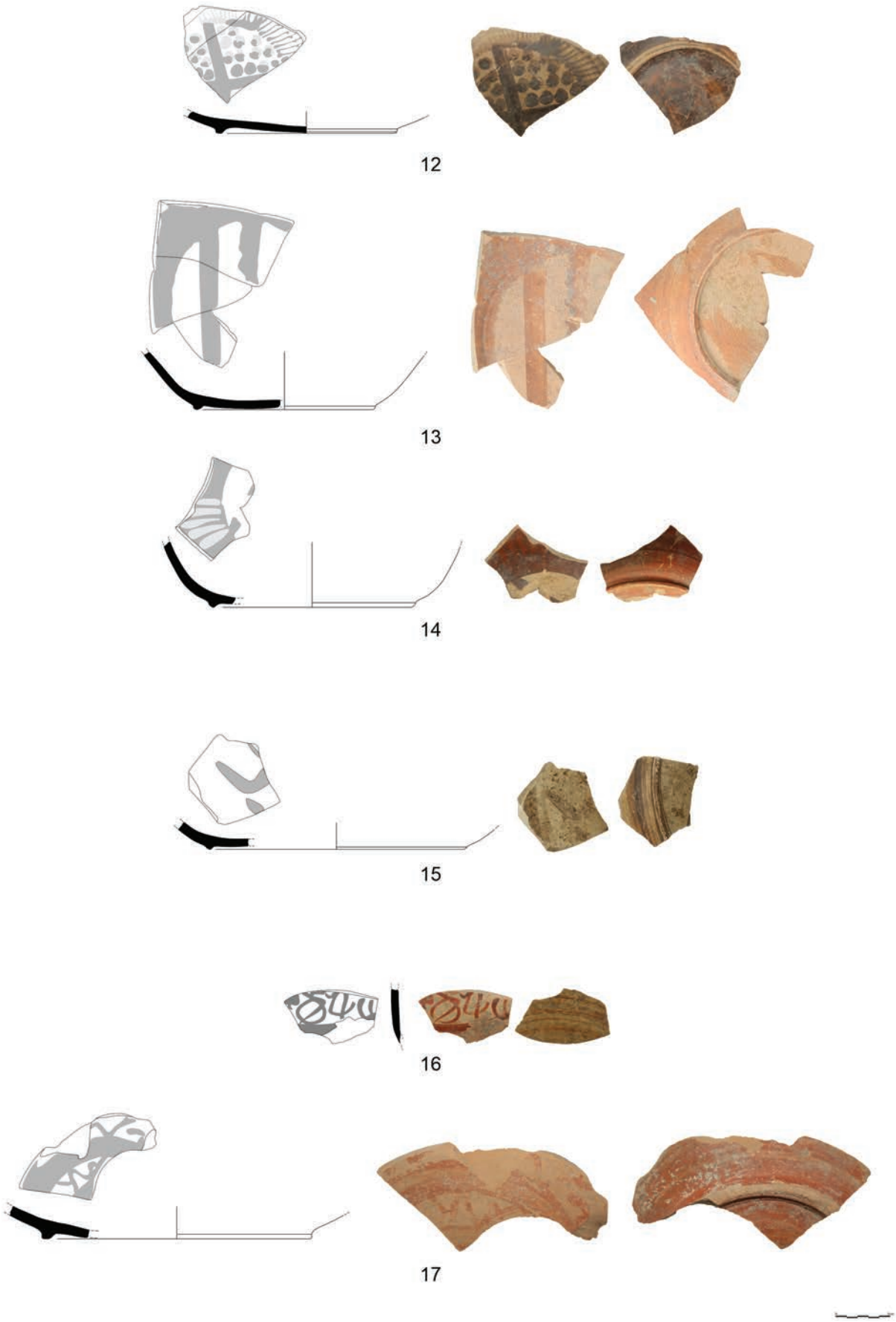


Plate III. *A selection of Late Roman ware found in Prusias, base and body fragments.*

PRELIMINARY CONSIDERATIONS ON THE ROMAN BATHS IN SEBASTOPOLIS

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Keywords: *Black Sea, Tokat, Sebastopolis, Roman architecture, Roman* balneae
Abstract: *The baths, which stand as one of the significant institutions in Roman social life, represent one of the fundamental buildings of the Roman bathing tradition. In the Roman world, baths were not only places for bathing; they were also socialising venues or tools for political propaganda, embedded in the centre of public life and transformed into symbols of urban existence. Unlike in other civilisations, they were not exclusively used by the nobility but became structures that benefited all segments of society. The Roman bath located in the ancient city of Sebastopolis is one such example. In this study, the architectural elements obtained from excavations conducted to date have been evaluated (1987–2023). Based on the findings, the sections have been identified, and an attempt to propose a historical context has been made using the existing Roman bath terminology. Although the incompleteness of the structure's excavation and the alterations made during different periods, along with its use beyond its original purpose, complicated the dating, an attempt was nevertheless made to date it based on its plan in light of similar structures, and the innovations it brought to Roman bath architecture were highlighted.*

Cuvinte-cheie: *Marea Neagră, Tokat, Sebastopolis, arhitectură romană, băi romane*
Rezumat: *Băile, care reprezintă una dintre instituțiile semnificative ale vieții sociale romane, constituie unul dintre elementele fundamentale ale tradiției balneare romane. În lumea romană, băile nu erau doar locuri de îmbăiere; erau și locuri de socializare sau instrumente de propagandă politică, integrate în centrul vieții publice și transformate în simboluri ale existenței urbane. Spre deosebire de alte civilizații, acestea nu erau folosite exclusiv de nobilime, ci au devenit structuri de care au beneficiat toate segmentele societății. Baia romană situată în orașul antic Sebastopolis este un astfel de exemplu. În acest studiu, au fost evaluate elementele arhitecturale obținute din săpăturile efectuate până în prezent (1987–2023). Pe baza descoperirilor, au fost identificate secțiunile și s-a încercat propunerea unui context istoric folosind terminologia existentă a băilor romane.*
Deși caracterul incomplet al săpăturilor efectuate la această structură și modificările aduse în diferite perioade, precum și utilizarea sa în alte scopuri decât cele inițiale, au complicat datarea, s-a încercat totuși stabilirea acesteia pe baza planului, având în vedere structuri similare, și au fost evidențiate inovațiile pe care le-a adus arhitecturii băilor romane.

INTRODUCTION

The ancient city of Sebastopolis is situated 69 km south of Tokat Province, in the Central Black Sea Region of Turkey, within the boundaries of the district of Sulusaray, which has a population of 4.600[1] (Fig. 1). Although the region was visited by numerous travellers in the 18th and 19th centuries, it appears that none of these individuals made any mention of the ancient city of Sebastopolis[2]. It was not until 1871, during the visit of the researcher Damon to Sulusaray, that the city came to light following the decipherment of an inscription bearing the name Sebastopolis[3]. The primary reason cited for the city's having remained hidden for so long is that it does not lie along the route of the main road in use today. However, the real cause is that it lies within the floodplain of the Çekerek River (ancient name: Skylax) and that a large part of the city is burried beneath a layer of soil reaching depths of 5–10 metres in places. In addition to all these adverse factors, the ancient city was completely lost from view following the establishment of the modern town of Sulusaray–which bears the same name today–after the region came under Turkish rule. It only managed to return to the public eye following rescue excavations carried out by the Tokat Museum Directorate after architectural remains were uncovered during illegal excavations in the 1980s.

1. EXCAVATION WORK CARRIED OUT AT THE BATH

Excavations at the Roman Bath date back to 1987[4]. During the rescue excavations carried out by the Tokat Museum between 1987 and 1990, only a very small part of the structure was uncovered and its exact function could not be determined; consequently, the structure was recorded as "Excavation Area No. 1" and designated as the "Columned Building". During excavations carried out inside the structure in these years, marble floor paving, water

[1] Le Guen, Rémy 2010, p. 97.
[2] Amandry, Rémy 1988, p. 5–6.
[3] Amandry, Rémy 1988, p. 5–6; Le Guen, Rémy 2010, p. 96–98; Ramsay 1960, p. 361.
[4] Özcan 1991, p. 265–266, plan 2–3, fig. 3–4.



Figure 1. *Sebastopolis in antiquity.*

channels, remains of rubble-stone walls, and columns and their bases were unearthed. In 1989, work intensified in a 5 metre-thick fill of stone and brick on the southern side of the structure, which was thought to belong to the roof; it was observed that the flooring and water channels continued beneath the fill. Although it was initially thought that the structure might be a bath (based on the drainage channels and stone basin discovered during the excavation work), it was concluded that it might belong to a much larger structure due to the columns arranged in a row along the same line. Although the structure was again designated as "Excavation Area No. 1" in 1990, the discovery of bricks laid in layers during work on the ground level led to the suggestion that it might be a bath, though no definitive conclusion could be reached[5].

Excavations resumed in 2010 after a 20 year break that began in 1990. During this period, the sections of the bath that had become filled with earth over time were cleared away, revealing the hypocaust system. It was determined that the section located at the centre of the building's south wall belonged to the *praefurnium*; based on the uncovered *frigidarium*, *tepidarium* and *caldarium* sections, it was concluded that this structure was a large Roman bath[6].

After a two-year pause, work at the bath complex resumed in 2013 with a different team. In order to fully understand the function of the *praefurnium* located at the centre of the southern wall of the octagonal space, partially uncovered and identified as the *caldarium*, priority was given to investigations in this area. During the levelling works, ceramic fragments dating to the Late Roman and Early Byzantine periods were recovered, along with a large number of roof tiles believed to belong to the superstructure. In addition, remains of walls extending in an east–west direction were uncovered, consisting of cut stone blocks with outward-facing profiles and masonry made of mortar and rubble stone. Further excavations revealed the arched rear façade of the *praefurnium*, constructed with double rows of bricks. Excavation work conducted to the south of the bath was shifted eastward due to the presence of modern residential buildings above the area. In the investigations initiated to the east of the space identified as the *caldarium*, it was concluded that the structure with walls built of brick on three sides was an *alveus* (bathing pool). As a result of these studies, the *caldarium* was completely exposed[7].

The main objective of the 2014 campaign was to determine the function of the section containing the hypocaust system that had been uncovered during the 2013 excavations. During this season, investigations carried out to the east and north of the bath revealed traces of fire and lime deposits dating to a later period. Studies conducted to identify the function of the octagonal room located next to the *alveus*, to the east of the *caldarium* and uncovered during the 2013 excavation season, showed that this space was also heated by a hypocaust system and functioned as a second *caldarium*. Although no remains directly associated with the bath were encountered in the work carried out to the north, coins dating to the Byzantine

[5] Özcan 1992, p. 172–173, plan 1–3, fig. 25–30.

[6] Kohl *et alii* 2012, p. 564–565, fig. 8.

[7] Ful *et alii* 2014, p. 476–480, pl. 1–2, fig. 1–3.

period and rubble-stone wall remains from later periods were identified[8].

During the 2015 excavation season, work was carried out in the second *caldarium*, parts of which had been uncovered in previous excavation periods; during this work, a brick-vaulted *praefurnium* was uncovered, along with the remains of a wall built of dressed blocks immediately behind this space; the wall defined the south-eastern boundary of the bath. In the same season, additional work was carried out in the *frigidarium* to the west of the bath (partially revealed during excavations conducted by the Tokat Museum between 1987 and 1990), as well as in the pool area understood to be connected to a wastewater channel. Byzantine-period coins recovered during the excavations indicate that the structure was used in different periods[9].

Work during the 2016 season was carried out primarily to the west of the bath. During the excavations, finds included, in particular, Roman-period pottery, as well as Byzantine-period coins, weights and a large quantity of roof tile fragments. The discovery that the entrance door located on the wall forming the western boundary of the bathhouse had been subsequently bricked up with rubble stones indicates that the building was reused for a different purpose in later periods. The Iron Age ceramic finds discovered during the excavation of the north-western level, however, indicate the presence of remains from earlier periods beneath the structure[10].

Work in 2017 was carried out in the eastern and northern sections of the bath. During the work carried out in the northern section of the bath with the aim of uncovering the palestra section, believed to be located to the north of the bath, coins and bone artefacts dating from the Byzantine and Ottoman periods were discovered. In the eastern section, during undertaken works at the site where the city wall was said to have passed – based on test pits opened by the Tokat Museum in the 1980s – a floor paved with irregular stones, the function of which could not be fully determined, was encountered. However, no findings associated with the palestra section were encountered in the excavations carried out to the north of the bath. Nevertheless, structures believed to have been used as shops or workshops during the Byzantine period – comprising square or rectangular rooms with the bath's northern wall serving as a boundary – were brought to light in this area. This suggests that the bath lost its original function in a later period and underwent a second phase of use for different purposes[11].

During the 2018 season, work focused primarily on determining how far south the floor extends. This floor, identified in 2017, runs in a north–south direction and begins behind the row of ashlar walls that define the eastern boundary of the bath. During these investigations, where rubble remains from modern dwellings were found to reach a depth of 1.5 m, it was established that the stone-paved floor continued to a depth of 3 m in a north–south direction. Both in this area and in the excavations south of the bath, finds from the Byzantine Period, including pottery, glass, loom weights and coins, were uncovered. The presence of a coin from the Ottoman Period among these finds is particularly significant as it indicates the absence of a continuous stratigraphic sequence in the area. Based on the findings, and taking into account the size of the city, it has been concluded that this bath was merely one of many in the city[12].

Excavations at the Roman Bath were suspended in 2018 and resumed in 2021 by a different team[13]. During this period, the excavation of the eastern section of the bath was identified as the primary objective, and work commenced in this area. During these works, it was observed that the foundations of previously demolished modern dwellings continued into the site. Following the removal of their foundations, fragments of Roman-period red-slipped and Byzantine-period green-yellow-slipped pottery, along with a large number of roof tile fragments, were found within the fill soil. Upon reaching a depth of 2.50 m, excavations uncovered a section of a wall built of rubble stone, which delimits the eastern side of the bath and continues southwards. The preserved height of the wall is 1.60 m, and its width is 0.99 m. As work continued, cleaning, section levelling and excavation commenced in the area where the stone-paved floor uncovered during the 2017 excavation season was located, and the surface of the floor was fully exposed. The stone pavement, measuring 5.50 × 20 m and believed to have been used as a street during the Roman period, is bounded on the western side by a wall consisting of eight courses of cut stone blocks, each 0.34 m high. The cut stone blocks used in the 9.20 m long wall that has been uncovered have smooth surfaces facing the street, whilst the sections facing the bath are irregularly worked. Work was carried out simultaneously in the 3.40 × 14.50 m area situated between the wall delimiting the apodyterium section to the east and the bath's eastern wall. With the completion of these works, the excavations at the Roman Bath have come to an end (Fig. 2–3).

2. ASSESSMENT AND CONCLUSION

When referring to Roman baths, the terms "balneae" and "thermae" are used. Although these terms were used to describe different types of bath structures in various periods, it is known that "balneae" referred to smaller bath structures, whilst "thermae" referred to larger ones[14]. In addition to their use for health purposes, these bathhouses, which could be described as the spaces where interaction

[8] Ful *et alii* 2016, p. 380–382, pl. 1, fig. 1–7.
[9] Ful *et alii* 2017, p. 316–320, pl. 1, fig. 1–7.
[10] Ful *et alii* 2018, p. 165–170, plan 1, fig. 1–10.
[11] Ful *et alii* 2019, p. 554–559, plan 1, fig. 10.
[12] Ful 2018a, p. 165.
[13] Ful 2018b, p. 240–246.
[14] Yegül 1992, p. 43; Yegül 2011a, p. 65; Rook 2013, p. 109.



Figure 2. *Sebastopolis Baths and the modern settlement of Sulusaray.*

between social classes was most intense, as they were also accessible to lower income groups, played a significant role at the centre of daily life in the Roman world. They were not merely places for washing, but served as venues for socialising, entertainment, recreation, health and hygiene, utilised by every segment of society. Another reason for the popularity of bathhouses in Roman society is believed to be the desire to demonstrate the empire's power and the quest for political unity. Consequently, whilst the empire utilised its manpower, technical expertise and economic resources for the construction of bathhouses, it also sought to satisfy the urban populace through social and political policies. In this way, bathhouses helped to achieve the aim of creating a society with a shared sense of identity by bringing together Roman citizens of heterogeneous origins under a single umbrella, thereby contributing to the transmission of the empire's cultural agenda and vision to its people. In addition to these socio-cultural effects, bathhouses also fostered integration between different social classes and increased interaction between the sexes; through these interactions, bathhouse culture was enriched and became more diverse[15].

Although it is generally accepted that the social and architectural development of Roman baths historically coincided with the early 1st century BC and the expansion of Rome beyond Italy, their early developmental stages and origins[16] reveal a broad, complex network of relationships encompassing other Mediterranean civilisations and the provinces of north-western Europe[17].

When we examine the plans of Roman baths, the fact that there are very few structures sharing the same layout demonstrates that bath plans varied greatly depending on the socio-economic structure of the society in which they were built and the geographical context of the city. For this reason, it is quite difficult to classify Roman baths into strict typologies. Nevertheless, it is evident that bath plans were organised according to a specific bathing sequence[18]. This layout essentially consists of four main

[15] Yegül 1992; Yegül 2011a; Yegül 2011b.
[16] Heinz 1983, p. 36–51; Fagan 2001, p. 403–426.
[17] Yegül 1992, p. 48; Yegül 2006, p. 47.
[18] Yegül 2011a, p. 30–35.



Figure 3. *Aerial photograph of the Sebastopolis Baths after the excavations.*

sections: the *apodyterium*, *frigidarium*, *tepidarium*, and *caldarium*. The bathing process follows this sequence. The palaestra, an addition adapted from Hellenistic gymnasium structures, is not included among these main sections, as it is more commonly encountered in larger bath complexes. Although various classifications of Roman baths have been proposed[19], they can generally be grouped into three main types: the "linear type", in which the main sections are arranged along a single axis and the return follows the reverse direction; the "ring type", where the sections are organised in a circular sequence; and the "imperial type", formed by combining two ring-type layouts symmetrically along a central axis[20].

When the Sebastopolis Bath is evaluated in terms of its plan, it can be seen that the spaces arranged along an east–west axis correspond to the most common type of the Early Imperial Period, known as the "linear asymmetric type", which continued to be in use until the end of Late Antiquity (Fig. 4). The most distinctive feature of baths with this plan type is that they exhibit regional variations in their application. Numerous bath structures lacking a symmetrical layout are encountered across a wide range of contexts, from small urban baths to large imperial complexes[21]. The widespread use of this plan scheme, also observed in the Sebastopolis Bath, is generally attributed to its functional efficiency. In this type, which is not constrained by the limitations or difficulties imposed by the terrain, rooms are arranged asymmetrically rather than side by side. Many features observed in imperial baths are also present in these structures. In baths planned according to the Roman bathing tradition, after completing the bathing process, visitors do not return along the same axis but instead can reach the starting point, the *apodyterium*, through a different route. The asymmetric plan layout, whose early examples date back to the 1st century BC baths of Pompeii and Campania[22] and which is also observed in the Sebastopolis Bath, was used for a long period due

[19] For bath types, see Krencker *et alii* 1929, p. 177–184, Abb. 234–239.

[20] Nielsen 1993, p. 51, fig. 1; Yegül 2006, p. 162–163, fig. 154a–e; Yegül 2011a, p. 125–143.

[21] Yegül 2006, p. 250.

[22] Yegül 1992, p. 57, fig. 57–61; Yegül 2006, p. 63.

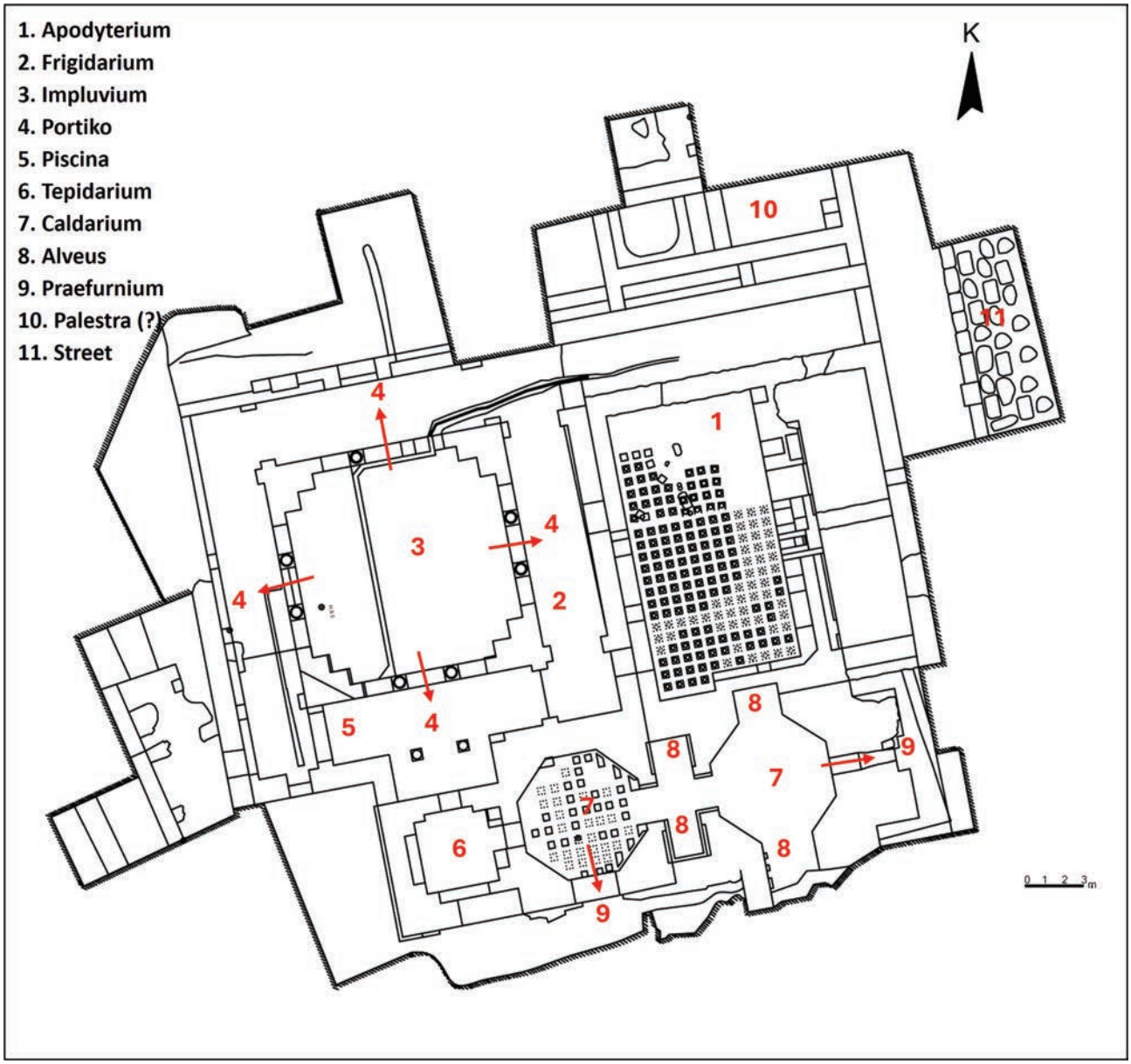


Figure 4. *Plan of the Sebastopolis Baths.*

to its design advantages, economy, and functionality. Therefore, it does not constitute a reliable criterion for dating on its own.

Since their plans can differ according to the traditions of the region in which they are located, it is not possible to identify all the rooms of a Roman bath with complete certainty[23]. However, when the sections of the Sebastopolis Bath are examined in general terms, it can be seen that it consists of the four main components forming the basis of Roman bath architecture, along with associated subsidiary spaces. The first of these is the *apodyterium* (Fig. 5). Derived from *gymnasium* architecture and meaning "a place where people undress together" in Greek[24], the *apodyterium* is the first room entered before the bathing process begins. In the Sebastopolis Bath, the rectangular *apodyterium*, measuring 7.5 × 15.0 m, constitutes the second largest space after the *frigidarium*. This suggests that it was not used solely as a changing room, but was also designed as a hall where visitors could socialise, converse, and engage in various activities. Part of the hypocaust system beneath the floor is preserved; it consists of square bases measuring 0.33 × 0.32 m and circular bricks with a diameter of 0.21 m placed on top of them, forming the *pilae*. Although the floor covering of the space has been

[23] Krencker *et alii* 1929, p. 185.

[24] Baatz 1973, p. 545–550; Nielsen 1993, p. 153.



Figure 5. Apodyterium.

completely destroyed, making it difficult to determine the exact nature of the superstructure, an evaluation of the plan suggests that it may have been covered with a vaulted roof.

Due to the extensive destruction that occurred during the period when the bath began to be used for purposes other than bathing, up until its complete abandonment, it is difficult to make a definitive statement about the entrance area. However, it seems likely that access to the *apodyterium* was provided from the street to the east through a narrow corridor functioning as a *vestibulum* (Fig. 6).

In accordance with the traditional Roman bathing sequence, the *frigidarium*, a square space measuring 19.0 × 19.0 m, is reached through an opening located to the southwest of the *apodyterium* (Fig. 7). In Roman baths, the *frigidarium* is among the most monumental and luxurious spaces[25]. The 11.5 × 11.5 m *impluvium* constructed at its centre, together with the surrounding spaces, defines the character of the area. The stepped supports located at the corners of the *impluvium*, filled with rubble stone and bonded with horasan mortar, are faced with stone slabs. Some of the eight columns that once supported the superstructure are preserved *in situ*. The pool, with a depth of only 20–30 cm, is too shallow for bathing purposes and is paved with marble slabs (Fig. 8). This section takes on a complete peristyle form, with the central pool and the surrounding columns that ones carried the superstructure. In this arrangement, the open-air pool occupies a central position, and a four-sided portico is formed by pairs of columns placed on each side (Fig. 9). Comparable examples of such porticoes can be observed at Aphrodisias[26], Parion[27], and Antiochia ad Cragum[28]. Among these, the *impluvium* sections in the baths of Aphrodisias and Antiochia ad Cragum appear to have been deep enough to allow bathing and were therefore more likely used as *natatio* (cold water pools)[29].

Another notable feature of the *impluvium* in the Sebastopolis Bath is that the channels of the bath's drainage system pass through it (Fig. 10). One of these

[25] Yegül 2011a, p. 35.

[26] Nielsen 1993, p. 192, fig. 220.

[27] Yılmaz 2022, p. 177, pl. 41, 56a.

[28] Can 2017, p. 83–100, fig. 3.

[29] Yılmaz 2022, p. 17.



Figure 6. Vestibulum *(?).*



Figure 7. Frigidarium.



Figure 8. Impluvium *located within the* frigidarium.



Figure 9. *Porticoes on all four sides of the* impluvium.



Figure 10. *Drainage channels passing through the* impluvium.



Figure 11. *Terracotta pipes carrying wastewater out of the bath.*

channels runs from the very centre of the *impluvium*, initially from south to north, then turns east within the space, and subsequently turns north again to exit through the northern portico. After leaving the building, it connects to a channel made of ceramic pipes (künk) measuring 11 cm in diameter and 0.50 m in length (Fig. 11). Since only part of this channel has been preserved, its full extent remains unknown. To the west of the *frigidarium*, a second water channel, 9 m in length, runs along a north–south axis before turning eastward. The entrance door located on the western wall of the bath, which defines the western boundary of the structure and measures 1.65 × 1.20 m, was blocked with rubble stones in a later period. Regardless of the plan of the frigidarium in Roman baths, cold-water pools are generally found at one or both ends[30]. In accordance with this tradition, the Sebastopolis Bath features a square piscina measuring 3.25 × 3.06 m, accessed through an opening at the southern end of the *frigidarium* (Fig. 12). Cold water pools can also be located in the *palaestra*; however, since the *palaestra* has not yet been uncovered in the Sebastopolis Bath, no definitive statement can be made. While in many Anatolian examples the piscina is not planned as a separate room but is incorporated within the *frigidarium*, in Sebastopolis it is arranged as an independent section, similar to the arrangements observed in the Smintheion Bath[31] and the Parion Bath[32]. The piscina has a floor paved with cut stone slabs and an interior coated with plaster, and it is connected to the drainage channel located in the *frigidarium*. One of the characteristic features of baths from the Late Republican–Early Roman period is that *frigidaria* were relatively small in size[33]. However, the *frigidarium* in the Sebastopolis Bath is quite large, which strengthens the argument that this bath is unlikely to belong to the early period.

Another section accessed from the *frigidarium* is the *tepidarium* (warm room), arranged according to the traditional bathing sequence (Fig. 13). This square room measures 4.50 × 4.50 m. In Roman baths, the *tepidarium*, entered after the *frigidarium*, serves as a transitional space between cold and hot rooms, allowing bathers to gradually raise their body temperature. Like the hot sections, the *tepidarium* was traditionally heated by a hypocaust system. In the Sebastopolis Bath, the floor of the *tepidarium* has been destroyed, so the *pilae* (brick supports) of the hypocaust system are no longer visible.

From the *tepidarium*, one enters the *caldarium* (hot room), oriented along an east–west axis and measuring 6.50 × 6.43 m, with an octagonal plan (Fig. 14). Compared to the walls of the other sections of the bath, the walls of the *caldarium* were constructed to be quite thick in order to retain heat. Unlike in many Roman baths, the deep niches in the walls of the *caldarium*, which are a characteristic feature[34], are not present here. Some of the *pilae* of the hypocaust system under the floor are well preserved; they consist of square bases measuring 0.33 × 0.32 m, topped with circular bricks 21 cm in diameter. From the *caldarium*, a corridor leads to the section containing the *alvei*, positioned opposite each other to the north and south. In Roman bath architecture, *alvei* are considered complementary elements within the *caldarium* and are defined as hot-water pools capable of accommodating one or more bathers. In the Sebastopolis Bath, the *alvei* are constructed on three sides with bricks. The southern *alveus* measures 1.91 × 1.40 m, while the northern *alveus* measures 2.30 × 2.30 m. In the southern alveus, a terracotta water pipe (künk) is visible at the centre of the south wall, providing water to the pool. The *pilae* of the hypocaust system located beneath the *alveus* have largely been destroyed. However, some of the *pilae* constructed adjacent to the walls are still preserved.

To the east of the *caldarium*, there is a second hot room with the same plan and dimensions (Fig. 15). In this room, which is also understood to have functioned as a *caldarium*, *alvei* measuring 2.00 × 1.50 m are located to the south and north. The presence of two *caldaria* in the Sebastopolis Bath suggests that they may have been constructed separately for men and women. The pilae of the hypocaust system in this *caldarium* have largely been destroyed. At the junction of the northern and eastern walls of the room, the bath's waste drainage channel is present.

In Roman baths, *caldaria* in the early periods were typically rectangular, covered with barrel vaults, and contained *alvei* capable of accommodating multiple bathers simultaneously. Over time, however, caldariums also began to appear in circular or polygonal plans in addition to the rectangular type[35]. To maximize the use of solar heat, caldariums were usually oriented to the south and featured large window openings facing south or southwest. Another feature of early caldariums is the placement of labrums (basins) made of metal or marble in apsidal niches within the room. After the 1st century AD, these labrums largely lost their function, which was instead assumed by the *alvei* or pools in the *tepidarium*, as is also observed in the Sebastopolis Bath[36]. When the *caldarium* adjacent to the *tepidarium* of the Sebastopolis Bath is evaluated in general terms, it can be seen that this space, functioning as the primary bathing area, was constructed at a size appropriate to the overall dimensions of the building. In accordance with Vitruvius' recommendation that "the hot rooms of baths should be located in the southwest"[37], and following traditional Roman bath architecture, the caldariums of the Sebastopolis Bath were oriented to the south to make maximum use of sunlight[38]. This orientation is particularly significant for a region experiencing harsh

[30] Krencker *et alii* 1929, p. 182–183, Abb. 241b.
[31] Kaplan 2013, p. 23, fig. 2.5–2.6.
[32] Yılmaz 2022, p. 180, pl. 73a–b.
[33] Aran 1971, p. 83.
[34] Yegül 2006, p. 63.
[35] Krencker *et alii* 1929, p. 181–182, Abb. 240a–b, 241a–b.
[36] Nielsen 1993, p. 158.
[37] Vitruvius V.10.I.
[38] Krencker *et alii* 1929, p. 181; Yegül 2011a, p. 104.



Figure 12. Piscina *(cold-water pool).*



Figure 13. Tepidarium.



Figure 14. Caldarium.



Figure 15. Caldarium.

winter conditions. Unlike the barrel-vaulted caldariums of early baths, the Sebastopolis caldariums have a polygonal form and lack apses, reflecting a later-period characteristic. From this perspective, it can be said that the space fully embodies the identity of a *caldarium*.

Another section of the Sebastopolis Bath is the *praefurnium*, commonly referred to as the 'hearth' or furnace. The *praefurnium* is one of the most important parts of Roman baths and, together with the hypocaust and *suspensura* systems, developed from the Greek channel-heating system forms one of the three main components of the bath's heating system[39]. Typically connected to heated rooms such as the *caldarium* and *tepidarium*, *praefurnia* are vaulted structures built of brick or stone. Through bronze or copper boilers housed within the *praefurnium*, hot water is supplied to spaces like the *alvei*, while the heated air, transmitted *via* the *pilae* supporting the suspensurae, warms the rooms[40]. The Sebastopolis Bath contains two *praefurnia*: one located at the centre of the southern wall and the other to the east (Fig. 16). The southern *praefurnium* has a vaulted façade constructed of double-layered bricks (Fig. 17). Immediately behind it is the outer wall of the bath, built with cut stone blocks (Fig. 18). On these blocks, partially preserved rubble stone walls bound with mortar are still visible. The eastern *praefurnium* is also a vaulted structure built of brick (Fig. 19). Measuring 365 cm in length, 83 cm in width, and 90 cm in depth, it features a square section on top where the boiler would have been placed (Fig. 20). The most detailed information regarding the boilers used for heating water in baths is provided by Vitruvius[41]. Vitruvius explains that three interconnected bronze boilers were placed above the furnace, with one used for hot water, the second for warm water, and the third for the cold section of the bath. No evidence of the boilers used in the Sebastopolis Bath has been found; however, given that the building contains two *praefurnia*, a similar system was likely employed.

The Sebastopolis Bath does not include a *laconicum*. The absence of a *laconicum* indicates a later period of construction, as these spaces were characteristic of 1st century AD baths. In the Stabian Baths at Pompeii[42], by the 2nd century AD, the full implementation of the hypocaust system[43] allowed rooms to be heated from both the floor and the walls. This advancement in heating technology eliminated the need for a *laconicum*, and by the 2nd century AD, baths constructed during this period generally no longer included this feature[44].

Another component commonly found in Roman baths is the *latrina*, or public toilet. These facilities held an important place in daily Roman life and were constructed throughout the city, particularly near streets or forums where people gathered in large numbers. In baths, *latrinae* are generally located near the entrance, although sometimes they were built close to the *frigidarium* to take advantage of the drainage from the cold-water pools[45]. In the Sebastopolis Bath, no space has yet been identified that can definitively be classified as a *latrina*. However, considering that it may have been located near the *frigidarium*, it is likely that such a facility existed in the western section of the bath, in the area that remains unexcavated and where the modern mosque now stands.

Research on Roman baths has shown that the management of water within the structure was a crucial aspect of their design and function[46]. However, there is insufficient information regarding the water supply and storage systems of the Sebastopolis Bath. While the numerous channels identified within the bath clearly indicate that water was brought in from outside, the extent of damage to the structure prevents us from determining exactly how it was delivered. In the present day, the waters used in the city's modern thermal spa facilities are sourced from the Ilıcak region, located approximately 3 km southwest of the bath. If thermal waters were also utilised during the Roman period, they would have needed to be transported to the bath *via* pipes or an aqueduct. The use of aqueducts, one of the most significant innovations in water management for Roman baths, dates back to the 1st century AD and was a critical factor in determining both the water supply and the scale of the bath complex[47]. However, no remains of an aqueduct have been detected in the ancient city, making this scenario unlikely for the Sebastopolis Bath. Consequently, water must have been delivered through piping. Stone pipes found at the foundation level of the nearby Byzantine church provide some insight into this possibility, but extensive damage caused by the modern city of Sulusaray, built over the ancient settlement, prevents definitive conclusions about the water routes. The bath is situated between the Çekerek River, located 500 m to the north with a still-functioning six arches Roman bridge, and the Çatalboğazı Stream, 400 m to the south. Given the proximity of these waterways, it is possible that river water was used to supply the bath, although no direct evidence currently supports this hypothesis. A third potential option, common before aqueducts became widespread, would have been the use of wells, cisterns, or rooftop water storage. While no archaeological evidence has been found for such installations at the bath, local accounts suggest that an ancient well existed approximately 100 m north of the bath near the southern apse of a church. According to these accounts, the well was closed after animals fell into

[39] Heinz 1979; Heinz 1983.
[40] Garbrecht, Manderscheid 1994, p. 15–89.
[41] Vitruvius V.10.I.
[42] Hartmann 1917, p. 152–169; Eschebach 1973, p. 235–242, Taf. 64–66; Eschebach 1979; Heinz 1983, p. 54, Abb. 43–45; Ward-Perkins 1988, p. 120–121, fig. 136–138.
[43] Yegül 1992, p. 3.
[44] Yegül 2011a, p. 116–120.
[45] Neudecker 1994.
[46] Manderscheid 2000, p. 467–535.
[47] Yegül 2011a, p. 120–124.



Figure 16. Praefurnium *located in the east.*



Figure 17. Praefurnia *located to the east and south of the bath.*



Figure 18. *Outer wall of the bath.*



Figure 19. Praefurnium *located in the south.*



Figure 20. *Detail of the* praefurnium *located to the south of the bath.*

it, indicating that wells may also have been employed to supply water to the bath.

It is well established that thermal springs played an important role in the development of bath technology. In early baths, where functionality was the primary concern, only the natural heat of the thermal water was utilised, and no additional heating system was required[48]. With the development of the hypocaust system, heated rooms expanded in size, and reliance on thermal water decreased. A further stage in the evolution of thermal baths involved the combined use of natural hot spring water and artificially heated water. Such a possibility also exists for the Sebastopolis Bath. It should also be noted that all of these options may have been employed together.

The palestra, a section that was part of *gymnasia* in the Hellenistic period and held a special place in Roman imperial baths[49], is another element whose presence in the Sebastopolis Bath remains uncertain. Excavations in the northern part of the bath, carried out under the assumption that a palestra might have existed there, have revealed small finds such as coins and ceramics from the Byzantine period, as well as wall remains of spaces that may have been used as workshops, shops, or similar facilities oriented along a north-south axis (Fig. 21). Since excavations in this section of the bath are still ongoing, it is not yet possible to reach a definitive conclusion regarding the existence of a palestra.

When examining the dating of the structure, it is not possible at this stage to provide a precise date, as there is no epigraphic evidence available. It is also not appropriate to propose a date based solely on the plan, since the Sebastopolis Bath, which combines Hellenistic and Italic elements, represents a unique example of Greco-Roman style Roman bath architecture in Anatolia. At this stage, in terms of its sequential asymmetric plan, it can be compared with the baths of Miletus, Aspendos, Side, Perge, and Sagalassos in Anatolia. In the Faustina Bath[50], the main halls are arranged at right angles to each other, and secondary units are placed in the intervening spaces; this is the most common practice observed in asymmetric-plan baths. Another frequently encountered feature in these baths is the presence of apsidal rooms, as seen in the baths of Miletus, Side, Perge, and Aspendos[51]. From this perspective, the common practices typically seen in asymmetric-plan baths are not present in the Sebastopolis Bath. Sequential asymmetric-plan baths, however, appear in many locations throughout Anatolia. Examples of this type from Anatolia

[48] Yegül 2011a, p. 67.

[49] Yegül 2011a, p. 58–62.

[50] Krencker *et alii* 1929, p. 284–285, Abb. 424; Yegül 1992, p. 291, fig. 373–387; Yegül 2006, p. 256, fig. 278–283.

[51] Yegül 1992, p. 254, fig. 301–303, 330; Yegül 2006, p. 256–261, fig. 278, 285, 288, 289; Yegül 2011a, p. 188, 202, res. 82.



Figure 21. *Workshops, shops, and similar structures dating to the Byzantine period.*

include Smitheion[52], Sardes[53], Pergamon[54], Ephesos[55], Arykanda[56], Patara[57], Limyra[58], Tlos[59], Sillyon[60], Aspendos[61], Perge[62], Syedra[63], Side[64], Anemurium[65], Elaiussa Sebaste[66] and the Parion Baths[67]. When comparing the Sebastopolis Baths with these examples, no common features are apparent apart from their asymmetrical floor plans.

Based on the artefacts recovered from the building and its surroundings, it is not possible to reach a definitive evaluation. The ceramics unearthed are of modest quality and indicate a wide chronological span. The coins, on the other hand, are corroded to the point of being unidentifiable. However, the discovery of two *praefurnia* one on the east and one on the north side of the structure together with the hypocaust heated sections, indicates that the bathhouse does not date earlier than the 2nd century AD.

It is evident that the city underwent an architectural transformation as it attained the status of a Roman city during the Roman period. Baths, considered building types through which Roman emperors established political legitimacy in public spaces, became not only venues for leisure and social activity but also reflected the economic growth brought about by the peaceful conditions of the *Pax Romana*. As a result, bath architecture reached its zenith in the 2nd century BC, and intensive urban development enabled the rapid construction of one or more baths in almost every city of the empire[68]. During this period of peak political and economic power in Rome, Emperor Hadrian's position allowed him to commission the construction of new buildings continually[69]. Sebastopolis also benefited from these urban development activities. Given that Hadrian is known to have visited Sebastopolis during his travels in Anatolia, it is likely that, alongside several other

[52] Kaplan 2018.
[53] Yegül 1992, p. 251, 270, fig. 298–299, 328–329, 334; Yegül 2011a, res. 85, 87–88.
[54] Nielsen 1993, fig. 231; Yegül 2006, p. 252, fig. 274–275.
[55] Yegül 1986; Yegül 1992, p. 258, fig. 321–324; Nielsen 1993, fig. 228; Yegül 2006, p. 252–254, fig. 276–277; Yegül 2011a, p. 193, res. 84.
[56] Farrington 1995, p. 149, fig. 2; Yegül 2006, p. 264, fig. 299–300.
[57] Yegül 2006, p. 264, fig. 296–298; Gülşen 2007, p. 223–258, fig. 3–6, 19–38; Gülşen 2008, p. 454–459, res. 1–30; Koçak, Erkoç 2016, p. 493–512.
[58] Schuh 2012, p. 287–299, Abb. 1–17.
[59] Korkut 2003, p. 445–459, Abb. 1–5; Yegül 2006, p. 264, fig. 301–302; Gülşen 2007, p. 223–258, fig. 7–8, 39–59.
[60] Taşkıran 2021, p. 313–348, fig. 1–14.
[61] Yegül 1992, p. 266, fig. 331–332; Yegül 2006, p. 256, fig. 284–287.
[62] Yegül 1992, p. 258, fig. 310–311; Yegül 2006, p. 256, fig. 33.
[63] Cicci 2013, fig. 17.
[64] Nielsen 1993, fig. 252–253; Yegül 2006, p. 256, fig. 288.
[65] Yegül 2006, p. 267–268, fig. 305–308; Cicci 2013, fig. 13–14, 18–19.
[66] Cicci 2013, fig. 20–21.
[67] Yılmaz 2022, p. 125 *sqq*.
[68] Nielsen 1993, p. 59.
[69] Jones 2000, p. 24.

constructions, the Sebastopolis Bath a small scale *balnea* was built in his honour[70]. Consequently, the suggested date for the Sebastopolis Bath is the 2nd century AD. However, later additions observed on the structure demonstrate that, like all Roman buildings entering a period of decline after the 4th century AD, bath architecture was also affected. The operation and maintenance of large bath complexes relied not only on imperial budgets and operational revenues but also on "evergetism," the practice of wealthy citizens donating their wealth to the community. The economic contraction of the 4th–5th centuries AD impacted bath architecture as well. As a result, the upkeep of the large imperial baths, which had peaked in size during the 2nd century, became increasingly difficult; issues arose in water supply and fuel provision, leading to the abandonment of some baths, downsizing of others, or their conversion into different functional spaces. This transformation is reflected in the Sebastopolis Bath as well. In rooms whose functions were altered, the modifications are visible in blocked doorways and window openings, as well as in the convertion of spaces into workshops or shops.

In the Early Byzantine Period, it is known that the presence of bath structures, particularly in areas with thermal springs, continued, albeit to a limited extent[71]. This period is characterised by a reduction in the number of baths and the restoration and continued use of baths from previous periods[72]. The most significant difference separating Byzantine baths from Roman baths was the creation of separate spaces for men and women, reflecting the influence of the Christian faith. Additionally, during this period, Christian clerics often described baths as "hedonistic" structures, leading to a weakening of the bathing culture and a significant decline in its social importance. Nevertheless, some scholars argue that, despite this decline, baths in the Byzantine period became an integral part of the emerging urban "neighbourhood trilogy" concept, comprising palace-*villa*-bath, church-monastery-bath, or *villa*-church-bath complexes, thereby gaining a new identity and functioning beyond merely being spaces for bathing[73].

Regardless of interpretation, ancient Roman baths were multifaceted structures reflecting not only social, cultural, and economic interactions but also the architectural dynamics of their era. These baths were not merely physical spaces; they mirrored the lifestyle and processes of their time. They symbolised the continuity of urban life and were part of broader cultural transformation. The Sebastopolis Bath, constructed near the city's social centre in a location of dense daily activity, must have played an important role in shaping social life in Sebastopolis during both the Roman and Byzantine periods.

[70] For the development of Hadrianic bath architecture, see Heinz 1983, p. 91–123.

[71] Berger 1982, p. 21.

[72] Yegül 1992, p. 322.

[73] Yegül 2011a, p. 230–232.

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ROMAN IMPERIAL OCTAGONAL GEMS: ANALYSES AND INTERPRETATIONS

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Keywords: *Octagonal-cut gems, Intaglios, Ankyra, Kaisareia, Roman period, Early Byzantine period*

Abstract: *When the distribution of octagonal-cut gems from the Roman Imperial period in excavation finds and museum collections is examined, one can observe that such jewellery generally originates from Central Anatolia and its vicinity. These octagonal-cut gems, generally used as seals, have their origins in the octagonal-pyramidal stamp seals of the Persian period. The reason for the high frequency of octagonal ring stones in Central Anatolia during the Roman period is attributed by the authors to the fact that the Cappadocia region remained under Persian rule for a long time and served as an important satrapy centre. In particular, it is observed that most of the pyramidal chalcedony stamp seals found in Sardis and Daskyleion – prominent satrapy centres in Anatolia – have octagonal seal surfaces. This Achaemenid tradition from the Persian Empire period appears to have persisted into the Roman period. In contrast to Anatolia, it is noted that Roman period octagonal gems are found in very limited numbers in state museums and private collections across Europe and America. The period during which this specific gem type was popular in the Roman world spans from the 2nd to the 5th century AD. This study demonstrates that the octagonal shape held both numerical and symbolic significance among soldiers and early Christian communities in Central Anatolia during the Roman period. This paper aims to clarify the hypothesis that octagonal ring stones were likely manufactured by a permanent workshop in Ankyra, the metropolis of Galatia, and Kaisareia, the metropolis of Cappadocia. In this study, a total of 51 octagonal gems are presented, including 6 found in excavations around Ankara, 14 from the collections of two different museums in Ankara, 8 from three separate private collections, and 23 from other archaeological museums in Anatolia. Thanks to the coins found in the same graves as the octagonal gems unearthed during excavations at the Juliopolis Necropolis in the Nallıhan district of Ankara, precise dating has been possible, revealing that these gems date to the 2nd century AD. Although octagonal gems were widely used during the Late Roman Empire and Early Christian periods, they are seen as a tradition extending from the Persian (Achaemenid) period to Islamic eras. Among the 51 gems examined, one features a cameo (relief) depiction, while the others feature intaglios (incised carvings). While these depictions were primarily used as personal seals, they also reflect the beliefs of the wearer.*

Cuvinte-cheie: *geme octogonale, gravuri incizate, Ankyra, Kaisareia, epoca romană, perioada bizantină timpurie*

Rezumat: *Atunci când se analizează distribuția pietrelor de inel cu tăietură octogonală din perioada imperială romană, atât a celor provenite din săpături arheologice, cât și a celor aflate în colecțiile muzeale, se poate observa că provin, în general, din Anatolia Centrală și din zonele învecinate. Utilizate în general ca sigilii, acestea își au originile în sigiliile-ștampilă octogonale în formă de piramidă din perioada persană. Motivul frecvenței lor ridicate în Anatolia Centrală în perioada romană este atribuit de autori faptului că regiunea Capadociei a funcționat vreme îndelungată ca satrapie, în cadrul sistemului de organizare administrativă a Imperiului Persan. Se observă, în special, că majoritatea sigiliilor-ștampilă piramidale din calcedonie descoperite la Sardes și Daskyleion – importante centre ale satrapiei anatoliene – prezintă suprafețe de sigilare octogonale. Această tradiție ahemenidă din perioada Imperiului Persan pare să se fi perpetuat până în perioada romană. Spre deosebire de Anatolia, se remarcă faptul că gemele octogonale din perioada romană se găsesc în număr limitat în muzeele naționale și colecțiile private din Europa și America. Perioada în care acest tip specific de gemă a fost popular în lumea romană se întinde din secolul al II-lea până în secolul al V-lea d.Chr. Prezentul studiu demonstrează că forma octogonală a avut atât o semnificație numerică, cât și una simbolică în rândul soldaților și al comunităților creștine timpurii din Anatolia Centrală în perioada romană. Studiul de față își propune să clarifice ipoteza conform căreia pietrele de inel octogonale au fost probabil fabricate în ateliere permanente din Ankyra, metropola Galatiei, și Kaisareia, metropola Capadociei. În lucrarea de față sunt prezentate 51 de pietre de inel octogonale, dintre care 6 descoperite în săpături realizate în jurul Ankarei, 14 din colecțiile a două muzee diferite din Ankara, opt din trei colecții private și 23 din alte muzee arheologice. Datorită monedelor descoperite în aceleași morminte cu pietrele de inel octogonale scoase la lumină în cadrul săpăturilor efectuate în necropola orașului Juliopolis, azi cartierul Nallıhan al Ankarei, a fost posibilă datarea precisă a pieselor, acestea aparținând secolului al II-lea d.Chr. Deși utilizate pe scară largă în perioada romanității târzii și a creștinismului timpuriu, ele sunt interpretate ca manifestare a unei tradiții îndelungate, care se transmite din perioada persană (ahemenidă) până în epocile islamice. Dintre cele 51 de pietre examinate, una conține o reprezentare în relief (camee), în timp ce toate celelalte prezintă intaglii (gravuri incizate). Utilizate în principal ca sigilii personale, ele reflectă totodată credințele purtătorului.*

INTRODUCTION

Octagonal gems from the Roman period are of particular significance due both to their scarcity and their likely symbolic meaning. It is noted that octagonal gems are rare in European and American museums and private collections, whereas they are found in relatively large numbers in Central Anatolia[1]. This specific type of gem appears to have been popular between the 2nd and 5th centuries AD.

[1] Goldman 2014, p. 163–164.

As A. Goldman pointed out in his study based on three octagonal gems found during the excavations at Gordion[2], it is probable that these uniquely shaped gems held numerical and symbolic importance among the military and early Christian communities in Central Anatolia. Furthermore, we strongly support the theory that these gems were produced in Central Anatolia by a permanent workshop – possibly in Ankyra, the capital of Galatia, or Kaisareia, the capital of Cappadocia[3] – and we believe that this tradition of octagonal-faced ring stone seals originated in the Persian tradition. After the Persians captured Sardis, the centre of the Lydian Kingdom, in 546 BC, the largest and most important of the five satrapies they established in Anatolia was the Satrapy of Lower Phrygia, Sparda (Sardis). During the excavations of the Sardis necropolis between 1950 and 1955, in addition to significant jewellery finds, 200 pyramidal chalcedony seals were discovered[4]. Some of these Persian seals have octagonal surfaces and pyramidal bodies, dating to the 5th century BC[5]. One of the 200 seals now in the Istanbul Archaeology Museums was recovered from a male grave in Sardis. This chalcedony pendant seal is enclosed in a gold frame ending in duck heads and terminates with a suspension ring at the top. On this octagonal seal, a masterpiece of Achaemenid Persian art, a winged, lion-bodied figure with a single horn is engraved[6].

The fact that numerous Roman-period octagonal seal stones have been found in excavations and museums across Central Anatolia – within the territories of the Katpatuka (Kappadokia) Satrapy, one of the five Persian satrapies in Anatolia – demonstrates that Persian influence persisted in the region during the Roman period. The period of Darius I, in which Eastern and Western cultures were utilised together, is termed Graeco-Persian. The influence of Persian culture, which began in the second half of the 6th century BC and developed into its characteristic forms in the 5th century BC, was visible in many locations across Phrygia, Lydia, and within the Cappadocia and Pontus kingdoms, which were governed by dynasties of Persian origin during the Hellenistic period. In the İzmir Archaeology Museum, a necklace pendant (inv. no. 003.353) dating to the Archaic period was used as a Lydian-Persian seal, featuring a fight between a lion and a deer[7]. An octagonal gem in the İzmir Archaeology Museum (inv. no. 5593), depicting a bull and two unidentified motifs, belongs to the Archaic period, specifically the 6th century BC[8].

During the Roman Imperial period, alongside the appearance of figures of gods and goddesses of Persian origin on certain civic coins, the tradition of octagonal-cut ring stone seals re-emerged in Anatolia after a long hiatus. While octagonal ring stones were widely used during the Late Roman Imperial and Early Christian periods, this tradition is seen to extend from the Persian (Achaemenid) period up to the Islamic period[9]. An octagonal sard ring stone from the Islamic period, registered in the İzmir Archaeology Museum (inv. no. 13517), is dated to 1700 AD[10]. Similarly, an octagonal carnelian ring stone in the Uşak Archaeology Museum (inv. no. 31.1.75) also belongs to the Islamic period[11].

In this study, a total of 51 octagonal ring stones are presented: 6 found in excavations around Ankara, 14 from the collections of two separate museums in Ankara, 8 from three different private collections, and 23 from other archaeology museums in Anatolia. Through the coins found in the same graves alongside the octagonal gems unearthed during the excavations at the Juliopolis Necropolis in the Nallıhan district of Ankara, it has been possible to establish a precise date for these gems, placing them in the 2nd century AD[12].

Furthermore, 131 ring stones from the İzmir Archaeology Museum collection have been published, one of which is of the octagonal form. On this eight-cornered carnelian ring stone, a rabbit running towards the left is depicted[13]. In the unpublished doctoral thesis by Şenergüç, three additional octagonal gems are included alongside this specimen from the İzmir Archaeology Museum[14]. Similarly, among the 62 gems published from the Haluk Perk Museum collection, 5 are of the octagonal form[15].

Of the five octagonal gems in the Haluk Perk Museum collection, the octagonal jasper ring stone (no. 17) bears a name abbreviation consisting of two letters. The type defined as a "standing figure" on the carnelian ring stone (no. 22) should, in our opinion, be identified as Hecate, due to the three heads, three raised arms, the short *chiton*, and the two body forms visible from the right side. The type identified as a "figure seated on a throne" on the octagonal carnelian ring stone (no. 38) is more appropriately identified by us as Zeus–Serapis.

Since gems in museum and private collection catalogues are generally not found within an archaeological context, they are often assigned a broad date range, and their find-spots are usually unknown. In this respect, the Juliopolis finds we present here are of great importance. The gems discovered during the 2009–2012 excavations at the Juliopolis Necropolis in the Çayırhan district of Nallıhan, Ankara, were found within an archaeological context as grave goods, and, in most cases, were accompanied by *Charon* coins, thus providing the opportunity for precise dating[16].

[2] Goldman 2014, p. 180–185.
[3] Goldman 2002, p. 3–4; Goldman 2014, p. 185.
[4] Meriçboyu 2001, p. 87.
[5] Meriçboyu 2001, p. 88, 124; Öztürk 2024, p. 354–399, nos. 76–77, 80–82, 85–86, 88, 90, 95–98.
[6] Meriçboyu 2001, p. 124–125, fig. 3.
[7] Laflı 2012, p. 135, no. 1.
[8] Şenergüç 2026, p. 140, no. 13.
[9] Şenergüç 2026, p. 603, 610, nos. 476, 483.
[10] Şenergüç 2026, p. 603, no. 476.
[11] Şenergüç 2026, p. 610, no. 483.
[12] Arslan *et alii* 2011, p. 275–276.
[13] Laflı 2012, p. 137, no. 31.
[14] Şenergüç 2026, p. 322, 402, 594, 603, nos. 195, 275, 467, 476.
[15] Gülbay 2017, p. 205, 207, nos. 17, 22, 38, 42, 44.
[16] Arslan 2014, p. 13–24.

Even though descriptions of the gem seals have been based on clay impressions, the descriptions of some gems for which impressions are not available have been made based on direct observation of the gems themselves.

FUNCTIONS AND HISTORY OF ENGRAVED GEMS

Functions of Roman-Period Engraved Gems

Beyond being objects and ornaments of aesthetic appeal, the primary function of engraved gems was their use as seals. They were widely utilised to mark personal property, signify authority, and ensure the personalisation of certain objects. To denote ownership or authority, the engraved ring stone or the metal ring itself would be pressed onto a piece of clay or wax. Such seals served to verify the authenticity of a letter or an object. There is also extensive evidence that gemstones were used in relation to superstitious beliefs. Some were believed to possess healing and protective powers[17].

History of Octagonal-Shaped Stone Seals

The earliest use of octagonal-shaped gem seals appears to have emerged during the Persian Imperial period[18]. After the Achaemenids captured Sardis, the royal centre of Lydia, in 546 BC, they held dominion over all Anatolian lands until 334 BC. The Persians governed each of the regions inhabited by the peoples of Anatolia through governors from the Persian nobility, known as Satraps. Under Achaemenid rule, the Satrapy of Cappadocia held a significant position among the Persian satrapy centres. The inclusion of Cappadocia in the Achaemenid Empire as a satrapy had a profound and long-lasting impact on the country's cultural and administrative development, as evidenced by the prevalence of Persian names and belief systems in the region[19]. In fact, the Cappadocian rulers of the Hellenistic Ariarathes dynasty even claimed descent from Cyrus II. Despite their Iranian origin, the kings of Cappadocia modelled their administrative identities by emulating contemporary Hellenistic leaders and adopted typical Hellenistic titles such as *Eusebes*, *Philopator*, and *Philometor Ktistes*. Although the language of the court was Greek, the public continued to use local languages, primarily Aramaic. While Hellenisation reached a notable level during the Kingdom of Cappadocia, this influence did not entirely alter the structure and culture of the country. Aramaic and Cappadocian languages continued to be spoken, and their use in inscriptions persisted until the middle of the Roman Imperial period. Anatolian and Achaemenid religious practices also continued; the most striking evidence of this continuity is the "Temple State" of Komana, dedicated to the ancient Anatolian warrior Goddess Ma, which remained extremely influential in the region[20].

Archelaos, a Cappadocian nobleman likely of Macedonian origin, became the last king of Cappadocia (36 BC–17 AD). This king authored a geographical work on minerals and precious stones, as well as a treatise on agriculture and animal husbandry, demonstrating his interests – like other notables of his country – in these fields[21].

Similarly, the Kingdom of Pontus, located on the southern coast of the Black Sea, was governed by the Mithradates Dynasty of Persian origin and flourished between the 3rd and 1st centuries BC. Pontus was a region with cultural diversity where people of different origins and cultures converged. The reflections of this diversity are also visible in the populations that made up the kingdom. This variety is encountered in many cultural characteristics and religious practices of the peoples within the kingdom. While Hellenic cults and the worship of Persian gods persisted side by side in Pontus, ancient traditions dating back to the Hittite period and even Assyrian influences – such as the prohibition against eating pork and the practice of circumcision – also continued. The Greeks created cults related to underworld deities, such as Hecate. Furthermore, the worship of Persian gods like Mithras and Anahita remained prevalent among the public until the mid-Roman period. Moreover, another cult that was established, as was the case for the Anatolian gods Ma and Men, was the cult of the Komana goddess, a Mother Goddess later associated by the Greeks with Athena[22]. The Pontic Kingdom of the Mithradates dynasty ended in 63 BC with the defeat of Mithradates VI by Pompey the Great. During the Mithradatic Kingdom of Pontus, Persian religious beliefs persisted in the region, a condition that continued into the Roman era. The presence of a temple to the mystery goddess Ma of Persian origin in Komana of Pontus and Komana of Cappadocia, the existence of a temple and cult centre for the Persian-origin goddess Anaitis in the city of Zela in Pontus, and the depiction of these goddesses' figures on coins are significant in demonstrating the continuation of Persian religious beliefs in both regions. Additionally, on Roman-period coins of Trapezos, depictions of Mithras, the celestial and mysterious god – a continuation of the Persian-origin Ahura Mazda belief – were frequently included[23]. The appearance of busts and figures of Ma on ring stone seals and amulets[24] is further evidence of the persistence of Persian beliefs and traditions in Cappadocia throughout the Roman Imperial domination.

The primary origin of the octagonal-cut technique used for the ring stones examined here – which date to the

[17] Konuk, Arslan 2000, p. 11–13.

[18] Kaptan 2017; Dusinberre 2010a; Dusinberre 2010b; Garrison, Root 1996; Boardman 1970.

[19] Mitchell 2007, p. 151–171.

[20] Speidel 2019, p. 119–120.

[21] Speidel 2019, p. 128.

[22] Pastor 2019, p. 105.

[23] Arslan 2008, p. 712–713.

[24] Arslan 2018, p. 69–88.

Roman Imperial period and served as ornaments, amulets, and personal seals – is found in the octagonal-pyramidal stamp seals that appeared during the Achaemenid Persian Empire. These Persian stamp seals, generally made of white/blue chalcedony, feature a pyramidal handle with a hole drilled through the top or side to allow for suspension by a thread; they were often adorned with bronze or gold rings and worn as necklaces or pendants[25]. These chalcedony seals, which have octagonal-cut edges and are engraved with favoured figures of Persian iconography, have been unearthed at excavated Persian Satrapy centres such as Sardis[26] and Daskyleion[27], as well as at Gordion[28] and Uylupınar[29]. Furthermore, octagonal-pyramidal chalcedony Persian seals are present at many excavation sites and in museum collections[30]. Moreover, many octagonal seal impressions pressed onto clay tablets found in the archives of Persepolis, the royal capital of the Persians, are well-known[31]. A cuneiform clay tablet in the Persepolis archive bears three impressions of an octagonal seal. It is also noteworthy that a large number of octagonal seals are represented among the Persian clay seal impressions (*bullae*) recovered from the Daskyleion excavations[32].

ICONOGRAPHIC DIVERSITY IN ROMAN GLYPTIC ART: A STUDY ON SELECTED EXAMPLES FROM MUSEUMS AND PRIVATE COLLECTIONS

During the Roman Imperial period, ring stones (*gemmae*), which were used as personal ornaments and talismans in addition to their function as seals, are artefacts that reflect the belief systems, social hierarchies, and artistic trends of the era. The prevalence of carnelians and jaspers (especially red jasper) as preferred materials in the examined specimens confirms their dominant place in the Roman glyptic repertoire, owing to their suitable hardness for seal engraving and their aesthetic value. While the majority of these pieces exhibit the *intaglio* technique, the presence of the *cameo* (relief) technique – seen in layered gems such as sardonyx – demonstrates the variational richness of this art form. In particular, finds discovered *in situ* with coins belonging to emperors such as Hadrian and Lucius Verus in the Juliopolis necropolis excavations[33], and Claudius and Trajan in the Akyurt-Kalaba necropolis[34], both solidify the chronological framework of these pieces and emphasise the stratigraphic significance of glyptic sources within archaeological contexts. This study aims to analyse octagonal gems unearthed in Anatolia from iconographic and stylistic perspectives and to present the usage and typological classification of this form in Roman seal art.

Portraits

Portraits, which were rare in the Classical period, increased in number and significance during the Hellenistic period, particularly with Alexander III. In the Roman period, the majority of portraits belong to members of the ruling class. During the Imperial period, the portraits of rulers such as Augustus and Nero were frequently used on gems. In later periods, the idealistic approach in art gradually gave way to a realistic style. Consequently, there was a marked increase in the practice of individuals from the general public commissioning their own portraits on gems (Cat. nos. 1–2).

Divine and Mythological Depictions

The pantheon figures included in the catalogue reflect typical examples of the syncretic belief system and cultural interactions in the Roman religious world. Syncretic deity depictions, where Roman gods are combined with Egyptian-origin deities, are observed. The Isis-Tyche depiction (Cat. no. 11), in particular, draws attention with its complex iconography emphasising the goddess's power over fertility (*cornucopia*) and fortune (rudder). The snake figures on the gem and the negative inscription associated with the name 'Asklepiodos' confirm that the piece functioned both as a seal and as a powerful protective amulet. Similarly, the three-bodied form in the Hecate depiction (Cat. no. 3) and the *kalathos* detail in the Zeus–Serapis figure (Cat. no. 4) demonstrate the place of Eastern-origin cults in Roman iconography. Gems depicting Hecate in her three-bodied form were used for magical purposes[35]. Among the warrior deities, Ares (Cat. no. 5) is depicted standing with a spear and shield in the form of *Mars Ultor*. Athena (Cat. no. 6) maintains the traditional type with her classic stance, helmet, spear, and shield. Alongside the gods, the depiction of Eros on a Lion (Cat. no. 8) stands out in the catalogue as an allegorical composition symbolising the taming of wild nature by the god of love.

The only *cameo* ring stone in our catalogue, crafted from sardonyx, features Dionysus standing, leaning on a *thyrsos* with his right hand and pouring wine from a *kantharos* with his left (Cat. no. 7). Our catalogue includes two ring stones depicting Hermes standing with his most common attributes: a *petasos* on his head, winged boots (*talaria*) on his feet, a money pouch (*marsupium*) in one hand, and a *kerykeion* and cloak (*khlamys*) resting on his arm (Cat. nos. 9–10). Furthermore, on a red jasper stone set in a silver ring, Tyche is depicted standing, turned to the left, wearing a long *chiton* and *himation*, holding a ship's rudder and a *cornucopia* (Cat. no. 12).

[25] Kaptan 2017, p. 256, fig. 1.
[26] Dusinberre 2010a; Dusinberre 2010b, p. 324–327; Dusinberre 2003, p. 270–277; Curtis 1925, pl. X, XI; Butler 1922, p. 87, 121.
[27] Kaptan 2002, p. 189, 192, pl. 148–150, 169.
[28] Dusinberre 2010b, p. 327–330; Dusinberre 2005, p. 64–66, fig. 56–58, 60.
[29] Kaptan 2017, p. 258, fig. 3a–b.
[30] Laflı 2012, p. 139, fig. 1a–1b; Yağcı 2000, pl. 4, nos. 1–2.
[31] Garrison, Root 2001, pl. 101 c, d, pl. 126 c, d, pl. 127 c, d.
[32] Kaptan 2002, p. 189, nos. 149–150, p. 192, no. 169.
[33] Arslan *et alii* 2011, p. 275–276.
[34] Arslan, Metin 2014, p. 150, nos. 11–12.
[35] King 1872, p. 267.

Gryllos and Combinations

The combination consisting of an ostrich, a monkey, and a Silenos head (Cat. no. 13) – a *hippalectryon* – represents the imaginative and humorous side of Roman glyptic art. These '*gryllos*' depictions are known for their protective (apotropaic) properties against the evil eye; their discovery alongside coins, as in the Juliopolis finds, demonstrates their widespread use among the public and their protective nature[36]. Hybrid depictions known as *gryllos*, formed by combining Silenos/Satyros heads and masks with various animals such as eagles, roosters, and horses, were frequently preferred on gems for apotropaic purposes (Cat. no. 13). There are also two examples depicting a human-headed goat among the gems in our catalogue (Cat. nos. 19, 20). The visual oddity and distinctiveness of these compositions act as a kind of lightning rod, drawing malevolent gazes directly towards the compositions themselves to protect the owner of the object[37]. Emerging in the 4th century BC, these iconographic elements maintained their popularity over a wide time span reaching into the 3rd century AD[38].

Animal Depictions and Symbolism

Animal depictions in the catalogue span a wide spectrum, from aspects of daily Roman life to esoteric meanings. In addition to naturalistic approaches such as the rabbit (Cat. nos. 35–38) and the grazing horse (Cat. no. 25), the lion, for example, can be seen as a zodiac symbol. The combination of lion and star (Cat. no. 14) points to an astronomical and talismanic content. While the combination of dolphin and squid (Cat. no. 41) from the marine fauna attracts attention as a rare composition, eagle depictions (Cat. nos. 28–30) symbolise imperial power and legionary loyalty. The detail of ribbons on the legionary eagle (Cat. no. 29) directly documents the use of the piece in a military context.

The lion motif, which has been frequently depicted since early examples of figured gems, is an iconographic symbol of power and courage. Humanity's historical admiration for this animal stems from the desire to integrate its symbolic characteristics into human identities[39]. Lions can be depicted in various ways: walking, sitting, or lying down, sometimes fighting another animal or biting a bull. They are sometimes depicted alongside a deity figure. The struggle of Heracles with the Nemean lion and scenes depicting Eros on the back of a lion are quite common (Cat. no. 8). Boardman suggests that the lion symbolises the sun and the bull the world, and that a lion attacking a bull represents the triumph of light over darkness and life over death[40]. Bonner states that these gems had a magical meaning, were used to protect their owners from evil and served as amulets[41].

The iconographic development of the goat figure, which has a wide area of usage in ancient gems, is based on pastoral and hunting-related themes in early periods[42]. The connotations of fertility and sexual power it embodies have enabled this figure to be associated with the cults of Zeus, Aphrodite, Artemis, and Dionysus. Despite these connections with various deities, the goat is fundamentally integrated with the mythical world of Dionysus in iconographic terms[43] (Cat. nos. 19–21). Figures depicted as goat-headed humans recall Pan (Cat. nos. 19, 20). The depictions of goat-milking shepherds frequently seen on gems may be related to the 'Good Shepherd Jesus' mythology – a popular symbol in Christianity – or they may be associated with Hermes (Cat. nos. 22–24).

Accepted as a symbol of elite status in the ancient world, the horse is an iconographic element that embodies a warrior's character, military achievements, and socio-economic power[44]. The horse depictions appearing on gems constitute rich reflections of this symbolism of prestige, wealth, and victory in glyptic art (Cat. nos. 25–27). In these gems, horses are frequently depicted with their riders (Cat. nos. 26–27). Furtwängler states that such gems with equestrian depictions may have been carried by Roman soldiers as a sign of belonging and status[45].

Among the birds on gems, the eagle figure is the most preferred (Cat. nos. 28–30). This figure is not limited to Rome; it also appears on Ptolemaic coins in the Hellenistic period[46]. The eagle is fundamentally the sacred bird of Zeus and also the symbol of the Roman state and army. Eagles, signifying power and victory, carry a wreath in their beaks to emphasise victory (Cat. nos. 29–30). When representing Roman legions, they are usually depicted standing between two military standards (Cat. no. 29).

In addition to the eagle, another bird frequently encountered on gems is the parrot (Cat. nos. 31–33). According to Henig, most of these figures are Indian parrots, known for their loud voices and playful movements. On the other hand, they are closely associated with the Dionysian cult in ancient mythology[47].

Roosters were frequently used on gems due to the special meanings they carried (Cat. no. 34). In Rome, in particular, there was a strong tradition associating roosters with Hermes. The reason for this may be the similarity between the rooster awakening people in the mornings to herald a new day and Hermes's role as the messenger of the gods[48]. The rooster also had connotations related to masculinity and lust; hence, it is featured alongside Priapus,

[36] Devecioğlu 2016, p. 99, no. 8.
[37] Şenergüç 2026, p. 127.
[38] Sagiv 2018, p. 145.
[39] Şenergüç 2026, p. 112.
[40] Boardman 1980, p. 103.
[41] Bonner 1950, p. 36.
[42] Henig, MacGregor 2004, p. 76.
[43] Şenergüç 2026, p. 116.
[44] King 1872, p. 268.
[45] Furtwängler 1900, p. 284.
[46] King 1872, p. 259.
[47] Henig 2007, p. 54.
[48] Birley, Greene 2006, p. 70.

Eros, and Silenos in some depictions[49]. Finally, they were considered a general symbol of luck in the ancient world.

One of the animals frequently encountered on gems is the rabbit. These figures can sometimes be seen alone (Cat. nos. 35–38) and sometimes within a dynamic hunting scene with a dog chasing them (Cat. nos. 39–40). The popularity of hunting scenes in ancient art and the fact that the rabbit was a primary game animal led to this motif being interpreted in connection with Artemis, the goddess of the hunt. Furthermore, scenes of dogs chasing rabbits are important in that they emphasise the theme of 'inescapability of death', which is frequently encountered in Roman funerary art. The recurrence of this theme in excavation finds in and around Ankara offers strong evidence for the existence of a local workshop active in the region.

The dolphin motif, in a mythological context, symbolises both Poseidon and the journey of souls to the Blessed Isles (*Elysium*) (Cat. no. 41); depictions of Eros playing a musical instrument on the back of a dolphin are reflections of this allegory[50]. In a political context, when combined with victory emblems such as the palm, these figures point to Octavian's military success at Actium[51]. Accordingly, the dolphin transformed into a propaganda tool widely used on Augustan coins[52].

The scorpion is one of the cult animals of Hermes[53]. Furthermore, the carnelian ring stone with a scorpion depiction in our catalogue (Cat. no. 42) must have been used against evil forces, the evil eye, and spider or scorpion stings[54]. According to Pliny the Elder, the carnelian gem was seen as a cure for many ailments in the ancient world. It was believed that this stone was good for spider and scorpion bites, that merely looking at the stone soothed the eyes, and that it quenched thirst when held in the mouth. There was also a belief that the carnelian stone made athletes invincible[55].

Epigraphic Data and Late Period Transformation

Inscriptions, rarely seen on gems in the early periods, began to increase in number during the Classical period[56]. These written expressions generally contain the full name of the ring owner, only the first syllable of their name (monogram), or the signature of the artist who engraved the gem. In the Imperial period, artist names are frequently encountered on gems; these are generally formed by writing the names of Greek-origin masters with Greek letters[57] (Cat. nos. 11, 16, 44–47). Following the spread of Christianity, there was a significant increase in the number of gems bearing inscriptions. In this period, artist signatures were replaced by the ring owner's full name or name abbreviations in the form of monograms (Cat. nos. 48–51). In addition to this, protective expressions believed to carry good wishes and amuletic/talismanic effects also hold a significant place in the inscriptions (Cat. no. 46).

The inscribed gems in the final section of the catalogue clarify the seal's function of indicating ownership. Seals bearing the names Asklepiodos (Cat. no. 11), Julianos (Cat. no. 16), and Severus (Cat. no. 45) indicate personal ownership, while the Christogram with the IXΘYC inscription (Cat. no. 44) is a reflection of the religious transformation in the region and of early Christian symbolism on gems. Monogrammed gems dated to the 4th–6th centuries AD (Cat. nos. 49–51) are the final links documenting the evolution of the ancient glyptic tradition into Byzantine seal art.

There are ten inscribed and monogrammed gems in our catalogue; only three of these are in the form of monograms, while the others bear inscriptions.

CATALOGUE*

No. 1. Carnelian Intaglio Depicting a Male Bust, F 3 (Fig. 1)
Kütahya Archaeological Museum, inv. no. 06453
Dimensions. H. = 9 mm, w. = 7 mm, th. = 3 mm.
Dating. 2nd–3rd century AD.
Description. Draped male bust facing left.
Analogies/Bibliography. Furtwängler 1900, XLVII–Portraits; Gülbay 2017, p. 207, no. 42 (octagonal parallel).

No. 2. Red Jasper Intaglio Depicting a Male Bust, F 3 (Fig. 2)
İstanbul, Haluk Perk Archive, No. 42
Dimensions. H. = 9 mm, w. = 8 mm, th. = 3 mm.
Dating. 50 BC – 2nd century AD.
Description. Draped male bust facing left.
Analogies/Bibliography. Gülbay 2017, p. 207, no. 42.

No. 3. Red Jasper Intaglio Depicting Hecate, F 3 (Fig. 3)
İstanbul, Haluk Perk Archive, No. 22
Dimensions. H. = 12 mm, w. = 9 mm, th. = 3 mm.
Dating. 2nd–3rd century AD.
Description. Hecate standing in a frontal view; she is three-headed and three-bodied, wearing a *polos* on her head and holding a torch or a knife in her raised hands.
Analogies/Bibliography. Gülbay 2017, p. 205, no. 22.

No. 4. Carnelian Intaglio Depicting Zeus–Serapis, F 2 (Fig. 4)
İstanbul, Haluk Perk Archive, No. 38
Dimensions. H. = 9 mm, w. = 8 mm, th. = 3 mm.
Dating. 2nd century AD.
Description. Zeus–Serapis is seated on a high-backed throne in a frontal view, with head turned to the right. He wears a *kalathos* on the head, leans on his sceptre with his right hand, and holds a *phiale* (?) in his left hand.
Analogies/Bibliography. Gülbay 2017, p. 207, no. 38.

[49] Furtwängler 1900, p. 353.
[50] Şenergüç 2026, p. 122; King 1872, p. 275.
[51] Henig, MacGregor 2004, p. 86.
[52] Sutherland, Carson 1984, RIC I² 250–253; https://rpc.ashmus.ox.ac.uk/coins/1/470.
[53] Henig, MacGregor 2004, p. 86.
[54] Şenergüç 2026, p. 8.
[55] Şenergüç 2026, p. 28; Plin. *Nat. Hist.*, 37, 139–142.
[56] Richter 1920, p. 38.
[57] Plantzos 1999, p. 97.

* In the Catalogue the next abbreviations are used: H. = height; w. = width; th. = thickness; diam. = diameter.

No. 5. Black Glass Intaglio Depicting Ares, F 2 (Fig. 5)
İstanbul, Haluk Perk Archive, No. 44
Dimensions. H. = 10 mm, w. = 9 mm, th. = 3 mm.
Dating. 50 BC – 2nd century AD.
Description. Ares (*Mars Ultor*) standing in a frontal view; he wears a helmet, leans on his spear with his right hand, and holds his shield upright on the ground in front of him with his left hand; groundline.
Analogies/Bibliography. Gülbay 2017, p. 207, no. 44.

No. 6. Light Brown Carnelian Intaglio Depicting Athena, F 2 (Fig. 6a–b)
Burdur Archaeological Museum, inv. no. 626–50–73
Dimensions. H. = 12 mm, w. = 7 mm, th. = 4 mm.
Dating. 3rd century AD.
Description. On a light brown carnelian with black veins, described in impression, Athena stands in a frontal view with the head turned to the right. She wears a Corinthian helmet, rests her right hand on her shield in front, and leans on her spear with her left hand.
Analogies/Bibliography. For an octagonal parallel, see Goldman 2014, p. 171, Fig. 5; for Athena, see Konuk, Arslan 2000, p. 51–52, nos. 27–28.

No. 7. Sardonyx Cameo Gemstone or Amulet Depicting Dionysos, F 5 (Fig. 7)
Çorum Archaeological Museum, inv. no. 2739
Dimensions. H. = 15 mm, w. = 11 mm.
Dating. 2nd century AD.
Description. Black and white sardonyx cameo gemstone (or amulet). The figure of Dionysos is carved into the white layer of the stone. Standing with his body facing frontally and the head turned to the right, has long hair flowing over his shoulders. His right foot crosses over in front of his left foot, shifting his body



Figure 1. *Carnelian Intaglio Depicting a Male Bust from the Kütahya Archaeological Museum, inv. no. 06453.*



Figure 2. *Red Jasper Intaglio Depicting a Male Bust from the Haluk Perk Archive, no. 42.*



Figure 3. *Red Jasper Intaglio Depicting Hecate from the Haluk Perk Archive, no. 22.*



Figure 4. *Carnelian Intaglio Depicting Zeus–Serapis from the Haluk Perk Archive, no. 38.*



Figure 5. *Black Glass Intaglio Depicting Ares from the Haluk Perk Archive, no. 44.*

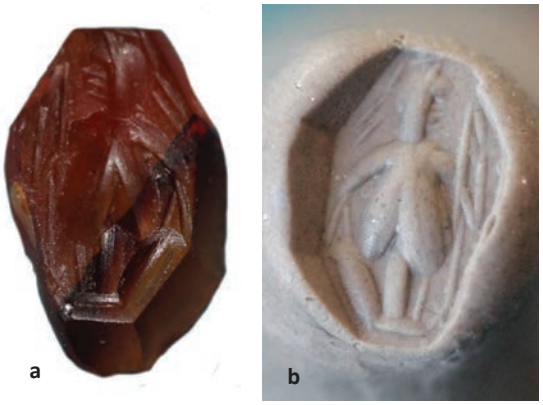


Figure 6a–b. *Light Brown Carnelian Intaglio Depicting Athena and its clay impression from the Burdur Archaeological Museum, inv. no. 626–50–73.*

weight onto his left leg. He leans on a *thyrsos* with his right hand and pours wine from a *kantharos* with his left hand.
Analogies/Bibliography. İbiş 2021, p. 96, Fig. 50; Arslan, Delikan 2021, p. 45, no. 30.

No. 8. Carnelian Intaglio Depicting Eros on a Lion, F 2 (Fig. 8a–b)
Uşak Archaeological Museum, inv. no. 2001/326
Dimensions. H. = 11 mm, w. = 12 mm, th. = 5 mm.
Dating. 2nd century AD.
Description. In impression; winged Eros is riding a lion walking to the right, guiding the lion with a whip held in his left hand; groundline.
Analogies/Bibliography. British Museum no. 1814,0704.1680; Şenergüç 2026, p. 371, no. 244; Middleton 1891, App. p. xix, no. 80; Furtwängler 1900, Pl. XLII, no. 35; Lippold 1922, Pl. CXXIII, no. 6; Cravinho 2017, p. 180–181, no. 5.

No. 9. Red Carnelian Intaglio in Silver Ring Depicting Hermes, F 2 (Fig. 9a–b)
Ankara, Museum of Anatolian Civilizations, inv. no. 176–9–80
Dimensions. H. = 12.6 mm, w. = 10.5 mm.
Dating. 2nd–3rd century AD.
Description. Hermes walking left; his body is shown in three-quarter frontal view, and the head is turned left. He wears a *petasos*? on his head and winged sandals (*talaria*) on his feet. He holds a purse (*marsupium*) in his right hand, and a *kerykeion* along with a cloak (*khlamys*) resting on his arm in his left hand; groundline.
Analogies/Bibliography. Arslan, Delikan 2021, p. 42, no. 9; for similar examples, see Spier 1992, p. 104, no. 256 (banded agate); Henig, MacGregor 2004, p. 36, no. 1.63.

No. 10. Red Jasper Intaglio Depicting Hermes, F 3 (Fig. 10a–b)
Konya Archaeological Museum, inv. no. 1482.4.4
Dimensions. H. = 11 mm, w. = 8 mm, th. = 4 mm.
Dating. 2nd–3rd century AD.
Description. In impression; Hermes stands facing right with his left leg extended forward. He wears a *petasos* on his head, holds a purse (*marsupium*) in his left hand, and carries a *kerykeion* and a *khlamys* draped over his right arm.
Analogies/Bibliography. Arslan, Delikan 2021, p. 44, no. 22; Kulbay 2019, p. 45, no. 8; Henig, MacGregor 2004, p. 36, no. 1. 63 (parallel); Spier 1992, p. 104, no. 256 (banded agate parallel).

No. 11. Dark Red Jasper Intaglio in Gold Ring Depicting Isis–Tyche, F 3 (Fig. 11a–c)
Ankara, Erimtan Archaeology and Arts Museum, inv. no. 1108
Dimensions. H. = 10.5 mm, w. = 8.5 mm.
Dating. 2nd century AD.
Description. In impression; Isis–Tyche, whose body faces frontally and head is turned right, wears a high *modius* (*kalathos*) on the head. Her hair is gathered from the sides and styled into a bun at the nape of her neck. She wears a short-sleeved, high-girdled *chiton* and a *himation*. She holds a rudder in her left hand, a *cornucopia* in her right arm, and a downward-draped *khlamys*.



Figure 7. *Sardonyx Cameo Gemstone or Amulet Depicting Dionysos from the Çorum Archaeological Museum, inv. no. 2739.*

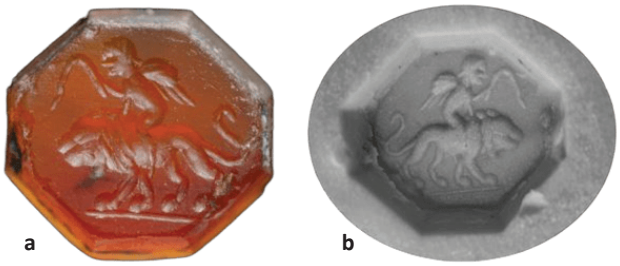


Figure 8a–b. *Carnelian Intaglio Depicting Eros on a Lion and its clay impression from the Uşak Archaeological Museum, inv. no. 2001/326.*



Figure 9a–b. *Red Carnelian Intaglio in Silver Ring Depicting Hermes from the Museum of Anatolian Civilizations, inv. no. 176–9–80.*

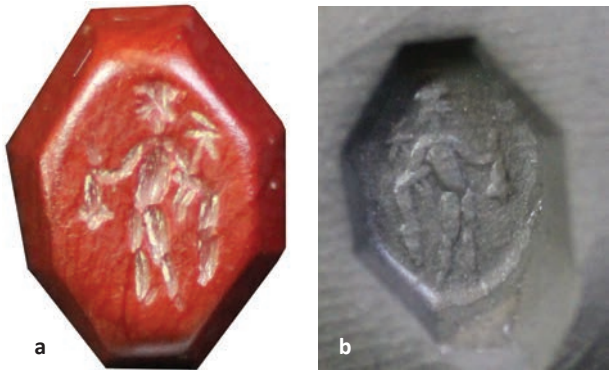


Figure 10a–b. *Red Jasper Intaglio Depicting Hermes and its clay impression from the Konya Archaeological Museum, inv. no. 1482.4.4.*

A snake is coiled around the goddess's arm holding the rudder, and three additional snake figures with raised heads are carved over her garment, winding from the hip down toward the calf (for similar examples featuring snakes, see Tinh 1990, p. 785–786, no. 313c, 313k, 318a, and 319b). Around Isis–Tyche, inscribed from right to left, reads: "ΑCΚΛΗ–ΠΙΟΔΟ–[C?]" = (The seal) of Asklepiodos. The inscription is engraved in negative on the stone and reads positive in its impression; groundline.

Discussion. On this gem, which is thought to be the work of a master gem-cutter, the inscription is carved in negative. This indicates that, besides its protective amulet function, the ring was also utilised as a personal seal. A similar iconography is observed on side B of a large jasper amulet measuring 30 x 20 mm in the Petit Palais collection in Paris (For details, see http://www2.szepmuveszeti.hu/talismans/object/search/Isis–Tykhe; for another example, see The Campbell Bonner Database, CBd–3071). On the Paris Isis–Tyche, which features a high *modius* crown, a *cornucopia*, and a rudder, snakes are also coiled around the left arm holding the rudder, see The Campbell Bonner Database, CBd–3071. For other similar Isis–Tyche examples, see CBd–28; CBd–2230; CBd–3661; CBd–3662, and CBd–4218 (reverse side); Arslan, Yeğin 2022, p. 87, no. 10–10a.

No. 12. Red Jasper Intaglio in Silver Ring Depicting Tyche, F 2 (Fig. 12a–b)
Kütahya Archaeological Museum, inv. no.?
Dimensions. Max. diam. of the ring = 20 mm.
Dating. 2nd–3rd century AD.

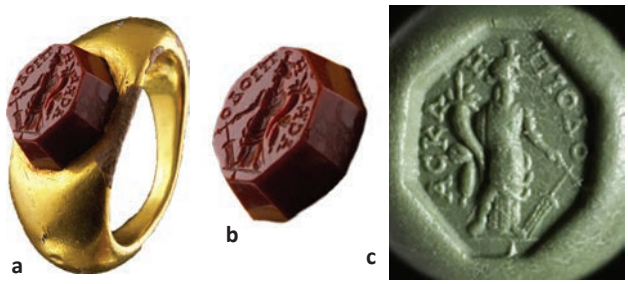


***Figure 11a–c**. Dark Red Jasper Intaglio in Gold Ring Depicting Isis–Tyche and its clay impression from the Erimtan Archaeology and Arts Museum, inv. no. 1108.*

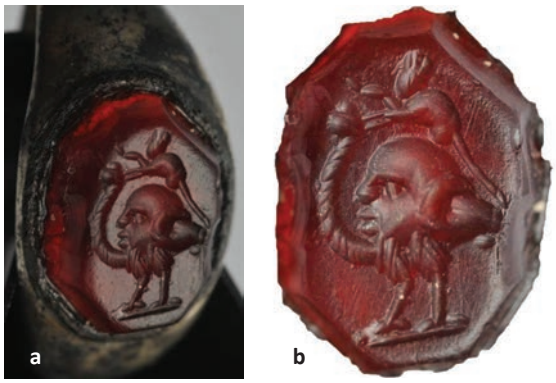


***Figure 13a–b**. Matte Red Carnelian Intaglio in Silver Ring Depicting an Ostrich, a Monkey, and a Silenus Head from the Museum of Anatolian Civilizations, inv. no. 47–22–12.*

Description. Tyche standing and facing left, clad in a long *chiton* and a *himation*. Holds a ship's rudder in her right hand and a *cornucopia* in her left arm.

Analogies/Bibliography. Arslan, Delikan 2021, p. 45, no. 28; for similar Tyche examples, see Konuk, Arslan 2000, p. 106, no. 82; Henig, MacGregor 2004, p. 64, no. 4.54; Spier 1992, p. 121, no. 315.

No. 13. Matte Red Carnelian Intaglio in Silver Ring Depicting an Ostrich, a Monkey, and a Silenus Head, F 2 (Fig. 13a–b)
Ankara, Museum of Anatolian Civilizations, inv. no. 47–22–12
Dimensions. H. = 12.2 mm, w. = 11 mm, th. = 3 mm.
Dating. 2nd century AD (161–180 AD)
Description. A composite combination of an ostrich, a monkey, and a Silenus head (*Gryllos*). The body of the ostrich is shaped as a Silenus head, and the monkey is mounted on the body, holding the ostrich by its neck; groundline.
Discussion. Discovered in Grave No. 365 of the Juliopolis Necropolis in Nallıhan, Ankara, this silver ring was unearthed alongside a bronze coin minted by the city of Juliopolis and dated to the reign of Marcus Aurelius (161–180 AD), see Devecioğlu 2016, p. 99, no. 8; Arslan, Delikan 2021, p. 41, no. 2; Arslan 2013, p. 115; Yinesor Demir 2008, p. 167, no. 69; for a similar example, see Henig, MacGregor 2004, p. 111, no. 10.91.

No. 14. Red Jasper Intaglio in Iron Ring Depicting a Lion, F 2 (Fig. 14a–c)
Ankara, Museum of Anatolian Civilizations, inv. no. 1–3–13
Dimensions. H. = 9 mm, w. = 11 mm; max. diam. of the ring = 22.9 mm.
Dating. Late 1st–2nd century AD.
Description. In impression; a lion walking right; above a star symbol; groundline.
Discussion. This ring was discovered in 2012 during the excavations of the Kalaba Tumulus in the Akyurt district of Ankara. The stone was cut into an octagonal shape, but for an unknown



***Figure 12a–b**. Red Jasper Intaglio in Silver Ring Depicting Tyche from the Kütahya Archaeological Museum.*



***Figure 14a–c.** Red Jasper Intaglio in Iron Ring Depicting a Lion and its clay impression from the Museum of Anatolian Civilizations, inv. no. 1–3–13.*

reason, the remaining two edges were left unshaped, giving it a hexagonal appearance. Stones featuring lion and star symbols were typically used for cosmic magic and talismans (see classics.mfab.hu/talismans/cbd/1421).
In the burial chamber of the Akyurt–Kalaba Tumulus, two gold *aureus* Charon coins were found. The first belongs to Claudius (41–54 AD) and the second to Trajan (98–117 AD). The Claudius coin was minted between 46 and 47 AD, and the Trajan coin was minted between 114 and 117 AD (see, Arslan, Metin, 2014, p. 159).
Analogies/Bibliography. Arslan, Delikan 2021, p. 41–42, no. 6b; Arslan, Metin 2014, p. 159; Amorai–Stark, Hershkovitz 2011, p. 107, Pl. 13; Henig, MacGregor 2004, p. 48, 88, 119, nos. 3.13, 9.19, 12.4–5; Konuk, Arslan 2000, p. 129, no. 105; Spier 1992, p. 141, no. 389.

No. 15. Red Jasper Intaglio in Gold Ring Depicting a Lion, F 2 (Fig. 15a–b)
Ankara, Erimtan Archaeology and Arts Museum, inv. no. 1103
Dimensions. H. = 6.5 mm, w. = 9.5 mm; max. diam. of the ring = 21.8 mm.
Dating. 2nd century AD.
Description. Lion walking left; groundline.
Analogies/Bibliography. Arslan, Delikan 2021, p. 43, no. 16a; Konuk, Arslan 2000, p. 132, 136–137, nos. 108, 112, 113 (jasper octagonal); Henig, MacGregor 2004, p. 48, 87–88, 119, nos. 3.13, 9.5–19, 12.4–5; Spier 1992, p. 141, nos. 387–390.

No. 16. Inscribed Red Jasper Intaglio in Silver Ring Depicting a Lion, F 2 (Fig. 16a–c)
Ankara, Erimtan Archaeology and Arts Museum, inv. no. 158
Dimensions. H. = 9.5 mm, w. = 12.2 mm; max. diam. of the ring = 25 mm.
Dating. 2nd–3rd century AD.
Description. In impression; a lion walking right. The surrounding inscription reads: I–OYΛIA–NOY (negative on the intaglio, positive in the impression), signifying the personal name "(belonging to) Julianus"; groundline.
Analogies/Bibliography. Konuk, Arslan 2000, p. 137, no. 113; Arslan, Delikan 2021, p. 43, no. 14.

No. 17. Dark Red Eye Agate Intaglio in Silver Ring Depicting a Lion, F 3 (Fig. 17a–b)
Burdur Archaeological Museum, inv. no. 48.28.75
Dimensions. Unknown.
Dating. 2nd century AD.
Description. Lion walking left; groundline.
Analogies/Bibliography. Arslan, Delikan 2021, p. 44, no. 27–27a; Konuk, Arslan 2000, p. 132, 136–137, nos. 108, 112, 113 (octagonal jasper); Henig, MacGregor 2004, p. 48, 87–88, 119, nos. 3.13, 9.5–19, 12.4–5; Spier 1992, p. 141, nos. 387–390.

No. 18. Chrome Chalcedony Intaglio Depicting a Lion, F 3 (Fig. 18)
Ankara, Erimtan Archaeology and Arts Museum, inv. no. 1253
Dimensions. H. = 9 mm, w. = 8 mm, th. = 3 mm.
Dating. 2nd century AD.
Description. Lion walking left; groundline.
Analogies/Bibliography. Arslan, Delikan 2021, p. 43, no. 15; Konuk, Arslan 2000, p. 132, 136–137, nos. 108, 112, 113 (jasper octagonal); Henig, MacGregor 2004, p. 48, 87–88, 119, nos. 3.13, 9.5–19, 12.4–5; Spier 1992, p. 141, nos. 387–390.

No. 19. Red Jasper Intaglio Depicting a Human–Headed Goat Combination, F 2 (Fig. 19a–b)
Denizli Archaeological Museum, inv. no. 320
Dimensions. H. = 10 mm, w. = 8 mm, th. = 4 mm.
Dating. 2nd–3rd century AD.
Description. In impression; a human-headed goat stands right, with its head turned to the left, wearing a hat or a helmet on its head.
Analogies/Bibliography. Şenergüç 2026, p. 537, no. 410 (same gem).



Figure 15a–b. *Red Jasper Intaglio in Gold Ring Depicting a Lion from the Erimtan Archaeology and Arts Museum, inv. no. 1103.*

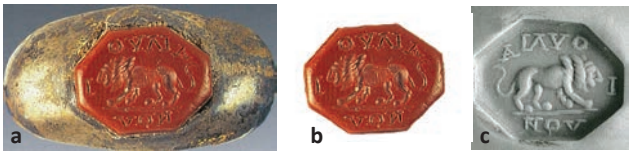


Figure 16a–c. *Inscribed Red Jasper Intaglio in Silver Ring Depicting a Lion and its clay impression from the Erimtan Archaeology and Arts Museum, inv. no. 158.*



Figure 17a–b. *Dark Red Eye Agate Intaglio in Silver Ring Depicting a Lion from the Burdur Archaeological Museum, inv. no. 48.28.75.*



Figure 18. *Chrome Chalcedony Intaglio Depicting a Lion from the Erimtan Archaeology and Arts Museum, inv. no. 1253.*

No. 20. Red Jasper Intaglio in Iron Ring Depicting a Goat, F 2 (Fig. 20a–b)
Uşak Archaeological Museum, inv. no. 35.1438.69
Dimensions. H. = 10 mm, w. = 7 mm.
Dating. 2nd–3rd century AD.
Description. In impression; a goat stands right, its head turned left. It features two horns on its head, an upturned tail, and appears to be wearing a helmet (?).
Analogies/Bibliography. Şenergüç 2026, p. 374, no. 247 (same gem).

No. 21. Pale Orange Translucent Carnelian Intaglio Depicting a Goat, F 2 (Fig. 21a–b)
Burdur Archaeological Museum, inv. no. 9266
Dimensions. H. = 10 mm, w. = 8 mm, th. = 3 mm.
Dating. 2nd–3rd century AD.
Description. In impression; a goat standing right, its head turned left.
Analogies/Bibliography. Arslan, Delikan 2021, p. 44, no. 26–26a; Konuk, Arslan 2000, p. 138, no. 114 (similar jasper).

No. 22. Green Jasper Intaglio in Gold Ring Depicting a Shepherd Milking a Goat, F 3 (Fig. 22)
Gaziantep, Dinçer Uğurluer Collection, inv. no. 292
Dimensions. H. = 7.5 mm, w. = 9 mm.
Dating. 2nd century AD.
Description. Shepherd sitting left on two rounded stones, milking the goat in front of him. Behind the shepherd, a staff (*logobolon/pedum*) stands vertically; groundline beneath the goat's hooves.
Analogies/Bibliography. Arslan, Delikan 2021, p. 42–43, 45, nos. 8, 17, 35; for similar examples of a shepherd milking a goat, see Meriçboyu 2001, p. 236, no. 1; Konuk, Arslan 2000, p. 128, no. 104; Amorai–Stark, Hershkovitz 2011, p. 112, Pl. 33; Henig, MacGregor 2004, p. 77–78, no. 7.9; Vollenweider 1984, p. 120, 273, nos. 204, 474; Uğurluer 2016, p. 15.

No. 23. Matte Red Jasper Intaglio in Silver Ring Depicting a Shepherd Milking a Goat, F 2 (Fig. 23a–b)
Ankara, Museum of Anatolian Civilizations, inv. no. 80–1–73
Dimensions. H. = 9.8 mm, w. = 10.6 mm; max. diam. of the ring = 22.5 mm.
Dating. 2nd–3rd century AD.
Description. Shepherd sitting left on two rounded stones, milking the goat in front of him. Behind the shepherd, his staff (*logobolon/pedum*) stands upright; groundline under the goat's hooves.
Besides the extreme iconographic similarity between this Ankara intaglio and the Gaziantep stone (No. 22), the style of engraving is so closely matched that both stones were likely carved by the same master craftsman in the same workshop.

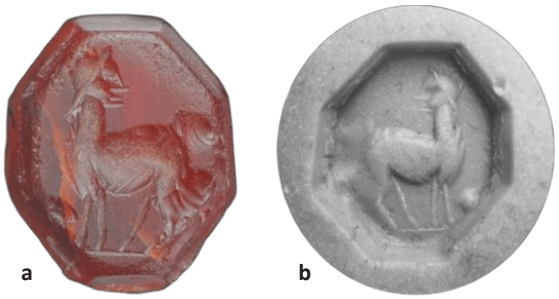


Figure 19a–b. *Red Jasper Intaglio Depicting a Human-Headed Goat Combination and its clay impression from the Denizli Archaeological Museum, inv. no. 320.*



Figure 20a–b. *Red Jasper Intaglio in Iron Ring Depicting a Goat and its clay impression from the Uşak Archaeological Museum, inv. no. 35.1438.69.*

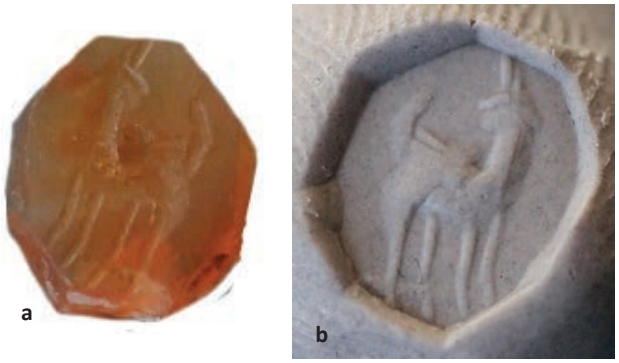


Figure 21a–b. *Pale Orange Translucent Carnelian Intaglio Depicting a Goat and its clay impression from the Burdur Archaeological Museum, inv. no. 9266.*



Figure 22. *Green Jasper Intaglio in Gold Ring Depicting a Shepherd Milking a Goat from the Dinçer Uğurluer Collection, inv. no. 292.*

Analogies/Bibliography. Arslan, Delikan 2021, p. 42–43, 45, nos. 8, 17, 35; for similar examples of a shepherd milking a goat, see Meriçboyu 2001, p. 236, no. 1; Konuk, Arslan 2000, p. 128, no. 104; Amorai–Stark, Hershkovitz 2011, p. 112, Pl. 33; Henig, MacGregor 2004, p. 77–78, no. 7.9; Vollenweider 1984, p. 120, 273, nos. 204, 474; Uğurluer 2016, p. 15.

No. 24. Red Jasper Intaglio in Silver Ring Depicting a Shepherd Milking a Goat, F 2 (Fig. 24a–c)
Ankara, Erimtan Archaeology and Arts Museum, inv. no. 945
Dimensions. H. = 9.8 mm, w. = 10.6 mm; max. diam. of the ring = 22.1 mm.
Dating. 2nd century AD.
Description. In impression; a shepherd sits on a rock facing right, milking the goat in front of him.
Analogies/Bibliography. Arslan, Delikan 2021, p. 42–43, 45, nos. 8, 17, 35; for similar examples of a shepherd milking a goat, see Meriçboyu 2001, p. 236, no. 1; Konuk, Arslan 2000, p. 128, no. 104; Amorai–Stark, Hershkovitz 2011, p. 112, Pl. 33; Henig, MacGregor 2004, p. 77–78, no. 7.9; Vollenweider 1984, p. 120, 273, nos. 204, 474; Uğurluer 2016, p. 15.



Figure 23a–b. *Matte Red Jasper Intaglio in Silver Ring Depicting a Shepherd Milking a Goat from the Museum of Anatolian Civilizations, inv. no. 80–1–73.*



Figure 24a–c. *Red Jasper Intaglio in Silver Ring Depicting a Shepherd Milking a Goat and its clay impression from the Erimtan Archaeology and Arts Museum, inv. no. 945.*

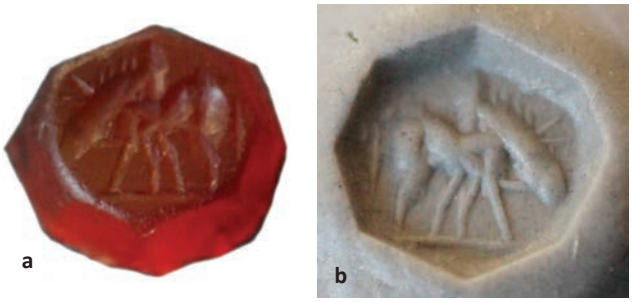


Figure 26a–b. *Red Carnelian Intaglio Depicting a Horse and a Rider and its clay impression from the Burdur Archaeological Museum, inv. no. 9268.*

No. 25. Dark Red Sard Intaglio in Gold Ring Depicting a Grazing Horse, F 2 (Fig. 25a–c)
Ankara, Erimtan Archaeology and Arts Museum, inv. no. 248
Dimensions. H. = 5.8 mm, w. = 8.5 mm; max. diam. of the ring = 23 mm.
Dating. 2nd century AD.
Description. In impression; a horse grazing right.
Analogies/Bibliography. Arslan, Delikan 2021, p. 43, no. 19–19b; Konuk, Arslan 2000, p. 143, no. 119; for similar examples of a grazing horse, see Henig, MacGregor 2004, p. 93, no. 9.74; Vollenweider 1984, p. 128–129, nos. 220–222.

No. 26. Red Carnelian Intaglio Depicting a Horse and a Rider, F 3 (Fig. 26a–b)
Burdur Archaeological Museum, inv. no. 9268
Dimensions. H. = 8 mm, w. = 8 mm, th. = 4 mm.
Dating. 2nd–3rd century AD.
Description. In impression; a horse walking right; a human figure behind it, holding its halter; groundline.
Analogies/Bibliography. Arslan, Delikan 2021, p. 44, no. 24–24a; Kulbay 2019, p. 88, no. 51.

No. 27. Red Jasper Intaglio Depicting a Rider on a Horse, F 3 (Fig. 27a–b)
Burdur Archaeological Museum, inv. no. 318–23–73
Dimensions. H. = 6 mm, w. = 9 mm, th. = 5 mm.
Dating. 2nd–3rd century AD.
Description. In impression; a horse galloping right and a rider on it; groundline. Since the upper half of the stone is broken and missing, the horse's head and the rider's upper body are not visible; however, the rider's downward-hanging legs can be seen.
Analogies/Bibliography. Arslan, Delikan 2021, p. 44, no. 25–25a; Kulbay 2019, p. 88, no. 50 (same gem); Henig, MacGregor 2004, p. 107, no. 10.53.



Figure 25a–c. *Dark Red Sard Intaglio in Gold Ring Depicting a Grazing Horse and its clay impression from the Erimtan Archaeology and Arts Museum, inv. no. 248.*

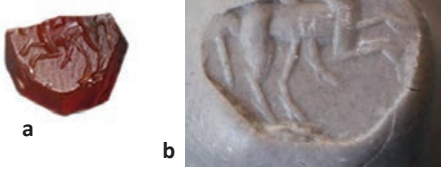


Figure 27a–b. *Red Jasper Intaglio Depicting a Rider on a Horse and its clay impression from the Burdur Archaeological Museum, inv. no. 318–23–73.*

No. 28. Jasper Intaglio in Silver Ring Depicting an Eagle, F 3 (Fig. 28a–c)
Ankara, Erimtan Archaeology and Arts Museum, inv. no. 159
Dimensions. H. = 10.2 mm, w. = 8.7 mm.
Dating. 2nd–3rd century AD.
Description. In impression; an eagle with folded wings standing left on a cylindrical altar, head turned right.
Analogies/Bibliography. Arslan, Delikan 2021, p. 44, no. 20a–b; Konuk, Arslan 2000, p. 147, no. 123; Henig, MacGregor 2004, p. 95, no. 9.94.

No. 29. Red Jasper Intaglio in Bronze Ring Depicting a Legionary Eagle, F 2 (Fig. 29)
Ankara, Gaye Çarmıklı Collection, inv. no. 259
Dimensions. H. = 13.2 mm, w. = 13 mm.
Dating. 3rd century AD.
Description. Eagle with folded wings facing left on a rounded altar, head turned right and holding a wreath in its beak; a military legionary standard (*signum*) stands on either side.
Analogies/Bibliography. Şenergüç 2026, p. 384, no. 257; Konuk, Arslan 2000, p. 149, no. 125 (similar).



Figure 28a–c. *Jasper Intaglio in Silver Ring Depicting an Eagle and its clay impression from the Erimtan Archaeology and Arts Museum, inv. no. 159.*



Figure 29. *Red Jasper Intaglio in Bronze Ring Depicting a Legionary Eagle from the Gaye Çarmıklı Collection, inv. no. 259.*

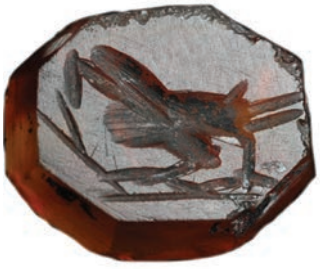


Figure 31. *Translucent Red Carnelian Intaglio Depicting a Parrot from the Museum of Anatolian Civilizations, inv. no. 14–108–69.*

No. 30. Carnelian Intaglio Depicting an Eagle, F 3 (Fig. 30a–b)
Uşak Archaeological Museum, inv. no. 9.25.76
Dimensions. H. = 10 mm, w. = 8 mm, th. = 5 mm.
Dating. 2nd–3rd century AD.
Description. In impression; an eagle faces left with its head turned right, carrying a wreath in its beak; groundline.
Analogies/Bibliography. Şenergüç 2026, p. 309, no. 182 (same gem); British Museum online nos. 1814,0704.2166; 1814,0704.2037; 1814,0704.2065; 1987,0212.358; Konuk, Arslan 2000, p. 151, no. 127; Henig, MacGregor 2004, p. 95, no. 9.91–9.93; Middleton 2001, p. 51, no. 28.

No. 31. Translucent Red Carnelian Intaglio Depicting a Parrot, F 2 (Fig. 31)
Ankara, Museum of Anatolian Civilizations, inv. no. 14–108–69
Dimensions. H. = 6.4 mm, w. = 8.8 mm, th. = 3 mm.
Dating. 2nd–3rd century AD.
Description. Parrot is perched on a branch facing left, holding a fruit in its beak.
Analogies/Bibliography. Arslan, Delikan 2021, p. 42, no. 12; Konuk, Arslan 2000, p. 154–155, nos. 130–131 (sard stone).

No. 32. Light Brown Carnelian Intaglio Depicting a Parrot, F 2 (Fig. 32a–b)
Kahramanmaraş Archaeological Museum, inv. no. 55.8.73
Dimensions. H. = 6 mm, w. = 14 mm.
Dating. 2nd–3rd century AD.
Description. In impression; a parrot is perched on a branch facing right.
Analogies/Bibliography. Akbaş 2020, p. 80, no. 40 (same gem); Arslan, Delikan 2021, p. 42, no. 12; Konuk, Arslan 2000, p. 154–155, nos. 130–131 (sard stone).

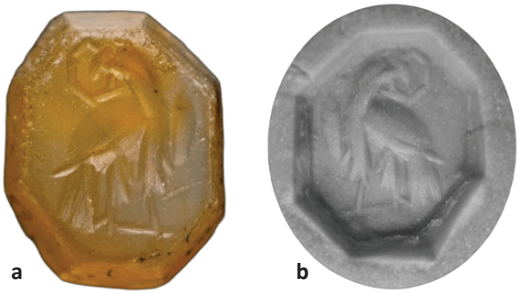


Figure 30a–b. *Carnelian Intaglio Depicting an Eagle and its clay impression from the Uşak Archaeological Museum, inv. no. 9.25.76.*

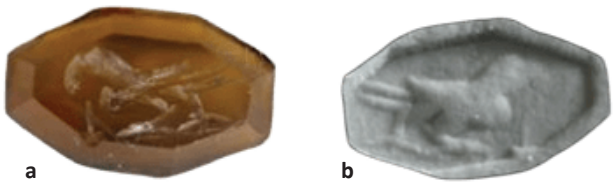


Figure 32a–b. *Light Brown Carnelian Intaglio Depicting a Parrot and its clay impression from the Kahramanmaraş Archaeological Museum, inv. no. 55.8.73.*

No. 33. Orange-Yellow Translucent Carnelian Intaglio Depicting a Parrot, F 2 (Fig. 33a–b)
Uşak Archaeological Museum, inv. no. 2001/332
Dimensions. H. = 7 mm, w. = 9 mm, th. = 4 mm.
Dating. 2nd–3rd century AD.
Description. In impression; a parrot stands on a branch facing right, pecking at a plant stem in front of it; groundline.
Analogies/Bibliography. Şenergüç 2026, p. 541, no. 414 (same gem); Arslan, Delikan 2021, p. 42, no. 12; Spier 2007, p. 118–119, no. 306.

No. 34. Gold Ring with a Carnelian Stone Depicting a Cock, F 3 (Fig. 34a–b)
Ankara, Museum of Anatolian Civilizations, inv. no. 64–01–10
Dimensions. H. = 6.5 mm, w. = 5 mm; max. diam. of the ring = 19.7 mm.
Dating. 117–138 AD.
Description. Cock stands left, pecking at an unidentifiable object (likely a seeded plant or a worm) in front of its head; groundline.
Discovered in Grave No. 2 at the Juliopolis Necropolis, alongside a *denarius* coin of Emperor Hadrian (117–138 AD) (Arslan *et alii* 2011, p. 275).
Analogies/Bibliography. Arslan, Delikan 2021, p. 41, no. 1–1a; Arslan *et alii* 2011, p. 275, Fig. 2; Arslan 2013, p. 114; for similar cock representations, see Spier 1992, p. 117, 123, nos. 302 (agate), 326 (carnelian); Henig, MacGregor 2004, p. 97, nos. 9.111–114.

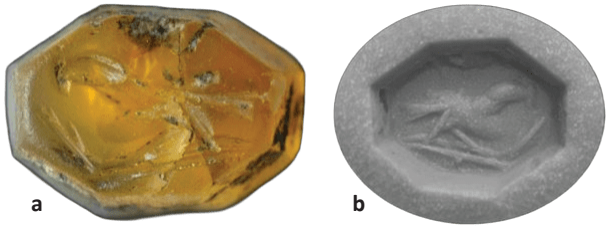


Figure 33a–b. *Orange-Yellow Translucent Carnelian Intaglio Depicting a Parrot and its clay impression from the Uşak Archaeological Museum, inv. no. 2001/332.*



Figure 34a–b. *Gold Ring with a Carnelian Stone Depicting a Cock from the Museum of Anatolian Civilizations, inv. no. 64–01–10.*



Figure 36. *Carnelian Intaglio Depicting a Hare from the Museum of Anatolian Civilizations, inv. no. 12–74–11.*

No. 35. Carnelian Intaglio in Silver Ring Depicting a Hare, F 2 (Fig. 35a–b)
Ankara, Museum of Anatolian Civilizations, inv. no. 12–67–11
Dimensions. H. = 5.7 mm, w. = 8.4 mm.
Dating. Late 2nd – early 3rd century AD.
Description. Hare running left.
Excavated from Grave No. 138 of the Juliopolis Necropolis, this silver ring was found alongside a silver *denarius* of Julia Domna (193–211 AD).
Analogies/Bibliography. Henig, MacGregor 2004, p. 90, nos. 9.32–34.

No. 36. Carnelian Intaglio Depicting a Hare, F 2 (Fig. 36)
Ankara, Museum of Anatolian Civilizations, inv. no. 12–74–11
Dimensions. H. = 6.4 mm, w. = 7.5 mm; max. diam. of the ring = 22 mm.
Dating. Late 2nd century AD.
Description. Hare running left; groundline.
Discovered in Grave No. 130 of the Juliopolis Necropolis, alongside a silver *denarius* coin of Commodus (177–192 AD).
Analogies/Bibliography. Arslan, Delikan 2021, p. 41, no. 4; Arslan 2013, p. 118; for similar examples, see Henig, MacGregor 2004, p. 90, nos. 9.32–34.

No. 37. Matte Red Jasper Intaglio Depicting a Hare, F 1 (Fig. 37a–b)
Kahramanmaraş Archaeological Museum, inv. no. 8.34.80
Dimensions. H. = 5 mm, w. = 9 mm.
Dating. 2nd–3rd century AD.
Description. In impression; hare running right.
Analogies/Bibliography. Akbaş 2020, p. 84, no. 44 (same gem); Arslan, Delikan 2021, p. 41, nos. 3 and 4 (similar); for similar examples, see Henig, MacGregor 2004, p. 90, nos. 9.32–34.

No. 38. Carnelian Intaglio Depicting a Hare, F 1 (Fig. 38a–b)
İzmir Archaeological Museum, inv. no. 13403
Dimensions. H. = 7 mm, w. = 10 mm, th. = 5 mm.
Dating. 2nd century AD.

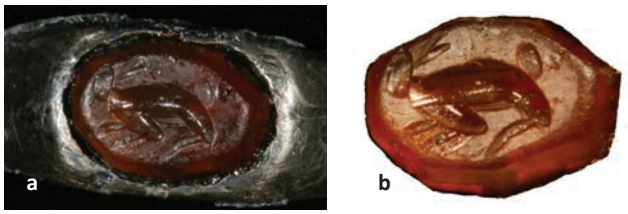


Figure 35a–b. *Carnelian Intaglio in Silver Ring Depicting a Hare from the Museum of Anatolian Civilizations, inv. no. 12–67–11.*

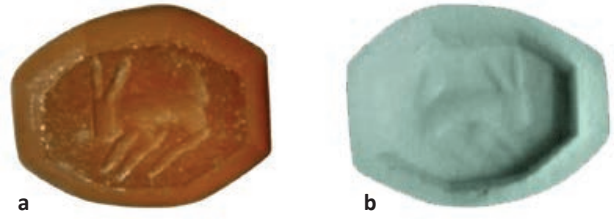


Figure 37a–b. *Matte Red Jasper Intaglio Depicting a Hare and its clay impression from the Kahramanmaraş Archaeological Museum, inv. no. 8.34.80.*

Description. In impression; hare running right; groundline.
Analogies/Bibliography. Şenergüç 2026, p. 402, no. 275 (same gem); Arslan, Delikan 2021, p. 41, nos. 3–4 (similar); Laflı 2012, p. 137, no. 31 (same gem); Henig, MacGregor 2004, p. 90, no. 9.33; Garcia 1990, p. 176–177, nos. 443–445.

No. 39. Carnelian Intaglio in Silver Ring Depicting a Hound Chasing a Hare, F 2 (Fig. 39a–b)
Ankara, Erimtan Archaeology and Arts Museum, inv. no. 1318
Dimensions. H. = 7 mm, w. = 10 mm; max. diam. of the ring = 25 mm.
Dating. 2nd–3rd century AD.
Description. Hare is being chased left by a greyhound-type dog.
Discussion. Similar to the following example, since both octagonal stones were found in Ankara, and another non-octagonal stone depicting the same motif was discovered during the necropolis excavations of Boyalık Village (Gölbaşı District, Ankara) (see Çetin, Kaya 2010, p. 79), it is highly probable that the gem-cutter who produced these "hound chasing a hare" scenes was active in the Galatia region, and most likely based in Ankyra.
Analogies/Bibliography. Arslan, Delikan 2021, p. 43, no. 13–13a; for similar scenes, see Molesworth, Henig 2011, p. 182, Pl. 16a, 16b; Çetin, Kaya 2010, p. 79.

No. 40. Red Jasper Intaglio Depicting a Hound Chasing a Hare, F 2 (Fig. 40)
Ankara, Museum of Anatolian Civilizations, inv. no. 150–16–70
Dimensions. H. = 7.3 mm, w. = 9.1 mm, th. = 2.8 mm.
Dating. 2nd–3rd century AD.
Description. Hare is being chased left by a greyhound-type dog.

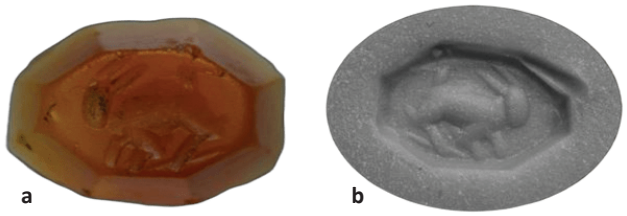


Figure 38a–b. *Carnelian Intaglio Depicting a Hare and its clay impression from the İzmir Archaeological Museum, inv. no. 13403.*



Figure 39a–b. *Carnelian Intaglio in Silver Ring Depicting a Hound Chasing a Hare from the Erimtan Archaeology and Arts Museum, inv. no. 1318.*



Figure 41. *Transparent Red Carnelian Intaglio Depicting a Dolphin and a Squid from the Museum of Anatolian Civilizations, inv. no. 29–3–09.*

Discussion. During the Roman Imperial period, the scene of a hound chasing a hare was a popular motif utilised across small-scale artworks, mosaics, sculptures, and tombstones. Especially on tombstones, it bore the symbolic meaning of "death cannot be escaped." For instance, on a 3rd-century AD sardonyx cameo, a greyhound chasing a hare is accompanied by the Greek inscription ΕΛΑΒΕC ("Caught you!") (see Molesworth, Henig 2011, p. 182, Pl. 16a, 16b). In 2009, a non-octagonal carnelian stone set in a bronze ring unearthed during a necropolis excavation in Boyalık Village, Gölbaşı District, Ankara, also featured a hound chasing a hare.
Analogies/Bibliography. Arslan, Delikan 2021, p. 42, no. 7; Molesworth, Henig 2011, p. 182, Pl. 16a, 16b; Çetin, Kaya 2010, p. 79 (similar depiction).

No. 41. Transparent Red Carnelian Intaglio Depicting a Dolphin and a Squid, F 3 (Fig. 41)
Ankara, Museum of Anatolian Civilizations, inv. no. 29–3–09
Dimensions. H. = 8.7 mm, w. = 11 mm, th. = 3 mm.
Dating. 2nd–3rd century AD.
Description. Dolphin swimming left, a squid attached to the top of its head.
Analogies/Bibliography. Arslan, Delikan 2021, p. 42, no. 11; for the dolphin depiction, see Henig, MacGregor 2004, p. 87, no. 9.2; for the squid, see p. 98, no. 9.124.

No. 42. Carnelian Intaglio Depicting a Scorpion, F 3 (Fig. 42)
Niğde Museum, inv. no. 2.7.85
Dimensions. H. = 14 mm, w. = 10 mm, th. = 2 mm.
Dating. 2nd–3rd century AD.
Description. Scorpion centrally placed, six-legged.
Analogies/Bibliography. Çakar 2025, p. 217, no. 10; Imhoof–Blumer, Keller 1889, taf. XXIV, Fig. 15; Walters 1926, Pl. XXIX, Fig. 2529; Maaskant–Kleibrink 1978, p. 167, Fig. 1071a; Faraone 2011, p. 55, Fig. 14a–b.



Figure 40. *Red Jasper Intaglio Depicting a Hound Chasing a Hare from the Museum of Anatolian Civilizations, inv. no. 150–16–70.*



Figure 42. *Carnelian Intaglio Depicting a Scorpion from the Niğde Museum, inv. no. 2.7.85.*

No. 43. Nicolo Intaglio in Gold Ring Depicting an Actor, F 2 (Fig. 43a–b)
İzmir Archaeological Museum, inv. no. 8302
Dimensions. H. = 16 mm, w. = 12 mm, th. = 7 mm; max. diam. of the ring = 26 mm.
Dating. Late 1st–early 2nd century AD.
Description. On a nicolo stone (with a blue upper layer and black lower section) set in a gold ring, an actor is seated left on a high-backed chair; he holds a mask in his left hand and a *logobolon/pedum* in his right hand; groundline.
Analogies/Bibliography. Şenergüç 2026, p. 322, no. 195 (same ring); Henig, MacGregor 2004, p. 84, no. 8.1; Konuk, Arslan 2000, p. 67, no. 43 (similar agate stone depicting a Satyr); Spier 1992, p. 138, no. 377.

No. 44. Jasper Intaglio in Silver Ring Bearing a Christogram and Inscription, F 2 (Fig. 44a–c)
Ankara, Erimtan Archaeology and Arts Museum, inv. no. 245
Dimensions. H. = 8.8 mm, w. = 10.7 mm; max. diam. of the ring = 21.8 mm.
Dating. 3rd–4th century AD.
Description. Monogram and inscription read: IXΘYC (the inscription is carved in negative on the intaglio). In the impression, the Christogram inscription appears positive.
Discussion. The Greek inscription means "fish", which is an early Christian symbol. The Greek word *ichthus* (fish) is an acronym formed by the initial letters of the phrase *Iesous Christos Theou Uios Soter*, meaning "Jesus Christ, Son of God, Saviour." Such inscribed stones worn by Christian believers to protect themselves from evil became widespread during the 3rd–4th centuries.



Figure 43a–b. *Nicolo Intaglio in Gold Ring Depicting an Actor from the İzmir Archaeological Museum, inv. no. 8302.*



Figure 45. *Inscribed Red Jasper Intaglio in Iron Ring from the Gaye Çarmıklı Collection, inv. no. 373.*

Analogies/Bibliography. Arslan, Delikan 2021, p. 44, no. 21–21a; Konuk, Arslan 2000, p. 189, no. 165; for similar motifs, see Spier 2011, p. 196, Pl. 21–25.

No. 45. Inscribed Red Jasper Intaglio in Iron Ring, F 2 (Fig. 45)
Ankara, Gaye Çarmıklı Collection, inv. no. 373
Dimensions. H. = 8.8 mm, w. = 9 mm; max. diam. of the ring = 23.4 mm.
Dating. 1st–2nd century AD.
Description. Written in Greek across two lines is the word CEYH–POY (= Belonging to Severus), indicating it as the seal of Severus.
Analogies/Bibliography. For similar examples, see Arslan, Delikan 2021, p. 41, no. 5; Arslan *et alii* 2011, p. 292, Fig. 4; Şenergüç 2026, p. 592, no. 465.

No. 46. Inscribed Jasper Intaglio, F 3 (Fig. 46a–b)
Ankara, Museum of Anatolian Civilizations, inv. no. 64–40–11
Dimensions. H. = 8.7 mm, w. = 10.3 mm, th. = 3 mm.
Dating. 161–169 AD.
Description. Greek inscription in three lines: ΤΡΟΦΙΜ–ΕΖΗC–ΕC (= Trophimezos, may you live long).
Discussion. Since the inscription is carved in positive directly on the stone, it is easily readable; however, because the text would appear reversed in an impression, it is understood that this ring was not designed to function as a seal. This intaglio was discovered in Grave No. 11 at the Juliopolis Necropolis in Ankara, alongside a silver *denarius* coin of Emperor Lucius Verus (161–169 AD).
Analogies/Bibliography. Arslan, Delikan 2021, p. 41, no. 5; Arslan *et alii* 2011, p. 292, Fig. 4.

No. 47. Inscribed Jasper Intaglio, F 3 (Fig. 47a–b)
Uşak Archaeological Museum, inv. no. 9.36.76
Dimensions. H. = 9 mm, w. = 11 mm, th. = 5 mm.
Dating. 3rd–4th century AD.
Description. A two-line inscription on a pinkish-white veined zebra jasper intaglio; it reads: APΓI/OY (= Belonging to Argius).
Analogies/Bibliography. Şenergüç 2026, p. 592, no. 465 (same gem).

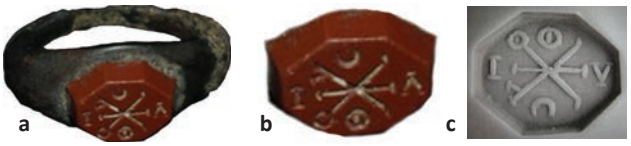


Figure 44a–c. *Jasper Intaglio in Silver Ring Bearing a Christogram and Inscription, with its clay impression, from the Erimtan Archaeology and Arts Museum, inv. no. 245.*

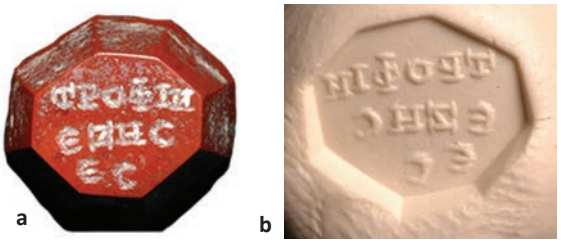


Figure 46a–b. *Inscribed Jasper Intaglio and its clay impression from the Museum of Anatolian Civilizations, inv. no. 64–40–11.*

No. 48. Inscribed Jasper Intaglio, F 2 (Fig. 48)
İstanbul, Haluk Perk Archive, No. 17
Dimensions. H. = 10 mm, w. = 11 mm, th. = 3 mm.
Dating. 3rd–4th century AD.
Description. A letter or a symbol is shown, with the letter "K" immediately to its right.
Analogies/Bibliography. Gülbay 2017, p. 205, no. 17 (same gem).

No. 49. Red Jasper Intaglio with Monogram, F 3 (Fig. 49a–b)
İzmir Archaeological Museum, inv. no. 13532
Dimensions. H. = 13 mm, w. = 10 mm, th. = 4 mm.
Dating. 4th–5th century AD.
Description. Monogram composed of the combination of the letters 'M Y O'.
Analogies/Bibliography. The same monogram is engraved on a jasper intaglio in the Uşak Archaeological Museum, inv. no. 35.1435.69. Şenergüç 2026, p. 594, no. 467 (same gem); Şenergüç 2026, p. 597, no. 470 (same monogram); Konuk, Arslan 2000, p. 187, no. 163 (similar); for examples of monogrammed stones, see Spier 2007, p. 183–188, 193–195.

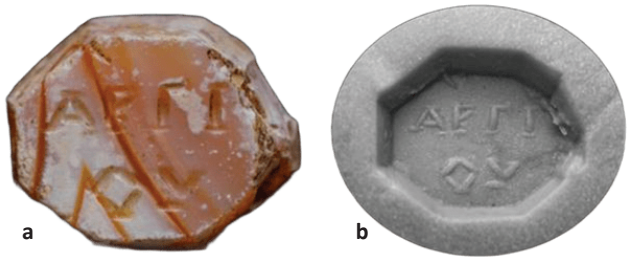


Figure 47a–b. *Inscribed Jasper Intaglio and its clay impression from the Uşak Archaeological Museum, inv. no. 9.36.76.*



Figure 48. *Inscribed Jasper Intaglio from the Haluk Perk Archive, no. 17.*



Figure 50. *Brown Jasper Intaglio with Monogram from the Kütahya Archaeological Museum, inv. no. 05709.*

No. 50. Brown Jasper Intaglio with Monogram, F 3 (Fig. 50)
Kütahya Archaeological Museum, inv. no. 05709
Dimensions. H. = 13 mm, w. = 11 mm, th. = 5 mm.
Dating. 4th–6th century AD.
Description. Monogram formed by the combination of the letters 'M T P O'.
Analogies/Bibliography. Şenergüç 2026, p. 596, no. 469 (same gem); Konuk, Arslan 2000, p. 187, nos. 163–164 (similar); Spier 2007, p. 193–195.

No. 51. Carnelian Intaglio with Monogram, F 2 (Fig. 51a–b)
Uşak Archaeological Museum, inv. no. 21.73.73
Dimensions. H. = 7 mm, w. = 9 mm, th. = 3 mm.
Dating. 5th–6th century AD.
Description. Monogram.
Analogies/Bibliography. Şenergüç 2026, p. 598, no. 471 (same gem); British Museum no. 1890,0515.4.

CONCLUSION

The cutting style of Roman-period octagonal gems is a continuation of the Anatolian-Persian octagonal-pyramidal stamp seal tradition. The reason these gems are frequently found in the Cappadocia and Galatia regions is not only that Cappadocia was a significant satrapy centre during the Persian period, but also that the kings governing the Kingdom of Cappadocia from the Hellenistic period onwards were of Persian descent. Under the rule of the



Figure 49a–b. *Red Jasper Intaglio with Monogram and its clay impression from the İzmir Archaeological Museum, inv. no. 13532.*

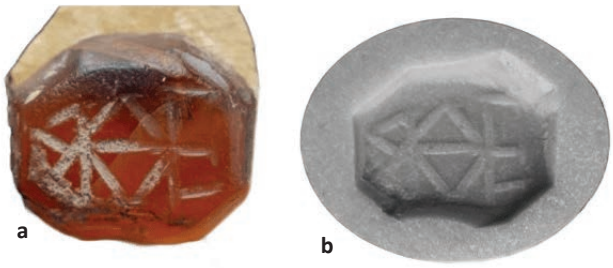


Figure 51a–b. *Carnelian Intaglio with Monogram and its clay impression from the Uşak Archaeological Museum, inv. no. 21.73.73.*

Ariarathes dynasty, the Kingdom of Cappadocia maintained Persian traditions and beliefs. It is known that this situation persisted into the Roman period through the continued existence of temples and cults of Persian-origin deities such as Anahita (Anaitis), Ma, and Mithras[58].

The origin of the octagonal cut in Roman-period gems, which were generally used as seals, rests upon the octagonal-pyramidal form of Persian Empire stamp seals[59]. This octagonal cut, which was not seen from the 4th century BC until the beginning of the Roman Imperial period, became popular again in Anatolia during the Roman era.

Sardis, the most important satrapy centre in Anatolia during the Persian period, continued to operate as a significant centre for jewellery, just as it had during the Lydian period. Among the 200 Persian seals made of chalcedony that were unearthed in the Sardis Necropolis excavations and are now in the Istanbul Archaeology Museums, 15 are of the octagonal-pyramidal form[60].

Octagonal-pyramidal seals and bullae have been unearthed at Daskyleion, the Sardis satrapy centre[61], as well as in Gordion[62] and Uylupınar[63]. Furthermore, octagonal-pyramidal chalcedony Persian seals are present at many excavation sites and museum collections[64]. Moreover, many octagonal seal impressions pressed onto clay tablets found in the archives of Persepolis, the royal capital of the Persians, are well-known[65].

The fact that the majority of Roman-period octagonal gems have been found in the vicinity of Ankyra must stem from the fact that this region was part of the Cappadocia Satrapy in the past. The five Roman-period octagonal gems in the Burdur Archaeology Museum likely carry traces of the same tradition as the single octagonal-pyramidal Persian seal found in Uylupınar and kept in the same museum.

The octagonal gems from the İzmir Archaeology Museum[66], the Haluk Perk Museum collection[67], the Kütahya Archaeology Museum, and the Laodikeia excavations[68] likely reflect the traces of a tradition originating from the lands of the Sardis Satrapy.

These local-style octagonal-cut gems, which are rarely encountered in regions outside of Anatolian geography, appear to have been very popular during the Roman Imperial period, especially in Central Anatolia. Customers appreciated this style and original shape, having been captivated by their aesthetic appeal. Octagonal-shaped gems must have been produced by a permanent workshop serving mixed customer groups, likely in metropolises such as Ankyra and Kaisareia. The frequent appearance of Mount Erciyes, with its distinctive three-peaked silhouette, on many ornaments in Anatolia[69] brings to mind the idea that nearby Kaisareia (Kayseri), the metropolis of the Cappadocia province, was one of the probable gem-cutting centres[70]. The depictions of lions, rabbits, greyhounds chasing rabbits, and shepherds milking goats frequently seen on octagonal gems also lead us to think that these gems might have been produced by a workshop in Ankyra.

Octagonal-cut gems, which were worn around the neck and also used as ornaments in Achaemenid seal art, were utilised as ornaments and personal seals in ring stones during the Roman period. The popular themes of Achaemenid art in Persian stone seals remained dominant in Roman-period ring stones, along with the beliefs and tastes of the era. The octagonal shape has numerical and symbolic importance among Roman soldiers and early Christian communities. It is suggested that the number 'eight' may have held a special meaning for Roman legionaries and auxiliary soldiers. It has been observed that most of the octagonal gems with known find-spots were located near military settlements and that these finds featured obvious military symbolism. During the Imperial period, the basic unit of Roman legions and auxiliary troops was a squad (*contubernium*) consisting of eight soldiers. Larger units also reflected multiples of eight. Thus, Roman legionaries and auxiliary soldiers may have been an important factor in the distribution of octagonal-shaped gems throughout the Roman Empire[71].

At least some of these octagonal gems have numerical symbolism connected to the doctrines and architecture of early Christian communities. Early Christians frequently attributed symbolism to numbers mentioned in the Bible and the liturgy, and in some early Christian texts, the number eight is directly related to the resurrection of Jesus. The octagonal shape is seen in churches, *martyria* (martyrs' shrines), and baptisteries in the early 4th century AD, when early Christian monumental architecture began. Most notably, Emperor Constantine I (307–337 AD) implemented the octagonal plan in major religious buildings he commissioned in several important Christian worship centres in the East and West. One of the most important churches in Antioch, built by Constantine I near the imperial palace, was the 'Golden Octagon'. Based on this numerical symbolism, it is possible to assume that early Christian customers chose octagonal gems to reflect their personal beliefs in resurrection and rebirth. When gems with Christian content appeared in the 3rd century AD, they featured a limited number of motifs, and all were placed on octagonal gems[72].

[58] Arslan 2018, p. 71–89; Merkelbach 1984, p. 45–46; Popko 1995, p. 169–170; Aytaş 2002, p. 23–27; Çapar 1995, p. 583–598; Mutlu 2016, p. 311–322.
[59] Dusinberre 2010a, p. 177–190; Dusinberre 2010b, p. 323–335.
[60] Dusinberre 2010a, p. 177.
[61] Kaptan 2002; Kaptan 2017, p. 256.
[62] Dusinberre 2005, p. 26, no. 50.
[63] Kaptan 2017, p. 258, fig. 3a–b.
[64] Laflı 2012, p. 135, fig. 1a–1b; Yağcı 2000, pl. 4, nos. 1–2.
[65] Garrison, Root 2001, pl. 101 c, d, pl. 126 c, d, pl. 127 c, d.
[66] Laflı 2012, p. 137, no. 31; Şenergüç 2026, p. 322, 402, 594, nos. 195, 275, 467.
[67] Gülbay 2017, p. 205, 207, nos. 17, 22, 38, 42, 44.
[68] Şimşek 2011, p. 924, no. 1147.
[69] Spier 1992, p. 143, no. 395.
[70] Goldman 2014, p. 185–186.
[71] Goldman 2014, p. 182.
[72] Goldman 2014, p. 182–185.

Roman-period octagonal gems have been found in the Gordion Necropolis[73], the Juliopolis Necropolis near Ankyra[74], the Akyurt–Kalaba Tumulus[75], Pessinus[76], and the Laodikeia Necropolis[77]. The octagonal gems presented here belong to the collections of the Ankara Museum of Anatolian Civilizations, the Ankara Erimtan Archaeology and Arts Museum, the Haluk Perk Museum in Istanbul, the Gaye Çarmıklı private collection in Ankara, the Dinçer Uğurluer private collection in Gaziantep, as well as the Archaeology Museum collections of Izmir, Konya, Kütahya, Burdur, Uşak, Kahramanmaraş, Denizli, Niğde, and Çorum.

In this study, new examples of octagonal-shaped gems not previously included in the literature have been added. Furthermore, it has been observed that these specially cut gems were concentrated particularly in the Cappadocia and Sardis Satrapy regions. Based on the depictions on the gems, the idea that gems with similar figures might have been produced by a workshop in the same region has been strengthened. The abundance of rabbit-depicted gems shows us that the rabbit was popular during the Roman period. Octagonal gems with rabbit depictions are also found in museum collections abroad. A red carnelian octagonal gem in the RD Milns Antiquities Museum at the University of Queensland, dated to the 2nd–3rd centuries AD[78], features a rabbit running to the left. The abundance of lion-depicted gems found in the Juliopolis Necropolis and the Akyurt Tumulus excavation, as well as in the collections of the two museums in Ankara, is significant in showing that this tradition originates from Persian gem seals found in Anatolia. In the last quarter of the Hellenistic period, the lion motif was also frequently used on the bronze coins of Amyntas, the last king of Galatia[79]. Furthermore, it was used on Roman-period Ankyra city coins during the Augustan period[80] and in later periods[81]. Moreover, it is seen more frequently on the coins of Pessinus, where the *Tolistobogi* tribe of the Galatians settled. The reason for this is that Pessinus was the centre of the worship of the Great Mother Goddess Cybele in Anatolia, and Cybele's sacred animal was the lion. On Pessinus coins, the lion motif was used with considerable frequency from the 1st century BC to the mid-3rd century AD[82]. Therefore, the individuals who used lion-depicted gems found in Galatia must have been followers of the Great Mother Goddess Cybele. Gems with lion figures used by Roman legionary soldiers also became a popular symbol due to the belief that they represented power and would protect the wearer. The presence of gems with figures of shepherds milking goats in the two museums in Ankara may be related to the 'Angora goat' synonymous with Ankara, or it may be related to the 'Good Shepherd Jesus' mythology, a popular symbol in Christianity.

In the burial chamber of the Kalaba Tumulus in the Akyurt district of Ankara, two gold aureus *Charon* coins were found along with a red jasper iron ring (Cat. no. 14). The first of these coins belongs to Claudius (41–54 AD) and the other to Trajan (98–117 AD). The Claudius coin was minted in 46–47 AD, and the Trajan coin in 114–117 AD. Thanks to these coin finds, the iron ring can be dated to the late 1st – early 2nd century AD[83]. Thus, this octagonal jasper gem is one of the earliest examples among Roman Imperial period octagonal gems (Cat. no. 14).

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GEMSTONES DEPICTING HERMES FROM ASIA MINOR IN THE ROMAN IMPERIAL PERIOD

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Keywords: *Anatolian glyptic art, Hermes iconography, ring stones (gems), typology, Juliopolis Necropolis*

Abstract: *This study presents an assemblage of 36 artefacts, including 34 gems and two clay bullae, compiled from Anatolian museums, private collections, and archaeological excavations. The study is focused on the formal and functional characteristics of Hermes iconography in ancient Anatolian glyptic art. The artefacts are analysed in terms of material (gold, silver, iron, bronze, and various semi-precious stones), dimensions, and cutting techniques, which results in eight main iconographic types. In light of the findings from the Juliopolis necropolis, it is argued that dating gems solely on the basis of stylistic features can sometimes be misleading; examples with poor workmanship belonging to the Hadrianic period are attributed to urgent production needs in provincial workshops. Of the 36 artefacts presented in the catalogue, nine contain iconographic details that have not been previously identified in the literature or that are rarely seen (e.g., bearded or clothed Hermes, ithyphallic Hermes holding a phiale, pantheistic Ares/Hermes combinations). These new types are significant because they reveal local Anatolian variations of Hermes iconography and expand the iconographic diversity in Anatolian glyptic art. On the basis of these findings, the study aims to provide a new perspective on regional workshop production practices and the belief system regarding these portable cultural assets, which functioned simultaneously as jewellery, seals, and talismans.*

Cuvinte-cheie: *artă gliptică anatoliană, iconografia lui Hermes, pietre de inel (geme), tipologie, necropola Juliopolis*

Rezumat: *În articolul de față este analizat un lot de 36 de artefacte, compus din 34 de pietre prețioase și două sigilii din lut, provenite din muzee din Anatolia, colecții private și săpături arheologice. Studiul se concentrează asupra caracteristicilor formale și funcționale ale iconografiei lui Hermes în arta gliptică din Anatolia antică. Artefactele sunt clasificate din punct de vedere al materialului (aur, argint, fier, bronz și diverse pietre semiprețioase), al dimensiunilor și al tehnicilor de tăiere, rezultând opt tipuri iconografice principale. Pe baza descoperirilor din necropola de la Juliopolis, se demonstrează că datarea pietrelor prețioase exclusiv pe baza trăsăturilor stilistice poate fi uneori înșelătoare; exemplarele cu o tehnică de realizare calitativ slabă din perioada domniei lui Hadrian sunt atribuite nevoilor urgente de producție din atelierele provinciale, ca urmare a cererii mari. Dintre cele 36 de artefacte prezentate în catalog, nouă conțin detalii iconografice care nu au fost identificate anterior în literatura de specialitate sau sunt rare (de exemplu, Hermes cu barbă sau îmbrăcat, Hermes itifalic ținând o phiala, combinații sincretice Ares/Hermes). Aceste noi tipuri sunt semnificative atât pentru că dezvăluie variațiile locale anatoliene ale iconografiei lui Hermes, cât și pentru că extind diversitatea iconografică în arta gliptică anatoliană. Pe baza acestor descoperiri, studiul își propune să ofere o nouă perspectivă asupra practicilor de producție ale atelierelor regionale și asupra sistemelor de credință legate de aceste artefacte, care îndeplineau simultan funcțiile de bijuterii, sigilii și talismane.*

INTRODUCTION

In this study, 36 objects depicting Hermes and dating to the Roman Imperial period (1st–3rd centuries AD) are presented: 34 gems and two clay bullae. A total of 21 gems are from the collections of Ankara museums: 19 from the Museum of Anatolian Civilizations, one from the Erimtan Archaeology and Art Museum, and one from the private collection of Gaye Çarmıklı in Ankara. In addition to these, 13 gems are from various state museums, and two clay seal impressions are from the Murat Uğurluer collection in Gaziantep. Of the 36 gems, 30 are natural stones, four are glass, and two are clay seal impressions. Sixteen of these are set in rings, while 18 are loose gems without ring hoops. The four glass ring stones presented here are from the collection of the Uşak Museum, within the borders of the ancient Lydia region.

The aim of this study is to examine the gems depicting Hermes in Turkish museums and private collections from an iconographic perspective and to investigate their contributions to Anatolian glyptic art. In the study, detailed descriptions of the iconographic depictions of Hermes on engraved stones, glass, and clay seal impressions are provided in a catalogue, and the existence of new, hitherto unknown iconographic representations of Hermes has been determined. Among these new types are those where Hermes is depicted side by side with other gods and goddesses, as well as pantheistic depictions of Hermes either alone or with other deities.

Although the vast majority of the artefacts presented here were found in Anatolian lands, their find contexts cannot be known with certainty as they entered museums and private collections through purchase. In particular, the fact that modern Ankara encompasses the ancient

city of Ankyra, the metropolis of the Galatia region, and that the Ankara Museum of Anatolian Civilizations holds this rich collection is not coincidental. This indicates the importance of the gem-engraving art in the ancient Galatia region. The fact that some of the 21 gems originating from Ankara museums were found during excavations at the Juliopolis necropolis (Çayırhan, Nallıhan, Ankara) increases the importance of this collection. The discovery of these gems together with *kharon* coins and other archaeological material has contributed to our understanding of the earliest date they were placed in the graves (*terminus post quem*).

One of the two clay seals we have presented here is a depiction of Hermes on a ram (Cat. no. 36). A similar iconography appears on a red jasper stone with Hermes on a ram running to the left from the RD Milns Antiquities Museum at the University of Queensland[1]. Another similar example is kept in the British Museum, on a glass specimen with inventory number 1923, 0401.419. Considering the examples of the seal hoard called Doliche/Nikopolis, which was dispersed through non-excavation means and some of which have been published, it is thought that these artefacts are of Doliche (Dülük) origin.

There are four glass ring stones from the Uşak Museum in this study. With the exception of the glass gem set in the silver ring numbered 17 in our catalogue, three glass pieces (Cat. nos. 18–20) and nearly 100 glass ring stones in the Uşak Museum have uncleaned casting residues on their edges. The presence of specimens with this condition indicates that the glass pieces were waiting for orders in a workshop or a shop and had not yet been mounted on a ring. Most likely, this glass workshop was located in Sardis, the metropolis of Lydia, as Jane DeRose Evans suggests[2].

Throughout the ancient period, many clay seal impressions made using engraved gems mounted on rings have survived to the present day. These are the only surviving remnants of Greek and Roman archives that once contained rolled and sealed papyrus documents. The reason these clay seal impressions have survived to the present day is that the clay baked during the burning of the archives, gaining durability over time. Some of these archives contain seal impressions covering several centuries, likely from the late 2nd century BC to the early 3rd century AD, as in the case of Doliche (Gaziantep)[3]. In some of these archives, over 20,000 seal impressions have been found. Similarly, more than 100,000 clay seal impressions were unearthed in bulk during the Zeugma excavations[4].

It can be said that gems were popular mainly from the 2nd to the 4th century AD. However, their influence extended into the Medieval Ages and continues to the present day. In particular, gems depicting Hermes were used not only as a personal seal and a reflection of faith but also as protective talismans.

STYLISTIC FEATURES AND FUNCTIONS OF ENGRAVED GEMS

Amulet gems were made for the general public in Antiquity (for women, children, and men alike). The gems were processed using a tradition spanning thousands of years by rotating a sharp-pointed drill with a bow. They were also polished using powder of diamonds and other hard gemstones. During the Roman Imperial era, gemstone carving was a highly respected profession. A magician, specifically commissioned to prepare an amulet, would also get involved. His task was to depict the content of the spell correctly, in accordance with his divination, to ensure the right composition of materials, the correct use of the magical inscription, and to consecrate the gem. In the carving of magic gems, the artisan could neither use his own preference nor sign his work, as he would with other works of art. Furthermore, images executed using the engraving technique were not worked in reverse (negative), as they were in seal depictions. The motifs were processed so that they could be seen correctly (positively). Due to their symbolic character, they had no creative aspect. Almost always, pre-defined motifs were used: representations of Hermes carrying a money pouch and a *caduceus* (Cat. nos. 4–24) were taken from the statues of Polykleitos or Lysippos. In contrast, gems depicting Aphrodite used for love spells come from the Hellenistic tradition. Likewise, the three-headed Hecate, Nemesis, and the sun god Helios and Serapis on a *quadriga* are depicted with a Greek-style scheme. Motifs of Zeus or Serapis, Mars Ultor or Gradivus, and all kinds of mixed deities, deity busts, and astrological symbols were from Roman iconography. Since these were not used as jewellery and were carried in secret to ensure their effects, no one expected them to have artistic quality. For this reason, the production style was sloppy, as in the case of gemstones mass-produced for soldiers during the Roman Imperial period (Cat. nos. 5–8, 10, 24–25, 28–29). Only very rarely were some gems carved to near perfection, close to sculptural examples (Cat. nos. 4, 14–15, 22, and 32). As can be seen, some pieces were processed with care, in an artistic manner, with smooth transitions, and in a clear and detailed way.

Beyond being beautiful objects and ornaments with aesthetic appeal, engraved gems primarily functioned as seals. These were used very commonly to mark someone's property, indicate authority, and ensure that certain objects were personalized. To indicate ownership or authority, the engraved gem or metal ring was pressed onto a piece of clay or wax. Such seals could be easily broken when used for the security of a letter or object, but if they were broken, it would be immediately obvious. Some ancient authors refer to this usage. Another important area of use for seals is the protection of valuable packages during trade. Pliny the Younger wrote in 112 AD that he sent a gold ingot from Nicomedia (İzmit) 'sealed with his ring in the shape of

[1] Levick, Donaldson 2023, pl. 29, no. 9.
[2] Evans 2019, p. 2–9.
[3] Maaskant-Kleibrink 1971, p. 23–25.
[4] Önal 2006, p. 2–16; Önal 2007, p. 8–15.

a four-horse, two-wheeled chariot'[5]. In modern terms, a seal on a letter is equivalent to a signature or a stamped envelope, and if pressed onto an object or a door, it is equivalent to a padlock. In ancient times, most people were illiterate, and therefore the use of a personal seal as an identity mark was very convenient. Today, since stamps are not used much and seals are rarely engraved and utilized, it is not very easy to understand the importance given to them in ancient times.

Of course, not all ring stones were as expensive as those made from very precious stones, and in later periods, they were produced in large quantities for a more sought-after market. During the Roman period, gems became increasingly affordable, but their quality was proportional to their price. In the Roman Republican period, a gemstone mounted on a ring was usually used as a seal. The common ring material was iron, and wearing a gold ring was a sign of exclusivity. However, during the Roman Imperial period, this privilege extended to people of lower ranks, and the number of rings worn by individuals increased. In the 1st and 2nd centuries AD, gems and jewellery became increasingly widespread and were no longer the sole prerogative of the elite class.

During the Augustan period, the production of glass ring stones, which were imitations of precious gems, became fashionable and gained widespread popularity among those who wanted to own cheaper gems throughout the Roman world.

At the same time, this glass gem tradition was also used in the making of cheap cameos. Glass ring stones were obtained by pouring glass paste into molds taken from an original gem. Since the outer edges and the bottom of the glass ring stone removed from the mold were rough, these misshapen parts were corrected before the stone was mounted on a ring. It is well known that the glass pieces used in rings, after being retouched, often display more detailed and beautiful designs than those found in natural gems. Moreover, glass imitations have played an important role in ensuring that many lost masterpieces have survived to this day[6]. Findings of glass ring stones with uncleaned outer edges and not mounted on a ring suggest that these stones were not ready for use or were kept at the production site.

Findings in legionary camps all over the Roman Empire show that many soldiers had rings with engraved gems. Remarkably, such precious objects were frequently found in the drains of public baths where they were lost. Since resin or pitch, a type of natural adhesive, was used to attach Roman gems, these gems would fall off in the hot and humid environment of the bath. Although Romans knew the risk of their precious gems being lost, they continued to wear them, probably because they believed that they were more vulnerable to harmful supernatural influences when naked and that the gems could protect them[7].

[5] Plin. Ep. X, 74.

[6] Furtwängler 1900, p. 119.

[7] Konuk, Arslan 2000, p. 13.

HERMES ICONOGRAPHY

In the art of Antiquity, it is seen that a large number of gods and goddesses from the Greek and Roman pantheons were depicted. Among these gods, Hermes is a deity who has been depicted extensively in various branches of art. This god, who appears as Hermes in the Greek pantheon, is known as Mercurius in Rome.

In the context of our study, although we will focus on the status of Hermes in Greek and Roman art, it is understood that the god's origins date back to very ancient times. Hermes' character developed under the influence of different cultures and beliefs systems until he gained his essential place and characteristics within the Greco-Roman world.

The god Hermes has acquired many characteristics over time. In his most well-known aspect, he appears primarily as the messenger of Zeus. The wings on his head and feet are among the indicators of this duty. Another important feature is related to the underworld. Here, by virtue of his duty, Hermes is known as *chthonios-psychopompos*[8], a god who accompanies the souls of the dead to the other world[9]. With these aspects, Hermes is among the most well-known gods in the Roman world.

Hermes also acts as the protector of merchants, thieves, poets, and masters of eloquence. He also possesses the epithets of protector against evils, guardian of roads, leader, protector of boundaries, guardian of the *agora*, bringer of good news, giver of good signs, and protector of individuals in wars[10].

Based on the god's iconography on archaeological materials, the following can be said regarding his preferred depictions: Hermes has quite a standardized depiction in Greco-Roman art. The god is usually shown as a young man, sometimes old and bearded, and when not depicted nude, he appears wearing a long cloak, that is, a *khlamys* or *paenula*. He frequently wears a wide-brimmed hat (*petasos*). This hat is associated with his messenger function. Hermes is always depicted carrying his staff, the *kerykeion/caduceus*, in his left hand. The money pouch, *marsupium*, usually shown in his right hand, and his winged shoes/sandals, *talaria*, are the prominent attributes of the god[11].

Hermes is recognized as the god of trade and, at the same time, of thievery. He guides merchants. His depictions are encountered in the form of a *herm*, a pillar with only the upper part in the shape of a human bust and a very prominent male organ on the lower part. Hermes is also the protector of shepherds. He is often represented

[8] This term can be translated as 'guide of souls'; see Erhat 2007, p. 141; Siebert 1990, p. 336–337. It is stated that in Hermes *psychopompos* depictions, the god is mostly pictured without his winged sandals.

[9] Siebert 1990, p. 286–287; Laflı, Henig 2025, p. 187–188.

[10] Radulović *et alii* 2015, p. 51–52; for more information on Hermes, see Siebert 1990, p. 285–387, nos. 198–283; Larson 2007, p. 144–155; Versnel 2011, p. 316–377; Allan 2018, p. 1 et seq.

[11] Grimal 2012, p. 275–276; Can 2016, p. 99–100; Laflı, Henig 2025, p. 188.

carrying a ram on his shoulder (*Hermes Kriophoros*). He was believed to have the power to bring sleep or awaken one from sleep[12].

The oldest form of the god's depiction is the phallus. This stems from Hermes being characterised as a god who has the power of creation and represents fertility and productivity[13]. The Greeks learned the ithyphallic Hermes figure from the Egyptians. The Athenians first saw this among the Pelasgians, and the other Greeks saw it among the Athenians. The Pelasgians left a sacred tradition in this regard that is known to those familiar with Samothrace[14].

With his mythology and iconography briefly summarized above, Hermes can be counted among the Greco-Roman gods who have been the subject of the most art forms in the ancient world. The god Hermes appears in a very wide spectrum, from great sculptural works to vase paintings, and from wall paintings to small finds. The attributes of the god have been the reason for him being accepted as a god friendly to humans and for him to be so loved and depicted. Likewise, the glyptic art is one of the areas where Hermes iconography is most intensely used.

ANALYSIS OF ARCHAEOLOGICAL MATERIAL

In this catalogue, a total of 36 artefacts, including 34 gems and two clay *bullae*, are described in detail. Of the 34 gems examined, 16 are preserved with their ring hoops, while 18 are in the form of gems only. The material distribution of the artefacts with ring hoops is as follows: 5 gold, 7 silver, 2 iron, 1 bronze, and 1 gold-plated iron. Evaluated in terms of dimensions, the smallest gem measures 6.2 × 5.1 mm (Cat. no. 24), and the largest gem measures 17.3 × 13 mm (Cat. no. 30). Agate, garnet, chalcedony, carnelian, nicolo, jasper, and glass were preferred as stone types; among these materials, carnelian and jasper were the most frequently used for Hermes depictions.

Gems depicting Hermes have been classified under eight main iconographic types. In the description of each artefact in the catalogue, the gem's type (e.g., A3, F2), determined according to its convex or flat cutting style, is indicated in parentheses[15]. The typological classification is presented below:

RING STONES (GEMS)

Group 1: Hermes' head or bust faces left (Cat. nos. 1–3).
Group 2: Hermes, standing, facing right; holding *kerykeion* and money pouch (Cat. nos. 4–20).
Group 2a: Hermes, standing, facing left; holding *kerykeion* and money pouch (Cat. nos. 21–25).
Group 3: Hermes/Ares (?), standing, facing left (Cat. nos. 26–27).
Group 4: Hermes, standing in frontal view; head facing right (Cat. nos. 28–29).
Group 5: Hermes, sitting on a rocky outcrop (Cat. nos. 30–31).
Group 6: Hermes and Harpokrates, standing, facing each other (Cat. no. 32).
Group 7: Hermes and Isis/Tyche, standing, facing each other (Cat. no. 33).
Group 8: Ibis bird, carrying *kerykeion* and poppy (Cat. no. 34).

CLAY SEAL IMPRESSIONS (*BULLAE*):

1. Type: Hermes' bust, facing right (Cat. no. 35).
2. Type: Hermes, riding a ram to the right (Cat. no. 36).

On statues, relief and coins from the Greek and Roman period, Hermes is depicted holding a money pouch in his right hand and a *kerykeion* in his left. It is thought that the same engravers made the coin dies as well as the gems. Furtwängler states that this similarity is natural because the engraver of the Roman Imperial mint was also a gem engraver by profession[16]. On coins minted in Anatolian city mints of the Roman period, Hermes holds a money pouch in his right hand and a *kerykeion* and a cloak in his left hand.

In the clay seal impressions of gems, Hermes is depicted holding a money pouch in his left hand and a *kerykeion* on his right arm[17]. However, due to the nature of the seal impression, it should be noted that the direction of the figure and the position of the objects in his hands are reversed by the mirror effect[18].

In addition, some gems depicting Hermes that we do not think were used as seals are engraved in positive. On positively engraved gems, Hermes is shown holding the money pouch in his right hand and the *kerykeion* on his left hand[19]. When an impression of a positively engraved gem is taken, the figure will appear negative. Five gems numbered 21–25 and gems numbered 30–33 in our catalogue are positively engraved examples that do not function as seals.

It is often difficult to determine whether gems depicting Hermes were seals, ornaments, or talismans or whether they served all of these functions. Although it seems reasonable to accept sealing as the primary function, it is quite difficult to determine definitively which function was more dominant based on the material that has survived to the present day. However, in this study, we aim to formulate various hypotheses regarding the purpose of these ring stones.

On some gems in the Museum of Anatolian Civilizations, Hermes heads and busts are depicted facing left

[12] Roman, Roman 2010, p. 220.
[13] Roscher 1890, p. 2392.
[14] Herodotos, *Herodot Tarihi* II, p. 51.
[15] For the classification of gem cutting styles, see Spier 1992, p. 3, fig. 5; Konuk, Arslan 2000, p. 21, fig. 7.
[16] Furtwängler 1900, p. 301.
[17] Doksanaltı, Sağlan 2008, p. 89, no. 30.
[18] Spier 1992, p. 104, 119, 128, nos. 254–256, 310, 343; Konuk, Arslan 2000, p. 87–92, nos. 63–68.
[19] Spier 1992, p. 104, no. 253; Konuk, Arslan 2000, p. 93, no. 69.

(Cat. nos. 1–3). These examples display high quality engraving workmanship. The Hermes bust on one of these gems (Cat. no. 2), however, displays a slightly sloppier workmanship compared to the other two gems. We think that the primary intended purpose of these three gems, in addition to being talismans and ornaments, was to serve as personal seals. We hold this opinion because Hermes' head is facing left on gems[20], whereas on clay *bullae* it is always seen facing right[21].

On a red jasper gem from the Museum of Anatolian Civilizations (Cat. no. 4), the body lines of Hermes, standing facing right, are rendered muscularly, similar to statues of Herakles. This gem, which shows qualified engraving workmanship, must have been used as a personal seal, talisman, and jewellery.

On a carnelian gem (Cat. no. 5), Hermes is standing facing right, wearing his very wide-brimmed winged hat on his head, a *kerykeion* and cloak on his right arm, and holding a money pouch in his left hand. Hermes' attributes are rendered clumsily and disproportionately. Despite Hermes' muscular and triangular body, the legs look like thin, long branches. The *kerykeion* appears as a two-pronged pitchfork with ends parallel to each other, rather than two snakes wrapped around a staff. This gem, which does not show good engraving workmanship, must have been used both as a seal and as jewellery.

Two gems (Cat. nos. 6 and 7) are very similar to each other in terms of their convex surfaces and engraving techniques; they seem to have come from the same workshop, from the hand of the same engraver. Undoubtedly, gem which has a gold ring band (Cat. no. 7) must have been used as a seal as much as it was used as jewellrey. Another example from the Museum of Anatolian Civilizations (Cat. no. 8) also must have been used as both a seal and jewellery.

On the green jasper gem with a silver band from the Erimtan Archaeology and Art Museum (Cat. no. 9), Hermes stands facing right. He has a winged hat on his head, winged boots on his feet, a money pouch in his left hand, a *kerykeion* resting on his right arm and a cloak tied around his neck and wrapped around his other arm, hanging down. Hermes has his right leg bent at the knee, placing his weight on his left leg. His torso is tilted to the right, his right hand is bent and faces upward as if he were resting his elbow on a small pillar, and the object on which he leans resembles a knotted tree, similar to a Herakles club. These features suggest that this gem might be very different from its counterparts in terms of engraving workmanship. The existence of many published gems depicting Hermes and Herakles and the fact that, in mythology, Hermes helped Herakles in many of his tasks strengthen the possibility that this object he is leaning on could be a Herakles club.

[20] Konuk, Arslan 2000, p. 86–89, nos. 62–65; Spier 1992, p. 128–129, nos. 344–347.

[21] Konuk, Arslan 2000, p. 230–233, nos. 206–209; Doksanaltı, Sağlan 2008, p. 89, nos. 28–29; the clay seal impression numbered 35 here is, similarly, facing right.

On the nicolo gem on a gold ring from the Gaye Çarmıklı collection in Ankara (Cat. no. 10), Hermes is placing the money pouch in his left hand onto a small pillar, holding a *kerykeion* resting on his shoulder with his right hand and a *chlamys* hanging from his arm. Facial details are not well rendered, and the exaggeratedly long neck shows that the gem displays poor workmanship. Despite that, the gem being on a gold mounting and the rare use of nicolo among gems with Hermes increase the value of this ring stone. This iconographic type, in which Hermes places the money pouch on a pillar, is noteworthy in terms of Anatolian glyptics because it is a little-known example. This gem was also used both as jewellery and as a seal.

On a black and blue layered nicolo gem set in a gold-plated iron ring from the İzmir Museum (Cat. no. 11), Hermes is standing, body in 3/4 frontal view, head facing right, bearded and wearing a *petasos*, holding the money pouch upward in the palm of his right hand; he is holding the *kerykeion* in his left hand pointing it towards the ground. All of this constitutes an unusual iconography. Furthermore, the fact that Hermes is bearded and clothed from the waist down represents a novelty in Hermes iconography. The fact that the iron ring band is gold-plated shows ancient forgery, indicating that this ring would have been shown and sold as gold in its day. This gem was used as jewellery and as a seal.

On the silver ring with a carnelian gem from the Juliopolis necropolis, now kept in the Museum of Anatolian Civilizations (Cat. no. 12), Hermes is standing facing right and holding a money pouch and a *kerykeion*. It is possible that this gem, which was found in the grave together with a *kharon* coin belonging to Septimius Severus (193–211 AD), was placed in the grave for Hermes to take the soul of the dead to the land of Hades more quickly under his guidance. At the same time, it is likely that it was used as a personal seal and jewellery during the deceased's lifetime.

Another find from the Juliopolis necropolis, also kept in the Museum of Anatolian Civilizations, is a silver ring with a matte red jasper gem (Cat. no. 13). On the gem, Hermes stands facing right and holds his well-known attributes in his hands. Next to this ring, a *denarius* coin belonging to Geta Caesar (198–209 AD) was found. Like the artefact numbered 12, this one was also unearthed in grave 148. The ring must have been placed in the grave during the reign of Septimius Severus. This find suggests that it could have been used both as a seal and as jewellery during the person's lifetime and at the same time, because one of Hermes' special duties was to guide the souls of the dead to the underworld (*psychopompos*), it may have been placed in the grave as a funerary gift.

A silver ring with a jasper gem, a find from the Juliopolis necropolis, in the Museum of Anatolian Civilizations, has a depiction of Hermes standing facing right (Cat. no. 14). On this gem, Hermes holds the *kerykeion* not resting on his arm, as in known gem examples, but separately from his body. No *kharon* coin was discovered in this grave. However, looking at the other archaeological

finds from the grave, this artefact is dated from the late 2nd to the early 3rd century AD. This artefact could have been used as jewellery or a seal, and in the context of Hermes' function of guiding the souls of the dead (*psychopompos*), it may also have been left in the grave to accompany the deceased on his journey to the land of Hades. The gem displays quite high quality engraving workmanship.

On an iron ring with a red jasper stone from the Fethiye Museum (Cat. no. 16), Hermes stands facing right (left according to the impression). He has a *petasos* on his head and holds a *kerykeion* in his left hand, there is no money pouch in his right hand, which he extends forward. Although the altar in front of his feet might look like it has flames, when looked at carefully, a liquid is being poured onto the altar from a round object located under his hand that is not holding the money pouch (libation scene), and the poured liquid makes the altar appear flaming. At the same time, Hermes is shown as ithyphallic. Although the gem, which shows beautiful engraving workmanship, was used as jewellery and for magical purposes, it must also have functioned as a seal because it was negatively engraved.

The glass ring stone on a silver ring from the Uşak Museum has Hermes standing facing right (left according to the impression) (Cat. no. 17). In front of the feet of Hermes, who has a *petasos* on his head and holds a money pouch and *kerykeion*, a cylindrical altar is depicted. Designed in a way that is suitable for mass production with the casting technique and low cost, in addition to good mold workmanship, this glass ring stone was produced negatively in a way that would give a positive image in its impression to meet the functions of jewellery, talisman, and seal.

On a carnelian stone from the Museum of Anatolian Civilizations (Cat. no. 24), Hermes is walking towards the left, a winged hat (*petasos*) on his head, a money pouch in his right hand, and a cloak (*chlamys*) hanging wrapped around his left arm. The *kerykeion* that should be on the left arm is not visible on this gem. The body details and the face are carved sloppily, and the money pouch is exaggeratedly large. Hermes is carved as ithyphallic, with a disproportionately large phallus. This positively engraved gem was used as jewellery and as a talisman.

A sard gem with orange-black veins from the Uşak Museum has a depiction of a barbaric god similar to Hermes (Cat. no. 25). On his head, there is an oriental headdress in the shape of a tiara, a sharp spur on top of it and wings cover the neck and face. A sweater-like garment wraps his body, and he is wearing trousers that go down below the knees. He holds a *kerykeion*-like staff in his right hand and a money pouch in his left hand. On the left edge, where the drape of the *chlamys* hanging from his right arm extends, there is a round shield (?). The Hermes figure, carved in a pantheistic or barbaric style, presents the phenomenon of a new iconographic type.

A yellowish chalcedony gem is kept in the Fethiye Museum (Cat. no. 26). According to the impression of the oval-formed, convex-surfaced stone, Hermes/Ares is standing, with his body in 3/4 frontal view and his head facing right. A shawl/cloak is wrapped around his right shoulder, covering his intimate parts, wraps around his arm from behind his left shoulder and hangs from his elbow. He places his body weight on his right leg; his left leg is bent at the knee, thrown slightly backward and he is stepping on his toes. He wears a helmet on his head, with a cobra-shaped protrusion or *polos* at the front. The Hermes/Ares combination god is leaning on a spear with his right hand and is holding a *kerykeion* with his left hand that he extens forward. This pantheistic representation is a new iconographic type. Because of his cobra-type headdress, we also think that this new type of figure could be a syncretic Hermes/Harpokrates. It must have been used for the purposes of magic and protection.

There is a pantheistic god figure of the Ares/Hermes type on a red jasper gem located in an iron ring from the Uşak Museum (Cat. no. 27). In this impression, Ares/Hermes is standing in 3/4 frontal view, with his head facing right and is wearing a helmet; the god holds a *kerykeion* resting on his arm and he holds a hanging cloak (*chlamys*) with his right hand. With his left hand he places a wreath on a trophy tree (*tropaiona*) standing on a shield in front of him. It can be said that the person who used this gem was a soldier.

A bronze ring with an agate gem from the collection of the Museum of Anatolian Civilizations (Cat. no. 28) has the clothed Hermes standing in frontal view, head facing right. He wears a *petasos*, holds a money pouch in his left hand and holds the *kerykeion* raised with his right hand, away from his body. Because this gem depicting the clothed Hermes type, which shows naive and poor quality workmanship, was positively engraved, it was used as a talisman and as jewellery.

A find from the Juliopolis necropolis excavation, now in the Museum of Anatolian Civilizations, is a red jasper gem on a gold ring (Cat. no. 29). On the gem, Hermes is standing in 3/4 frontal view, with his head facing right; he wears a *petasos* on his head, winged shoes (*talaria*) on his feet, holds a *kerykeion* in his right hand, and a hanging *chlamys*, and carries a money pouch in his left hand. The Hermes depiction is carved very naively and clumsily. A *denarius* coin belonging to Hadrian (117–138 AD) was found in the grave together with this gold ring. If this ring had not been found with the Hadrian coin, the gem would most likely have been dated later, due to the naive and sloppy engraving workmanship. The artefact, which was found in the grave together with a *kharon* coin, allows for accurate dating. The Hadrian period is the brightest period of Roman sculpture. However, if we question the clumsily made engraving workmanship on this jasper gem, we think that these gems with bad workmanship were ordered from non-central workshops in the provinces for urgent needs at the time, were produced by amateur engravers, and that such bad engraving workmanship does not reflect the high art understanding of the period.

On the blue chalcedony gem from the Museum of Anatolian Civilizations (Cat. no. 30), Hermes is sitting towards the right on a rocky outcrop, holding a money pouch and a *kerykeion* in his hand. Such types of Hermes depictions were frequently used on the coins of many cities in the Pamphylia and Pisidia region. We think that this gem, which was negatively engraved with good workmanship, was used as a protective amulet.

In its impression, a red carnelian gem from the Burdur Museum (Cat. no. 31) shows Hermes sitting on a rocky outcrop, with his head facing right and the body in 3/4 frontal view; he has his right foot placed on two stones one on top of the other and he is stepping on the ground with his left foot. He has a *petasos* on his head, and he is holding a winged *kerykeion* resting on his right arm and a cloak (*chlamys*). It is thought that seated Hermes types originate from Pisidian city coins. This gem, which was processed positively and with high quality workmanship, must have been used as a protective talisman (amulet) due to its large diameter.

A grey-white chalcedony amulet from the Museum of Anatolian Civilizations (Cat. no. 32) has a depiction of Hermes and Harpokrates standing facing each other. The naked Hermes standing on the left has a winged hat (*petasos*) on his head, a *kerykeion* and a cloak (*chlamys*) on his right arm, and he is placing a laurel wreath held in his left hand onto the head of the Harpokrates opposite him. The naked Harpokrates standing on the right has brought his right hand to his lips and is making a gesture of silence, while holding a *cornucopia* and a cloak (*chlamys*) with hanging drapes on his left arm. This is a new variation in which Hermes and Harpokrates are seen together on a positively engraved type. This motif is a variant of the more common type in which Hermes/Mercury crowns Tyche/Fortuna. In this intaglio type, the positions of the figures are usually reversed, and Hermes/Mercury is located to the viewer's right and is looking left[22]. The figure to whom Hermes is presenting the crown seems to be presented here as a free-standing Harpokrates, a god frequently shown holding a *cornucopia* and a draped cloak in intaglios, although sometimes he is presented leaning against a tree. The characteristic gesture of Harpokrates in this pose is, as in other types, the raising of the hand towards the mouth. While adapting the free-standing model type to the Hermes/Mercury crowning type, probably in accordance with the customer's request, the engraver did not manage to take into account the raised arm of Hermes/Mercury and therefore had to design the right hand of Harpokrates in an exaggeratedly long way. Furthermore, the double crown that Harpokrates usually wears in this pose has been turned into a normal wreath here. This situation might suggest that the original model was actually of the type in which a Genius holds a *patera*; in this type, the figure likewise holds a *cornucopia* and a draped cloak in his free hand[23]. Here, Hermes/Mercury, as the bringer of wealth and business success, is associated with Harpokrates, the symbol of agricultural prosperity. In this way, a visual repetition for personal prosperity and good demand is created. In another more complex type, Hermes/Mercury crowns Zeus/Jupiter, and Tyche/Fortuna surrounds them on two sides; this type transposes the personal wish to the social level[24]. However, no other gem in which this type is adapted to Harpokrates is known to date.

A yellowish coloured gem with brown veins from the İzmir Archaeology Museum (Cat. no. 33) has, in the impression, Hermes and Isis/Tyche[25] who are standing facing each other; Hermes is on the left, with the body shown frontally and his head turned towards Isis/Tyche; he wears a *petasos*, holds a *kerykeion* and a cloak (*chlamys*) on his right arm, and crowning Isis-Tyche with the wreath in his left hand. The pantheistic goddess Isis/Tyche is on the right edge, wearing a long *khiton*, with an Isis crown, holding a ship's rudder in her right hand, and a *cornucopia* resting on her arm in her left hand. A ground line is separately present under the feet of both of them.

A red-coloured, translucent carnelian gem from the Museum of Anatolian Civilizations (Cat. no. 34) is oval-shaped and has a convex surface; on it, an Ibis bird walks towards the left, in its beak it has gripped two poppy capsules by their stems and carrying a winged *kerykeion/caduceus* in a crosswise manner on its back. This gem, which shows masterful workmanship engraved positively, must have been used as a talisman.

One of the two clay seal impressions from the Murat Uğurluer collection in Gaziantep (Cat. no. 35) shows a draped bust of Hermes facing right, carrying a *kerykeion* on his shoulder. Similar examples for this *bulla* have been found at Doliche[26].

On the other clay seal impression from the Murat Uğurluer collection (Gaziantep), Hermes is progressing towards the right on a ram; he holds a *kerykeion* on his right arm and a money pouch in his left hand (Cat. no. 36). This type is rare, but a similar example made of red jasper (inventory number UQ 83.009) is now kept in the intaglio collection at the RD Milns Antiquities Museum at the University of Queensland. In this example, Hermes is mounted on the back of a ram running towards the left; he holds a money pouch in his right hand and a *kerykeion* in his left hand; the hind legs of the ram are on the ground,

[22] Henig, Whiting 1987, p. 14, nos. 93–95; Fossing 1929, p. 223, no. 1663; Bertolami E-Live Auc. 84, Lot 106 (https://bertolamifineart.bidinside.com/en/auc/118/e-live-auction-84-glyptic/4/); Sotheby 1842, p. 23, no. 367.

[23] Arslan *et alii* 2022, p. 98.

[24] For this type, see intaglios in which Hermes/Mercury crowns Zeus/Jupiter, with Tyche/Fortuna on the sides; Arslan *et alii* 2022, p. 98–99, cat. no. 5, fig. 8; Arslan, Yeğin 2021, p. 125, pl. 4.

[25] See Şenergüç 2026, p. 559, no. 432 (Hermes and Tyche), defined as Tyche. This goddess must be the syncretic Isis/Tyche, because the Isis crown is clearly visible on the goddess's head, and therefore it provides evidence for this identification. Also, for the Isis crown, see Arslan, Yeğin 2021, p. 121–122, 129, pl. 1; Arslan 2021, p. 421–422, fig. 6, 7a; Henig, MacGregor 2004, p. 46, no. 2.48; Spier 1992, p. 126, no. 336.

[26] For Hermes bust clay seal impressions, see Doksanaltı, Sağlan 2008, p. 89, nos. 28–29; Konuk, Arslan 2000, p. 230–233, nos. 206–209.

its front legs are raised in the air[27]. A depiction very close to that on the Gaziantep clay seal impression is also seen in two dark glass examples in the British Museum, dated to the 1st–3rd centuries AD. Both are of the same type; Hermes/Mercury is mounted on a ram running towards the right; he holds a money pouch in his extended left hand and a *kerykeion* on his right arm that he holds close to his body. He is naked and looks ahead towards the right. All four legs of the ram are on the ground line[28].

CATALOGUE*

No. 1. Carnelian Ring Stone with Bust of Hermes, F 1 (Fig. 1)
Museum of Anatolian Civilizations, inv. no. 53-3-74 (Case 7, no. 54 f).
Dimensions. H. = 12 mm, w. = 9.8 mm, th. = 2.3 mm.
Dating. 1st–2nd century AD.
Description. The dark red translucent carnelian stone is oval-shaped with a flat surface. It features a bust of Hermes facing left, wearing a winged hat (*petasos*). The facial features are executed in a fine and detailed classical style.
Bibliography/Analogies. Henig, MacGregor 2004, p. 36, no. 1.62 (similar); Spier 1992, p. 129, no. 345 (similar).

No. 2. Gold Ring with Garnet Gem Depicting a Bust of Hermes, A 4 (Fig. 2a–b)
Museum of Anatolian Civilizations, inv. no. 12-2-69 (Case 7, no. 58).
Dimensions. H. = 8 mm, w. = 8.2 mm, ring diam. = 23.1 mm.
Dating. 2nd century AD.
Description. The gold ring features a brownish-red, translucent garnet stone, which is near-circular in form with a slightly convex surface. It displays a bust of Hermes facing left, wearing drapery, a *petasos* on his head, and carrying a winged *kerykeion* on his shoulder.
Bibliography/Analogies. Spier 1992, p. 128, no. 344; Pannuti 1983, p. 53, no. 74; Maaskant-Kleibrink 1978, p. 255, no. 669; Richter 1956, p. 72, no. 293; Walters 1926, p. 158, no. 1414; Rijk Museum (GS-00111), (I 2019/7.49).

No. 3. Carnelian Ring Stone with Bust of Hermes, F 1 (Fig. 3)
Museum of Anatolian Civilizations, inv. no. 18850 (Case 7, no. 59).
Dimensions. H. = 11.7 mm, w. = 9.3 mm, th. = 2.7 mm.
Dating. 1st–2nd century AD.
Description. The light red, translucent carnelian stone is oval-shaped with a flat surface. It depicts a bust of Hermes facing left, bareheaded, wearing drapery, and carrying a winged *kerykeion* on his shoulder. The details of Hermes' face, hair, and clothing demonstrate masterful carving craftsmanship. The upper right edge of the stone is chipped and missing.
Bibliography/Analogies. Henig 2007, p. 96–97, no. 37 (similar); Konuk, Arslan 2000, p. 86, no. 62; Maaskant-Kleibrink 1978, p. 212, no. 494; Richter 1956, p. 72, nos. 291–292; Walters 1926, p. 158, nos. 1418–1419; Marshall 1907, p. 83, 86, nos. 484, 503; https://rpc.ashmus.ox.ac.uk/coins/4/7346.

No. 4. Jasper Ring Stone with Hermes, F 1 (Fig. 4)
Museum of Anatolian Civilizations, inv. no. 18855 (Case 7, no. 54 a).
Dimensions. H. = 14.5 mm, w. = 12.6 mm, th. = 4 mm.
Dating. 1st–2nd century AD.



Figure 1. *Carnelian Ring Stone with Bust of Hermes from the Museum of Anatolian Civilizations, inv. no. 53-3-74.*



Figure 2a–b. *Gold Ring with Garnet Gem Depicting a Bust of Hermes from the Museum of Anatolian Civilizations, inv. no. 12-2-69.*



Figure 3. *Carnelian Ring Stone with Bust of Hermes from the Museum of Anatolian Civilizations, inv. no. 18850.*

[27] Levick, Donaldson 2023, p. 95–96, no. 9.
[28] Walters 1926, p. 272, no. 2793.
* In the Catalogue the next abbreviations are used: H. = height; w. = width; th. = thickness; diam. = diameter.

Description. The matte red jasper stone is oval-shaped with a flat surface. It depicts Hermes standing in a three-quarter view, with his head turned to the right. He places his weight on his right leg, while his left leg is bent at the knee and drawn back, resting on his toes. He wears a *petasos* (?) on his head and winged sandals (*talaria*) on his feet. He holds a money pouch (*marsupium*) in his left hand, a winged *kerykeion* resting against his right arm, and a cloak (*khlamys*) draped over his arm, hanging down; groundline. The figure of Hermes is executed with great finesse. Hermes is depicted with an athletic, Heraklean physique, in which the chest and abdominal muscles, as well as the knees, are carved with rounded contours.
Bibliography/Analogies. Willers, Raselli-Nydegger 2003, p. 82, no. 36; Hoey Middleton 2001, p. 28, no. 11; Maaskant-Kleibrink 1978, p. 233–234, nos. 586–587; Richter 1956, p. 71, 72, no. 290; https://rpc.ashmus.ox.ac.uk/type/72133.

No. 5. Carnelian Ring Stone with Hermes, F 2 (Fig. 5)
Museum of Anatolian Civilizations, inv. no.65-1-66 (Case 7, no. 54 b).
Dimensions. H. = 13.1 mm, w. = 9.8 mm, th. = 4 mm.
Dating. 2nd century AD.
Description. The dark red, translucent carnelian stone is oval-shaped, with a wide base and a narrow, flat top surface. It depicts Hermes standing in a three-quarter view, with his head turned to the right. He carries his weight on his right leg, with his left leg extended to the side. He wears a *petasos* on his head and holds a money pouch (*marsupium*) in his left hand, a winged *kerykeion* resting against his right arm, and a cloak (*khlamys*) draped over his arm, hanging down; groundline. The rendering of Hermes' lower body, facial features, and kerykeion is disproportionate; furthermore, the ground line is positioned above the level where his feet are supposed to rest. It appears as if his feet are submerged in water.
Bibliography/Analogies. Konuk, Arslan 2000, p. 88, no. 64; Spier 1992, p. 128, no. 343; Maaskant-Kleibrink 1978, p. 332, no. 1010 (similar); Rijk Museum (VF 855).

No. 6. Jasper Ring Stone with Hermes, A 3 (Fig. 6)
Museum of Anatolian Civilizations, inv. no. 160-1-96 (Case 7, no. 54 c).
Dimensions. H. = 14.5 mm, w. = 10.4 mm, th. = 4.1 mm.
Dating. 2nd century AD.
Description. The matte, dark red jasper stone is oval-shaped with a convex surface. It depicts Hermes standing in a three-quarter view, with his head turned to the right. He wears a *petasos* on his head and holds a money pouch (*marsupium*) in his left hand, and a *kerykeion* and cloak (*khlamys*) resting against his right arm. His right leg is bent at the knee and drawn back, while his weight is shifted onto his left leg. The neck is very slender, and the feet are invisible, as if submerged in water.
Bibliography/Analogies. Nardelli 2011, p. 131, Pl. 4 (similar); Demir 2008, p. 105, no. 7 (similar); Willers, Raselli-Nydegger 2003, p. 82, no. 37; Spier 1992, p. 104, no. 256 (similar).

No. 7. Gold Ring with Spiral Ornament and Hermes, A 5 (Fig. 7a–b)
Museum of Anatolian Civilizations, inv. no. 110-1-72 (Case 7, no. 60).
Dimensions. H. = 14 mm, w. = 9 mm, ring diam. = 21 mm, weight = 8.3 g.



Figure 5. *Carnelian Ring Stone with Hermes from the Museum of Anatolian Civilizations, inv. no. 65-1-66.*



Figure 4. *Jasper Ring Stone with Hermes from the Museum of Anatolian Civilizations, inv. no. 18855.*



Figure 6. *Jasper Ring Stone with Hermes from the Museum of Anatolian Civilizations, inv. no.160-1-96.*

Dating. 2nd century AD.
Description. The gold ring features a spiral ornament and a matte green jasper stone, which is oval-shaped with a convex surface. It depicts Hermes standing in a three-quarter view, with his head turned to the right. He wears a winged hat (*petasos*) on his head, and holds a money pouch (*marsupium*) in his left hand, and a *kerykeion* and a cloak (*khlamys*) resting against his right arm. His right leg is bent at the knee, and his weight is shifted onto his left leg. The facial features are schematic, the neck is disproportionately thin, the *kerykeion* is faintly engraved, and the craftsmanship is careless. Given the convex surface, the thin neck, and the similar rendering of bodily details as in the stone numbered 6, we suggest that both stones may have been produced by the same lapidary.
Bibliography/Analogies. Demir 2008, p. 105, kat. No. 7; Willers, Raselli-Nydegger 2003, p. 82, no. 37.

No. 8. Carnelian Ring Stone with Hermes, F 2 (Fig. 8)
Museum of Anatolian Civilizations, inv. no. 19323 (Case 7, no. 54 e).
Dimensions. H. = 11.1 mm, w. = 9.2 mm, th. = 2.8 mm.
Dating. 2nd century AD.
Description. The light red, translucent carnelian stone is oval-shaped with a flat surface. It depicts Hermes standing in a three-quarter view, with his head turned to the right. He wears a winged hat (*petasos*) on his head and winged boots (*talaria*) on his feet. He holds a money pouch (*marsupium*) in his left hand, and a *kerykeion* and cloak (*khlamys*) resting against his right arm. His right leg is bent at the knee, and his weight is shifted onto his left leg; groundline.
Bibliography/Analogies. Nardelli 2011, p. 131, Pl. 4 (similar); Konuk, Arslan 2000, p. 90, no. 66.

No. 9. Silver Ring with Jasper Gem Depicting Hermes, F 2 (Fig. 9a–b)
Erimtan Archaeology and Art Museum, Ankara, inv. no. 1265.
Dimensions. H. = 14 mm, w. = 11 mm, ring diam. = 26 mm, weight = 11.1 g.
Dating. 2nd century AD.
Description. The silver ring features a reddish-yellow jasper stone, oval-cut with a flat surface. It depicts Hermes standing in a three-quarter view, with his head turned to the right. He wears a winged hat (*petasos*) on his head, and holds a money pouch (*marsupium*) in his left hand, and a *kerykeion* resting against his right arm, along with a cloak (*khlamys*) tied around his neck and draped over his arm. His right leg is bent at the knee, and his weight is shifted onto his left leg; groundline. The posture of Hermes' body leaning to the right, resting his elbow on a column-like object, and holding the *kerykeion* not in his hand but in the crook of his elbow, combined with the fact that the object the elbow rests upon resembles a knotted tree trunk, suggests that this object might be the club of Herakles.
Bibliography/Analogies. Gülbay 2017, p. 206, no. 25 (similar); Spier 1992, p. 128, no. 343 (similar); Marshall 1907, p. 97, no. 567 (similar).



Figure 7a–b. *Gold Ring with Spiral Ornament and Hermes from the Museum of Anatolian Civilizations, inv. no. 110-1-72.*



Figure 8. *Carnelian Ring Stone with Hermes from the Museum of Anatolian Civilizations, inv. no. 19323.*



Figure 9a–b. *Silver Ring with Jasper Gem Depicting Hermes from the Erimtan Archaeology and Art Museum, Ankara, inv. no. 1265.*



Figure 10a–b. *Gold Ring with Nicolo Gem Depicting Hermes from the Gaye Çarmıklı Collection, Ankara, inv. no. 59.*

No. 10. Gold Ring with Nicolo Gem Depicting Hermes, F 2 (Fig. 10a–b)
Gaye Çarmıklı Collection, Ankara, inv. no. 59.
Dimensions. H. = 8 mm, w. = 6 mm, ring diam. = 20 mm.
Dating. 1st–2nd century AD.
Description. The gold ring features a nicolo stone with a white upper layer and a black base layer, oval-shaped with a concave surface. It depicts Hermes standing in a three-quarter view, with his head turned to the right. He is placing the money pouch (*marsupium*) in his left hand onto a small column, and holds a *kerykeion* resting against his right arm along with a hanging cloak (*khlamys*). The face is blurred, the neck is exaggeratedly long, and the feet are not indicated.
Bibliography/Analogies. Spier 1992, p. 119, no. 309 (similar).

No. 11. Gold-Plated Iron Ring with Nicolo Gem Depicting Hermes, F 2 (Fig. 11a–b)
İzmir Archaeology Museum, inv. no. 16116.
Dimensions. H. = 10 mm, w. = 7 mm, ring diam. = 22 mm, ring height = 19 mm, hoop th. = 4 mm.
Dating. 1st–2nd century AD.
Description. The gold-plated iron ring features a nicolo stone, oval-shaped with a flat surface, featuring a blue upper layer and a black base, with a narrow top and a wide base. Hermes is depicted standing in a three-quarter view, facing right. He is bearded, wearing a *petasos*, and holds a money pouch (?) in his raised right hand. The drapery of his cloak (*khlamys*) hangs from his right elbow, and he holds a winged *kerykeion* in his left hand, pointing downwards. The lower part of his body is draped, and the helical folds of the garment are prominent; groundline. Bearded and draped representations of Hermes are rarely encountered on coins and gems of the Roman Imperial period.
Bibliography/Analogies. British Museum Inv. No. 1872, 0604.170 (similar); Şenergüç 2026, p. 528, no. 401 (same ring); https://rpc.ashmus.ox.ac.uk/type/73231 (Pisidia-Termessos dressed type).

No. 12. Silver Ring with Carnelian Gem Depicting Hermes, F 2 (Fig. 12a–b)
Museum of Anatolian Civilizations, inv. no. 12-61-11 (Juliopolis Tomb No. 148).
Dimensions. H. = 10.3 mm, w. = 7.9 mm, ring diam. = 21 mm.
Dating. 193–211 AD (Septimius Severus coin).
Description. The silver ring features an orange carnelian gem, oval-shaped with a flat surface, narrow at the top and wide at the base. It depicts Hermes standing in a three-quarter view, with his head turned to the right. He wears a winged hat (*petasos*) on his head and winged shoes (*talaria*) on his feet. He holds a money pouch (*marsupium*) in his left hand, and a *kerykeion* resting against his right arm along with a downward-hanging cloak (*khlamys*); groundline. The ring was found in Juliopolis Tomb No. 148, together with a denarius coin of Septimius Severus.
Bibliography/Analogies. Arslan 2013, p. 113, fig. 4; Spier 1992, p. 104, no. 256; Gesztelyi 2000, p. 54–55, no. 100; https://rpc.ashmus.ox.ac.uk/type/72550.

No. 13. Silver Ring with Jasper Gem Depicting Hermes, F 2 (Fig. 13a–b)
Museum of Anatolian Civilizations, inv. no. 12-63-11 (Juliopolis Tomb No. 148).
Dimensions. H. = 10.7 mm, w. = 7.6 mm, ring diam. = 18.7 mm.
Dating. 198–209 AD (Geta Caesar coin).
Description. The silver ring features a matte red jasper gem, oval-shaped with a flat surface, narrow at the top and wide at the base. It depicts Hermes standing in a three-quarter



Figure 11a–b. *Gold-Plated Iron Ring with Nicolo Gem Depicting Hermes from the İzmir Archaeology Museum, inv. no. 16116.*



Figure 12a–b. *Silver Ring with Carnelian Gem Depicting Hermes from the Museum of Anatolian Civilizations, inv. no. 12-61-11 (Juliopolis Tomb No. 148).*



Figure 13a–b. *Silver Ring with Jasper Gem Depicting Hermes from the Museum of Anatolian Civilizations, inv. no. 12-63-11 (Juliopolis Tomb No. 148).*

view, facing right; his body is slightly tilted to the right, his right leg is bent at the knee, drawn back and resting on his toes. He wears a winged hat (*petasos*) on his head and holds a money pouch (*marsupium*) in his left hand, and a *kerykeion* resting against his right arm along with a downward-hanging cloak (*khlamys*). The surface of the figure has been polished with white paint; the snakes on the *kerykeion* and the facial features are amateurishly executed; groundline. The ring was found in Juliopolis Tomb No. 148, together with a denarius coin of Geta Caesar.
Bibliography/Analogies. Gesztelyi 2000, p. 54, no. 99; Spier 1992, p. 104, no. 256.

No. 14. Bronze Ring with Jasper Gem Depicting Hermes, F 1 (Fig. 14a–b)
Museum of Anatolian Civilizations, inv. no. 52-25-12 (Juliopolis Tomb No. 394).
Dimensions. H. = 12.3 mm, w. = 8.7 mm, th. = 2.8 mm, ring diam. = 22.6 mm, ring height = 19.5 mm.
Dating. 2nd century AD (no coins found in the tomb).
Description. The bronze ring features a red jasper gem, oval-shaped with a flat surface. It depicts Hermes standing in a three-quarter view, with his head turned to the right. He wears a shawl-like cloak tied around his neck, which hangs over his chest to the back, wraps around his left arm, and extends to his right heel. His hairline is depicted as rounded curls that cover his ears and encircle his head. He wears winged sandals (*talaria*) on his feet, holds a winged *kerykeion* in his right hand, and a money pouch (*marsupium*) in his left hand. His weight is shifted onto his left leg, while his right leg is bent at the knee and rests on his toes; groundline. On this gem, which features high-quality engraving, Hermes holds the *kerykeion* held up and away from his body, unlike in most known examples where it is rested against the arm, and the phallus is depicted more prominently.
Bibliography/Analogies. Nardelli 2011, p. 131, pl. 4–5 (Mercury similar); Willers, Raselli-Nydegger 2003, p. 82, no. 36; Spier 1992, p. 104, no. 256 (similar); CBd-441.

No. 15. Jasper Ring Stone with Hermes, A 3 (Fig. 15a–b)
İzmir Archaeology Museum, inv. no. 2014/428(A).
Dimensions. H. = 8 mm, w. 12 mm, th. = 4 mm.
Dating. 2nd century AD.
Description: The red jasper gem is oval-shaped with a convex surface. In impression: Hermes standing in a three-quarter view, with his head turned left. He carries his weight on his right leg, while his left leg is bent at the knee and drawn back, resting on his toes. He wears a *petasos* on his head, holds a money pouch (*marsupium*) in his right hand, and a *kerykeion* resting against his arm with a hanging cloak (*khlamys*) in his left hand. There is a rooster on the ground; groundline.
Bibliography/Analogies. Hoey Middleton 2001, p. 28, no. 11; Spier 1992, p. 104, no. 254 (similar); Şenergüç 2026, p. 378, no. 251 (same gem).

No. 16. Iron Ring with Jasper Gem Depicting Hermes, F 2 (Fig. 16a–c)
Fethiye Museum, inv. no. 3176.
Dimensions. H. = 12 mm, w. = 10 mm, th. = 3 mm.
Dating. 2nd century AD.
Description. The iron ring has a hoop broken halfway. The red jasper gem is oval-shaped with a flat surface. In impression: Hermes standing, facing left, with his body in a three-quarter view. His weight is shifted onto his right leg, while his left leg is positioned back. He wears a *petasos* on his head, and his right hand is extended forward, either open-palmed or holding a *phiale* (?). With his left hand, he holds a *kerykeion* resting against his arm and a cloak (*khlamys*) draped around his arm. On the ground, at his feet, there is a creature or a libation vessel (?) on top of it; groundline. The altar does not appear to be flaming; rather, it seems as if a liquid is being poured onto it from an unidentified object. Furthermore, it appears that Hermes is not holding a money pouch. On this gem, Hermes' phallus is specifically highlighted, depicting him with ithyphallic characteristics.

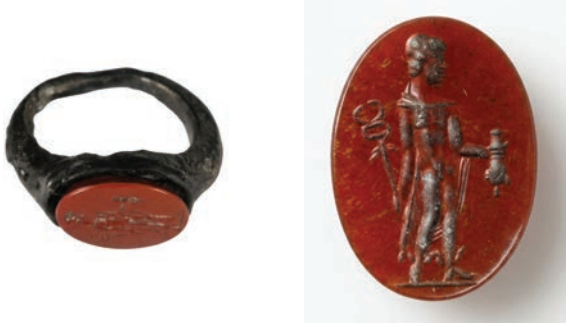


Figure 14a–b. *Bronze Ring with Jasper Gem Depicting Hermes from the Museum of Anatolian Civilizations, inv. no. 52-25-12 (Juliopolis Tomb No. 394).*



Figure 15a–b. *Jasper Ring Stone with Hermes from the İzmir Archaeology Museum, inv. no.2014/428(A).*



Figure 16a–c. *Iron Ring with Jasper Gem Depicting Hermes from the Fethiye Museum, inv. no. 3176.*



Figure 17a–c. *Silver Ring with Glass Ring Stone Depicting Hermes from the Uşak Museum, inv. no. 7.5.93.*

Bibliography/Analogies. LIMC V-II, Hermes 619; Laflı, Henig 2025, p. 207, no. 11; Şenergüç 2026, p. 477, no. 350 (same gem); Kulbay 2019, p. 47, no. 10 (same gem).

No. 17. Silver Ring with Glass Ring Stone Depicting Hermes, F 2 (Fig. 17a–c)
Uşak Museum, inv. no. 7.5.93.
Dimensions. H. = 12 mm, w. = 10 mm, ring diam. = 25 mm, ring height = 29 mm.
Dating. 2nd century AD.
Description. The silver ring features a blue-greenish glass ring stone, oval-shaped with a flat surface. In impression: Hermes standing, facing left, with his weight shifted onto his right leg, while his left leg is bent at the knee and drawn back. He wears a *petasos* on his head, and in his right hand, he is placing a money pouch (*marsupium*) onto a cylindrical altar in front of him. With his left hand, he holds a *kerykeion* resting against his arm and a hanging cloak (*khlamys*); groundline. There are chips and losses along the edges of the glass. The ring hoop is not original and must have been made in a later period.
Bibliography/Analogies. Şenergüç 2026, p. 482, no. 355 (same ring); LIMC V-II, Hermes no. 619; Evans 2019, p. 12, no. 18; Konuk, Arslan 2000, p. 87, no. 63 (without altar).



Figure 18a–b. *Glass Ring Stone with Hermes from the Uşak Museum, inv. no. 22.63.72.*

No. 18. Glass Ring Stone with Hermes, F 2 (Fig. 18a–b)
Uşak Museum, inv. no. 22.63.72.
Dimensions. H. = 13 mm, w. = 10 mm, th. = 3 mm.
Dating. 2nd century AD.
Description. The blue-green glass ring stone is oval-shaped with a flat surface. There are uncleaned casting burrs along the edges. In impression: Hermes standing in a three-quarter view, facing left, wearing a *petasos* (?). He holds a money pouch (*marsupium*) in his right hand, and a *kerykeion* resting against his shoulder and a hanging cloak (*khlamys*) in his left hand. There is a cylindrical altar on the ground; groundline. The bottom right corner of the glass is missing. Since the casting burrs on the edges have not been cleaned, it is likely that this piece was never set into a ring.

Bibliography/Analogies. LIMC V-II, Hermes 619; Şenergüç 2026, p. 270, no. 143 (same glass ring stone); Evans 2019, p. 12, no. 18; Konuk, Arslan 2000, p. 87, no. 63 (glass, without altar).

No. 19. Glass Ring Stone with Hermes, F 2 (Fig. 19a–b)
Uşak Museum, inv. no. 10.5.76.
Dimensions. H. = 11 mm, w. = 10 mm, th. = 3 mm.
Dating. 2nd–3rd century AD.
Description. The greenish glass ring stone is near-circular/oval-shaped with a flat surface. In impression: Hermes standing in a three-quarter view, facing left, with his weight shifted onto his right leg, while his left leg is bent at the knee and positioned back. He wears a *petasos* (?), holds a money pouch (*marsupium*) in his right hand, and a *kerykeion* resting against his arm and a hanging cloak (*khlamys*) in his left hand. The area below the ankles is not carved. The upper left edge of the glass is broken and missing. Furthermore, since the casting burrs along the edges have not been cleaned, it is understood that it was never set into a ring.
Bibliography/Analogies. Şenergüç 2026, p. 480, no. 353 (same glass ring stone); Evans 2019, p. 12, no. 17 (similar); Konuk, Arslan 2000, p. 87, no. 63 (similar).

No. 20. Glass Ring Stone with Hermes, F 2 (Fig. 20a–b)
Uşak Museum, inv. no. 22.57.72.
Dimensions. H. = 6 mm, w. = 5 mm, th. = 2 mm.
Dating. 2nd–3rd century AD.
Description. The greenish glass ring stone is oval-shaped with a flat surface. In impression: Hermes standing, his body in a three-quarter view, facing left. His weight is shifted onto his right leg, while his left leg is bent at the knee and drawn back. He wears a *petasos* (?), holds a money pouch (*marsupium*) in his right hand, and a *kerykeion* (?) resting against his arm and a hanging cloak (*khlamys*) in his left hand. There are casting burrs on the bottom surface.
Bibliography/Analogies. Şenergüç 2026, p. 480, no. 354 (same glass ring stone); Evans 2019, p. 12, no. 17 (similar); Konuk, Arslan 2000, p. 87, no. 63 (similar).

No. 21. Gold Ring with Carnelian Gem Depicting Hermes, F 2 (Fig. 21a–b)
Museum of Anatolian Civilizations, inv. no. 18404 (Case 7, no. 55).
Dimensions. H. = 13.1 mm, w. = 7.9 mm, ring diam. = 27.8 mm.
Dating. 2nd century AD.



Figure 19a–b. *Glass Ring Stone with Hermes from the Uşak Museum, inv. no. 10.5.76.*



Figure 20a–b. *Glass Ring Stone with Hermes from the Uşak Museum, inv. no. 22.57.72.*



Figure 21a–b. *Gold Ring with Carnelian Gem Depicting Hermes from the Museum of Anatolian Civilizations, inv. no. 18404.*



Figure 22a–b. *Silver Ring with Carnelian Gem Depicting Hermes from the Museum of Anatolian Civilizations, inv. no. 176-9-89.*

Description. The gold ring features a light reddish-orange, translucent carnelian gem, oval-shaped with a flat surface. It depicts Hermes standing in a three-quarter view, with his head turned to the left. He wears a *petasos* (?) on his head and winged boots (*talaria*) on his feet. He holds a money pouch (*marsupium*) in his right hand, and a *kerykeion* and a cloak (*khlamys*) draped around his arm in his left hand. The ground line is slanted to the left. Regarding the facial details, the lips and mouth are schematic, and the neck is carved thin.
Bibliography/Analogies. Konuk, Arslan 2000, p. 93, no. 69 (Sard similar); https://rpc.ashmus.ox.ac.uk/coins/4/4109 (Marcus Aurelius, Pessinus coin).

No. 22. Silver Ring with Carnelian Gem Depicting Hermes, F 3 (Fig. 22a–b)
Museum of Anatolian Civilizations, inv. no. 176-9-89 (Case 7, no. 56).
Dimensions. H. = 12.6 mm, w. = 10.5 mm, ring diam. = 22.3 mm.
Dating. 2nd century AD.
Description. The silver ring features an octagonal, translucent red carnelian gem, narrow at the top and wide at the base. It depicts Hermes standing in a three-quarter view, with his head turned to the left. He wears a *petasos* (?) on his head and winged boots (*talaria*) on his feet. He holds a money pouch (*marsupium*) in his right hand, and a *kerykeion* resting against his arm and a cloak (*khlamys*) in his left hand; groundline.
Bibliography/Analogies. Arslan, Delikan 2021, Pl. 3, fig. 9–9a; Henig, MacGregor 2004, p. 36, no. 1. 63; Spier 1992, p. 104, no. 256 (banded agate similar).



Figure 23a–b. *Jasper Ring Stone with Hermes from the Konya Archaeology Museum, inv. no.1482.4.4.*



Figure 24a–b. *Silver Ring with Carnelian Gem Depicting Hermes from the Museum of Anatolian Civilizations, inv. no. 2-898-64.*

No. 23. Jasper Ring Stone with Hermes, F 3 (Fig. 23a–b)
Konya Archaeology Museum, inv. no. 1482.4.4.
Dimensions. H. = 11 mm, w. = 8 mm, th. = 4 mm.
Dating. 3rd century AD.
Description. The red jasper gem is octagonal, narrow at the surface and wide at the base. In impression: Hermes standing in a three-quarter view, with his head turned to the right. He bends his right leg at the knee and extends it to the side, while his body weight is supported by his left leg. He wears a *petasos* on his head and winged sandals (*talaria*) on his feet. He holds a money pouch (*marsupium*) in his left hand, and a *kerykeion* resting against his arm and a cloak (*khlamys*) wrapped around his arm in his right hand. The facial details, body, and *kerykeion* are amateurishly executed, and the feet are not visible.
Bibliography/Analogies. Arslan, Delikan 2021, p. 44, pl. 5, Fig. 22; Kulbay 2019, p. 45, cat. no. 8; Henig, MacGregor 2004, p. 36, no. 1.63 (similar); Spier 1992, p. 104, no. 256 (banded agate similar); https://rpc.ashmus.ox.ac.uk/coins/4/5734.

No. 24. Silver Ring with Carnelian Gem Depicting Hermes, F 2 (Fig. 24a–b)
Museum of Anatolian Civilizations, inv. no. 2-898-64.
Dimensions. H. = 6.2 mm, w. = 5.1 mm, ring diam. = 15.4 mm.
Dating. 2nd–3rd century AD.
Description. The silver ring features a red, translucent carnelian gem, oval-shaped with a flat surface. It depicts Hermes walking to the left, with his body in a three-quarter view and his head turned to the left. His right leg is positioned back, and his left leg is stepped forward. He wears a winged hat (*petasos*) on his head, holds a money pouch (*marsupium*) in his right hand, and has a hanging cloak (*khlamys*) draped around his left arm. The *kerykeion* is not depicted. The ground line is slanted to the left. Body details and the face are rendered carelessly, and the money pouch is depicted as disproportionately large. Hermes' phallus is depicted as large, with ithyphallic characteristics.
Bibliography/Analogies. Konuk, Arslan 2000, p. 93, no. 69 (similar).

No. 25. Sard Ring Stone Depicting a Barbaric Hermes (?), A 3 (Fig. 25a–b)
Uşak Museum, inv. no. 21.5.90.
Dimensions. H. = 12 mm, w. = 10 mm, th. = 5 mm.
Dating. 2nd–3rd century AD.
Description. The orange gem with black veins (sard) is oval-shaped with a slightly convex surface. In impression: A barbaric, Hermes-like male figure stands frontally, with his head turned to the right. He wears a *tiara*-like headdress with a sharp, spur-like point at the top; wings cover his neck and face, and the front of the headdress

slopes down to his forehead. He wears trousers that end in bows below the knees. The area from the end of the trousers to the feet appears bare. The body is not naked but seems to be wearing a thin tunic. The barbaric figure holds a *kerykeion*-like staff in his right arm and a money pouch in his left hand. On the left side, beneath the drapery of the cloak (*khlamys*) hanging from his right arm, there is a round shield (?); groundline.
Bibliography/Analogies. Although Şenergüç has identified this figure, carved with stylized and amateurish craftsmanship, as Hermes, we think that while it evokes the syncretic dual-god type of Hermes/Ares, the *tiara*-style headdress and the trousers suggest it may be of Eastern, Parthian, or Sassanian origin. This figure is a significant finding as it may point to a new iconographic depiction. New type: Şenergüç 2026, p. 479, no. 352 (same gem).

No. 26. Chalcedony Ring Stone Depicting a Pantheistic Hermes/Ares or Hermes/Harpokrates (?), A 3 (Fig. 26a–b)
Fethiye Museum, inv. no. 3703.
Dimensions. H. = 13 mm, w. = 11 mm, th. = 3 mm.
Dating. 2nd–3rd century AD.
Description. The yellowish, transparent chalcedony ring stone is oval-shaped with a convex surface. In impression: Hermes/Ares figure stands in a three-quarter view, with the head turned to the right. A shawl/cloak wraps around his right shoulder, covering his private parts and draping from the back of his left shoulder over his elbow. He carries his weight on his right leg, while his left leg is bent at the knee and drawn slightly back, resting on his toes. He wears a helmet, and on the front of the helmet is an Egyptian crown or *polos* in the shape of a cobra snake. The Hermes-Ares composite deity leans on a spear with his right hand and holds a *kerykeion* in his extended left hand; groundline.
Bibliography/Analogies. In previous studies, this type has been identified by Kulbay as Satyr/Dionysos and by Şenergüç as a Hermes/Warrior/Ares (?). In our view, due to the cobra crown on his head, this new type could potentially be Hermes/Harpokrates. New type; Şenergüç 2026, p. 481, no. 354; Kulbay 2019, p. 63, no. 26 (same gem).

No. 27. Iron Ring with Jasper Gem Depicting Ares/Hermes, F 2 (Fig. 27a–c)
Uşak Museum, inv. no. 4.43.71.
Dimensions. H. = 16 mm, w. = 12 mm, ring diam. = 25 mm, band th. = 5 mm.
Dating. 2nd–3rd century AD.
Description. The iron ring features an oval-shaped, flat-surfaced red jasper gem. In impression: Ares/Hermes standing in a three-quarter view, with his head turned to the right. He wears a helmet, and in his right hand, he holds a *kerykeion* resting against his arm and a hanging cloak (*khlamys*). With his left hand, he is placing a wreath onto a



Figure 25a–b. *Sard Ring Stone Depicting a Barbaric Hermes (?) from the Uşak Museum, Inv. No: 21.5.90.*



Figure 26a–b. *Chalcedony Ring Stone Depicting a Pantheistic Hermes/Ares or Hermes/Harpokrates (?) from the Fethiye Museum, inv. no. 3703.*



Figure 27a–c. *Iron Ring with Jasper Gem Depicting Ares/Hermes from the Uşak Museum, inv. no.4.43.71.*

trophy tree (*Tropaion*) that stands upon a shield. The upper right edge of the gem is broken and missing.
Bibliography/Analogies. LIMC II-II Mars 245; Henig 2007, p. 101, no.77 (similar); Şenergüç 2026, p. 529, no. 402 (same ring).

No. 28. Bronze Ring with Agate Gem Depicting Hermes, F 2 (Fig. 28a–b)
Museum of Anatolian Civilizations, inv. no. 5-5-98 (Case 7, no. 57).
Dimensions. H. = 8.2 mm, w. = 6.5 mm, ring diam. = 19.8 mm.
Dating. 2nd–3rd century AD.
Description. The bronze ring features an oval-shaped, flat-surfaced agate gem with reddish-brown and yellow-white wavy bands. It depicts a clothed Hermes standing frontally, with his head turned to the right. He wears a *petasos* on his head, holds a money pouch (*marsupium*) in his left hand, and a *kerykeion* and a hanging cloak (*khlamys*) in his right hand.
Bibliography/Analogies. The figure is depicted as clothed, with visible garment drapery. Furthermore, the *kerykeion*, face, and neck are executed in a very naive and amateurish style. Konuk, Arslan 2000, p. 92, no. 68 (similar).

No. 29. Gold Ring with Jasper Gem Depicting Hermes, F 2 (Fig. 29a–b)
Museum of Anatolian Civilizations, inv. no. 47-5-12 (Juliopolis Grave No. 220).
Dimensions. H. = 8.6 mm, w. = 6.1 mm, ring diam. = 17.4 mm.
Dating. 117–138 AD (Hadrianic coin).
Description. The gold ring features an oval-shaped, flat-surfaced red jasper gem, which is narrow at the top and wide at the base. It depicts a clothed Hermes standing in a three-quarter view, with his head turned to the right. He wears a *petasos* (?) on his head and winged shoes (*talaria*) on his feet. He holds a *kerykeion* and a hanging cloak (*khlamys*) on his right arm, and a money pouch (*marsupium*) in his left hand. The ground line is slanted to the right. The craftsmanship of the gem is naive; the facial details, body, and *kerykeion* are executed in an amateurish manner. Because this ring, which shows late-period stylistic characteristics due to its naive and amateurish workmanship, was found in the Juliopolis necropolis alongside a *denarius* of Hadrian, it provides a precise date from the early 2nd century at the latest. Therefore, it serves as a valuable documentary piece for the chronology of glyptic engraving.
Bibliography/Analogies. New type; Arslan, Metin 2013, p. 28, fig. 1; CBd-441 (similar).

No. 30. Chalcedony Amulet Gem Depicting Seated Hermes, A 3 (Fig. 30)
Museum of Anatolian Civilizations, inv. no. 53-29-74 (Case 7, no. 53 a).
Dimensions. H. = 17.3 mm, w. = 13 mm, th. = 4.1 mm.
Dating. 1st–2nd century AD.
Description. The bluish-grey chalcedony gem is oval-shaped with a convex surface. It depicts Hermes sitting on a rock, facing right. He holds a money pouch (*marsupium*) in his left hand, and a *kerykeion* resting against his arm and a cloak (*khlamys*) in his right hand. His left leg braced against the rock behind him, and his right leg is placed forward. The left and upper edges of the gem are broken and missing. Due to the size of the gem's dimensions and its cutting style, we believe it was used as an amulet (talisman) worn around the neck for protective purposes.
Bibliography/Analogies. Mastrocinque 2017, p. 94, fig. 1a; Henig 2007, p. 99, no. 56; Gesztelyi 2000, p. 55, no. 105; Vollenweider 1984, p. 48, no. 66 (similar to just sitting on a rock); Richter 1956, p. 71, no. 288; CBd-3148; https://rpc.ashmus.ox.ac.uk/type/73823-73822; https://rpc.ashmus.ox.ac.uk/type/75051; https://rpc.ashmus.ox.ac.uk/coins/6/30381.



Figure 28a–b. *Bronze Ring with Agate Gem Depicting Hermes from the Museum of Anatolian Civilizations, inv. no. 5-5-98.*



Figure 29a–b. *Gold Ring with Jasper Gem Depicting Hermes from the Museum of Anatolian Civilizations, inv. no. 47-5-12 (Juliopolis Tomb No. 220).*



Figure 30. *Chalcedony Amulet Gem Depicting Seated Hermes from the Museum of Anatolian Civilizations, inv. no. 53-29-74.*

No. 31. Carnelian Amulet Gem Depicting Seated Hermes, F 5 (Fig. 31a–b)
Burdur Archaeology Museum, inv. no. K. 29-34-80.
Dimensions. H. = 15 mm, w. = 12 mm, th. = 3 mm.
Dating. 1st–2nd century AD.
Description. The red carnelian gem is near-circular/oval-shaped with a flat surface. In impression: Hermes sitting on a rock, his body in a three-quarter view, with his head turned to the right. He has placed his right foot on two stones stacked one above the other, while his left foot rests on the ground. He wears a *petasos* on his head, holds a winged *kerykeion* resting against his right arm and a cloak (*khlamys*), and rests his left hand on the rock. The left edge of the gem is broken and missing in three separate places. It is probable that this gem was also used as an amulet.
Bibliography/Analogies. Henig 1978, p. 20, no. 39; Henig 2007, p. 98, no. 54; Kulbay 2019, p. 45, no. 9 (same gem); Laflı, Henig 2025, p. 212–213, no. 20 (same gem); Şenergüç 2026, p. 559, no. 432 (same gem); https://rpc.ashmus.ox.ac.uk/coins/6/5882.

No. 32. White Chalcedony Amulet Depicting Hermes/Mercury crowning Harpokrates, F 5 (Fig. 32)
Museum of Anatolian Civilizations, inv. no. 50-2-74 (case 7, no. 53 b).
Dimensions. H. = 15.4 mm, w. = 13.4 mm, th. = 2.7 mm.
Dating. 2nd century AD.
Description. On the left, Hermes/Mercury stands, in slight *contrapposto*, facing the spectator's right. He wears what is conventionally known as a "lotus diadem" on his head, and holds the *kerykeion/caduceus* in the crook of his right arm, over which his *khlamys*/mantle is draped. With his left arm he offers a leafy crown to Harpokrates, who faces him. The naked Harpokrates standing on the right has brought his right hand to his lips and is making a sign of silence, holding a *cornucopia* and a cloak (*khlamys*) with hanging drapes on his left arm. The groundline is broken. Probably due to the protective and prosperity-bringing properties of the two deities on the gem, it was engraved in relief to be worn as an amulet necklace. The appearance of an elongated arm on Harpokrates, as if an addition was made to the end of his right arm, stems from a mistake by the gem engraver.
Bibliography/Analogies. Arslan *et alii* 2022, p. 98, no. 5, fig. 8; Arslan, Yeğin 2021, p. 130, pl. 4.1; Laflı, Henig 2025, p. 218, no. 26.

No. 33. Carnelian Gem Depicting Hermes and Isis-Tyche, F 2 (Fig. 33a–b)
İzmir Archaeology Museum, inv. no. 16474.
Dimensions. H. = 10 mm, w. = 7 mm, th. = 3 mm.
Dating. 2nd century AD.
Description. The yellowish carnelian gem with brown veins is oval-shaped, has a flat surface, and gradually widens from top to bottom. In impression: Hermes and Isis-Tyche stand side-by-side, facing each other. Hermes is on the left, his body facing front, with his head turned toward Isis-Tyche; he wears a *petasos* and holds a *kerykeion* and a cloak (*khlamys*) on his right arm, while crowning Isis-Tyche with a wreath held in his left hand. The pantheistic goddess Isis-Tyche is on the right side, wearing a long *chiton*; she wears an Isis crown, holds a ship's rudder in her right hand, and a *cornucopia* resting against her arm in her left hand. A ground line is separately present beneath the feet of both figures.
Bibliography/Analogies. We propose that the goddess identified as Tyche in Gamze Şenergüç's doctoral thesis be corrected to Isis-Tyche. The presence of the Isis crown on the head of Tyche is a proof that this goddess is the pantheistic Isis-Tyche. For the Isis crown, see: Arslan 2021, p. 422, fig. 7a (Isis) and Arslan, Yeğin 2021, p. 129, pl. 1.



Figure 31a–b. *Carnelian Amulet Gem Depicting Seated Hermes from the Burdur Archaeology Museum, inv. no. K. 29-34-80.*



Figure 32*. White Chalcedony Amulet Depicting Hermes/Mercury crowning Harpokrates from the Museum of Anatolian Civilizations, inv. no. 50-2-74.*



Figure 33a–b. *Carnelian Gem Depicting Hermes and Isis-Tyche from the İzmir Archaeology Museum, inv. no. 16474.*



***Figure 34**. Carnelian Ring Stone Depicting an Ibis from the Museum of Anatolian Civilizations, inv. no. 18854.*



***Figure 35**. Clay Seal Impression Depicting a Bust of Hermes from the Murat Uğurluer Collection, Gaziantep, inv. no. 28.*

For gems depicting pantheistic Isis/Tyche, see: Arslan, Yeğin 2022, p. 81–100. New type; Şenergüç 2026, p. 559, no. 432 (same gem); LIMC VIII-II Fortuna 131, 132, 133 (similar); British Museum inv. no. 1987, 0212. 147–148 (similar); Zwierlein-Diehl 2007, p. 192, no. 717 (similar); Spier 1992, p. 135, no. 369 (Heliotrope similar); Gülbay 2017, p. 206, Cat. no. 26 (Tyche similar); Laflı, Henig 2025, p. 217, no. 25 (similar).

No. 34. Carnelian Ring Stone Depicting an Ibis, A 3 (Fig. 34)
Museum of Anatolian Civilizations, inv. no. 18854 (Case 7, no. 54 g).
Dimensions. H. = 9.4 mm, w. = 7.7 mm, th. 3.5 mm.
Dating. 2nd century AD.
Description: The red, translucent carnelian gem is oval-shaped with a convex surface. It depicts an ibis walking to the left; it holds two poppy heads by their stems in its beak, and carries Hermes' attribute, the winged *kerykeion*, crossed over its back; groundline.
Bibliography/Analogies. Bonner 1951, p. 324, no. 14-Rev. (CBd-724); Michel 2001, p. 37–38, no. 57; Arslan, Yeğin 2021, p. 130, Pl. 5; Henig, MacGregor 2004, p. 111, no. 10.91.

No. 35. Clay Seal Impression Depicting a Bust of Hermes (Fig. 35)
Murat Uğurluer Collection, Gaziantep, inv. no. 28.
Dimensions. H. = 13.5 mm, w. = 11.5 mm, th. = 4 mm, seal impression diam. = 8 mm.
Dating. 2nd century AD.
Description: The impression features a draped bust of Hermes facing right, carrying a *kerykeion* on his shoulder. Traces of papyrus are visible on the reverse.
Bibliography/Analogies. Konuk, Arslan 2000, p. 230–233, no. 206–209; Doksanaltı, Sağlan 2008, p. 89, no. 28–29; https://rpc.ashmus.ox.ac.uk/type/73266 (Termessos coin obverse similar).

No. 36. Clay Seal Impression Depicting Hermes on a Ram (Fig. 36)
Murat Uğurluer Collection, Gaziantep, inv. no. 46.



***Figure 36.** Clay Seal Impression Depicting Hermes on a Ram from the Murat Uğurluer Collection, Gaziantep, inv. no. 46.*

Dimensions: H. = 12 mm, w. = 10 mm, th. = 3 mm, seal impression diam. 6 mm.
Dating. 2nd–3rd century AD.
Description. Hermes is depicted advancing to the right on a ram; he holds a *kerykeion* in his right arm and a money pouch (*marsupium*) in his extended left hand.
Bibliography/Analogies. Levick, Donaldson 2023, p. 95–96, no. 9 (red jasper similar); Walters 1926, p. 272, no. 2793 (The gold ring with a lapis lazuli imitation glass ring stone, inv. no. 1923,0401.419, in the British Museum collection is very similar).

CONCLUSION

In this study, a total of 36 artefacts, consisting of 34 gems and two clay *bullae*, were presented, 23 of which were compiled from museums in Ankara, private collections, and excavation finds. The remaining 13 artefacts were presented: four in Dolunay Kulbay's master's thesis covering the museums of Central and Western Anatolia[29] (Cat. nos. 16, 23, 26, 31) and 9 in Gamze Şenergüç's doctoral study on the museums of Western Anatolia[30] (Cat. nos. 11, 15, 17, 18, 19, 20, 25, 27, 33).

[29] Kulbay 2019.
[30] Şenergüç 2026.

The gems depicting Hermes included in the present study have introduced new types to ancient Anatolian gem iconography. Furthermore, the ring stones found together with *kharon* coins in the Juliopolis necropolis show that dating gems solely based on their engraving techniques is not always a reliable method. For example, the jasper gem with a gold hoop, Cat. no. 29, was found together with a Hadrianic *denarius* coin. The engraving technique of the gem is quite primitive and amateurish. However, the art of engraving was applied quite successfully in other gems dated to the Hadrianic period. Indeed, many researchers working in this field tend to date such gems with unqualified workmanship to much later periods using stylistic analysis methods. This example, unearthed together with a *kharon* coin in the Juliopolis necropolis, reveals that some unqualified engravings might have actually been produced at earlier dates. We think that such works were produced by relatively amateur craftsmen in provincial workshops to meet urgent needs.

Among the gems depicting Hermes, nine artefacts containing new iconographic features draw attention. Both the fact that Hermes is bearded and clothed in the İzmir Museum gem (Cat. no. 11) and the way he holds his attributes are unique. In the Fethiye Museum gem (Cat. no. 16), Hermes holding a *phiale* in his right hand, the presence of an altar on the ground with a libation vessel on the altar, and the ithyphallic depiction of the figure are innovative features. The pantheistic Ares/Hermes-like type wearing a *tiara*-type headdress in the Uşak Museum gem (Cat. no. 25); the *pantheistic* Hermes/Ares or Hermes/Harpokrates type in the Fethiye Museum gem (Cat. no. 26); the *pantheistic* Ares/Hermes combination in the Uşak Museum gem (Cat. no. 27); and the depiction of Hermes crowning Isis/Tyche in the İzmir Museum gem (Cat. no. 33) are entirely new iconographic types. Furthermore, the catalogue numbers 28 and 29 are noteworthy in terms of local Hermes characteristics. The depiction of Hermes on the back of a ram in the clay seal impression (Cat. no. 36) is quite a rare example.

The existence of these new types, which we have focused on above, brings significant richness to Hermes iconography and Anatolian glyptic art. Although we have made iconographic interpretations regarding the *pantheistic* types found in the gems numbered 25 and 26 in our catalogue, we would like to state that our views on these two artefacts may be re-evaluated or may differ in future studies.

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CONTRIBUȚII ARHEOLOGICE PRIVIND PERIOADA TIMPURIE A EPOCII MEDIEVALE ÎN NORDUL MUNTENIEI. O EVALUARE PRELIMINARĂ A LOCUIRII DE TIP IPOTEȘTI–CÂNDEȘTI DIN SITUL DE LA URLAȚI (PRAHOVA)

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Keywords: *Urlați, 5th–7th centuries AD, Ipotești–Cândești culture, dwellings, pottery, mould, relative and absolute chronology*
Abstract: *Archaeological investigations were conducted in the town of Urlați (Prahova) at a multi-layered site whose occupation begins in the Neolithic, continues through the Eneolithic, the Bronze Age, the 2nd–3rd centuries AD, the 5th–7th centuries AD, and extends to the end of the medieval period. A substantial body of information has been accumulated, partly disseminated in a series of scientific studies and archaeological reports. This article proposes an evaluation of the discoveries attributed to the 5th–7th centuries AD, belonging to the Ipotești–Cândești culture. Information regarding the investigated archaeological features and their inventories, as well as their relative and absolute chronology is presented. The archaeological research carried out at this site and its results are also placed within a regional context.*

Cuvinte-cheie: *Urlați, secolele V–VII d.Hr., cultura Ipotești–Cândești, locuințe, ceramică, tipar, cronologie relativă și absolută*
Rezumat: *În localitatea Urlați (Prahova) au fost realizate cercetări arheologice într-un sit pluristratificat cu o locuire care debutează în neolitic, traversează eneoliticul, epoca bronzului, secolele II–III d.Hr., secolele. V–VII d.Hr. și atinge sfârșitul perioadei medievale. S-a acumulat un volum consistent de informații, parțial diseminate într-o serie de studii științifice sau rapoarte arheologice. În acest articol propunem o evaluare a descoperirilor atribuite culturii Ipotești–Cândești și încadrate în secolele V–VII d.Hr. Sunt prezentate informații privind complexele arheologice cercetate, inventarul acestora și cronologia relativă și absolută. De asemenea, sunt așezate într-un context regional cercetările arheologice din situl menționat și rezultatele acestora.*

INTRODUCERE

Localitatea Urlați este situată în zona central-nordică a Munteniei, la contactul dintre Câmpia Română și zona deluroasă (masivul Dealul Mare – Istrița), fiind traversată de râul Cricovul Sărat (Fig. 1/1). Situl arheologic de la Urlați – *La Câmp/La Islaz* se află în imediata apropiere a islazului localității și la sud de liceul Brâncoveanu Vodă. Este amplasat pe un martor de terasă, care are forma unei fâșii triunghiulare cu vârful ascuțit orientat spre VSV și cu baza la ENE. Această formă naturală de teren are lungimea de peste 450 m (ENE–VSV) și lățimea maximă de cca 270 m (NVN-SES) (Pl. II/2). Martorul de terasă este situat la 132 m altitudine, iar înălțimea sa maximă, raportată la lunca din imediata apropiere, este de aproape 3 m. Este limitat spre nord și vest de o zonă mlăștinoasă, cu o vegetație specifică. Situl se află lângă o sursă secundară de apă dulce, preluată de către râul Cricovul Sărat, care curge la circa 900 m vest. Izvoare locale alimentează un areal relativ întins (Fig. 1; Pl. II/3), controlat prin canale artificiale de dirijare a apei, amenajate în perioada regimului comunist (Pl. I/3)[1].

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Săpătura arheologică în acest sit a fost derulată în două etape, respectiv 2004–2006 și 2013–2025. În prima etapă, situl a fost doar sondat, scopul principal fiind stabilirea potențialului acestuia în vederea programării unei cercetări arheologice sistematice[2]. Săpăturile au fost reluate în anul 2013, fiind transformate în unele sistematice[3]. Cercetarea a acoperit o suprafață care traversează situl pe o lățime maximă de 25 m și pe o lungime care atinge maximum 83 m (suficientă cât să suprapună parțial albia colmatată a izvoarelor/pârâului aflat la nord). În urma săpăturilor arheologice, suprafața acoperită de cercetări a ajuns să fie de aproximativ 2000 mp (Pl. II/1–2).

Fără să fie unitară pe toată întinderea sitului, stratigrafia arheologică este următoarea: după 0,20–0,25 m de sol afectat de arătură, cu materiale arheologice aflate în poziție secundară, urmează o depunere negricioasă groasă de circa 0,40 m, în zona centrală (spre margini se subțiază și/sau dispare cu totul). În acest strat au fost descoperite materiale/complexe arheologice specifice secolelor XVI–XVII/XVIII, V–VII, II–III, epocii bronzului (culturile Tei și materiale Monteoru) și celei eneolitice (cultura Gumelnița). Urmează un strat argilos, de culoare gălbuie, gros de maximum 10 cm, care suprapune o locuire aproape insesizabilă pe profilurile secțiunilor, atribuită epocii

[1] Frînculeasa 2024, p. 215.

[2] Andreescu *et alii* 2007; Frînculeasa *et alii* 2018, p. 238.

[3] Frînculeasa 2024.



Figura 1. *1. Imaginea panoramică a zonei în care se află situl (săgeată roșie) de la Urlați (foto O. Negrea); 2–3. situl arheologic de la Urlați văzut dinspre vest-sud-vest (foto A. Frînculeasa).*

Figure 1. *1. Panoramic view of the area where the Urlați site is located (red arrow) (photo O. Negrea); 2–3. the archaeological site at Urlați seen from the west–southwest (photo A. Frînculeasa).*

neolitice timpurii (cultura Starčevo–Criș). De la suprafață a fost recuperat un ciob tipic pentru cultura Boian–Giulești[4].

DESPRE LOCUIREA IPOTEȘTI–CÂNDEȘTI

În nivelul arheologic datând din perioada medieval-timpurie au fost descoperite cinci locuințe adâncite și două gropi de extragere a lutului sau de provizii[5]. Locuințele au fost descoperite răsfirate pe toată suprafața cercetată (Pl. II/1). Toate au formă rectangulară, dar, din perspectiva dimensiunilor/suprafețelor acestora, pot fi incluse în două grupe distincte: aproximativ 7,5 mp pentru trei complexe și cca 15 mp pentru celelalte două. Adâncimea gropilor săpate pentru amenajarea podelelor acestor locuințe diferă: de exemplu, B.10 nu se adâncește mai mult de 0,25 m în stratul gălbui natural (coboară până spre -0,50 m față de nivelul actual), în timp ce B.5 și B.6 ajung până la -0,95–1,10 m (față de același reper). Locuințele au cuptoare realizate în calupuri de lut rezervate într-un colț (SE și NE), într-un singur caz cu spațiu săpat separat de pereții/groapa locuinței (B.6). În cazul B.5, cuptorul avea două faze de construcție, rezultate prin refacerea pe un alt amplasament a celui inițial (Pl. V/7). Deși cuptoarele sunt realizate în calupuri de lut, în structura lor au fost folosite și pietre, iar cel din B.5 (faza a II-a) ar putea fi considerat un *pietrar*. În cazul locuinței B.7, spațiul dedicat amenajării cuptorului fusese rezervat, dar acesta nu a mai fost finalizat/săpat (Pl. X). În ceea ce privește B.10, cuptorul era realizat într-un calup de lut care avea formă dreptunghiulară, dar nu a fost săpat în partea centrală a acestuia, ci spre margine, într-un colț aflat lângă peretele sudic (Pl. XII/9).

[4] Frînculeasa 2024, p. 216.

[5] Frînculeasa, Negrea 2023; Frînculeasa 2024.

În locuințe am identificat urmele unor gropi de par și traseele/amprentele unor tălpi de lemn pentru fixarea suprastructurii. În trei locuințe existau gropi dispuse în fața cuptorului sau ceva mai depărtat de acesta, în care se aflau amestecate pietre, ceramică, lemn ars și oase de mamifere (Pl. VI/8–9; IX/5–6). Observăm și o adaptare la morfologia terenului în cazul locuințelor amenajate spre marginile terasei, unde aceasta prezintă o pantă mai accentuată spre sud sau mai lină spre nord. Podeaua este orizontală, dar adâncimea raportată la terenul din exterior este diferită în funcție de direcția pantei.

În ceea ce privește inventarul acestor complexe, se remarcă B.10, care, după abandonarea sa, pare să fi funcționat ca groapă menajeră: cantitatea de ceramică (nr. cioburi = 292), precum și oasele de mamifere (28) recuperate sunt net superioare celorlalte bordeie. De exemplu, în B.7 au fost descoperite 35 de cioburi, dintre care numai 16 pot fi atribuite secolelor V–VII d.Hr. (7 NME[6]), iar în B.7 resturi de la două vase (bazele acestora) și o buză de oală, deci nu mai mult de 15 cioburi (3 NME). Pentru B.6 am numărat 59 de cioburi (7–8 NME), iar din B.5 provin 166, plus resturi de la un vas întregibil (12 fragmente). Dintre aceste cioburi, 18 provin din pietrar și două dintr-o groapă aflată în fața aceleiași structuri de combustie. Spre deosebire de B.10, în care ceramica și oasele au provenit din umplutură și din cuptor, cele din B.5 au fost descoperite mai ales pe podeaua locuinței (Pl. VI/2–7), în structura pietrarului sau în gropi săpate în interiorul acesteia. Au fost descoperite puține oase de mamifere în aceste complexe, excepția fiind B.10, situație deja menționată.

DESCRIEREA COMPLEXELOR ARHEOLOGICE CERCETATE

Locuința B.5 avea dimensiuni maxime de 4,4 × 3,6 m (Pl. III; VI/11, 13). Cuptorul se află în colțul de SE, cu două faze de construcție. Inițial, cuptorul a fost amenajat într-un calup rezervat. Ulterior, acesta a fost demontat (a fost păstrată latura de nord, înglobată în pietrar), în locul său fiind ridicat un *pietrar* (0,90 × 0,70 m), construit mai aproape de colțul de SE al locuinței. Gura de acces a pietrarului era spre SSV. Baza/vatra era mozaicată datorită arderii intense, iar pereții erau verticali (Pl. V). Cu excepția pietrelor dinspre colțul de SE, care aveau dimensiuni de circa 0,10–0,15 m înălțime, așezate vertical pe marginea lor, celelalte erau mai mici, cu forme neregulate. Grosimea vetrei era de cca 1–2 cm, iar arsura de 3–5 cm. În interiorul locuinței au fost descoperite mai multe gropi de par, dar și amprenta (ușor îngropată) a unor bârne ce făceau parte din structura de lemn a construcției/bârne (tălpi). Pe latura de NV au fost descoperite trei gropi, iar pe cea de SE un număr similar. Acestea se adânceau de la baza bordeiului până la -0,5 m. Inițial, aveau formă circulară, apoi, după 10 cm adâncime, deveneau dreptunghiulare în plan, cu profil în U (Pl. IV). La sud-vest de cuptor, la 0,65 m de acesta, a fost descoperită o groapă ovală (0,55 × 0,35 m), cu pereții oblici, adâncă de circa 0,25 m. În interiorul acesteia se aflau pietre, lemn ars, cenușă, dar și câteva fragmente ceramice (Pl. IV/1–2; VI/8–9). În fața cuptorului apar numeroase gropițe (diam.= 5–6 cm), puțin adânci (2–3 cm), care ar putea să reprezinte urmele lăsate de picioarele unui scăunel mutat/reașezat frecvent (Pl. IV/1–2, 5; VI/11). Pe podeaua bordeiului au fost descoperite numeroase pietre provenite din distrugerea pietrarului sau, posibil, prăbușite de pe acoperiș (întinse pe mare parte din suprafața locuinței) (Pl. VI/1). De asemenea, au fost recuperate multe fragmente ceramice (de la cel puțin 15 vase) (Pl. VI/1–7), toate lucrate cu mâna, singura formă consemnată fiind cea de borcan (Pl. XIV–XVII). Pentru unul dintre vase a putut fi reconstituită forma întreagă și a fost parțial restaurat (Pl. XVI/1). Fragmente ceramice erau prezente și în cuptor, inclusiv prinse în calup. Din această locuință provine și o piesă (sârmă de bronz), fără să poată fi precizată funcționalitatea acesteia (Fig. 4/1).

Locuința B.6 avea dimensiuni maxime de 3,50 × 3,30 m. Deoarece terenul era într-o ușoară pantă, baza locuinței ajungea la -0,95 m spre N și -0,55 m spre S (Pl. VII; VIII; IX/8). Cuptorul era săpat într-un calup de lut rezervat (dimensiuni de 1 × 0,90 m), dispus în colțul de NE al construcției. Calupul se păstra pe o înălțime de 0,50–0,55 m. Cavitatea cuptorului propriu-zis avea cca 0,60 × 0,50 m, iar la gura acestuia vatra continua 10–12 cm spre interiorul bordeiului (Pl. VIII). Vatra era mozaicată datorită arderii intense, iar pereții cuptorului erau verticali până în apropierea cupolei. Grosimea vetrei era de circa 1–2 cm, iar arsura de 3–5 cm. În cuptor, dar și în dărâmăturile acestuia, au fost descoperite fragmente de la două vase lucrate la mână și numeroase pietre. Au fost identificate mai multe gropi de par cu diametre de 0,20–0,35 m, puțin adânci (0,8–0,15 m), care făceau parte din structura construcției. În zona de sud a bordeiului a fost descoperită o groapă ovală (0,50 × 0,40 m) cu pereții oblici (adâncă de maximum 0,20 m), pe fundul căreia se aflau cinci pietre, cenușă și lemn ars (Pl. IX/5–6). În locuință au fost descoperite fragmente ceramice lucrate exclusiv cu mâna (Pl. XVIII; XIX/1–6).

Locuința B.7 avea dimensiuni de aproximativ 2,7 × 2,3 m; baza se afla la -0,62 - 0,67 m (față de nivelul actual de călcare); spațiul rezervat pentru cuptor era dispus în colțul de SE, dar cuptorul încă nu fusese amenajat; zona rezervată cuptorului avea 0,75 × 0,55 m (Pl. X). În umplutura complexului au fost descoperite câteva fragmente ceramice foarte mărunte, toate lucrate la mână (Pl. XIX/6–9).

Locuința B.10 avea dimensiuni de 2,7 × 2,6 m, un cuptor săpat în calup rezervat (0,9 × 0,7 m), dispus în colțul de ESE al locuinței (Pl. XI–XII). Cuptorul avea dimensiuni reduse de circa 0,7 × 0,5 m; spre limita estică a acestuia am surprins păstrată parțial gaura de evacuare a fumului, dispusă vertical în partea superioară a calotei (pereții erau fățuiți) (Pl. XII/1–6). Pe latura de SSV se afla o groapă de par (diam.= 0,30 m) (Pl. XII/7–8). Complexul a avut un inventar ceramic bogat (remarcăm o tipsie, un vas cu cioc de scurgere), descoperit inclusiv în umplutura cuptorului

[6] Număr Minim de Exemplare.

(Pl. XX–XXVI). Tot în cuptor se aflau și pietre arse. Din această locuință provin o piesă din metal (fier), o închizătoare de geantă purtată la centură sau amnar (Fig. 4/2–3), precum și un fragment de tipar pentru turnat piese din metal (Pl. XXVIII).

Locuința B.13 era orientată NNV–SSE, avea dimensiuni de 2,40 × 2,20 m, iar baza se afla la -0,40–0,45 m (Pl. XIII). Cuptorul cotlonit în calup rezervat era dispus în colțul de SE al locuinței și avea 0,60 × 0,40 m; vatra acestuia era mozaicată și avea formă ovală (Pl. XIII/4–6). În umplutură (Pl. XIII/5), dar și în fața cuptorului se aflau pietre, care erau arse. În locuință, am identificat o groapă circulară (diam.= 0,50 m, adâncime = 0,20 m), săpată spre marginea vestică a acesteia, cu umplutură de culoare negricioasă (Pl. XIII/3–4); în partea superioară a gropii am descoperit resturile unui vas lucrat cu mâna (baza vasului), dar și o buză (Pl. XXVII/2–4, 6). Ceva mai jos se aflau o buză de la un vas borcan, un os de mamifer (astragal), dar și fragmente ceramice cu nisip în pastă, dintre care una decorată cu brâu pe buză (epoca bronzului). Din aceeași zonă a fost prelevată baza unui alt vas lucrat cu mâna (Pl. XXVII/1, 5).

Menționăm și o groapă descoperită în S.IX, carourile 16–17. Avea umplutură negricioasă și dimensiuni de cca 1 × 0,6 m (intra în profilul vestic al secțiunii), atingând adâncimea de 1,45 m. În umplutură am descoperit câteva fragmente ceramice lucrate la mână, specifice culturii Ipotești–Cândești. Alte gropi au fost descoperite în interiorul locuințelor, în inventarul cărora au fost găsite pietre, oase de mamifere, lemn ars și/sau fragmente ceramice.

MATERIALE ARHEOLOGICE. ELEMENTE DE CRONOLOGIE RELATIVĂ

A. Ceramica reprezintă principala categorie de material arheologic descoperit în așezarea de la Urlați (Pl. XIV–XXVI). Provine din umplutura locuințelor (inclusiv din cuptoare sau din structura acestora), din gropi aflate în interiorul acestora sau săpate pentru a se extrage lut. Numai patru cioburi au fost descoperite în strat (două din zona gurii și două funduri de vase) (Pl. XXVI/7–11). Distribuția ceramicii în complexele arheologice nu este una uniformă, există locuințe cu material numeros (B.5, B.6, B.10), dar și altele din care provine un număr restrâns de fragmente (B.7, B.13).

Cu excepția unui singur fragment ceramic lucrat la roată înceată (Pl. XIX/6–7), materialul ceramic este realizat cu mâna, rudimentar și utilitar. Aceste caracteristici pot fi observate atât din asimetria pereților vaselor, cât și din faptul că multe dintre acestea păstrează urmele degetelor ce au modelat respectivele recipiente. Cea mai mare parte a ceramicii este arsă secundar.

Pe baza observațiilor microscopice (Fig. 2)[7], dar și macroscopice, pasta vaselor poate fi clasificată în trei categorii: **a.** pastă cu ceramică pisată în compoziție; **b.** pastă mixtă, care prezintă în compoziție atât pietriș fin, cât și ceramică pisată; **c.** pastă ceramică degresată cu pietriș fin. Exceptând degresantul din compoziție, toate categoriile ceramice menționate cunosc mai multe asemănări decât deosebiri. Astfel, cele trei categorii prezintă o matrice poroasă și un nivel de sinterizare scăzut[8]. Toate cele trei categorii prezintă în compoziție nisip fin, cu mică. Prima excepție de la aceste trei categorii este pasta tipsiei, aceasta fiind cea mai grosieră, cu o matrice deosebit de poroasă și cu o sinterizare foarte slabă, ce prezintă ca degresant exclusiv pietrișul fin foarte slab sortat (Fig. 2/5). A doua excepție este o pastă fină degresată cu nisip fin sau calcar (particule observabile doar prin mărire optică). Aceasta este arsă oxidant, matricea este mai puțin poroasă (se pot observa cavități sub 1 mm în pastă), dar sinterizarea este bună (am numit-o „pasta X"). Ultima excepție, atât din punct de vedere tehnic, cât și din punct de vedere al speciei, este fragmentul realizat folosind roata înceată. Acesta prezintă pietriș fin ca degresant; matricea este foarte poroasă, iar nivelul de sinterizare este slab. Arderea este necontrolată, dat fiind faptul că exteriorul este ars oxidant, iar nucleul fragmentului prezintă caracteristicile arderii reducătoare, dar incomplete. Compoziția pastei și modul de modelare a acestui fragment ceramic nu diferă de cea a vaselor modelate manual, cu pastă degresată cu pietriș.

Fragmentele aparținând celor trei tipuri de pastă prezintă atât ardere reducătoare, cât și oxidantă. Există inclusiv câteva exemple de fragmente care prezintă un nucleu ars incomplet, fețele înfățișând oxidare. Acest fapt sugerează o ardere necontrolată[9]. Fragmentul de vas cu cioc pentru turnare face parte din specia de pastă degresată exclusiv cu ceramică pisată. Semnalăm prezența unor zgârieturi asemănătoare inciziilor, care, de fapt, sunt urme lăsate de particulele de degresant agățate în timpul netezirii suprafeței vasului anterior arderii (Pl. XVII/3–4). Decorul este, în general, foarte rar prezent pe suprafețele vaselor lucrate cu mâna[10]. Din punct de vedere al calității și mai ales în comparație cu ceramica epocilor clasice, literatura a vehiculat termenul „ultra-grosier"[11]. În cazul ceramicii de la Urlați, se poate observa încă o ușoară diferențiere; categoria care are în pastă doar ceramică pisată tinde să fie relativ superioară calitativ.

Ceramica, deși este reprezentată de un lot relativ bogat, este foarte fragmentată; un singur vas păstrează segmente suficiente pentru a fi restaurat (Pl. XIV/1). Și în cazul altor câteva vase, prin desen, am reușit să le reconstituim forma în întregime (Pl. XX/1, 5; XXII/1). Câteva elemente trebuie menționate, cum ar fi stadiul cercetării

[7] Aparat utilizat: Microscop AF4515T-FUW, 1.3MP, 20-220x 8 LED-uri (4x alb, 4x UV), 30 fps, USB 2.0.

[8] Pentru o altă abordare privind pasta ceramicii culturii Ipotești–Cândești, a se vedea Negru *et alii* 2009.

[9] Teodor 2009, p. 151; Teodor 1996, p. 54–55, 58. D. Gh. Teodor vorbește despre ceramică lucrată manual și arsă în cuptoare unicamerale sau chiar în instalațiile de încălzire din locuințe (Teodor 2005a). Vezi și Teodor 2001 (https://esteo.ro/TTW/Vol_1/v1_s1/3_a10.htm)

[10] Teodor 2001 - https://esteo.ro/TTW/Vol_1/v1_s4/12_3clm.htm (despre decorul vaselor lucrate cu mâna).

[11] Teodor 2009, p. 151.

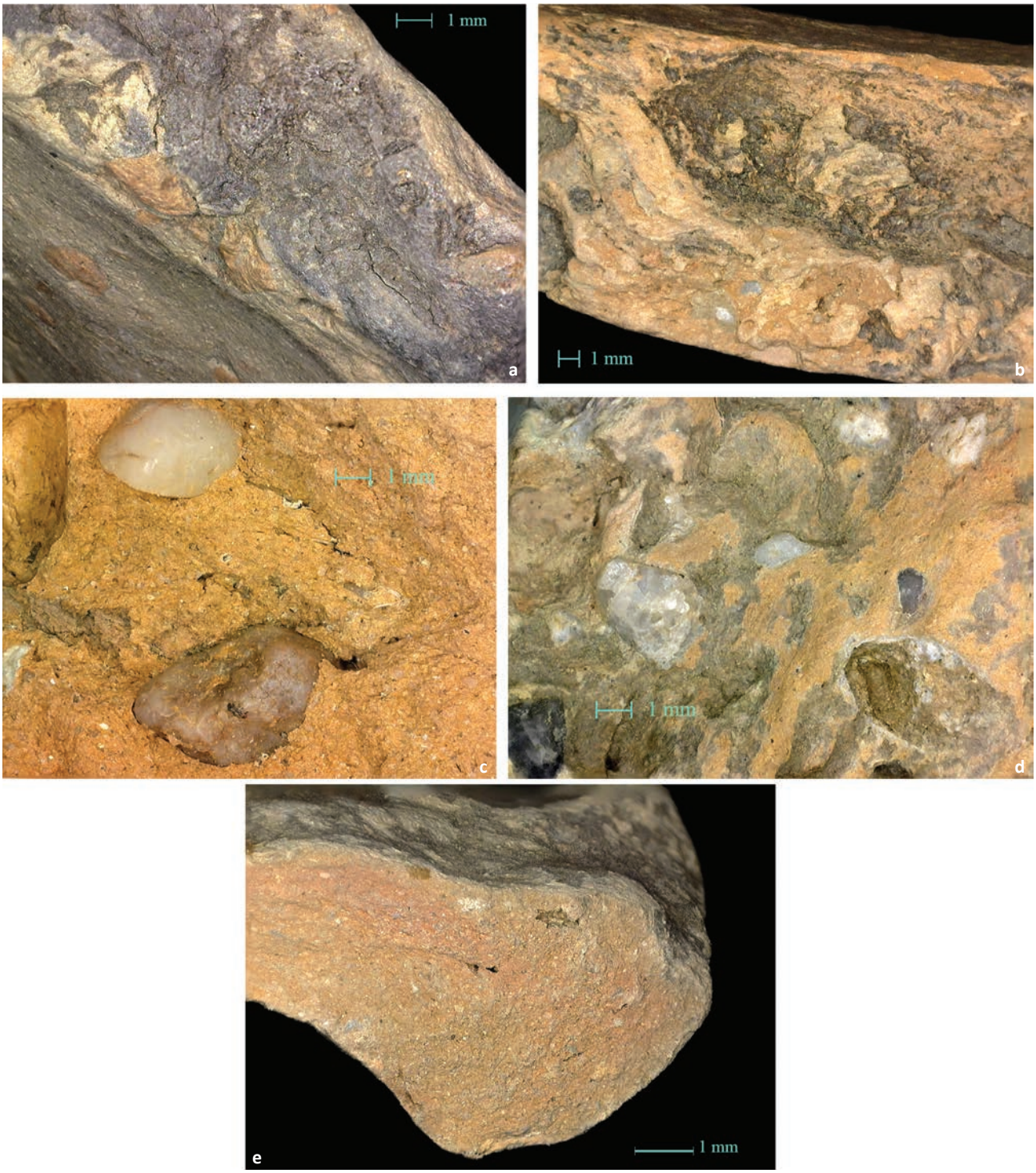


Figura 2. *Detalii microscopice asupra pastei ceramicii de la Urlați (a. pastă șamotă, b. pastă mixtă, c. pastă pietriș, d. pastă tipsie, e. pastă X).*

Figure 2. *Microscopic details of the ceramic paste from Urlați (a. chamotte paste, b. mixed paste, c. gravel paste, d. tray paste, e. paste X).*

așezării de la Urlați, fragmentaritatea excesivă a ceramicii, faptul că este lucrată exclusiv cu mâna, caracterul mai curând asimetric al unor pereți, lipsa unei standardizări și neregularități, caracteristici semnalate deja[12]. Toate aceste elemente fac ca discuția în jurul tipologiei și analogiilor să fie abordată sub rezerva acestor limite. Prin urmare, nu ne-am propus în acest stadiu al publicării să realizăm clasificări care să urmărească anumite criterii prestabilite.

Pentru o interpretare a tipologiei ceramicii întâlnite în situl de la Urlați (Fig. 3), am apelat la comparația publicată de

[12] Teodor 2009; Stanciu 2011.



***Figura 3**. Reconstituirea formelor ceramice prezente în situl de la Urlați (cu marcaje necesare pentru analogii cu E. S. Teodor 2005).*

***Figure 3.** Reconstruction of ceramic forms present at the Urlați site (with markings required for analogies with Teodor 2005).*

E. S. Teodor[13] dintre formele aparținând grupurilor morfologice ale *ceramicii slave* și a *celei din Valahia* (moștenind caracteristici aparținând ceramicii din epocile anterioare). Astfel, clasificarea tipologică a vaselor de la Urlați face trimitere la cea mai apropiată formă din comparația conținută în articolul anterior menționat. Pe fiecare formă apare numele grupului din figură (primul rând), numărul de specimene al grupului (cu rol pur orientativ în cazul nostru), capacitatea vasului (la fel, cu rol pur orientativ) și, în final, figura din articolul lui E. S. Teodor în care se poate găsi analogia. Astfel, avem 18 analogii pentru formele din figura 7 („*slavic pottery*") și șase analogii pentru figura 8 („pottery from assemblages in Wallachia").

Forma predominantă este cea de vas-borcan/oală (de la dimensiuni mici și medii spre cele mari). Există vase-borcan care au corpul zvelt (un procent restrâns) și altele ceva mai robuste, cu pereții arcuiți (ovoidali sau sferoidali), cu diametrul mai mare, umăr pronunțat sau ceva mai lin/puțin accentuat (Fig. 3). Unul dintre vase are o formă cilindrică (zveltă) (Fig. 3/?), cu buza rotunjită în interior. Această formă nu o regăsim la E. S. Teodor[14], dar seamănă cu cea a unui vas descoperit în situl de la Zalău – *Bulevardul Mihai Viteazul, nr. 104–106*[15]. Buzele acestor vase sunt răsfrânte spre exterior, drepte sau teșite. Baza este profilată sau curbată lin spre interiorul vasului. Sunt lipsite de decor, urmele unor zgârieturi/incizii neregulate fiind singurele elemente care pot fi amintite. Unul dintre vase are o perforație pe corp, dispusă mai jos de umăr (Pl. XXVI/7–8). Vasul-borcan/oală, cu origini anterioare, este specific orizontului cronologic analizat, fiind cunoscut în toate siturile cercetate atribuite culturii Ipotești–Cândești[16].

[13] Teodor 2005.

[14] Teodor 2009, fig. 21–22.

[15] Stanciu 2011, pl. 142/10.

[16] Teodorescu 1964; 1970; Teodor 2005; 2009; Stanciu 2011; Frînculeasa *et alii* 2011.

Alături de vasele-borcan, am descoperit și o tipsie în umplutura complexului B.10 (Pl. II/1; XXV/7). Aceste vase sunt lucrate cu mâna, au pereții scunzi (0,8–3,3 cm) perpendiculari pe bază sau ușor oblici. Tipsiile sunt apariții frecvente în aceste așezări, considerate de către unii cercetători piese „emblematice" pentru cultura slavă; ele sunt bine atestate în a doua parte a secolului al VI-lea d.Hr.[17] și sunt întâlnite și în secolele VII–IX d.Hr.[18]. Tipsiile au fost datate în bazinul Dunării de Jos nu mai devreme de secolul al VI-lea d.Hr.[19]. Între cele mai timpurii descoperiri de tipsii de pe teritoriul României cunoaștem locuința 13 de la Botoșana (*terminus post quem* dat de o monedă de bronz cu efigia împăratului Iustinian I datată în intervalul 527–538)[20], locuințele 72 și 75 de la Davideni (prima locuință a fost datată pe baza analogiilor fibulei în a doua treime a secolului al VI-lea d.Hr., iar cea de-a doua, tot pe baza analogiei fibulei, în a doua jumătate a secolului al VI-lea)[21]. Atestările continuă în secolul al VII-lea[22], dar nu mai sunt prezente de la sfârșitul acestuia și în perioada următoare[23]. Din apropierea sitului de la Urlați cunoaștem acest tip de vas la Budureasca[24], Târgșoru Vechi[25], Șirna[26] sau Belciug[27]. În ultimul sit menționat au fost descoperite fragmente de tipsii provenind de la un număr de 12 exemplare[28].

Evidențiem prezența unor fragmente de la trei recipiente cu forme și caracteristici mai rare pentru contextul cultural analizat. Unul este prevăzut cu un cioc de scurgere modelat din buză, iar două au forma de castron. Vasul prevăzut cu un cioc de scurgere modelat din buză este o apariție excepțională (Pl. XXII/2–3; XXVI/1–6). Două vase cu ciocuri de scurgere atribuite aceleiași perioade, considerate creuzete, provin din așezarea de la Băleni[29]. Un alt creuzet cu cioc provine de la Șirna[30]. Din cimitirul de incinerație (M.14/1952) de la Sărata Monteoru provin 8 păhărele conic-piramidale, cu gura trilobată (fără oase în ele)[31]. Tot vas trilobat este și cel de la Băneasa, considerat creuzet[32]. În ce privește vasul de la Urlați, dimensiunile sale, pereții subțiri și forma îl fac diferit; în același timp, funcționalitatea sa nu poate fi aceea de creuzet în care să fie topit metal, deși nu putem exclude utilizarea acestuia în metalurgie. Vase cu cioc apar și în mediul avar[33], dar cu forme (ulcioare/căni) și caracteristici tehnologice diferite de cel de la Urlați și au fost datate între a doua jumătate a secolului al VI-lea și începutul secolului al VII-lea[34]. Fragmente de castroane provin din situl de la Belciug[35].

Ceramica întâlnită este, în proporții covârșitoare, lucrată cu mâna, degresată cu pietriș fin și ceramică pisată și arsă în medii necontrolate. Conform caracteristicilor tehnologice constatate, putem plasa situl de la Urlați în perioada contemporană culturilor Ipotești–Cândești[36], Costișa–Botoșana–Hansca[37], cu orizontul Lazuri–Pișcolt[38], Praga–Korchak[39] și Penkovka[40].

B. Piese de metal. Piesa de fier provenită din B.10 este corodată, are formă alungită, capetele rotunjite spre interior și este plată în secțiune (L = 8,5 cm, l max. = 1,4 cm, grs. = 0,3 cm). Secțiunea este rectangulară, cu marginile rotunjite (Fig. 4/2–3). Pentru o lungă perioadă, astfel de piese au fost considerate amnare. În același timp, ar putea reprezenta o închizătoare de geantă, purtată la centură[41]. Realizat dintr-o singură bucată de metal feros, obiectul este dispus orizontal cu două terminații rotunjite și cu două protuberanțe fragmentare în mijloc, care formau un locaș de agățare directă sau prin intermediul unei piese care făcea legătura cu o cataramă (Fig. 4/B).

Obiectul cel mai apropiat de cel de la Urlați provine din zona Ungariei actuale, din necropola de la Kiszombor, respectiv din M.335. A fost identificat ca amnar, cu dimensiuni de 9 cm lungime și 1 cm lățime (este puternic corodat), iar terminațiile, aparent rotunjite, și agățătoarea sunt similare cu cea de la Urlați[42]. O altă analogie parțială apare și în cazul M.148, sub forma unui obiect de metal notat ca amnar, cu lungimea de 11 cm (terminațiile sunt mai evazate și mai puțin rotunjite, mai mici, iar agățătoarea este puternic corodată, pare mai mult o apucătoare)[43]. Cimitirul este datat între sfârșitul secolului al V-lea și primul sfert al secolului al VI-lea[44]. În necropola de la Carei/Căpleni – *Kozárd*, în M.5/1996, a fost descoperit un obiect similar, identificat ca amnar[45]. Prezintă următoarele dimensiuni: lungime de aprox. 9 cm și lățime de cca 2,5 cm[46]. Secțiunea are forma unui patrulater neregulat cu muchii drepte, terminațiile capetelor sunt zimțate și îndoite spre

[17] Curta 2006, p. 256.
[18] Teodorescu 1964, p. 493; Teodor 2009, p. 154.
[19] Curta 2016, p. 156.
[20] Curta 2016, p. 168–169; Teodor 1984, p. 31, 110, fig. 31/6.
[21] Curta 2016, p. 169; Mitrea 2001, p. 117–119, 121–122.
[22] Curta 2016, p. 170.
[23] Curta 2016, p. 157.
[24] Teodorescu 1964; 1971; Teodorescu *et alii* 1993; 1999.
[25] Teodorescu 1964; Măgureanu 2010.
[26] Olteanu *et alii* 2007, p. 71.
[27] Frînculeasa *et alii* 2011.
[28] Frînculeasa *et alii* 2011, p. 199, pl. VII.
[29] Muscă, Muscă 1980, p. 427, fig. 8.
[30] Olteanu *et alii* 2007, fig. 34/4.
[31] Nestor *et alii* 1953, p. 84–85.
[32] Constantiniu 1966, fig. 5/1; Teodorescu 1972, p. 77.
[33] Vida 1999, p. 231, 232, taf. 25/1, 25/2; Stanciu 2011, p. 84–85.
[34] Vida 1999, p. 76; Stanciu 2011, p. 85, pl. 21/2.
[35] Frînculeasa *et alii* 2011, p. 199, pl. VIII.
[36] Teodorescu 1964; 1970; Teodor 2009, p. 126–157; Teodor 2001, https://esteo.ro/TTW/Vol_1/v1_s4/0_sec4.htm.
[37] Teodor 1995, p. 223–225.
[38] Stanciu 2011.
[39] Kazanski 1999, p. 57–76, 83, 85–86, 89–91, 94; Teodor 2009, p. 128, 130–131, 151–153; Teodor 2001, https://esteo.ro/TTW/Vol_1/v1_s2/05_31Pra.htm; Teodor 2001, https://esteo.ro/TTW/Vol_1/v1_s2/05_34Kor.htm; pentru o critică asupra conceptului de cultură Praga-Korchak: Teodor 1994, p. 223–225; Curta 2006, p. 200–216; 2021, p. 32–36, 209–212; Curta, Paliga 2023, p. 134–137.
[40] Kazanski 1999, p. 101; Teodor 1994, p. 223–225.
[41] Stanciu 2011, p. 62.
[42] Csallány 1961, p. 190, pl. CXLIV / 11.
[43] Csallány 1961, p. 181, pl. CXXVII/8.
[44] Csallány 1961, p. 331.
[45] Stanciu 2011, p. 41, 88.
[46] Csallány 1961.

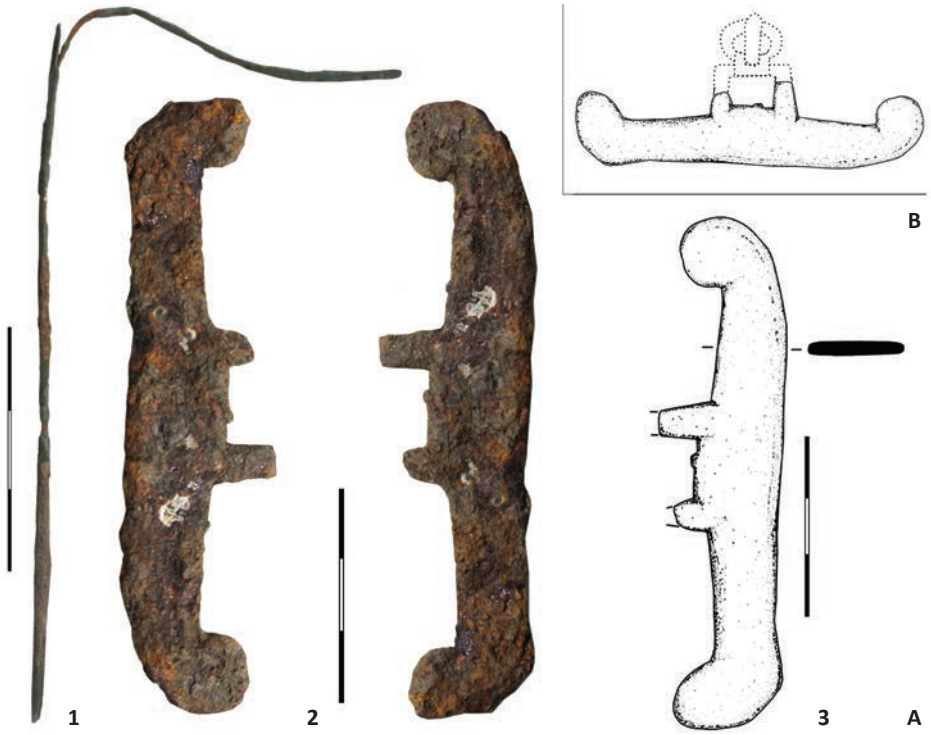


Figura 4. *A. Piese din metal din așezarea de la Urlați, realizate din bronz (1) și din fier (2–3); B. reconstituirea ipotetică a sistemului de închidere a unei genți așezate la centură.*

Figure 4. *A. Metal objects from the Urlați settlement, made of bronze (1) and iron (2–3); B. hypothetical reconstruction of the fastening system of a belt pouch.*

interior formând bucle, agățătoarea este prinsă printr-un nit. Datarea acestui sit este plasată în prima jumătate a secolului al VI-lea d.Hr., dar influențele avare pot extinde datarea spre a doua jumătate a secolului al VI-lea d.Hr.[47]. În necropola de la Szentes – *Berekhát* (Ungaria), datată între ultimul sfert al secolului V și mijlocul secolului VI[48], în mormintele notate 146–147 există un obiect identificat ca „amnar fragmentar", cu dimensiunea de 8 cm (fără informații despre secțiune, dar cu o terminație ruptă, cealaltă rotunjită ca și în cazul obiectului nostru, dar îi lipsește agățătoarea), obiectul este asociat cu bucăți de cremene[49]. Alte descoperiri similare apar și în M.6 (fără informații despre secțiune); terminația care se păstrează este relativ rotunjită, dar fără o agățătoare, ci pare să prezinte mai degrabă o apucătoare[50] și în M.224 (sub forma unei bare cu terminații îndoite și rotunjite)[51]. Mai aducem în discuție un alt obiect, descoperit accidental într-un mormânt din Bodajk (Ungaria), datat la începutul secolului al VII-lea d.Hr., dar despre care nu avem detalii legate de dimensiunile sale[52]. Altă analogie se găsește în necropola de la Mokrin (Serbia), fără să fie cunoscut mormântul din care provine acest obiect[53]. Clasificat ca amnar, avea lungimea de 9,4 cm și lățimea de 2,1 cm[54]. Situl este atribuit începutului epocii avare și este datat între sfârșitul secolului al VI-lea și începutul celui următor[55], deși acest interval poate fi extins către ultimele decenii ale secolului al VII-lea[56].

M.2142 din necropola de la Viminacium II (Više Grobalja) prezintă și el un obiect asemănător ca formă (secțiune similară de patrulater rotunjit; și terminațiile lipsesc sau diferă, agățătoarea este similară în schimb mai solidă), dar nu ca dimensiuni (lungimea de 7,5 cm, lățimea de 2,2 cm), datat în a doua treime a secolului al VI-lea d.Hr. (faza C2)[57]. O altă piesă, dar cu analogie redusă, provine din fortificația de la Pčinja. Avea lungimea de 8–9 cm și lățimea de 2–3 cm (cu terminații ascuțite și îndoite în sus, dar cu o agățătoare similară, fără informații asupra secțiunii); piesa este datată generic în secolele V–VII d.Hr.[58]. Din necropola medieval-timpurie, din punctul „Bošnjića voće", localitatea Rakovčani (Bosnia-Herțegovina), menționăm două cazuri: M.16 prezintă un obiect din fier, cu lungimea de 9,5 cm,

[47] Csallány 1961.
[48] Csallány 1961, p. 333.
[49] Csallány 1961, p. 85, pl. LXXVIII / 7–7a.
[50] Csallány 1961, p. 70, pl. LVII/10.
[51] Csallány 1961, p. 91, pl. XCV/11.
[52] Fülöp 1984, p. 255, fig. 2/1.
[53] Ranisavljev 2007, imaginea 67, pl. XXXV/8; Bugarski, Ivanišević 2016, p. 158, fig. 13.
[54] Ranisavljev 2007, p. 26.
[55] Ranisavljev 2007, p. 55–56.
[56] Bugarski, Ivanišević 2016, p. 157–158.
[57] Ivanišević *et alii* 2006, p. 122, 223, 227, pl. 44, T.2142/5.
[58] Georgiev 1985–1986, p. 206–213, fig. 5/3.

notat ca fiind o cataramă pentru închiderea unei genți de curea (terminații rotunjite formând bucle, fără detalii referitoare la secțiune, catarama pare prinsă direct) și M.43, care conține un obiect de metal cu lungimea de 8,7 cm, notat ca având aceeași funcționalitate ca obiectul anterior, prezentând același caracteristici, cu terminații răsucite și catarama prinsă direct. Necropola este datată la sfârșitul secolului al V-lea și în prima jumătate a secolului al VI-lea[59].

Un exemplu de astfel de obiect identificat ca închizătoare de geantă (de aproximativ 12 cm lungime, capete îndoite pentru a forma bucle, agățătoare și secțiune în formă de patrulater cu colțuri rotunjite și latură mare bombată), dar asociat cu o bucată de silex (cremene), apare și în cazul necropolei din Miren din vestul Sloveniei, în M.6, cu analogii în spațiul german (Germania, Austria, Elveția), datat în a doua jumătate a secolului al V-lea și prima jumătate a secolului al VI-lea[60]. O altă analogie provine din zona nord-vestului Mării Azov (Ucraina), sub forma unui obiect identificat ca fiind un amnar cu lungimea de 12 cm, lățimea de 1,8 cm și grosimea de 0,7 cm. Terminațiile sunt rotunjite, formând bucle, spre deosebire de cele ale obiectului de la Urlați. Piesa prezintă totuși o agățătoare similară, dar secțiunea este mai degrabă rotunjită și a fost datată în a doua jumătate a secolului al VII-lea d.Hr.[61].

Există posibilitatea ca aceste obiecte să fi funcționat atât ca mijloace de închidere a unei genți așezate la centură, cât și ca amnar. Rolul de amnar ar fi cel mai ușor de clarificat datorită modului specific de utilizare a obiectului, care ar provoca urme specifice. Un amnar poate funcționa doar prin detașarea unor microparticule de fier, expuse la oxigen și încălzite de impactul cu cremenea. Această funcționare generează o serie de urme specifice. Pentru o eventuală clarificare a utilizării acestor obiecte puse în discuție[62], traseologia poate fi un instrument util.

Un alt obiect de metal este reprezentat de o sârmă din bronz descoperită în spațiul aflat în spatele cuptorului din B.5. Nu prezintă elemente morfo-tipologice (Fig. 4/1) care să fie utile unei analize privind cadrul cronologic.

C. Tipar. În locuința B.10 au fost descoperite două fragmente ale unui tipar confecționat din argilă grezoasă (Pl. XXVII)[63]. Deoarece era ars pe verso, după fragmentare a fost reutilizat în structura cuptorului. Reunind fragmentele, a rezultat un patrulater neregulat cu laturile curbate (L max. = 92,78 mm, l max. = 66,34 mm, grosimea variază între 24,49 mm și 33,53 mm). În partea utilă a tiparului, plană, șlefuită și uzată, este prezent un model compus din patru adânciturI[64] cu diametrul ce variază între 8,9 și 10,3 mm și cu adâncimea maximă de aproximativ 8,44 mm. Acestea descriu forma unei cruci cu brațe relativ egale, cu lungimea de 22,57 mm, respectiv 22,17 mm (Pl. XXVII/1, 4). La o distanță de 13,61 mm de adâncIturile anterior menționate, observăm un alt model (cu lungimea de 28,42 mm în total), incizat superficial, format din două linii ușor curbe, cea din stânga măsurând 22,04 mm, iar cea din dreapta 28,42 mm, care converg spre o incizie circulară cu diametrul de 8,8 mm (Pl. XXVII/4). Doar cele patru adâncIturi prezintă caracteristici utile procesului de manufacturare, celelalte incizii fiind prea superficiale pentru a avea un uz practic.

O analogie a acestei piese poate fi tiparul realizat din marnă de la Hansca–Ialoveni (R. Moldova)[65], cu dimensiunile de 4 × 4,1 cm, cu scopul de a produce pandantive cruciforme decorate cu granule (în acest caz, patru granule pe capetele brațelor unei cruci egale)[66]. Menționăm și tiparul de la Răcoasa, produs dintr-o gresie grosieră, având două fețe utile, dintre care una are un motiv floral (sau cruciform), decorat la fel, cu patru granule dispuse la distanță egale; tot ansamblul este încadrat de un chenar, ceea ce îi conferă o forma florală[67]. Lipsa unui astfel de chenar în cazul tiparului de la Urlați, absență evidențiată și prin imaginile obținute prin tehnica fotografiei cu lumină razantă (H-RTI), îl apropie de cel de la Hansca, datat în secolele VI–VII d.Hr. Turnarea metalelor în tipare din piatră sau lut este tehnica predominantă în zona de silvostepă a Europei în secolele VI–VII d.Hr.[68]. Pe aceeași față apar incizii ușor adâncite (superficiale) (Pl. XXVII/1, 3); scopul acestora este deocamdată dificil de precizat.

CRONOLOGIA ABSOLUTĂ A LOCUIRII MEDIEVALE-TIMPURII DE LA URLAȚI

Realizarea datărilor absolute în cazul complexelor atribuite perioadei medievale-timpurii s-a dorit să fie o completare a cercetării, un demers care să ofere repere suplimentare privind cronologia locuirii din așezarea de la Urlați. Probele, constând din oase de mamifere, au fost prelevate din complexe închise, respectiv din umplutura locuințelor B.6 și B.10 sau din gropi aflate în interiorul B.5 și B.13. Groapa din B.5 se afla în fața cuptorului (inventar format din oase, ceramică, pietre arse, lemn) (Pl. VI/8–9). Groapa din B.13, situată în partea opusă cuptorului, a fost realizată într-o fază timpurie a utilizării complexului[69]; unul dintre vase se afla în poziție naturală (așezat pe fund), dar în umplutură (-0,30 m adâncime) (Pl. XXVI/2, 6). Osul a fost

[59] Miletić 1970, p. 121, pl. II/16, XV/10 (mormântul 10), p. 124, pl. IV/43; pl. XV/12 (mormântul 43); Pilarić 1970, p. 179.

[60] Tratnik, Karo 2023, p. 2111, pl. 3/3.

[61] Komar *et alii* 2006, p. 318, 374, fig. 32/29.

[62] Roes 1965.

[63] Determinare realizată de către M. N. Frînculeasa (Universitatea Valahia din Târgoviște), căreia îi mulțumim.

[64] Piesa, în care au fost depistate urme de metal, va fi abordată într-un studiu separat. Identificarea reziduurilor de pe suprafața plană a tiparului a fost realizată cu microscopul digital Keyence VHX-X1 din dotarea Institutului de Arheologie „Vasile Pârvan". Determinarea compoziției elementale (prezența cuprului în una dintre adâncituri) a fost realizată cu același aparat, care dispune și de un sistem de analiză prin metoda LIBS (*Laser-induced breakdown spectroscopy*).

[65] Teodor 2005a, p. 164, 173, fig. 8/2.

[66] Teodor 2005a, p. 164, 173 (fig. 8/2); Tănase 2021, p. 207.

[67] Tănase 2021, p. 329.

[68] Tănase 2021, p. 19.

[69] Nu trebuie exclusă nici situația în care groapa locuinței a tăiat respectivul complex, care era deja abandonat.

Cod laborator	Context arheologic	Probă	Dată în ani BP	Ani calibrați, Sigma 1 68.3%	Ani calibrați, Sigma 2 95,4%	Valoare medie
DeA-51957	URLAȚI 2023, B.10	Os de mamifer	1611±21	420–532	416–538	477
DeA-51958	URLAȚI 2023, B.10	Os de mamifer	1564±25	436–533	430–566	496
DeA-51959	URLAȚI 2025 B.13, Gr.1	Os de mamifer	1641±22	404–530	387–538	444
DeA-54062	URLAȚI 2017 B.5, Gr.8	Os de mamifer	1558±21	439–558	432–569	502
DeA-54063	URLAȚI 2017 B.5, Gr.8	Os de mamifer	1565±19	437– 551	433–561	494
DeA-54064	URLAȚI 2017, B.6	Os de mamifer	1606±19	421–534	418–538	497

Tabel 1. *Date absolute C14-AMS din nivelul de locuire Ipotești–Cândești din situl de la Urlați.*

Table 1. *Absolute C14-AMS dates for samples collected from the Ipotești–Cândești habitation layer at the Urlați site.*

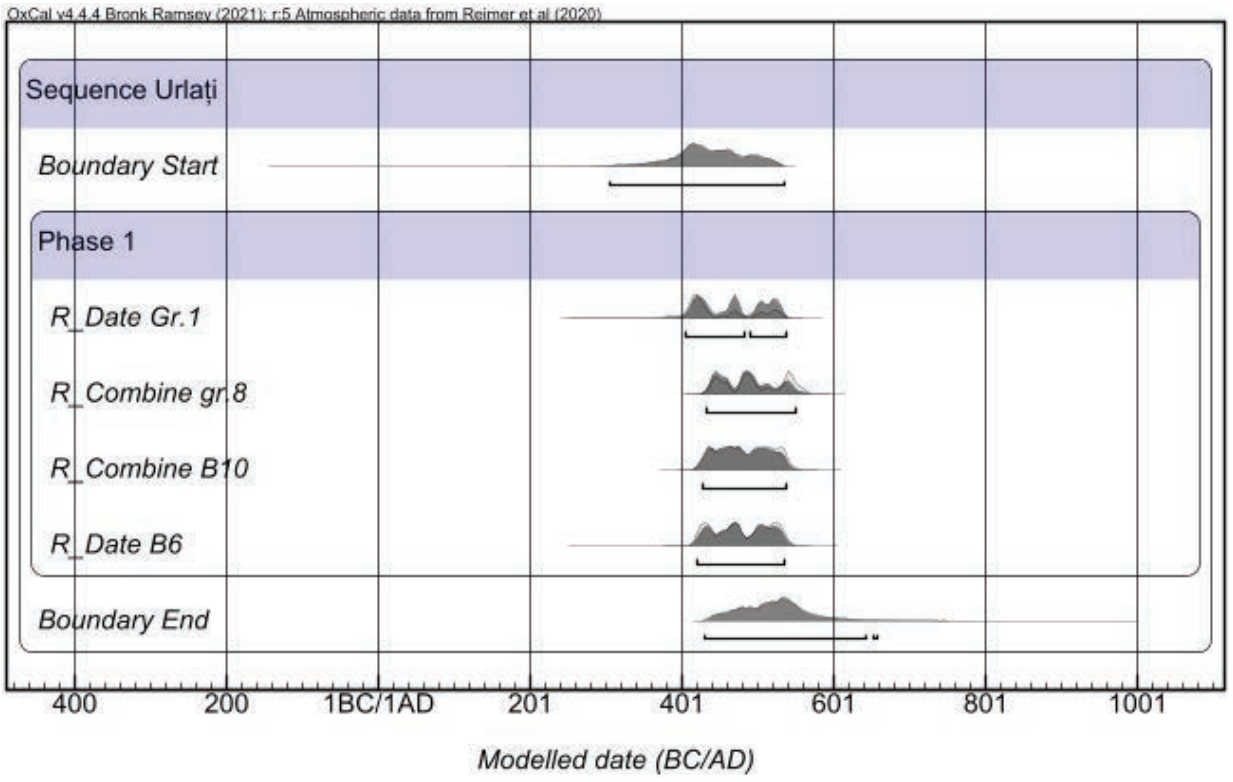


Figura 5. *Grafic cu modelarea bayesiană a datelor C14-AMS din nivelul de locuire Ipotești-Cândești de la Urlați.*

Figure 5. *Graph showing Bayesian modelling of C14-AMS data from the Ipotești-Cândești habitation layer at Urlați.*

prelevat din umplutura de culoare maronie a gropii, în care se aflau resturile unui vas-borcan, o buză de vas (Pl. XXVI/1, 3–4, 5) și trei fragmente ceramice din epoca bronzului, acestea din urmă fiind antrenate în timpul săpării gropii sau scurse odată cu prăbușirea pereților acesteia.

Datele obținute în cazul sitului de la Urlați (Tabel 1, Fig. 5) indică o locuire care acoperă din plin secolul al V-lea și prima jumătate a următorului. Cunoscută printr-un număr restrâns de datări[70], cronologia absolută a culturii Ipotești–Cândești, dar și a sitului de la Urlați, nu poate fi încă abordată dincolo de un stadiu preliminar.

[70] Botár, Puskás 2019.

CONCLUZII

Unde putem să situăm evoluția așezării de la Urlați în contextul arheologic și cultural regional? Astăzi, în Registrul Arheologic Național sunt înregistrate 179 de situri atribuite culturii Ipotești–Cândești. Primele cercetări arheologice care au produs material atribuit secolului al VI-lea d.Hr. au fost efectuate în anii 30 ai secolului trecut în București (Lacul Tei)[71]. Un alt sit important este cel de la Sărata-Monteoru în care a fost descoperit un cimitir de incinerație, datat în secolul al VII-lea d.Hr.[72]. Tot în București sunt cunoscute cercetările efectuate la Mihai Vodă – *Arhivele Statului*, la Curtea Veche – *Sf. Ioan Nou* și la Fundenii Doamnei. Urmează publicarea rezultatelor mai multor săpături arheologice care vizau această cultură arheologică din zona Bucureștiului efectuate la Militari – *Câmpul Boja*[73], Străulești – *Luncă*, Cățelu Nou, dar și în alte puncte din capitală (*str. Soldat Ghivan*, *str. Soarelui*, *Băneasa*, *Dămăroaia*)[74]. Mai recent menționăm săpăturile restrânse de la *Aleea Scroviștea*, *Strada Neajlovului*, *Dămăroaia*[75]. Cercetările efectuate la Ipotești (jud. Olt)[76] în anii 1959–1960 de către Muzeul regional din Pitești, cele de la Cândești (jud. Buzău) din anii 1959–1960, sub coordonarea Muzeului regional din Ploiești și cele de la Ciurel (București) din perioada anilor 1956–1961[77] au fost corelate cu rezultatele cercetării din necropola de incinerație de la Sărata-Monteoru[78]. Un orizont cronologic asemănător, datat inițial „posterior secolului IV", a fost identificat și în săpăturile de la Târgșorul Vechi, odată cu cercetările demarate în sectorul IA în anul 1958[79].

În urma prospecțiunilor efectuate în anul 1959 au fost identificate situri în Valea Budureasca, din comuna Vadu Săpat[80]. Odată ce a fost clarificată datarea materialului arheologic de la Cândești, s-a constatat că și Valea Budureasca prezintă aceeași cultură arheologică[81]. Primele săpături arheologice au fost realizate aici în anul 1961[82]. Situri aparținând acestei culturi au mai fost identificate și în localitățile Bozieni, Ceptura, precum și pe valea Cricovului Sărat la nord de orașul Urlați (Jercălăi, Plavia). V. Teodorescu menționează în anul 1964 pentru nord-estul Munteniei (regiunea Ploiești conform organizării administrative de atunci) un total de 27 de situri aparținând acestei culturi[83]. Este anul în care apar numele și conceptualizarea culturii arheologice Ipotești–Cândești, precum și datarea sa în secolele V–VII d.Hr.[84]. Din județul Prahova menționăm alături de cercetările de la Budureasca[85] pe cele de la Târgșoru Vechi[86] sau Șirna[87], dar și pe cele izolate de la Boboci[88], Bătrâni[89], Ghinoaica[90], Ploiești – *Bereasca*[91]. Mai recente, alături de cele sistematice de la Urlați, sunt cercetările preventive restrânse de la Blejoi[92] sau cele extinse de la Belciug[93].

Dacă privim dintr-o perspectivă cantitativă această trecere în revistă a principalelor obiective abordate aflate în regiunea apropiată sau ceva mai îndepărtată de așezarea de la Urlați, pare că siturile atribuite secolelor V–VII d.Hr. au reprezentat un subiect de prim interes pentru cercetători (Fig. 6). Se creează impresia că avem o bază solidă la care să putem raporta rezultatele cercetărilor derulate în situl de la Urlați. Totuși, raportul dintre săpăturile arheologice și valorificarea științifică a rezultatelor este unul net defavorabil ultimului demers menționat. În același timp, zona central-nordică a Munteniei se prezintă ca un areal cu un potențial important în studierea perioadei menționate în acest studiu.

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Tipul de locuire și caracteristicile locuințelor de la Urlați (formă, dimensiuni, prezența cuptoarelor amenajate în calup rezervat sau în *platforme de lut cruțat*, în care sunt utilizate și pietrele) se încadrează în tradiția culturală specifică perioadei și arealului analizat[94]. Semnificativă este prezența exclusivă a ceramicii lucrate cu mâna, un element considerat un reper cronologic care marchează o etapă târzie în evoluția culturii Ipotești–Cândești, apreciat de unii cercetători ca fiind de caracter slav[95]. De altfel, principalele caracteristici ale culturii Ipotești–Cândești se conturează mai ales prin particularitățile ceramicii[96]. Situri Ipotești–Cândești cu ceramică lucrată exclusiv manual ne sunt cunoscute în localitățile Vadu Codrii (jud. Olt) – sit datat în secolul al VI-lea d.Hr.[97], Șuvița Hotarului (jud. Călărași) – datat la sfârșitul secolului VI d.Hr. și în primele decenii ale secolului al VII-lea[98] și Vadu Anei (jud. Ilfov) – încadrat în secolul al VII-lea d.Hr.[99]. Această caracteristică, privind proporția ceramicii, a fost definită ca „aspectul cultural

[71] Rosetti 1934.
[72] Nestor *et alii* 1953, p. 86.
[73] Negru *et alii* 2009.
[74] Teodorescu 1964; 1971; 1972.
[75] Vintilă *et alii* 2014, p. 111, cu bibliografia extinsă.
[76] Teodorescu 1964.
[77] Teodorescu 1964; Dolinescu-Ferche 1979.
[78] Nestor 1960, p. 704.
[79] Popescu *et alii* 1961.
[80] Teodorescu, Peneș 1984.
[81] Teodorescu 1964.
[82] Teodorescu 1964; Teodorescu, Peneș 1984.
[83] Teodorescu 1964.
[84] Teodorescu 1964; 1971.
[85] Teodorescu 1964; 1971; Teodorescu *et alii* 1993; 1999.
[86] Teodorescu 1964; Măgureanu 2010.
[87] Olteanu *et alii* 2007.
[88] Peneș, Paveleț 2001, p. 9.
[89] Teodorescu 1994a, p. 173.
[90] Teodorescu 1998, p. 189.
[91] Teodorescu 2000, p. 238.
[92] Paveleț 2008; amintim și săpăturile arheologice extinse de la Băleni (Dâmbovița), vezi Muscă, Muscă 1980.
[93] Frînculeasa *et alii* 2011, p. 196.
[94] Măgureanu 2010.
[95] Kazanski 1999, p. 83–86; Olteanu *et alii* 2007, p. 70; pentru o privire critică, vezi Teodor 1994, p. 223–225; 2005; 2009, p. 128–153, Curta 2021, p. 32–36, 209–216; Curta, Paliga 2023, p. 134–137.
[96] Teodorescu 1964; 1971.
[97] Nica, Deleanu 1994.
[98] Sîrbu *et alii* 1996, p. 105.
[99] Teodor 2000, p. 132; 2003, p. 331.

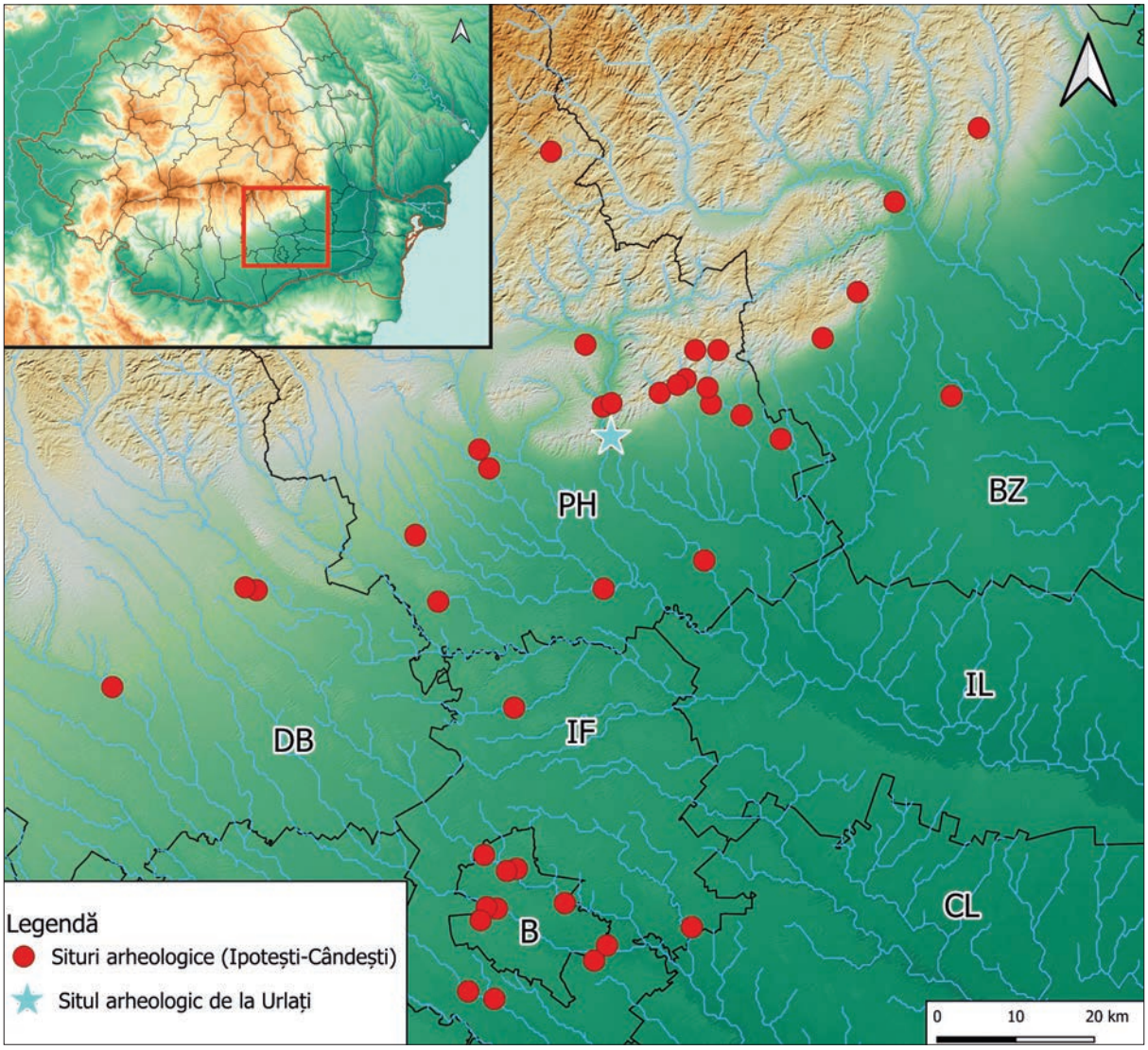


Figura 6. *Poziționarea sitului de la Urlați în contextul cercetărilor arheologice din arealul apropiat.*

Figure 6. *Location of the Urlați site within the context of archaeological research in the nearby area.*

Vadu Codrii", reprezentând perioada de final a culturii Ipotești–Cândești, adică de la sfârșitul secolului al VI-lea d.Hr. până cel târziu la mijlocul secolului al VII-lea d.Hr.[100].

Apariția unui tipar pentru turnat piese de metal se încadrează și ea aceluiași cadru geografic/regional abordat (vezi descoperirile de la Budureasca, Vadu Săpat, Șirna, Aldeni, București, Cândești, Dichiseni, Dulceanca, Izvorul Dulce, Olteni)[101]. Din zona apropiată de situl de la Urlați menționăm două fibule digitate care provin dintr-un sit aflat în localitatea Gornet-Cricov[102], un fragment de fibulă digitată descoperit pe raza localității Udrești[103], precum și un cercel stelat și o brățară de la Ceptura[104].

Datarea cu radiocarbon situează descoperirile de la Urlați într-un interval de timp care acoperă secolul al V-lea d.Hr. și prima jumătate a secolului următor, ceea ce intră în contradicție cu reperele de cronologie relativă abordate, respectiv materialul ceramic prelucrat exclusiv de mână și prezența vasului tipsie, recipient care apare mai curând în a doua jumătate a secolului al VI-lea. Avansarea unor scenarii precum cel al unor etape diferite de utilizare a complexelor (de la locuire la groapă menajeră) ar putea să explice o parte dintre aceste nepotriviri. În același timp, piesa de fier descoperită în B.10, indiferent de utilizarea sa (amnar sau mijloc de a închide o geantă de curea), ne

[100] Teodor 2003, p. 331; pentru atribuirea ceramicii lucrate manual de pe teritoriul României culturii Praga și problemele aferente, vezi Curta 2018.

[101] Ciupercă, Măgureanu 2009; Tănase 2021, p. 242, fig. 54; Măgureanu 2024.

[102] Piese descoperite în anul 2021 de către V. Nitu cu ajutorul detectorului de metale.

[103] Piesă descoperită în anul 2026 de către E. D. Mihalca cu ajutorul detectorului de metale.

[104] Teodorescu 1994, p. 281.

indică limitele abordării cronologiilor relative exclusiv din perspectiva unor obiecte. Dacă ar fi să admitem o origine în mediul gepidic, acest obiect ar sprijini datarea radiocarbon timpurie a locuirii de la Urlați. Însă, dacă ar fi să urmărim originea acestuia în stepele estice, datarea sa ar fi mult mai târzie, deoarece obiectele de acest tip din acest mediu sunt plasate la sfârșitul secolului al VII-lea.

Datarea absolută reprezintă deocamdată un instrument cu totul secundar în studierea așezărilor atribuite acestei perioade, unele date fiind discutabile[105]. Un alt sit pentru care sunt publicate date radiocarbon, cu materialul ceramic lucrat exclusiv cu mâna[106], este Șumuleu-Miercurea Ciuc – *Grădina Fodor-kert*. Aici, rezultatele obținute din investigații pe materialul osteologic plasează locuirea în jurul mijlocului secolului al VI-lea, însă datele obținute prin analiza lemnului carbonizat sugerează un interval cuprins între sfârșitul secolului al V-lea și începutul secolului al VI-lea[107]. O critică privind rezultatul din urmă poate fi legată de *old wood effect,* întrucât analiza lemnului poate coborî/influența datările.

Datele absolute provenind din situl de la Urlați nu confirmă așteptările privind cronologia relativă ilustrată de artefacte, așa cum este considerat acest aspect de către cercetători. Având în vedere numărul restrâns de date absolute, precum și posibilitatea ca, în viitor, odată cu evoluția săpăturilor, să putem avansa o serie de scenarii privind dinamica internă a așezării care să difere de situația relevată de stadiul actual al cercetării, discuția rămâne una deschisă. În același timp, observând intervalele foarte strânse (de zeci de ani) în care sunt analizate anumite aspecte considerate relevante privind cronologia relativă/evoluția a acestei culturi/perioade, acest instrument ar putea să nu fie unul de real folos, ci să își arate deocamdată limitele. Totuși, aceste repere oferite de datarea cu radiocarbon nu trebuie ignorate sau considerate, fără drept de apel, unele greșite sau nefolositoare interpretării arheologice/istorice. Ele ar putea să marcheze limitele absolutizării cronologiei relative în abordarea acestei perioade. Deși cercetarea este într-un stadiu nu foarte avansat, având în vedere numărul restrâns de publicații dedicate perioadei medievale-timpurii, considerăm că vizibilitatea și apoi relevanța descoperirilor de la Urlați nu sunt neglijabile pentru cei interesați.

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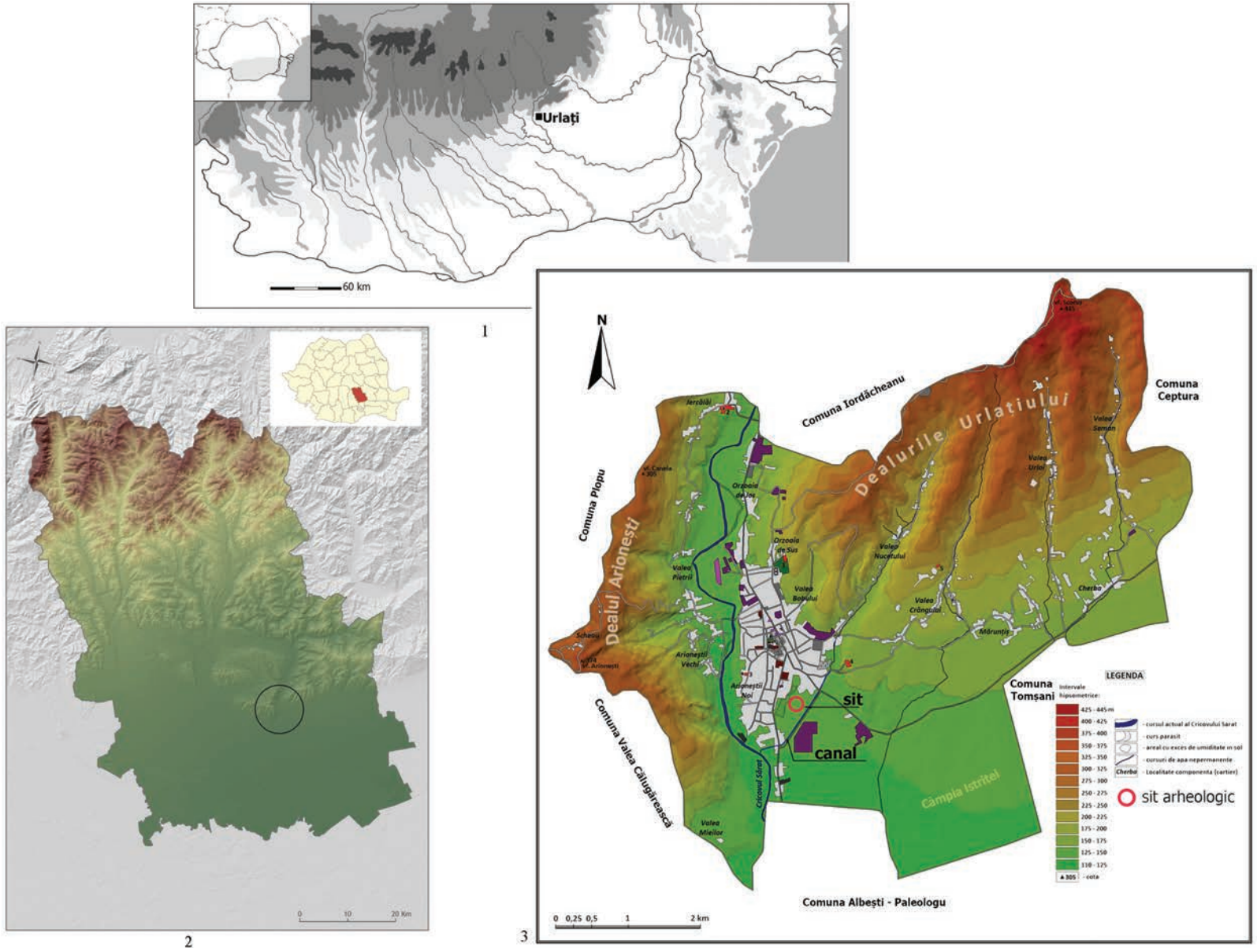
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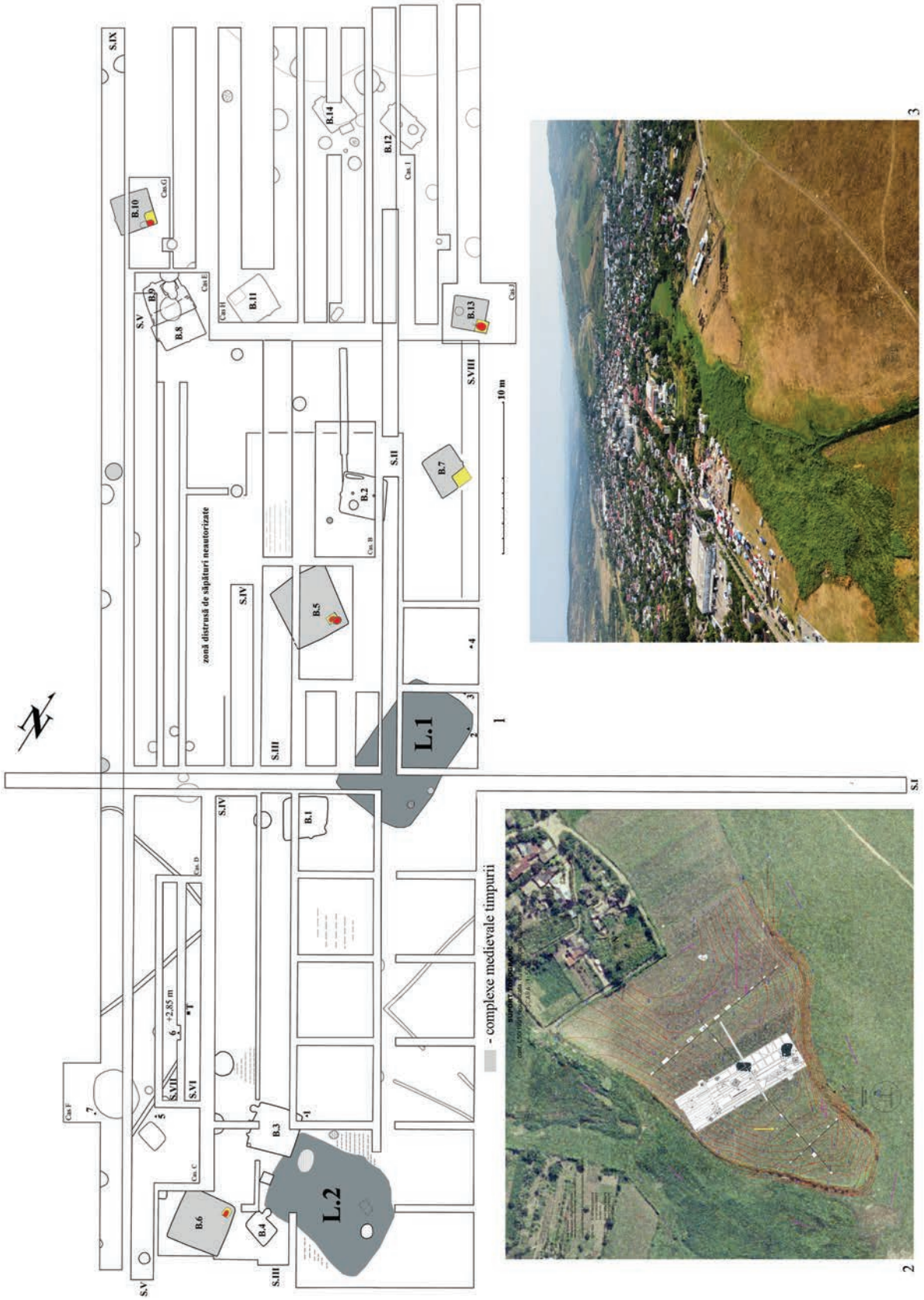
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Planșa I. *Poziționarea sitului de la Urlați pe harta României (1), a județului Prahova (2) și a localității (3).*

Plate I. *Location of the Urlați site on the map of Romania (1), Prahova County (2), and the locality (3).*



Planșa II. *Planul general al săpăturii cu amplasarea complexelor atribuite culturii Ipotești–Cândești (1–2); imaginea aeriană în care este surprins cadrul natural al sitului (3) (foto O. Negrea).*

Plate II. *General excavation plan showing the features attributed to the Ipotești–Cândești culture (1–2); aerial photograph showing the natural setting of the site (3) (photo O. Negrea).*



Planșa III. *Imagini din timpul cercetării locuinței B.5, înainte de demontarea umpluturii (1–2) și după (3–4).*

Plate III. *Images taken during the investigation of Dwelling 5, before removing the fill (1–2) and after (3–4).*



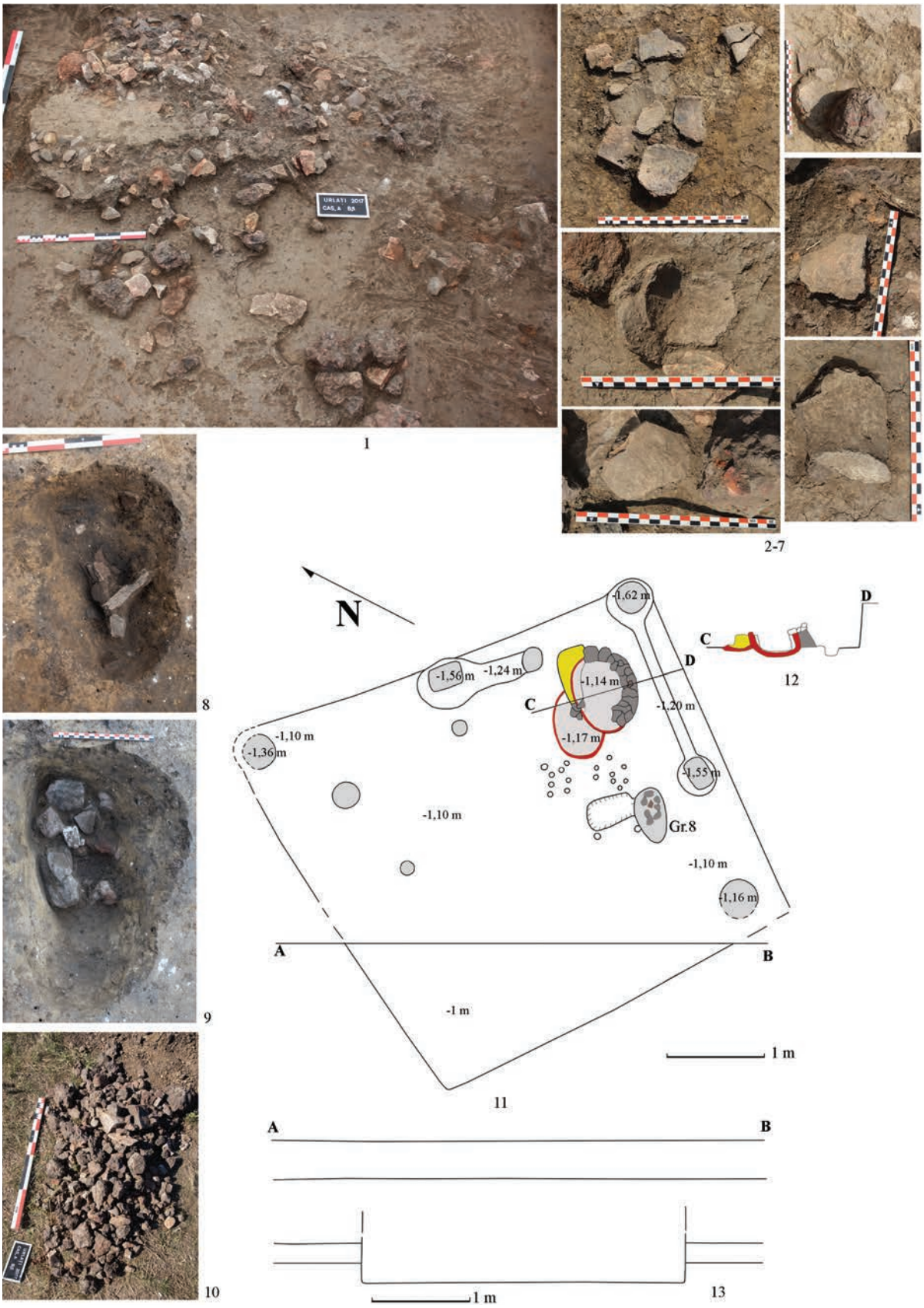
Planșa IV. *Imagini din timpul cercetării locuinței B.5 cu detalii ale diverselor intervenții umane și ale cuptoarelor.*

Plate IV. *Images taken during the investigation of Dwelling 5, with details of various human interventions and the ovens.*



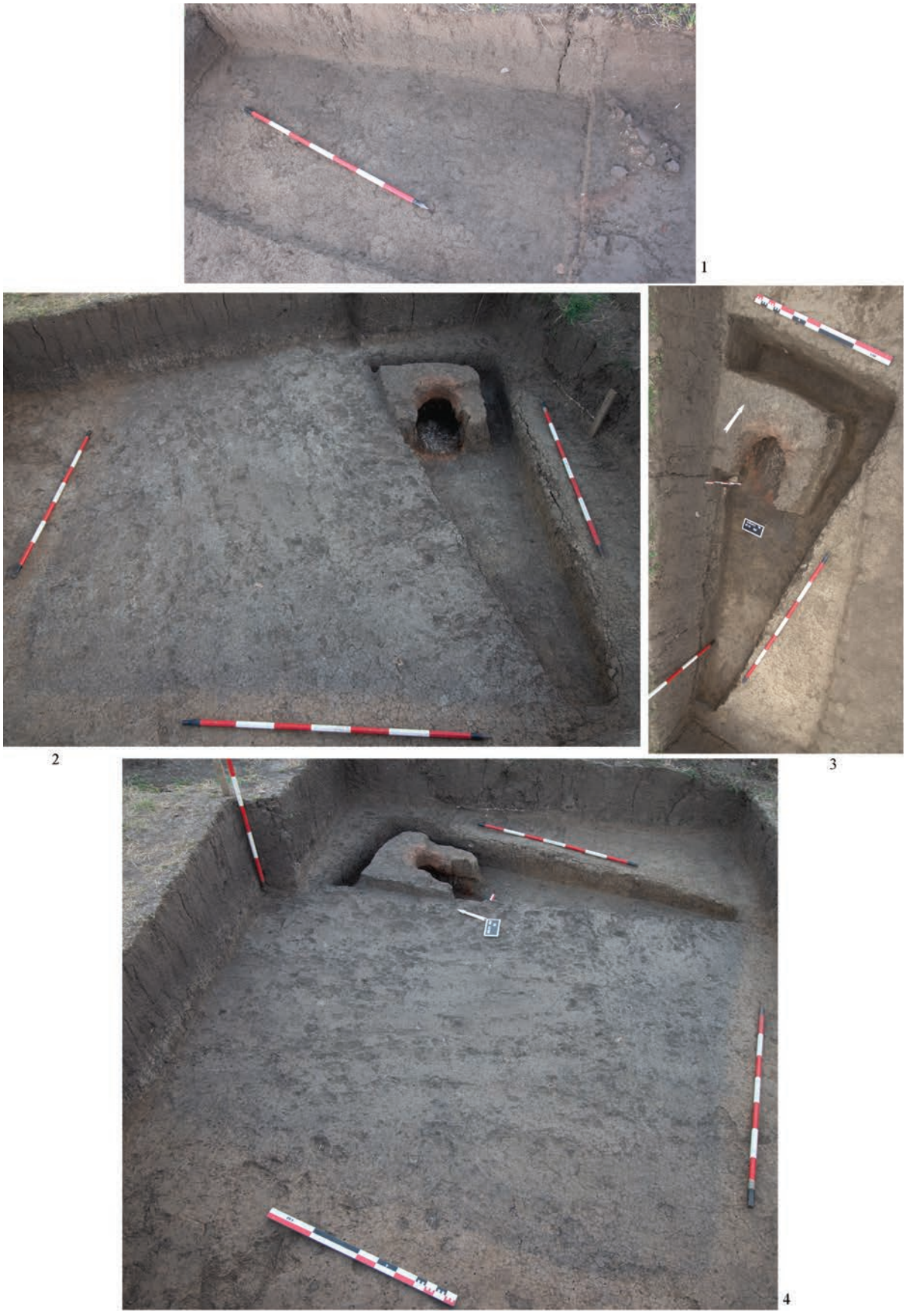
Planșa V. *Detalii din timpul cercetării cuptoarelor din locuința B.5.*

Plate V. *Details from the investigation of the ovens in Dwelling 5.*



Planșa VI. *Detalii din timpul cercetării locuinței B.5, zona cuptoarelor (1) și a gropii din fața acestora (8–9); ceramică* in situ *(2–7); planul locuinței (11); secțiuni prin cuptoare (12) și locuință (13).*

Plate VI. *Details from the investigation of Dwelling 5, the oven area (1) and the pit in front of them (8–9); ceramic finds* in situ *(2–7); plan of the dwelling (11); sections through the ovens (12) and the dwelling (13).*



Planșa VII. *Imagini din timpul cercetării locuinței B.6, înainte de demontarea umpluturii (1–2, 4) sau după demontarea parțială a acesteia (2–3).*

Plate VII. *Images taken during the investigation of Dwelling 6, before removing the fill (1–2, 4) or after partial removal (2–3).*


1


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3


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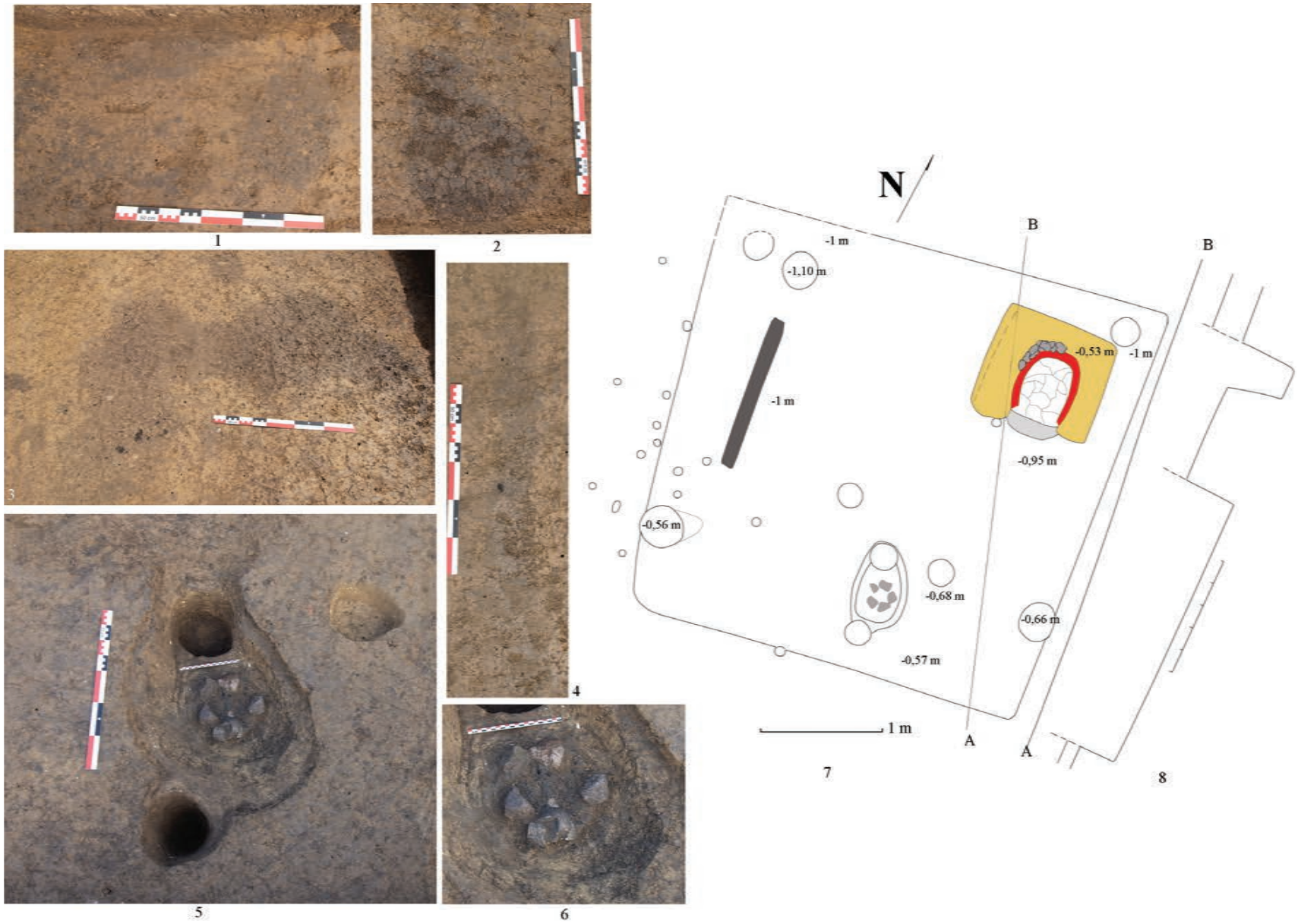
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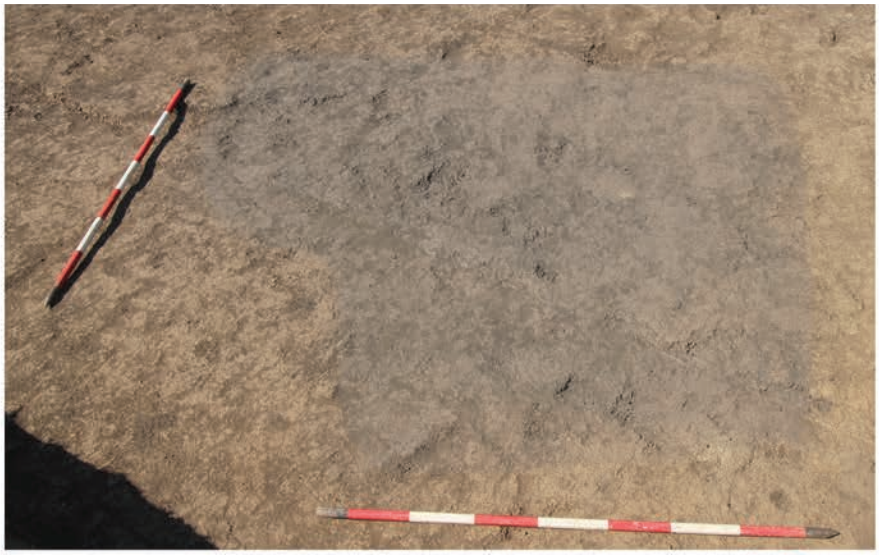
Planșa VIII. *Detalii din timpul cercetării locuinței B.6 (1, 3, 5) și a cuptorului acesteia (2, 4, 6, 8).*

Plate VIII. *Details from the investigation of Dwelling 6 (1, 3, 5) and its oven (2, 4, 6, 8).*

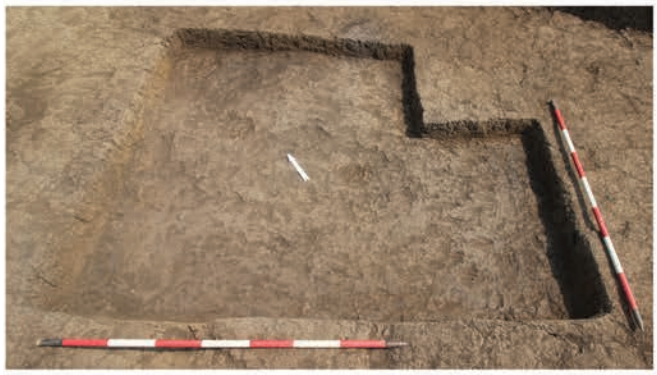


Planșa IX. *Detalii din timpul cercetării locuinței B.6 (1–6); plan și secțiune a locuinței B.6 (7–8).*

Plate IX. *Details from the investigation of Dwelling 6 (1–6); plan and section of Dwelling 6 (7–8).*



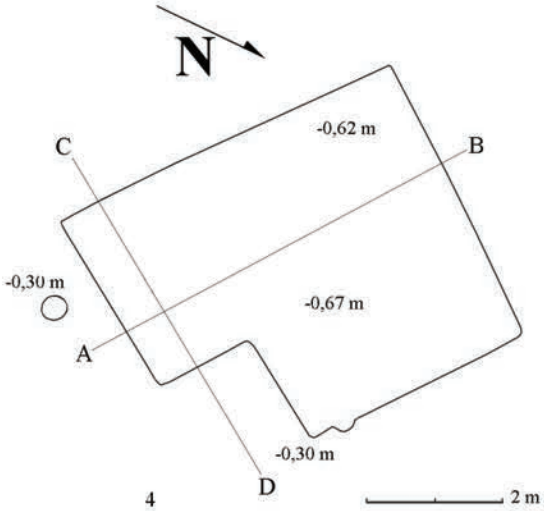
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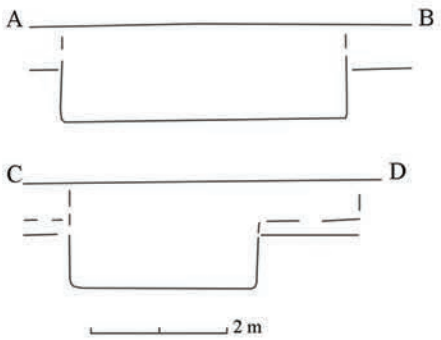
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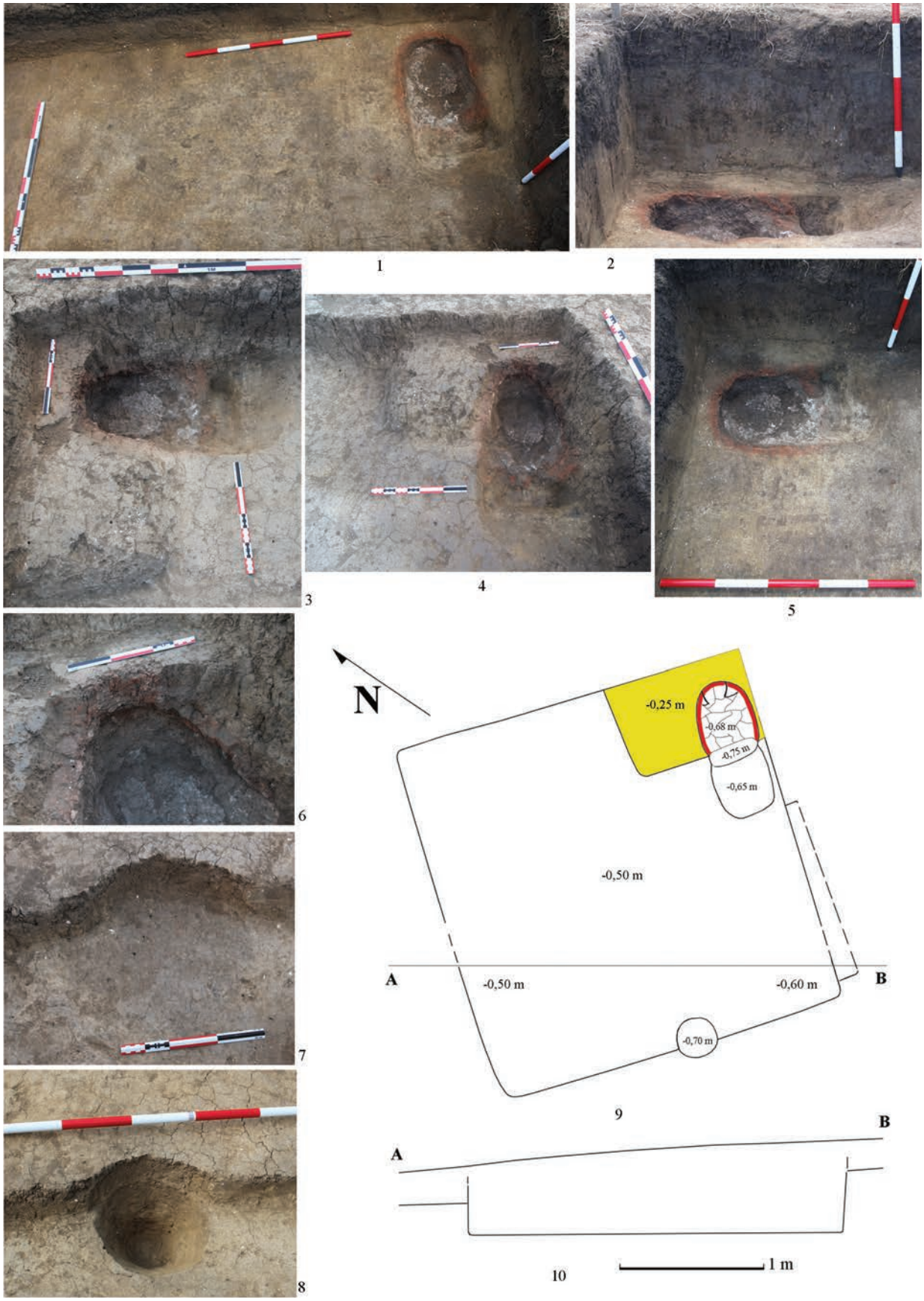
***Planșa X**. Imagini cu locuința B.7 înainte de demontarea umpluturii (1) și după (2–3); plan și secțiune prin locuința B.7 (4–5).*

***Plate X.** Images of Dwelling 7 before removing the fill (1) and after (2–3); plan and section of Dwelling 7 (4–5).*



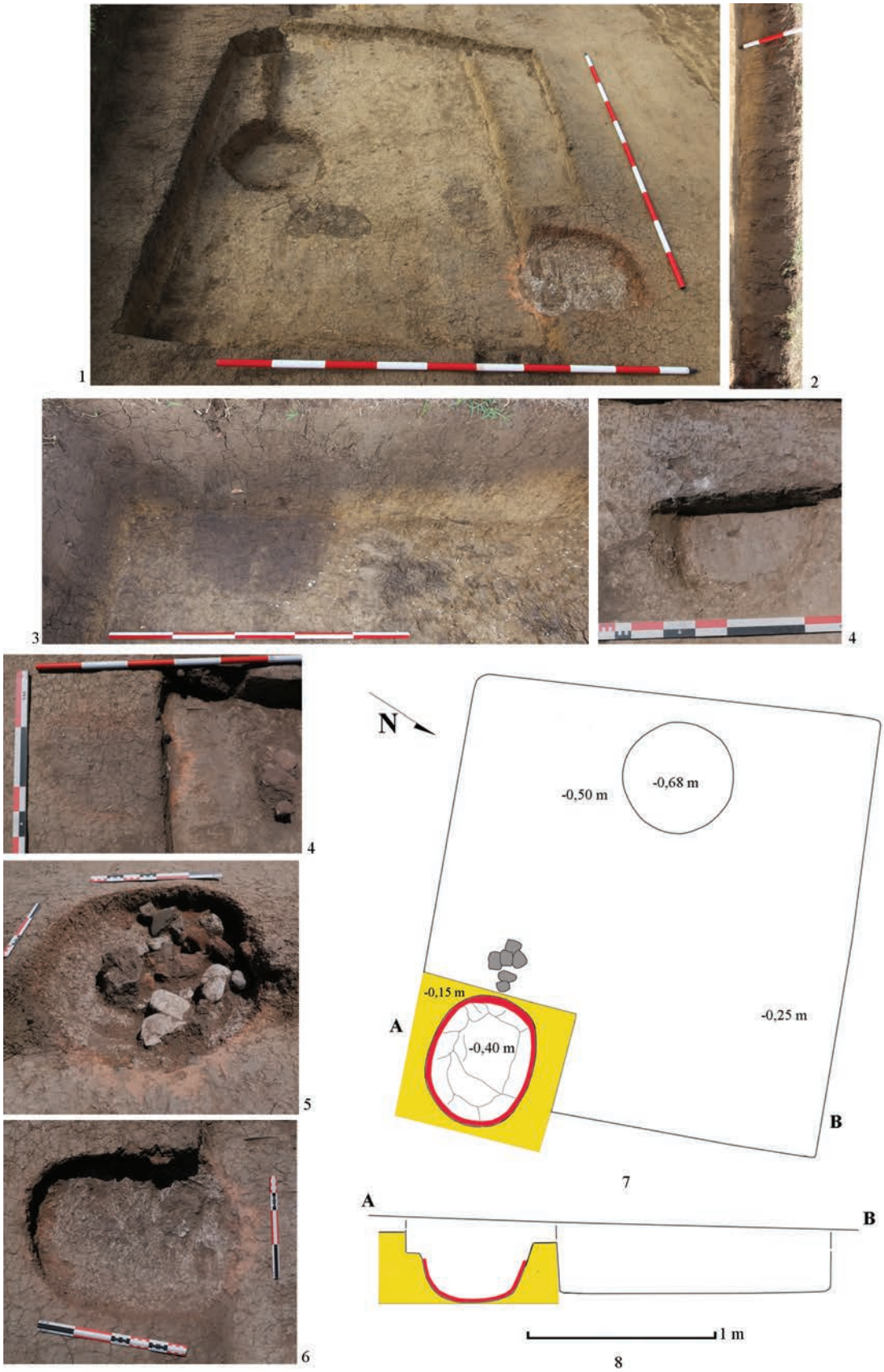
Planșa XI. *Imagini din timpul cercetării locuinței B.10, înainte de demontarea umpluturii (1–2) și după (4–8); profil arheologic prin locuința B.10 (3).*

Plate XI. *Images taken during the investigation of Dwelling 10, before removing the fill (1–2) and after (4–8); archaeological profile through Dwelling 10 (3).*



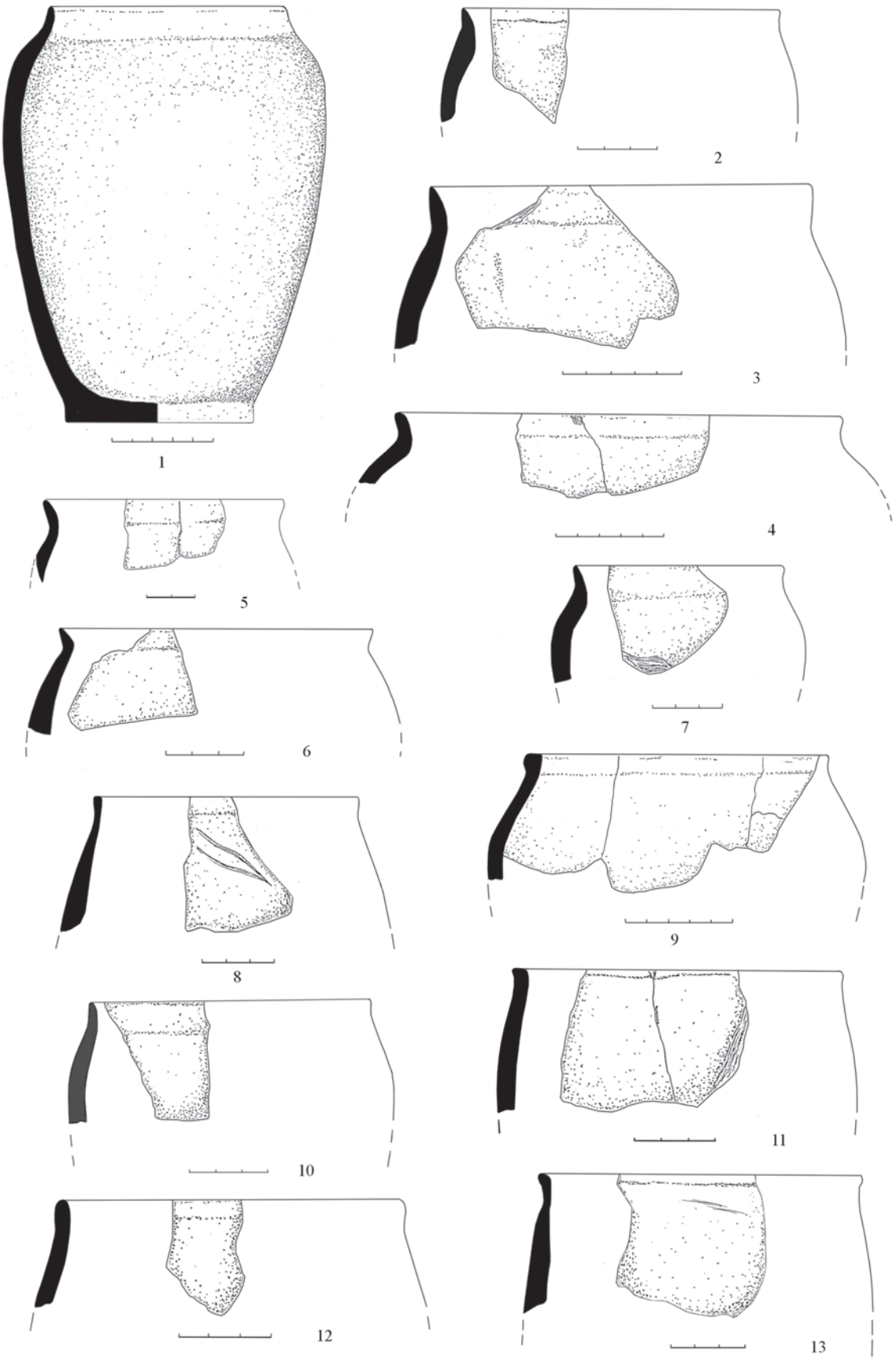
Planșa XII. *Detalii din timpul cercetării cuptorului locuinței B.10 (1–6); groapă de stâlp (7–8); plan general și secțiune prin locuința B.10 (9–10).*

Plate XII. *Details from the investigation of the oven in Dwelling 10 (1–6); post hole (7–8); general plan and section through Dwelling 10 (9–10).*



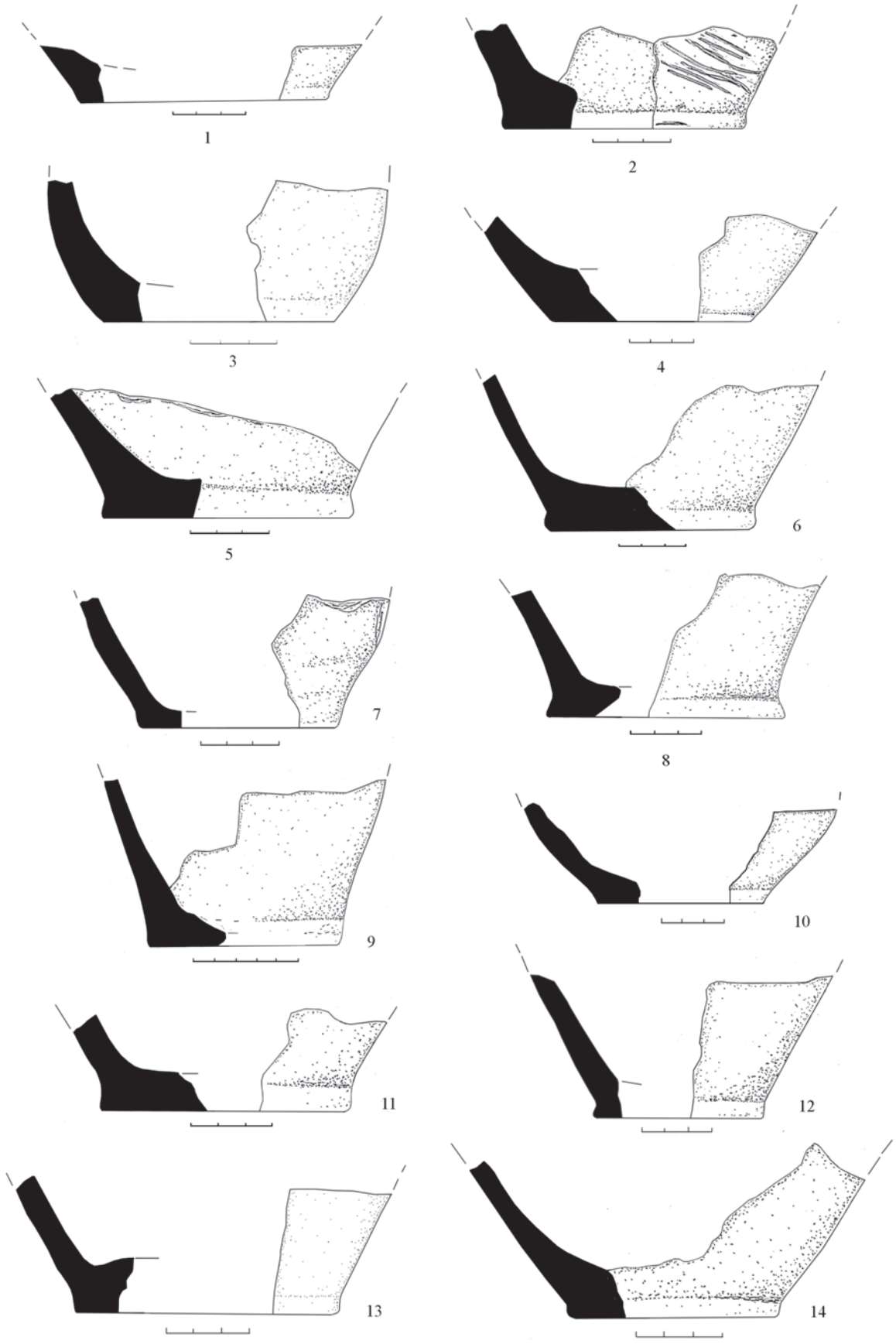
Planșa XIII. *Imagine cu locuința B.13 după demontarea umpluturii acesteia (1); detalii asupra cuptorului locuinței, cu pământ (4), pietre (5) și curățat (6); groapă din locuința B.13 (3–4); plan general și secțiune prin locuința B.13 (7–8).*

Plate XIII. *Image of Dwelling 13 after the removal of its fill (1); details of the dwelling's oven, showing earth (4), stones (5), and cleaned (6); pit in Dwelling 13 (3–4); general plan and section through Dwelling 13 (7–8).*



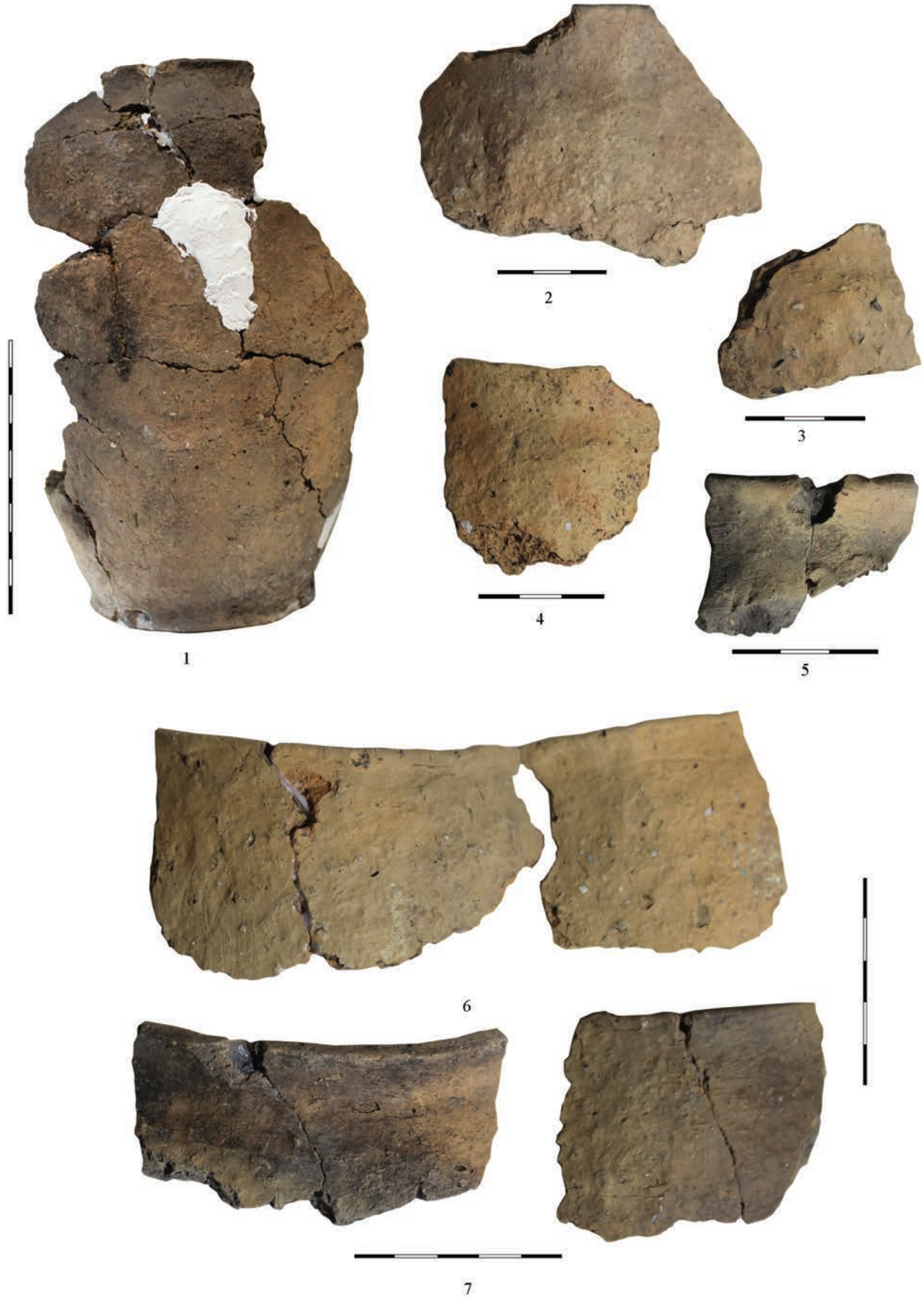
***Planșa XIV**. Ceramică din locuința B.5.*

***Plate XIV.** Ceramics from Dwelling 5.*



Planșa XV. *Ceramică din locuința B.5.*

Plate XV. *Ceramics from Dwelling 5.*



Planșa XVI. *Ceramică din locuința B.5.*

Plate XVI. *Ceramics from Dwelling 5.*



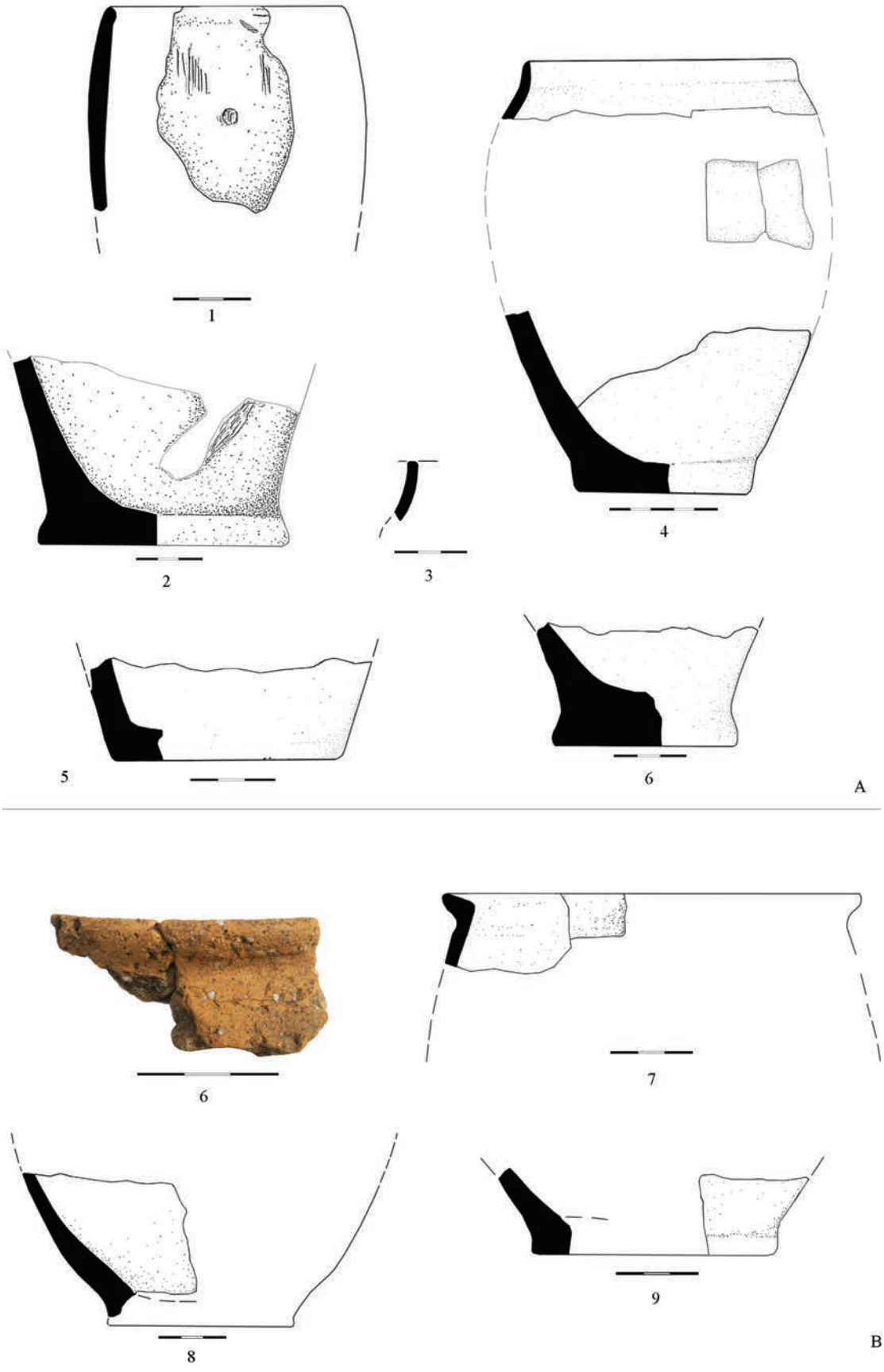
Planșa XVII. *Ceramică din locuința B.5.*

Plate XVII. *Ceramics from Dwelling 5.*



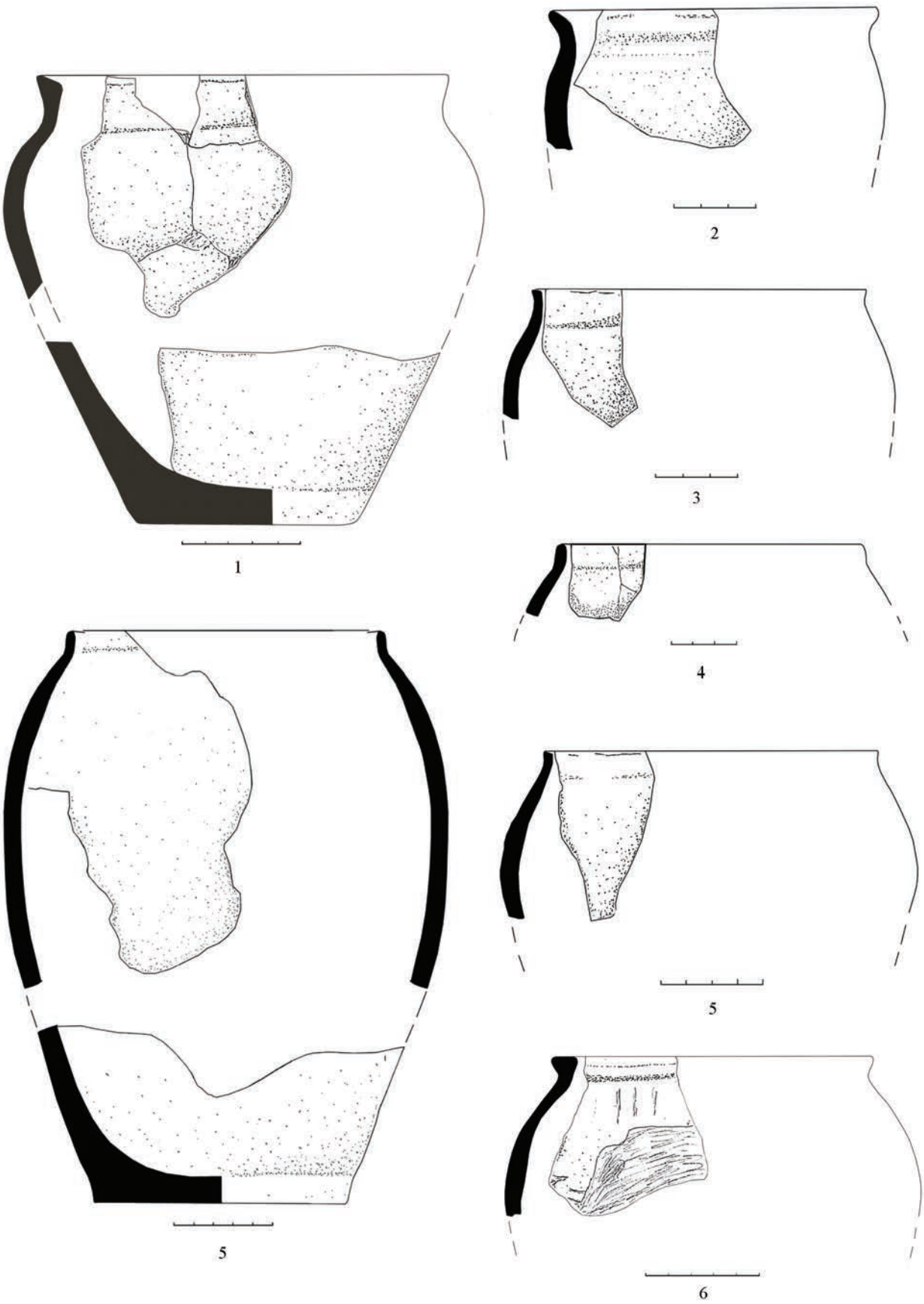
Planșa XVIII. *Ceramică din locuința B.6.*

Plate XVIII. *Ceramics from Dwelling 6.*



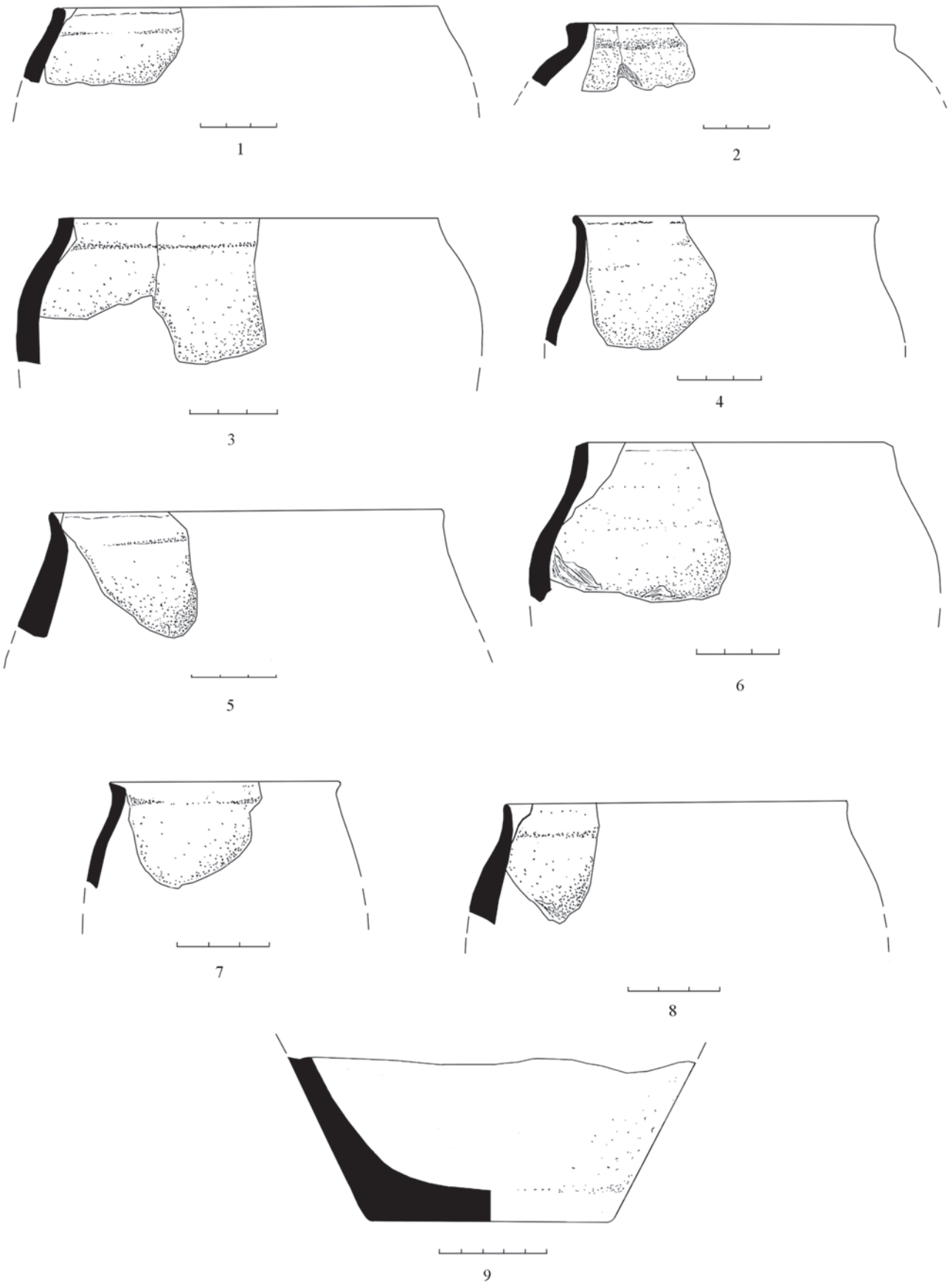
Planșa XIX. *A. Ceramică din locuința B.6 (1–6); B. ceramică din locuința B.7 (6–9).*

Plate XIX. *A. Ceramics from Dwelling 6 (1–6); B. ceramics from Dwelling 7 (6–9).*



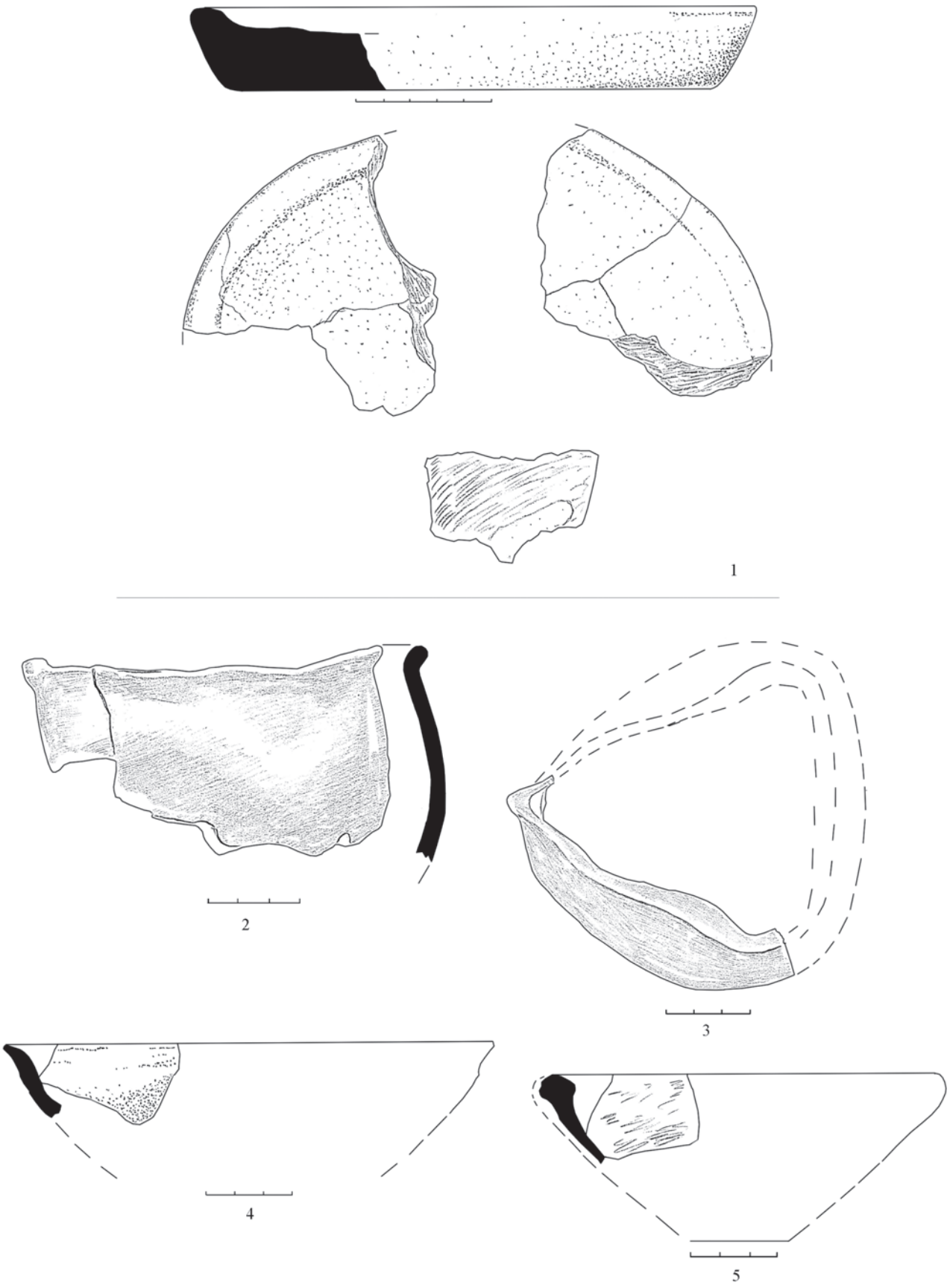
Planșa XX. *Ceramică din locuința B.10.*

Plate XX. *Ceramics from Dwelling 10.*



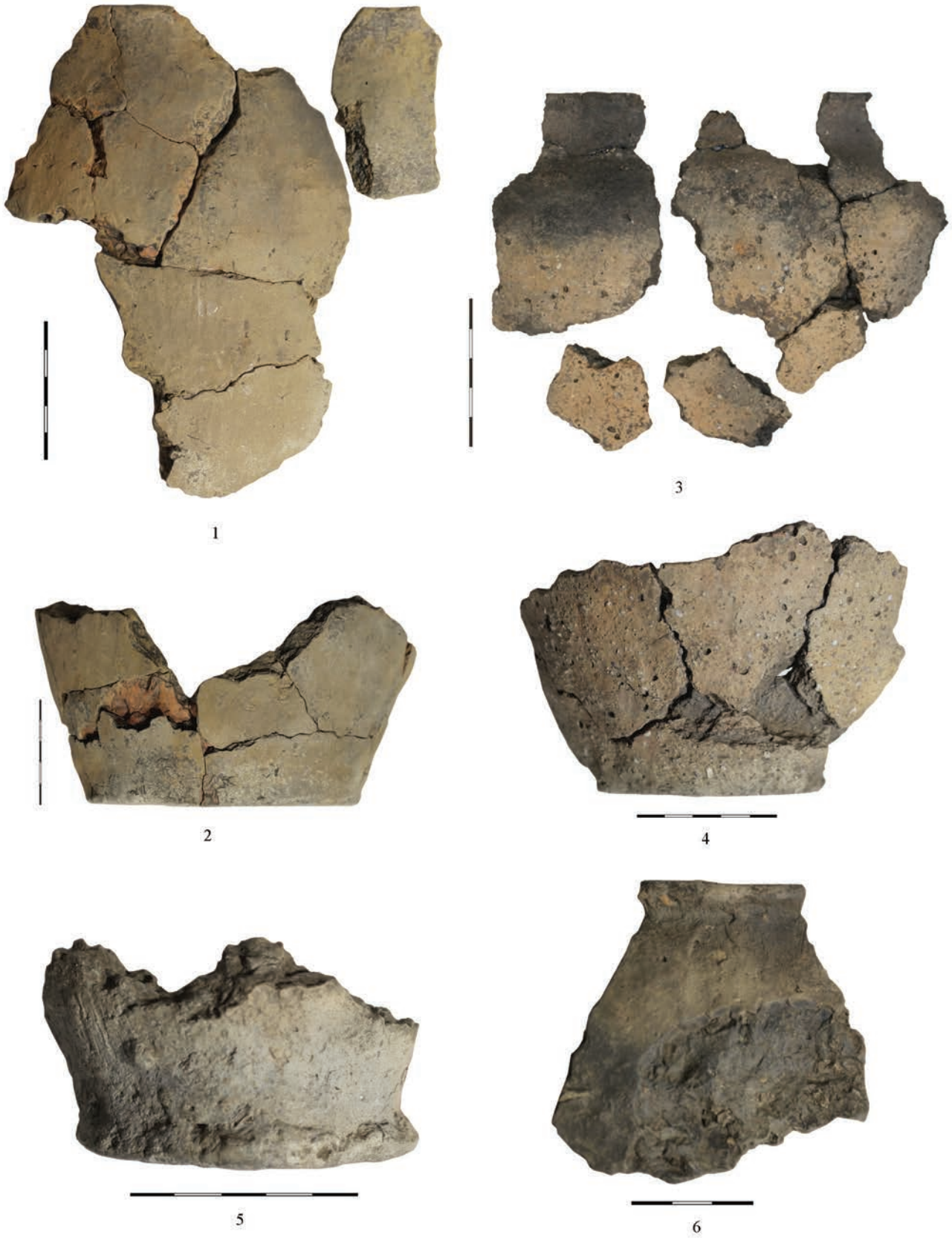
Planșa XXI. *Ceramică din locuința B.10.*

Plate XXI. *Ceramics from Dwelling 10.*



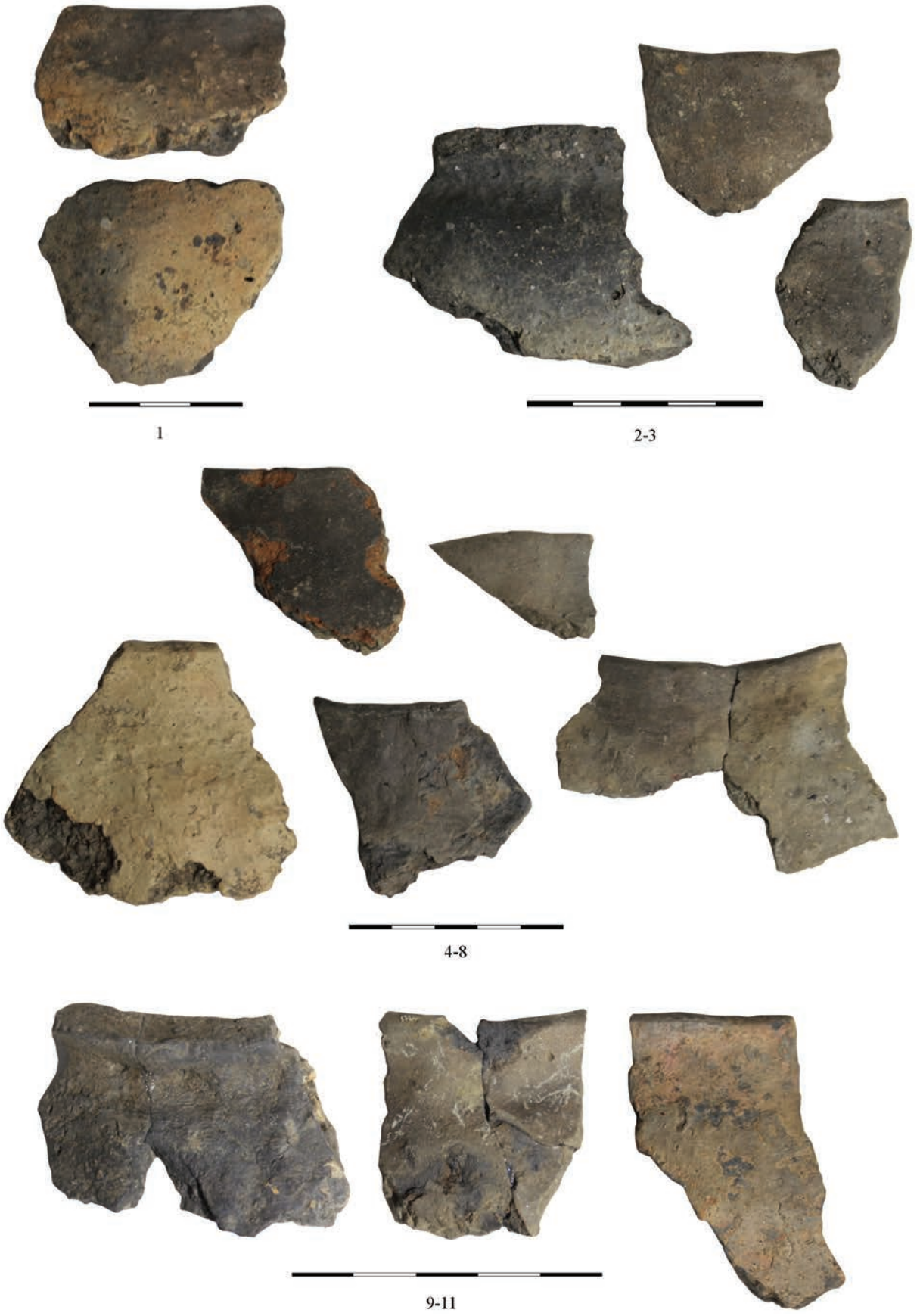
Planșa XXII. *Tipsie descoperită în locuința B.10 (1); vas cu cioc (2–3) și castroane din locuința B.10 (4–5).*

Plate XXII. *Tray discovered in Dwelling 10 (1); spouted vessel (2–3) and bowls from Dwelling 10 (4–5).*



Planșa XXIII. *Ceramică din locuința B.10.*

Plate XXIII. *Ceramics from Dwelling 10.*



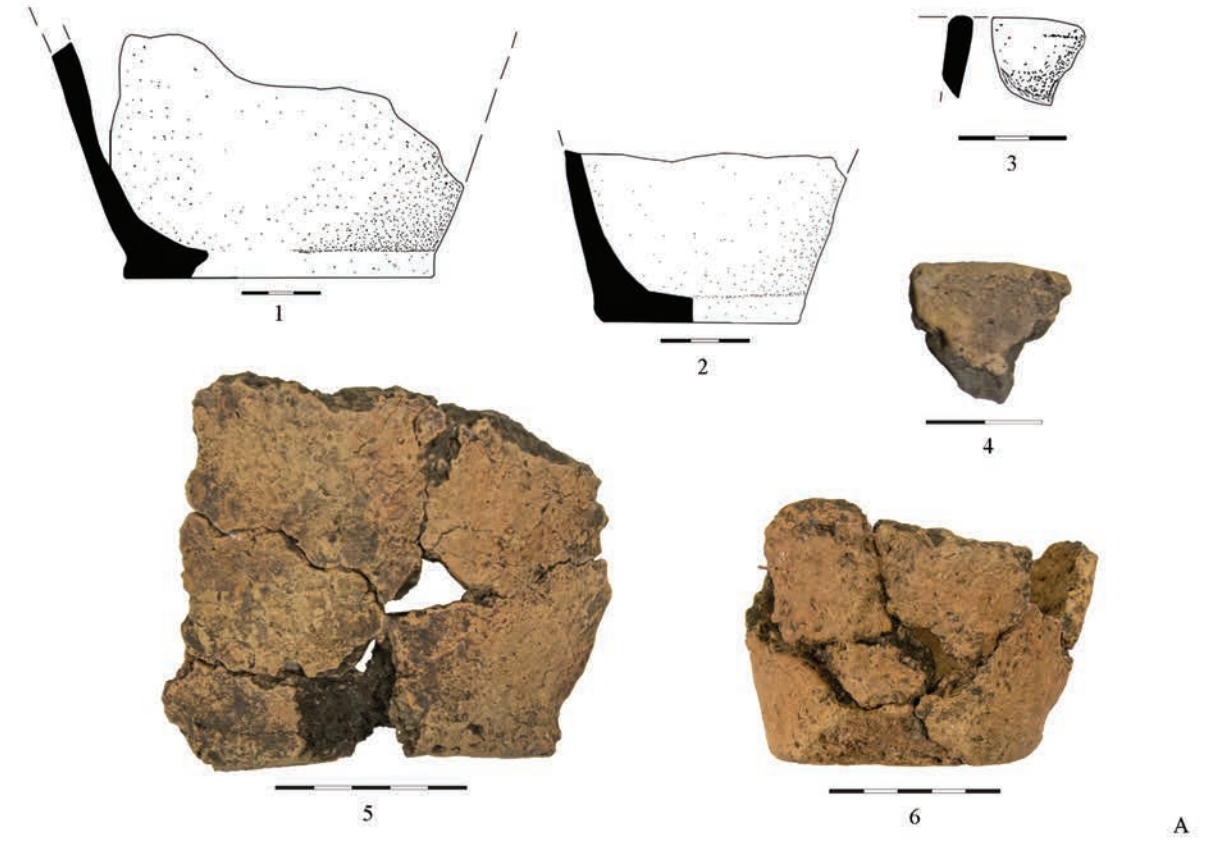
Planșa XXIV. *Ceramică din locuința B.10.*

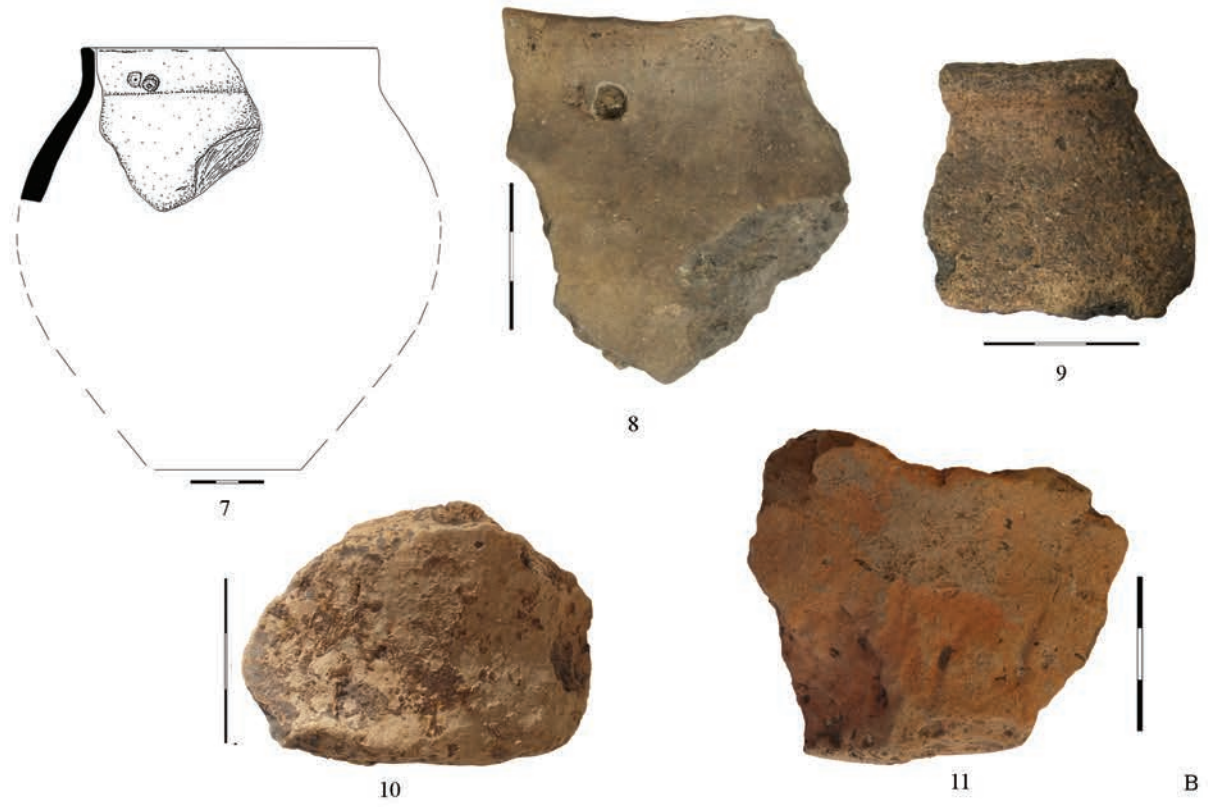
Plate XXIV. *Ceramics from Dwelling 10.*



Planșa XXV. *Vas cu cioc (1–6) și tipsie (7) descoperite în locuința B.10 (1).*

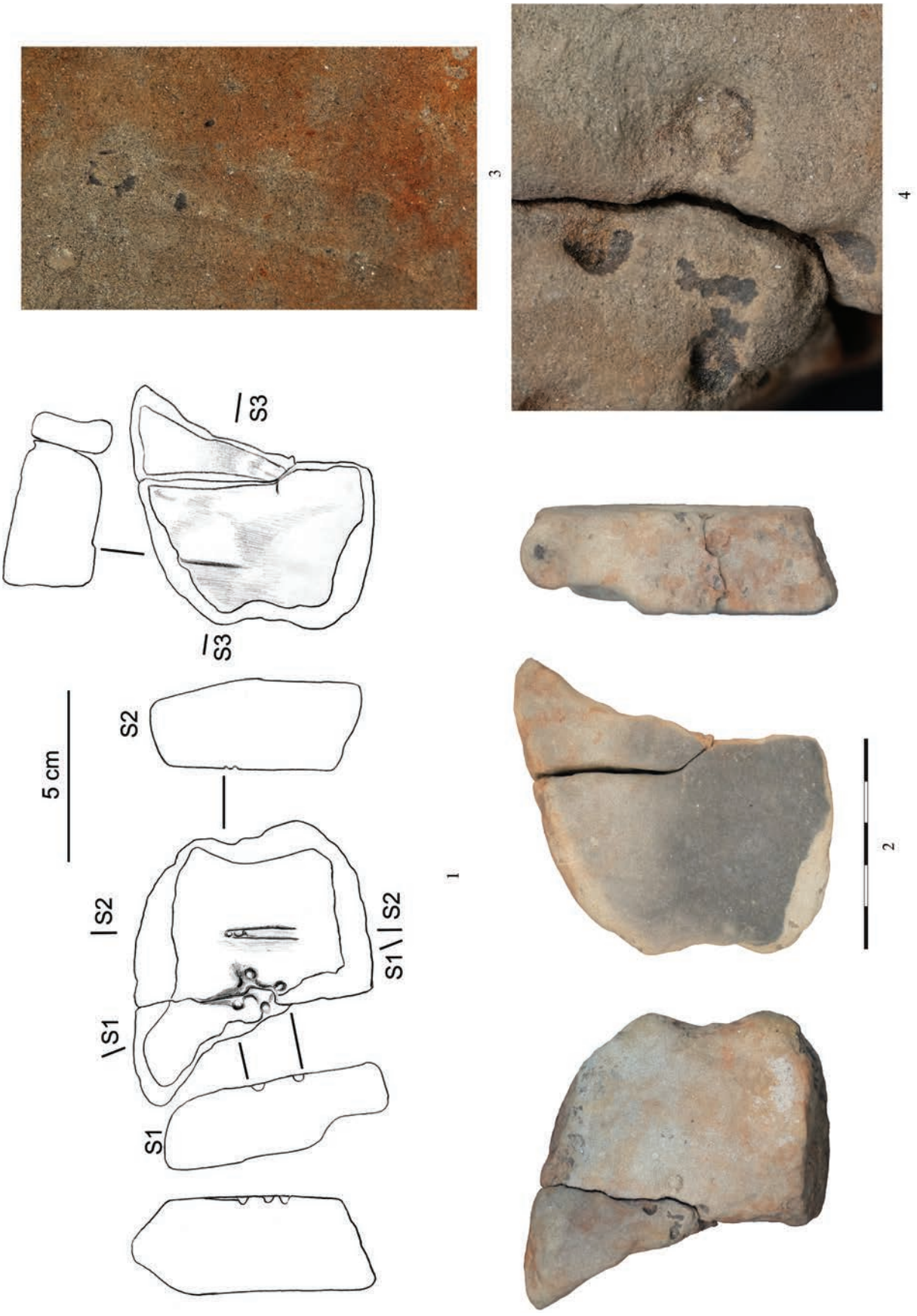
Plate XXV. *Spouted vessel (1–6) and tray (7) discovered in Dwelling 10 (1).*





Planșa XXVI. *A. Ceramică din locuința B.13 (1–6); B. ceramică din stratul arheologic (7–11).*

Plate XXVI. *A. Ceramics from Dwelling 13 (1–6); B. ceramics from the archaeological layer (7–11).*



Planșa XXVII. *Tipar din argilă grezoasă descoperit în locuința B.10 (1–2); detalii ale zonei incizate (3) și ale adâncițurilor (4).*

Plate XXVII. *Clay mould made of sandy clay discovered in Dwelling 10 (1–2); details of the incised area (3) and the depressions (4).*

MAXIMUM ENTROPY MODELLING FOR PREDICTIVE ARCHAEOLOGY: MAPPING 8TH–11TH CENTURY SETTLEMENTS IN ILFOV COUNTY

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Keywords: *MaxEnt, predictive map, Ilfov County, 8th–11th century, habitation*
Abstract: *This study employs advanced statistical methods, specifically Maximum Entropy (MaxEnt) modelling, to predict archaeological settlement locations from the 8th to the 11th centuries in the Bucharest and Ilfov regions, focusing on the Dridu culture. Using 107 known sites, the analysis integrates environmental variables (elevation, topographic position index, slope orientation, slope steepness, and distance to water) to generate a predictive map. Data preparation involved QGIS for spatial mapping and R for statistical analysis. The model, trained on 107 presence points (one point was excluded due to NA values) and 9779 absence points, achieved an AUC of 0.821, indicating strong predictive accuracy. Distance to water (73.96% contribution) and slope (25.02%) emerged as dominant factors, with high-probability zones aligning with areas near water and on moderate slopes.*

Cuvinte-cheie: *MaxEnt, hartă predictivă, regiunea Ilfov, secolele VIII–XI, habitat*
Rezumat: *Acest studiu folosește metode statistice avansate, în special modelizarea prin entropie maximală (MaxEnt), în scopul de a prevedea amplasarea siturilor arheologice între secolele VIII și XI în regiunea București-Ilfov, punând accent pe cultura Dridu. Pornind de la 107 situri cunoscute, analiza integrează variabile de mediu – altitudine, poziția topografică, orientarea pantei, diferența de nivel și distanța față de o apă curgătoare – pentru realizarea unei hărți predictive. Pregătirea datelor a implicat folosirea QGIS pentru cartografierea spațială și R pentru analiza statistică. Modelul, făcut pe 107 puncte de prezență (un punct a fost exclus din cauza valorilor lipsă) și 9 779 puncte de absență, a atins o AUC de 0,821, indicând o precizie predictivă foarte puternică. Distanța față de o apă curgătoare (73,96%) și panta (25,02%) s-au dovedit a fi factorii dominanți, zonele cu probabilitate ridicată corespunzând regiunilor apropiate de apă și situate pe pante moderate.*

INTRODUCTION

New statistical analyses have transformed the study of history, particularly in archaeology, providing efficient tools for interpreting data and reconstructing the past with striking precision. These methods, such as Bayesian analysis, spatial modelling, and maximum entropy (MaxEnt) techniques[1], allow archaeologists to extract insights from incomplete or imprecise data, test hypotheses, and make robust predictions about ancient behaviours and environments. Bayesian analysis, for example, is essential in radiocarbon dating. It integrates a priori information (such as site stratigraphy) with measured data to refine time intervals. Bronk Ramsey[2] demonstrates how Bayesian models reduce uncertainty in archaeological chronologies, allowing a more precise correlation of historical events. The MaxEnt techniques described by Frieden[3] are used to model the distribution of species[4] as a function of environmental variables, even with limited data. Maximum Entropy is a statistical method. It is used to determine the most likely distribution of a variable when the available information is incomplete. The idea behind this is to choose the distribution that increases uncertainty or disorder while still respecting known limits, such as observed data or physical properties (like values that are not negative). MaxEntropy estimates are always unbiased and general[5]. In archaeology, MaxEnt helps to predict the locations of undiscovered sites[6], optimising prospection campaigns and beyond.

Currently, in Romania, predictive maps for archaeological sites are rarely used. So far, to my knowledge, one study focused on the Buzău County area[7], where post-Roman sites were considered. Another study focused on the Eneolithic settlements in north-eastern Romania[8]. In addition, the PROSPECT project[9] (Non-destructive investigations in complex archaeological sites. An integrated model of applied research on immovable cultural heritage), led by the Alexandru Ioan Cuza University of Iași, has started such research for an area of 125 square kilometres in the south-western part of the Moldavian Plain. Lastly, a predictive map based on Generalised Linear Models was produced for Bucharest[10], with special regard to the Chilia-Militari culture.

1 Harte, Newman 2014.
2 Ramsey 2009.
3 Frieden 1972.
4 Phillips, Dudík 2008.
5 Jaynes 1982, p. 939–951.
6 Yaworsky *et alii* 2020; Rafuse 2021; Wachtel *et alii* 2018, etc.
7 Ștefan, Sîrbu 2010.
8 Nicu *et alii* 2019.
9 http://arheoinvest.uaic.ro/research/prospect/, accessed 05.03.2026, http://arheoinvest.uaic.ro/research/prospect/downloads/PROSPECT_RS-2015_RO.pdf, accessed 05.03.2026.
10 Manea 2022.

DATA SET[11] AND HISTORICAL CONTEXT

The identification of archaeological sites relied on two primary resources. For the Bucharest region, the *Repertoriul arheologic al Municipiului București*[12] was used, while the National Archaeological Repertoire was used for the Ilfov region (Fig. 1). A cartographic analysis was conducted to map all archaeological sites dated to the 8th–11th centuries, resulting in the identification of 107 sites (Fig. 2).

Dridu, an early medieval archaeological culture, is called after the Dridu village in Ialomița County. Archaeologist Ion Nestor[13] took the initiative in establishing this culture after carefully examining the finds and defining its specific traits[14]. Experts have established that the Dridu culture existed from the 8th to the 11th century, peaking in the 10th and 11th centuries. This was a period of substantial colonisation and engagement with the Byzantine and Bulgarian empires[15]. There are two main sorts of settlements in this area. Urban habitation was concentrated in the cities along the Roman Limes and in the interior of Dobrogea. On the other hand, rural habitation was more common in Wallachia[16]. The culture is an amalgam of Roman and native features that developed throughout time, inspired by Byzantine and Slavic cultures[17]. This is visible in the ceramics, which include provincial-Roman, Slavic, and Byzantine[18] elements.

The villages engaged mostly in subsistence farming[19], as well as orcharding, viticulture, gardening, and livestock keeping, with a special emphasis on cattle. Hunting was more prevalent in subcarpathian communities with forested areas. Similarly, the Danube people used fishing[20] to increase the community's food supply.

A significant proportion of the archaeological sites excavated were located on the gentle slopes near rivers, with steep terraces being a less popular option[21]. The existence of a water supply is an important[22] consideration when deciding the placement of a community. Houses were built in the pit-house or surface-house style, with either ovens or open hearths. Pit-residences account for 62.46%[23] of all dwellings in Wallachia. However, the prevalence of surface homes (25.23%) indicates that this is not an unusual occurrence, but rather a novel way to development[24]. During this time, fire installations were common, with ovens made of river stones and clay. These are followed by ovens dug into clay mounds. Finally, open hearths are the least common and are typically linked with surface houses. Once again, I see a pattern resembling the constructional and practical designs popular in previous times[25].

METHODOLOGY

The analysis was conducted on two levels: data modelling in QGIS version 3.34.9 Prizren[26] and statistical analysis and creating the MaxEnt model in R. All statistical analyses were performed in R version 4.4.1 (R Core Team, 2024). Environmental predictors were processed and analysed using the packages *raster* v3.6-32[27], *terra* v1.8-42[28], and *sf* v1.0-16[29]. Maximum entropy modelling was carried out with the *dismo* package v1.3-14[30], using 5-fold cross-validation. The data preparation in QGIS was further divided into two stages. The first stage focused on raster file processing, utilising a Digital Elevation Model (DEM)[31] to derive additional datasets (Fig. 3), including:

- **Elevation –** measuring the altitude of the terrain.
- **Slope** – measuring the steepness of the terrain.
- **Aspect** – indicating the direction a slope face.
- **Topographic Position Index (TPI)** – evaluating the relative position of a location within the surrounding landscape.
- **Distance to water** – Additionally, a proximity map was generated to calculate distances to water sources, specifically rivers. The base map for our analysis was derived from EU-Hydro River Network Database 2006–2012[32], which served as the foundation for spatial referencing.

I switched from raster to vector file generation. Initially, I mapped 107 archaeological sites chronologically dated between the 8th and 11th centuries. Each site was represented by a polygon, for which the centroid function was used to determine a centre point to which values were assigned. Raster data and geographic coordinates were then extracted for these points. Subsequently, I generated 10 000 points in the study area (only within the Ilfov County), ensuring a minimum distance of 100 meters between them. Raster data and coordinates were assigned to these points, and all points with *NA* values were excluded. The two data sets were assigned a value: 1 for true and 0 for false. The last step was processing the

[11] For a clearer understanding of the analysis, both the datasets (presence and absence points) and the R code used were submitted to the editors.
[12] Vintilă *et alii* 2024.
[13] Nestor 1958.
[14] Ciupercă, Mirea 2010, p. 116.
[15] Zaharia 1969, p. 118.
[16] Zaharia 1969, p. 118.
[17] Comșa 1978, p. 151.
[18] Comșa 1978, p. 115.
[19] Comșa 1978, p. 144.
[20] Comșa 1978, p. 144.
[21] Mănucu-Adameșteanu 1992, p. 57.
[22] Ciupercă 2012, p. 220.
[23] Ciupercă 2012, p. 219.
[24] Ciupercă 2012, p. 219.
[25] Ciupercă 2012, p. 219.
[26] QGIS Development Team 2024. Open Source Geospatial Foundation, https://qgis.org
[27] Hijmans 2023.
[28] Hijmans 2024.
[29] Pebesma 2018.
[30] Hijmans *et alii* 2023.
[31] Provided by the Shuttle Radar Topography Mission (SRTM GL1), with a resolution of 30 m, https://earthexplorer.usgs.gov/, accessed 05.03.2024.
[32] Available at https://www.eea.europa.eu/en/datahub/datahubitem-view/2e782ca5-c7b2-4b48-8928-03031b642176, accessed 05.03.2024.

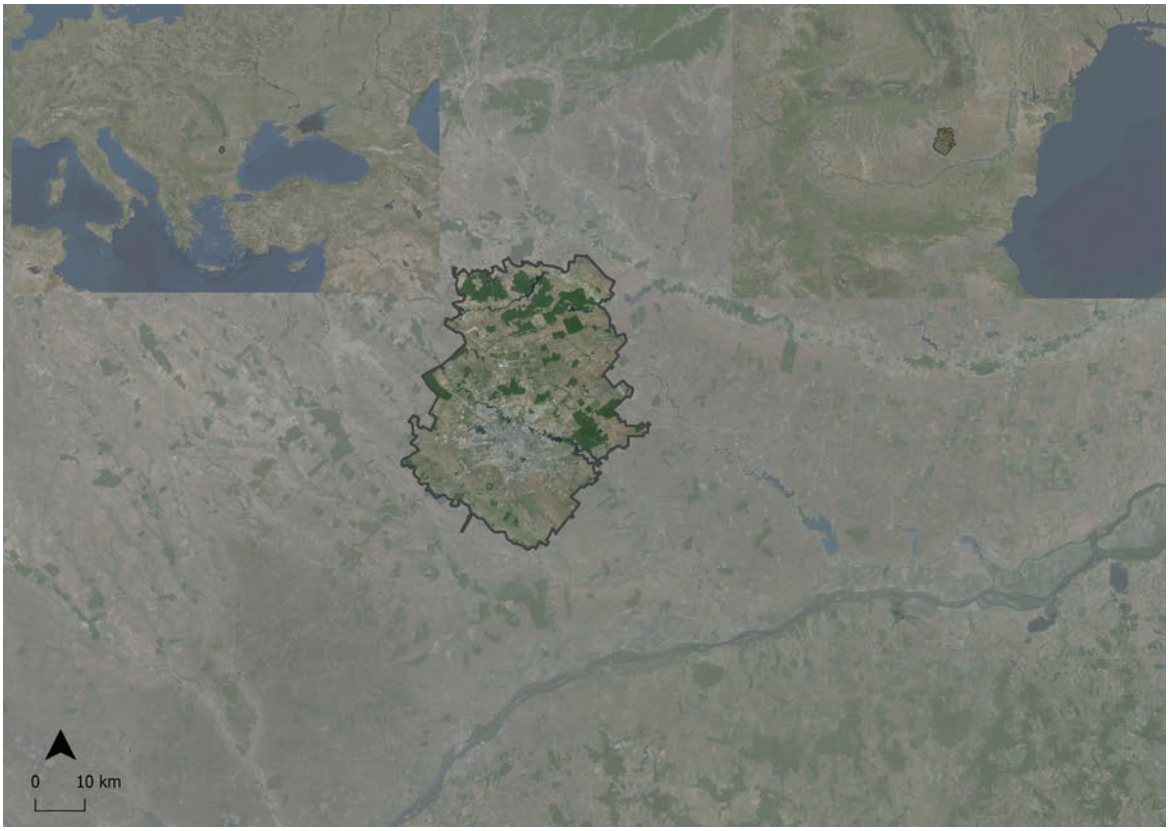
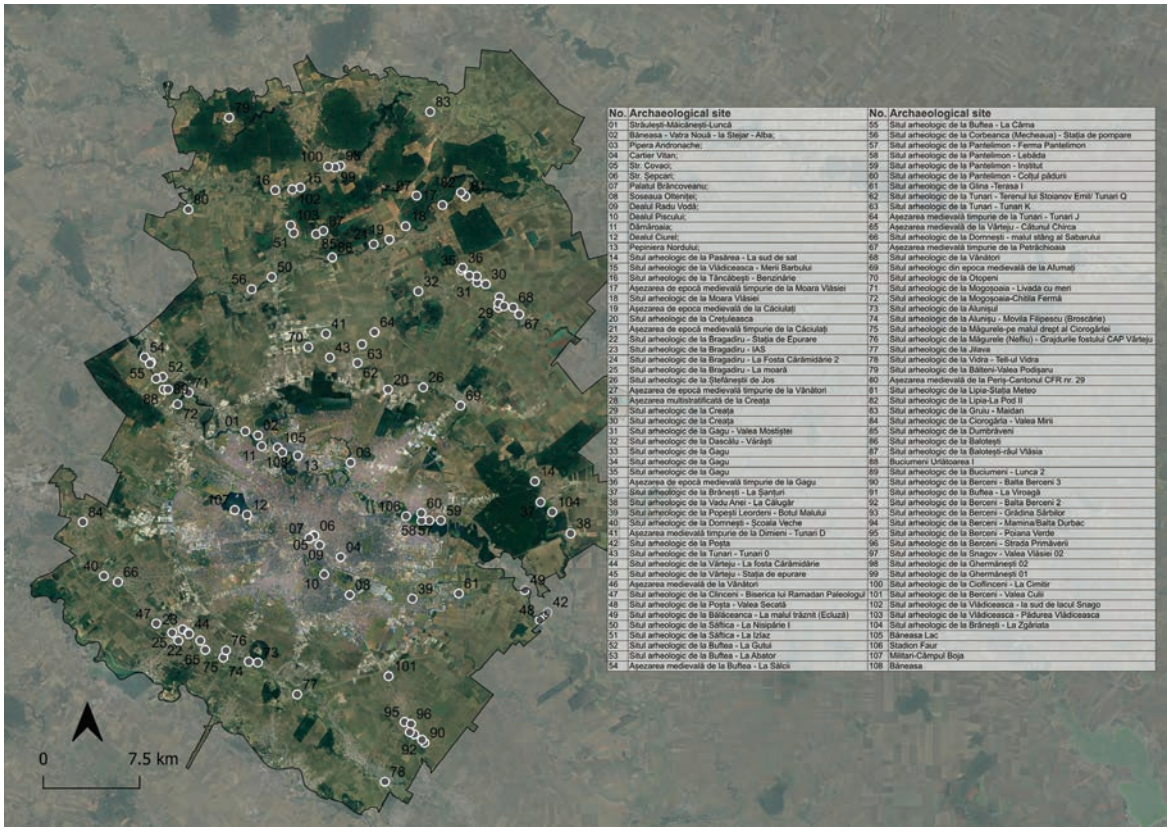


Figure 1. *Location of the study area.*



No.	Archaeological site	No.	Archaeological site
01	Străulești-Măicănești-Luncă	55	Situl arheologic de la Buftea - La Cârna
02	Băneasa - Vatra Nouă - la Știejar - Alba;	56	Situl arheologic de la Corbeanca (Mecheaua) - Stația de pompare
03	Pipera Andronache;	57	Situl arheologic de la Pantelimon - Ferma Pantelimon
04	Cartier Vitan;	58	Situl arheologic de la Pantelimon - Lebăda
05	Str. Covaci;	59	Situl arheologic de la Pantelimon - Institut
06	Str. Șepcari;	60	Situl arheologic de la Pantelimon - Colțul pădurii
07	Palatul Brâncoveanu;	61	Situl arheologic de la Glina - Terasa I
08	Șoseaua Olteniței;	62	Situl arheologic de la Tunari - Terenul lui Stoianov Emil/ Tunari Q
09	Dealul Radu Vodă;	63	Situl arheologic de la Tunari - Tunari K
10	Dealul Piscului;	64	Așezarea medievală timpurie de la Tunari - Tunari J
11	Dâmbroaia;	65	Așezarea medievală de la Vârteju - Câtunul Chirca
12	Dealul Ciurel;	66	Situl arheologic de la Domnești - malul stâng al Sabarului
13	Pepiniera Nordului;	67	Așezarea medievală timpurie de la Petrăchioaia
14	Situl arheologic de la Pasărea - La sud de sat	68	Situl arheologic de la Vânători
15	Situl arheologic de la Vlădiceasca - Merii Barbului	69	Situl arheologic din epoca medievală de la Afumați
16	Situl arheologic de la Tâncăbești - Benzinărie	70	Situl arheologic de la Otopeni
17	Așezarea de epocă medievală timpurie de la Moara Vlăsiei	71	Situl arheologic de la Mogoșoaia - Livada cu meri
18	Situl arheologic de la Moara Vlăsiei	72	Situl arheologic de la Mogoșoaia-Chitilia Fermă
19	Așezarea de epoca medievală de la Căciulați	73	Situl arheologic de la Alunișul
20	Situl arheologic de la Crețulească	74	Situl arheologic de la Alunișu - Movila Filipescu (Broscărie)
21	Așezarea de epocă medievală timpurie de la Căciulați	75	Situl arheologic de la Măgurele-pe malul drept al Ciorogârlei
22	Situl arheologic de la Bragadiru - Stația de Epurare	76	Situl arheologic de la Măgurele (Nefliu) - Grajdurile fostului CAP Vârteju
23	Situl arheologic de la Bragadiru - IAS	77	Situl arheologic de la Jilava
24	Situl arheologic de la Bragadiru - La Fosta Cărămidărie 2	78	Situl arheologic de la Vidra - Tell-ul Vidra
25	Situl arheologic de la Bragadiru - La moară	79	Situl arheologic de la Bălteni-Valea Podișaru
26	Situl arheologic de la Ștefănești de Jos	80	Așezarea medievală de la Periș-Cantonul CFR nr. 29
27	Așezarea de epocă medievală timpurie de la Vânători	81	Situl arheologic de la Lipia-Stația Meteo
28	Așezarea multistratificată de la Creața	82	Situl arheologic de la Lipia-La Pod II
29	Situl arheologic de la Creața	83	Situl arheologic de la Grui - Maidan
30	Situl arheologic de la Creața	84	Situl arheologic de la Ciorogârla - Valea Mirii
31	Situl arheologic de la Gagu - Valea Mostiștei	85	Situl arheologic de la Dumbrăveni
32	Situl arheologic de la Dascălu - Vârăști	86	Situl arheologic de la Baloteşti
33	Situl arheologic de la Gagu	87	Situl arheologic de la Baloteşti-râul Vlăsia
34	Situl arheologic de la Gagu	88	Bucuiumeni Uriașoarea I
35	Situl arheologic de la Gagu	89	Situl arheologic de la Bucuiumeni - Lunca 2
36	Așezarea de epocă medievală timpurie de la Gagu	90	Situl arheologic de la Berceni - Balta Berceni 3
37	Situl arheologic de la Brănești - La Șanțuri	91	Situl arheologic de la Buftea - La Viroagă
38	Situl arheologic de la Vadu Anei - La Călugăr	92	Situl arheologic de la Berceni - Balta Berceni 2
39	Situl arheologic de la Popești Leordeni - Botul Malului	93	Situl arheologic de la Berceni - Grădina Sârbilor
40	Situl arheologic de la Domnești - Școala Veche	94	Situl arheologic de la Berceni - Mamina/Balta Durbac
41	Așezarea medievală timpurie de la Dimieni - Tunari D	95	Situl arheologic de la Berceni - Poiana Verde
42	Situl arheologic de la Poșta	96	Situl arheologic de la Berceni - Strada Primăverii
43	Situl arheologic de la Tunari - Tunari 0	97	Situl arheologic de la Snagov - Valea Vlăsiei 02
44	Situl arheologic de la Vârteju - La fosta Cărămidărie	98	Situl arheologic de la Ghermănești 02
45	Situl arheologic de la Vârteju - Stația de epurare	99	Situl arheologic de la Ghermănești 01
46	Așezarea medievală de la Vânători	100	Situl arheologic de la Ciofîncenii - La Cimitir
47	Situl arheologic de la Clinceni - Biserica lui Ramadan Paleologul	101	Situl arheologic de la Berceni - Valea Cuiu
48	Situl arheologic de la Poșta - Valea Secată	102	Situl arheologic de la Vlădiceasca - la sud de lacul Snago
49	Situl arheologic de la Băiăceanca - La malul străzii (Ecluză)	103	Situl arheologic de la Vlădiceasca - Pădurea Vlădiceasca
50	Situl arheologic de la Săftica - La Nisipărie I	104	Situl arheologic de la Brănești - La Zgârieta
51	Situl arheologic de la Săftica - La Izlaz	105	Băneasa Lac
52	Situl arheologic de la Buftea - La Gutui	106	Stadion Faur
53	Situl arheologic de la Buftea - La Abator	107	Militari-Câmpul Boja
54	Așezarea medievală de la Buftea - La Sălcii	108	Băneasa

Figure 2. *Archaeological sites of the 8th–11th centuries identified in the studied area.*

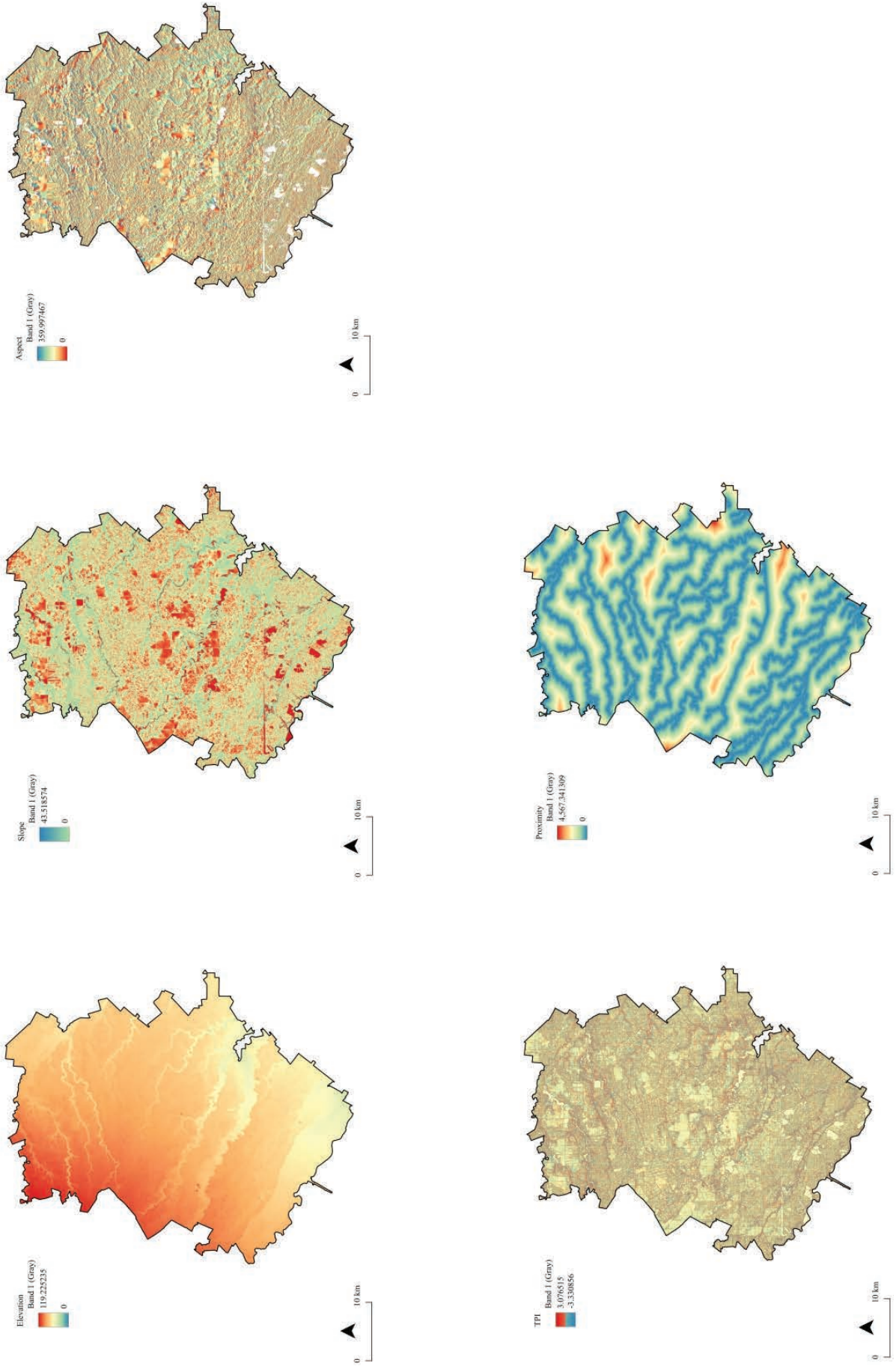


Figure 3. *Datasets derived from the Digital Elevation Model.*

data in R and finally generating the probability map. The projection CRS 3844 Pulkovo 1942(58) / Stereo70 was used throughout the analysis, and datasets that had a different coordinate system were reprojected.

LIMITATIONS

The model is based on current environmental conditions. If the landscape has changed significantly between the 8th–11th centuries and the present (e.g., diverted rivers, deforestation), predictions may be less accurate. No field verifications or measurements were performed to validate or, where applicable, invalidate the extracted parameters. The primary objective of the study was solely the development of a predictive model that could also contribute to the advancement of new technologies for identifying areas with archaeological potential. I should also note that ecological boundaries were not used; instead, administrative boundaries were applied. This choice undoubtedly weakens the model and does not follow the territorial divisions of the 8th–11th centuries (to the extent that they existed). Nevertheless, I chose to analyse Ilfov County and the Bucharest area because these regions have been relatively well researched archaeologically, resulting in a more robust and high-quality dataset. The 10,000 background points were generated within the study area to characterise the environmental conditions available across Ilfov, rather than to represent the full extent of any river watershed.

ANALYSES

Prior to model calibration, the environmental variables were standardised using z-score transformation (mean = 0, standard deviation = 1) with the *scale ()* function in R. This preprocessing step was necessary to bring predictors with different units and ranges (elevation in metres, slope in degrees, etc.) to a common scale, ensuring equal weighting across variables and improving numerical stability during model fitting.

I trained the model on the 107 presence points using 5-fold cross-validation in MaxEnt (replicatetype = crossvalidate, replicates = 5). The points were randomly split into five folds of roughly the same size. In each of the five runs, I trained the model on four folds (around 86 points) and tested it on the remaining fold of about 21 points. I repeated the whole process five times so that every fold was used once for validation. On average, the training AUC across the five folds was 0.821, while the test AUC came out at 0.809. Because I only had a fairly small number of presence records, I chose not to set aside an independent test set, this would have noticeably weakened the statistical power of the model. Model complexity was controlled by using only linear and quadratic feature classes and setting the regularization multiplier to 1.5. More complex feature classes (hinge, product, threshold) were disabled to reduce the risk of overfitting, given the relatively small number of presence records (n = 107). These settings were chosen manually following recommendations for small sample sizes in MaxEnt modelling[33].

Variable	Dem	TPI	Aspect	Slope	Distance
Dem	1.0000	0.035	-0.024	-0.0610	-0.147
TPI	0.035	1.0000	-0.024	0.422	0.0000
Aspect	-0.024	-0.024	1.0000	0.007	-0.004
Slope	-0.0610	0.422	0.007	1.0000	-0.010
Distance	-0.147	0.0000	-0.004	-0.010	1.0000

Table 1. *Correlation Matrix.*

For a better understanding of the model results, I first need to see what connections exist between the variables; for this reason, I generated correlation matrices. A multicollinearity test was conducted using Pearson's correlation and the Variance Inflation Factor (VIF) to evaluate dependence among predictor variables and enhance model accuracy and interpretability. Pearson's correlation matrix assesses pairwise relationships between independent variables[34]. Pearson's method was selected, as it is the standard approach in species distribution modelling for detecting linear relationships between continuous variables. Thus, all absolute correlation coefficients are below 0.7 (the highest being 0.422 between Slope and TPI), which indicates the lack of strong correlations or redundancy between variables. I can observe that Slope and TPI show a moderate positive correlation (0.422), suggesting that steeper slopes tend to occur in areas with higher topographic position (ridges). However, this relationship remains within acceptable limits. All other pairwise correlations are very weak ($|r| < 0.15$), with the strongest negative correlation being -0.147 between DEM and Distance to water. Elevation (DEM), Aspect, and TPI show very weak correlations with the other variables (< 0.07), confirming their relative independence.

The five graphs (Fig. 5) show the influence that each variable holds in the model. Distance to water turned out to be by far the most important variable in the model, explaining almost 74% of the variation. The response curve shows a clear U-shaped pattern: the probability of site presence is high both when settlements are located very close to water and when they are placed at relatively large distances from it. However, around the average distance found in the study area, this probability drops sharply. This suggests that 8th–11th century communities in Ilfov either preferred to stay close to water sources or deliberately

[33] Merow *et alii* 2013, p. 1063.
[34] Alin 2010.

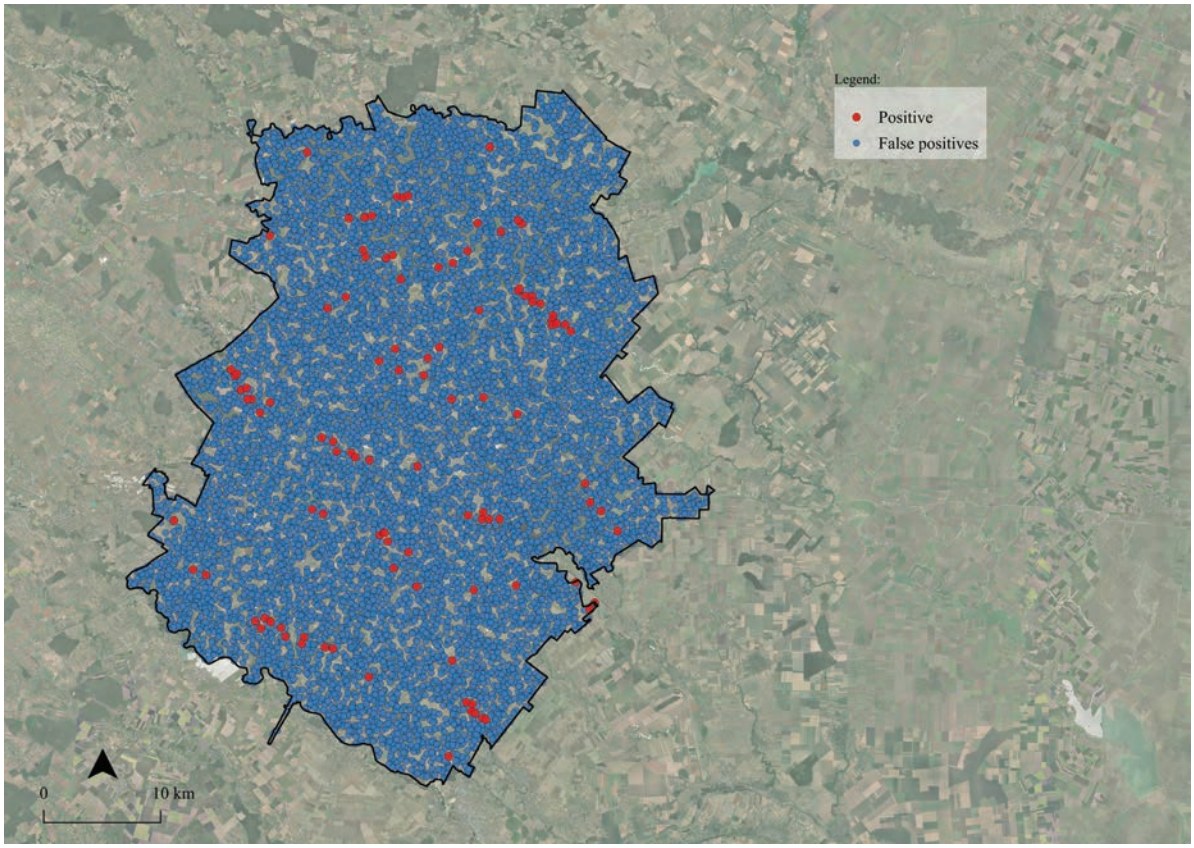


Figure 4. *Distribution of positive and false positive points in the studied area.*

chose more distant locations (possibly for defensive, strategic, or topographic reasons).

Slope came in as the second most important variable in the model, accounting for 25.02% of the contribution. Looking at the response curve, I can see a very clear pattern: the probability of finding a settlement is quite low on completely flat ground, then rises sharply and peaks on gentle to moderate slopes (around 3–6 degrees), before dropping off again on steeper terrain. This suggests that people in the 8th–11th centuries preferred locations with a bit of slope, probably because these spots were easier to build on, better for farming, and offered better drainage, while avoiding both the very flat areas and the steep slopes. Slope orientation (Aspect) also played a very minor role, contributing only 0.65%. The curve stays almost completely flat across all directions, suggesting that the way the slope faced (north, south, east, or west) had little to no effect on settlement location. The Topographic Position Index (TPI) had almost no influence at all, with a contribution of just 0.02%. Elevation had only a minor contribution (0.36%). The curve shows a weak negative trend, meaning the probability of finding sites was slightly higher at lower elevations and gradually decreased as altitude increased. Overall, height above sea level does not appear to have been an important factor in where people chose to settle.

n presences	107
n absences	9779
Mean Training AUC (5-fold CV)	0.821
Regularized Training Gain	0.626
Unregularized Training Gain	0.712

Table 2. *Model evaluation.*

I evaluated the model, which showed good predictive performance with a mean training AUC of 0.821 (SD = 0.008) across the 5-fold cross-validation. The regularised training gain was 0.626 and the unregularised training gain was 0.712. The binary map (Fig. 6.1) reflects this performance by reasonably aligning red dots with green areas. The threshold of 0.21 (corresponding to the 10th percentile of training presence) was used to generate the binary suitability map. This conservative threshold maximises the balance between sensitivity and specificity while minimising omission of known sites. The mean Training AUC across the 5-fold cross-validation was 0.821, while the mean Test AUC was 0.809. The small difference between training and test performance indicates good generalisation and limited overfitting. The regularised training gain of 0.626 is reasonable, and the difference from the unregularised training gain (0.712) confirms that the regularization multiplier of 1.5 effectively controlled model complexity without compromising predictive power.

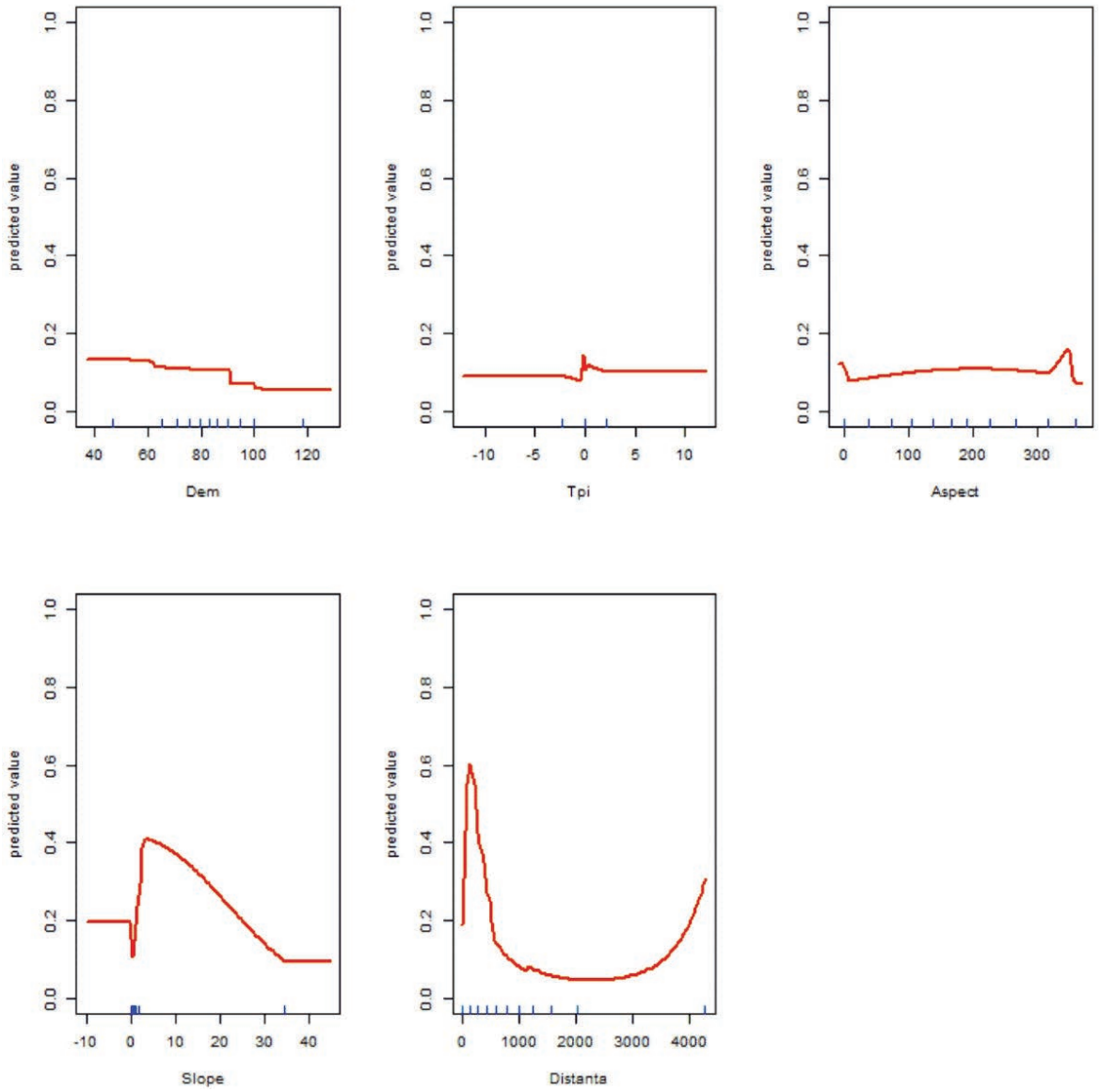


Figure 5. *Influence of each variable in the proposed model.*

Metric	Mean Value	SD
Number of presence points	107	-
Number of background points	9.779	-
Training AUC	0.821	0.007
Test AUC	0.809	0.035
Regularized Training Gain	0.626	0.038
Unregularized Training Gain	0.712	0.033
Iterations (mean)	160	24.5
Variable contribution (%)		
Distance to water	73.96	2.68
Slope	25.02	3.12
DEM	0.36	0.48
Aspect	0.65	0.42
TPI	0.02	0.03
Permutation Importance (%)		
Distance to water	72.72	4.85
Slope	26.09	4.12
Thresholds used		
10th percentile training presence	0.2	-
Minimum training presence	0.078	-
Equal training sensitivity + specificity	0.412	-

Table 3. *Detailed results of the model.*

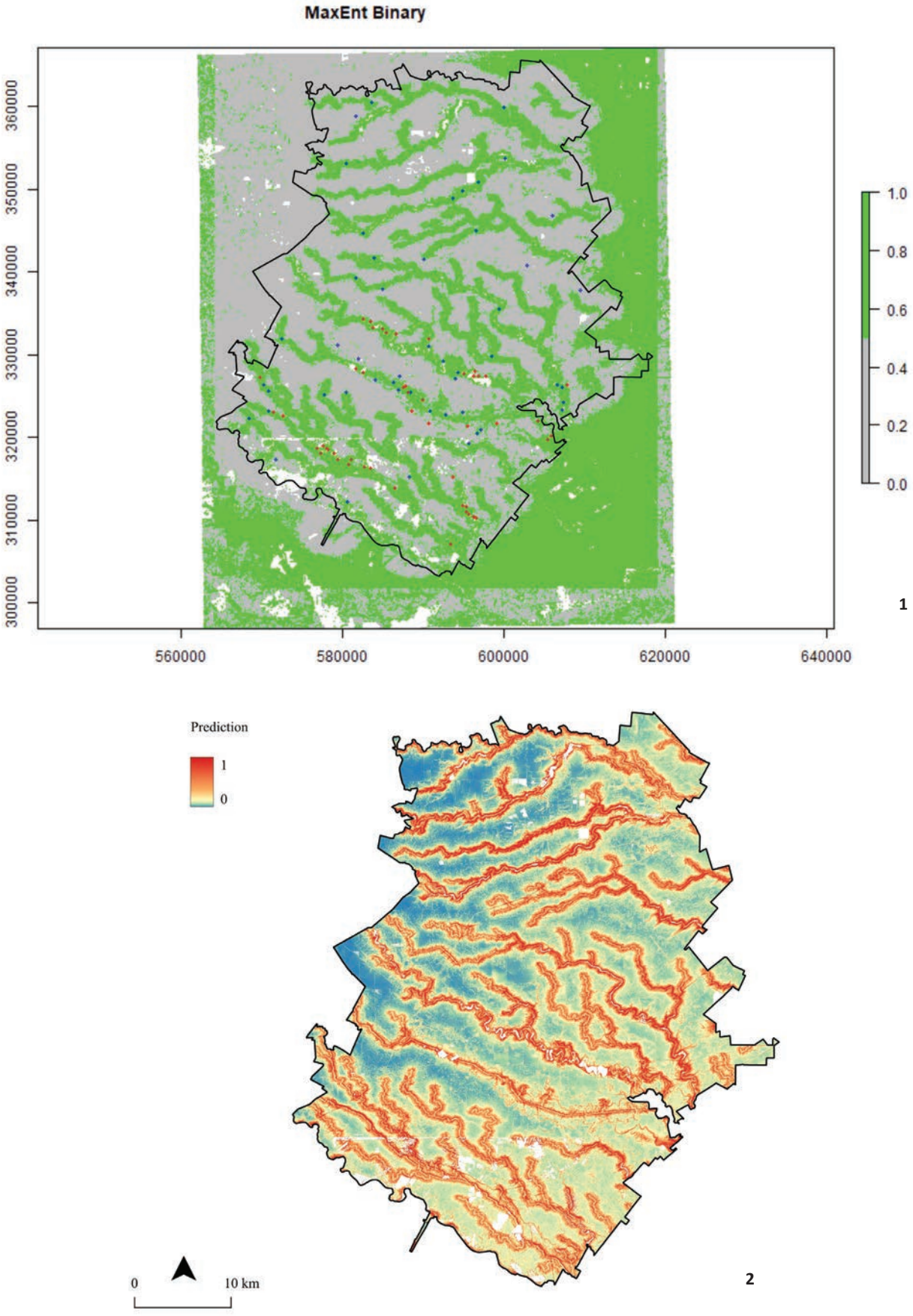


Figure 6. *Binary map of the predictive model of 8th–11th century settlements (1); Predictive map of 8th–11th century settlements (2).*

DISCUSSIONS AND CONCLUSION

Taking into account the results of the analysis and the generated map, I can state that distance to water and slope are the most important variables for 8th–11th century settlements. The map uses a colour scale from green (probability 0) to red (probability 1) (Fig. 6.2). The high probability areas (red and orange, 0.6–1.0) are concentrated along the water in the low hills, while the low probability areas (green, 0–0.2) dominate the north and western parts.

Distance to water was the most important factor in the model, contributing 73.96%. Looking at the response curve, I see a clear U-shaped pattern. This suggests that people in the 8th–11th centuries either preferred to settle right next to water sources, probably for practical reasons like farming, drinking water, and daily life or deliberately chose more distant locations, perhaps for defensive or strategic reasons.

Slope came second in importance; the response curve could suggest that 8th–11th century communities preferred moderately sloping land, likely because these areas were easier to build on, offered better drainage, and were more suitable for agriculture. The other three variables (elevation, TPI, and aspect) had very small contributions (all under 1%). Their response curves are almost flat, meaning these factors had little to no real influence on where settlements were established during this period.

Slope appears to be relevant to the distribution of archaeological sites, as it is evident from the data for this area that the majority of sites are located on predominantly flat terrain with minimal slope, i.e. a slope of up to 3 degrees.[35] In terms of how they procured their food, a flatter slope was beneficial for raising livestock and practising agriculture. Even if hunting was no longer the main way of foraging at this time, flat slopes could help achieve a higher success rate with less effort. In a previous analysis of the specific geographic conditions for this type of habitation[36], I concluded that the communities preferred altitudes between 70–100 m (80 sites), flat terrain (44 sites), with southern exposure (25 sites). Another obvious observation is the preference for locations found near water sources (71 sites) and, most noticeably, in the lowland areas of Otopeni (21 sites), Moviliței (20 sites) and Snagov (19 sites). At the same time, the increased density of settlements in the north and south could also be related to the pendulum theory of these communities. As expected, the most favourable areas for the development of 8th–11th century habitation are those in the proximity to water sources. If I look at the map, I observe that in the southern part of the surveyed area in the area of rivers Câlnău, Sabăr, Ciorogârla, Argeș (in the Argeș-Sabăr meadow and Cotroceni Plain) I have quite large areas with high probability of occurrence of Dridu type habitats, the same in the eastern area towards the centre of Ilfov County. For the western area, I have the least chances to find archaeological sites.

In conclusion, the predictive model MaxEnt has allowed us to begin to identify key factors of the geographic landscape that are essential for decisions making in establishing new 8th–11th century communities in the Ilfov area. The model does not show areas where there would be certainty of archaeological sites, but areas that fulfil all the requirements for Dridu culture habitation.

*** This paper is accompanied by supplementary material, made available by the author, based on FAIR criteria. You can access the supplementary material in the dedicated section on the journal's website, within the Archive, under the *Supplementary Material* heading.

[35] Manea 2023, p. 49.

[36] Manea 2023, p. 50.

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BEYOND CULTURAL GROUPS
RETHINKING HOREDT'S CULTURAL GROUPING SYSTEM IN EARLY MEDIEVAL TRANSYLVANIA

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Keywords: *Transylvania, Kurt Horedt, cultural groups, ethnicity, Early Middle Ages, cemetery classification*
Abstract: *The Transylvanian region between the 7th and 11th centuries was marked by the presence of multiple ethnically and culturally diverse communities living side by side. Although these populations shared certain archaeological characteristics and funerary practices, notable distinctions led researchers to establish a classification framework for differentiating cemetery groups. Developed primarily by Kurt Horedt, this framework organised the region into several groups – Mediaș, Gâmbaș, Blandiana, Ciumbrud and Cluj – according to key burial sites, as well as their presumed ethnic and chronological attributes. In this study, we reexamine these groups by focusing on the circumstances and motivations behind their formation, while also assessing the broader impact of this methodological approach on the study of the period and the region. Furthermore, the paper addresses continuing debates surrounding previously discovered cemeteries and their classification within this system and considers possible avenues for methodological refinement and the reassessment of earlier interpretations.*

Cuvinte-cheie: *Transilvania, Kurt Horedt, grupuri culturale, etnie, Evul Mediu timpuriu, clasificarea cimitirelor*
Rezumat: *Regiunea Transilvaniei din secolele VII–XI s-a caracterizat prin coexistența mai multor comunități distincte din punct de vedere etnic și cultural. Deși aceste populații prezentau anumite asemănări în ce privește patrimoniul arheologic și practicile funerare, diferențele semnificative au determinat cercetătorii să elaboreze un cadru de clasificare pentru diferențierea grupurilor de cimitire. Dezvoltat în principal de Kurt Horedt, acest sistem a organizat regiunea în mai multe grupuri – Mediaș, Gâmbaș, Blandiana, Ciumbrud și Cluj – pe baza principalelor situri funerare, precum și a caracteristicilor etnice și cronologice presupuse. În acest studiu, reexaminăm aceste grupuri concentrându-ne asupra circumstanțelor și motivelor care au stat la baza formării lor, evaluând totodată impactul mai larg al acestei abordări metodologice asupra cercetării perioadei și regiunii. De asemenea, lucrarea abordează dezbaterile încă existente privind cimitirele descoperite anterior și încadrarea lor în acest sistem, analizând posibile direcții pentru rafinarea metodologiei și reevaluarea interpretărilor anterioare.*

1. INTRODUCTION

One of the undeniable characteristics of the Transylvanian territories is that several populations with different cultural backgrounds lived side by side during the same period. Although numerous similarities can be observed in the archaeological heritage and burial customs of these groups, significant differences are also evident; therefore, from an archaeological perspective, it became necessary to establish a system that would allow these cemeteries to be distinguished from one another. As a result, a classification framework emerged which, in certain respects, resembles the differentiation of prehistoric archaeological cultures. Within the region, the following units were identified: the Mediaș, Gâmbaș, Blandiana, Ciumbrud, Nușfalău and Cluj groups. This classification system was developed by Kurt Horedt, whose work continues to play a decisive role in current research[1].

Contemporary scholarly debates primarily focus on determining to which group certain cemeteries – especially newly discovered ones – should be assigned. According to the methodological principles underlying this classification, the names of the groups refer to the most significant archaeological sites associated with a given population and were attributed the following ethnic and chronological meanings: the Mediaș group includes the 6th–8th century biritual and cremation Slavic cemeteries; the Nușfalău group comprises the 8th century Slavic tumulus cemeteries[2]; the Gâmbaș group represents the 7th–8th century Avar heritage of Transylvania; the Blandiana group is associated with the 9th century Bulgarian finds; the Ciumbrud group includes 9th–10th century Moravian or Bulgarian burials; while the Cluj group encompasses the 10th–11th century burials of the conquering Hungarians. In addition, to provide a more nuanced picture, researchers often discuss the Blandiana group in parallel with the Dridu or Danubian-Balkan culture, while the Cluj group is frequently connected to the Bijelo Brdo culture. In our analysis, we examine these groups, focusing on the circumstances and motivations behind

[1] Horedt 1986, p. 59–87.

[2] Although the Nușfalău group constitutes one of the Horedt's classification system, it is not discussed in detail in the present study. The research focuses primarily on Central and Southern Transylvania, whereas the Nușfalău cemeteries are concentrated in the northwestern part of the region. Their inclusion would have substantially broadened the geographical scope of the analysis and diverted attention from the microregional framework adopted here.

their emergence, as well as the impact this methodological framework has had on the study of both the period and the region. First, we investigate the research history of these groups, together with the major scholarly questions and problems associated with them. The chronological focus of the research is primarily directed toward the 8th–11th centuries.

2. MEDIAȘ GROUP

The group derives its name from the cemetery located at Mediaș – *Dealul Furcilor*, excavated between 1960 and 1961 (Pl. I). In the Mediaș cemetery, alongside cremation burials, a small number of inhumation graves were also identified; consequently, Horedt interpreted the site as a biritual cemetery[3]. In the following years, an increasing number of cemeteries with a similar structure were uncovered (such as Ocna Sibiului[4] and Bratei II[5]), where both burial rites were attested within the same burial ground, leading to the rapid spread and acceptance of the term[6]. According to current data, approximately twenty cemeteries from this period can now be assigned to this group. Over time, however, the definition of the group broadened to include cemeteries containing exclusively cremation burials[7]. As a result, the need emerged to distinguish separate subgroups within the main category: on the one hand, cemeteries containing exclusively cremation burials, and on the other, biritual cemeteries[8].

In contrast to other identified groups, the Mediaș-type cemeteries were distributed across a much wider area, from the region of the Someșul Mic River to the Olt Valley[9], extending their boundaries toward central Transylvania and in the northern territories – if the available data are reliable – as far as the valley of the Bistrița River[10]. Consequently, criticism has increasingly emerged in scholarly discourse regarding the terminology of the Mediaș group, primarily because it does not exclusively include biritual cemeteries and, secondly, because it is not confined solely to the examined region, as similar phenomena can also be observed across a much broader geographical area[11]. Within Transylvania, however, the cemeteries are concentrated mainly in two regions: the Mureș–Târnava area and the microregion of the Someșul Mic. Since a comprehensive overview of the entire group would exceed the geographical scope of the present study, the detailed analysis will focus only on the cemeteries situated in the Mureș Valley and the neighbouring Târnava region. In terms of burial rite, only cremation burials occur in the following cemeteries: Uioare de Jos, Șeica Mică, Păuca, and Turdaș. The biritual cemeteries include Berghin, Bratei, Alba Iulia – *Stația de Salvare*, Boarta, Mediaș, Ghirbom – *Gruiul Fierului*, and Ocna Sibiului.

The question arises as to what may properly be defined as a biritual cemetery. According to Țiplic's definition[12], which is similar to that of Zábojník[13] – who examined the Avar cemeteries of present-day Slovakia – birituality refers to the simultaneous practice of both burial rites within the same community. The evaluation of the Mediaș site is of particular importance, since it has been used in scholarship as the first documented evidence of biritual cemeteries. Nevertheless, more detailed examinations call for greater caution. Horedt – who also directed the excavation of the cemetery – regarded the evidence for birituality as lying in the fact that burials of the two different rites occurred at the same depth and that the inhumation and cremation graves fit coherently within the internal structure of the cemetery. If only these observations are taken into account, the contemporaneity of the burials indeed appears plausible. The situation, however, is not so straightforward. The three inhumation burials uncovered in the cemetery were oriented northwest–southeast, and none of the graves contained grave goods. Inhumation grave no. 11 lies at a relatively great distance from the grave rows, which were generally arranged in two lines, and therefore does not necessarily indicate a close connection with the other burials. Furthermore, the cemetery plan may not entirely reflect the actual situation, while the descriptions of the other two inhumation burials also reveal problematic features. In the case of grave no. 4 – which had been partially disturbed by work activity prior to excavation – a vessel or urn was observed directly beside and at a higher level than the skeleton of a *maturus*-aged male. It remains unclear whether this represented a separate cremation burial or a grave good belonging to the inhumation burial[14]. Due to the lack of precise observations, neither interpretation can be conclusively proven. In grave no. 5, urn no. 9 was found beside the pelvis and left forearm of the skeleton at the same depth level. The cemetery plan, however, is inaccurate in this respect, as it depicts them as two separate units, despite the written descriptions suggesting otherwise. In this sense, the cemetery plan should rather be regarded as an interpretation than as a fully objective representation. According to Horedt, the identical depth and immediate proximity suggest that the burials involving differing rites took place simultaneously. In his opinion, the inhumation grave may have belonged to a man, while the cremation burial belonged to a woman, although no definitive evidence supports this interpretation. Nevertheless, he considered the close spatial relationship between the urn and the skeleton to indicate contemporaneity, since they could only have been

[3] Horedt 1965, p. 7–22.
[4] Protase 2005.
[5] Zaharia 1977.
[6] Horedt 1986, p. 60–66.
[7] Țiplic, Tomagea 2016, p. 10–13.
[8] Tomagea 2012, p. 12.
[9] Gáll *et alii* 2020, p. 148.
[10] Țiplic 2005, p. 10.
[11] Stanciu 2015, p. 125.
[12] Țiplic, Țiplic 2014, p. 175.
[13] Zábojnik 2004, p. 339.
[14] Horedt 1965, p. 8–9.

placed so close together if the exact location of each burial had been known.

The observations made in relation to graves no. 4 and 5 are not necessarily precise due to the excavation conditions, the documented weather circumstances, and other factors. Neither the pits of the urn burials nor those of the inhumation burials could be clearly delineated, and therefore the possibility of stratigraphic overlap between the grave pits cannot be excluded. In the absence of precise observations, neither Horedt's interpretation nor the opposing viewpoint can be fully demonstrated. Furthermore, the determination of contemporaneity is complicated by the fact that none of the inhumation burials contained finds, making their more precise dating and cultural attribution particularly difficult. This observation, however, is not entirely new, since Horedt himself emphasised that "*the occurrence of skeletons and urns within the same area does not in itself imply contemporaneity, as the applied rites may reflect two different chronological phases of the cemetery*[15]." It therefore appears that, based on the archaeological evidence, the question remains far more open than has generally been acknowledged in scholarly interpretation.

In the 136-grave cemetery at Ocna Sibiului, 15 inhumation burials were identified, representing approximately 11% of the cemetery[16]. A more detailed examination of the inhumation burials raises numerous uncertainties. The problem stems from the fact that the inhumation graves do not form a coherent and clearly definable group, either on the basis of their orientation, grave goods or their level of documentation. Within the cemetery, a distinct group can be identified consisting primarily of child burials (graves 22, 23, 24, 32, 89, and 116), in which vessels were placed as grave goods. The excavators associated these vessels with the pottery found in the cremation burials. At the same time, however, no detailed typological analysis of the pottery or investigation of its precise parallels was undertaken; consequently, it cannot be conclusively demonstrated whether the same ceramic tradition is truly represented, or whether we are merely dealing with general Early Medieval forms and decorative motifs. In the case of the jewellery finds, detailed typological determinations are likewise lacking, which significantly limits their chronological value (graves 32, 111, 115, and 126). Simple bronze wire earrings and unpublished bead types are not, in themselves, suitable for precise chronological classification. In addition, another group may be distinguished among the inhumation graves, consisting of burials without grave goods or those that are only poorly documented (graves 17, 40, 63, 101, 123, and 136). In several of these cases, no finds were recovered that could securely connect them to the 8th–9th century cremation horizon. The orientation patterns also fail to present a uniform picture. Although the majority of the inhumation graves are aligned southeast–northwest, other orientations also occur (northeast–southwest and east–west). This does not in itself disprove contemporaneity; however, it weakens the interpretation that a uniform process of ritual transformation was taking place. Particularly important in this regard is grave no. 130, which, based on its weapon assemblage – including a spear and an arrowhead – can be interpreted as a Scythian-type burial[17]. Its significance lies in the fact that its orientation corresponds to that of several other inhumation graves, meaning that the southeast–northwest orientation alone cannot be used as proof of belonging to the 8th–9th century cemetery.

The interpretation of the inhumation graves is further complicated by the condition of the documentation. During the excavation, the shallow depth of the graves and the intensive agricultural disturbance resulted in extremely poorly preserved skeletal material in many cases. For several burials, only a few teeth or faint traces of the skeleton survived. Consequently, the outlines of the grave pits often cannot be reconstructed with certainty. Most descriptions lack detailed information on the grave features; precise information concerning the shape, dimensions, fill, or possible structural elements of the pits is unavailable. In some cases, even the orientation itself is only presumed. As a result, not only the chronological classification of several burials, but also the reconstruction of the original structure of the graves themselves remain uncertain. On the basis of all these observations, the contemporaneity of all the inhumation graves and the cremation cemetery cannot be conclusively demonstrated. In some cases, a connection with the 8th–9th century cremation horizon may indeed be suggested, particularly in the case of the child burials containing vessels as grave goods; however, for several burials, the firm chronological and typological arguments necessary to establish this beyond doubt are lacking. The cemetery should therefore be regarded as only partially and conditionally biritual, while part of the inhumation graves may represent a chronologically and culturally heterogeneous group. Accordingly, in evaluating the cemetery, it is justified to place greater emphasis on these uncertainties and to adopt a more cautious interpretation.

The Ghirbom – *Gruiul Fierului* cemetery also contains many unresolved issues. A total of twenty graves were uncovered from the site during two separate excavations: eleven cremation and nine inhumation burials. The first excavation took place in 1975, while the second was conducted in 1995[18], and the teams carrying out the excavations were also different. The earlier discoveries suggested the existence of an inhumation cemetery, since seven inhumation graves were uncovered at that time, whereas in 1995 thirteen graves were unearthed, the majority of which were cremation burials. Of the two inhumation burials uncovered during the second

[15] Horedt 1965, p. 11–12. *„Coexistența scheletelor cu urnele pe teritoriul aceluiași cimitir nu condiționează însă ca atare și contemporaneitatea lor, deoarece riturilor folosite pot să oglindească două faze deosebite ale cimitirului, separat din punct de vedere cronologic".*

[16] Protase 2005, p. 51.

[17] Protase 2005, p. 39.

[18] Anghel 1997, p. 255.

excavation campaign, one was considered by the excavators themselves to be Roman period in date, since Roman pottery fragments were recovered from the disturbed grave. The precise spatial relationship between the two excavation areas remains unknown. During the 1975 excavation, a rich assemblage of finds was recovered, including four unique gold earrings and two silver bracelets. On the basis of this material alone, assigning the cemetery to any specific cultural group would already have been problematic; however, because cremation graves were uncovered during the second phase of excavation, the site was ultimately classified within the Mediaș group[19]. Nevertheless, it remains questionable whether the discoveries truly belonged to the same cemetery. Furthermore, the finds from the cremation burials cannot be clearly connected to the cemetery uncovered earlier, and the cremation graves themselves have also been dated approximately one century later. It is also important to mention that several cremation burials were discovered at the Alba Iulia – *Stația de Salvare cemetery*, and for this reason scholarship frequently assigns at least that section of the cemetery to the Mediaș group. At the same time, the validity of this classification also remains highly uncertain[20].

The only cemetery in which the contemporaneity of inhumation and cremation burials can be demonstrably confirmed is Bratei II. Of the 244 burials uncovered there, 34 were inhumation graves[21]. In this cemetery, identical types of finds were recovered from both forms of burial. Among these, the beads are particularly significant, as they provide a reliable chronological framework and date the upper horizon of the cemetery to the end of the 8th century and the beginning of the 9th century. Based on the observed superpositions, the cremation section of the cemetery appears to have remained in use for a longer period. It cannot be excluded that an independent population practising cremation burial rites was already living there during the 7th century, while the Avar graves seem to correspond more closely to the final phase of the cremation cemetery. The examples discussed above demonstrate that the principal argument for the connection between inhumation and cremation burials is, in most cases, precisely the lack of information and the scarcity of finds. In the key cemeteries of the Mediaș group, numerous uncertainties arise concerning the question of birituality, and only in the final phase of the Bratei cemetery can a closer relationship and contemporaneity between inhumation and cremation burials be demonstrated – although the nature of this relationship remains unresolved to this day.

The cemeteries of the Mediaș group have been examined by a considerable number of researchers, yet no study is known to us that fundamentally questioned their biritual character. Through the work of Horedt, this interpretation became generally accepted; nevertheless, a more thorough review reveals several factors that call for caution. The anomalies mentioned above point to an important methodological lesson: the mere presence of cremation and inhumation graves within the same area does not automatically render a cemetery biritual. If archaeological methods cannot provide further clarification due to the absence of finds, and if the relationship between populations practising two different burial rites remains uncertain, then the tools of the natural sciences must also be employed. In the absence of convincing evidence, it is not possible to draw complex conclusions concerning population history; therefore, these questions must remain open. Furthermore, it has become evident that the chronology of these cemeteries is still far from being fully clarified.

3. GÂMBAȘ GROUP

The name of the group derives from the Avar-period cemetery at Gâmbaș (Pl. II). The material recovered from the Reformed Cemetery dates to the Early Avar period. The sites belonging to the group are concentrated primarily in the Middle Mureș Valley, in the vicinity of the salt sources of Transylvania. Due to their geographical location, scholarship has frequently connected the appearance of these cemeteries with salt extraction and trade. Outside the investigated region, no finds indicating Avar presence have been discovered; therefore, Horedt defined these cemeteries as a distinct territorial unit. Initially, he identified them under the name “Mureș group”, while in his later works he increasingly employed the term “Gâmbaș group”, in accordance with the principle that archaeological groups should be named after a particularly significant site. A relative uniformity can be observed in the grave goods of the cemeteries, especially with regard to object types. Mounted warrior burials are particularly prominent, although jewellery, costume elements, and food and drink offerings also occur frequently. The relatively high proportion of weapons has likewise been connected by researchers to salt mining and the need to protect it[22].

This group designation is among the least frequently encountered in the scholarly literature, because the finds from these sites fit well within the broader material culture of other Avar-period sites and objects from the Carpathian Basin. Horedt uniformly classified both the Early and Late Avar cemeteries within this group. In his opinion, signs of Slavic–Avar coexistence can also be observed during the later phase, as demonstrated, for example, in the case of the Bratei II cemetery. At Bratei II, a grave was uncovered whose assemblage is characteristic of elite Avar warriors. The warrior was buried together with his horse, and the grave goods date the burial to the Late Avar period[23]. Although the cemetery also contains

[19] Anghel 1997, p. 270.
[20] Blăjan, Botezatu 2000, p. 451–453.
[21] Zaharia 1977, p. 15.
[22] Horedt 1968, p. 108–109.
[23] Horedt 1986, p. 66–70.

several inhumation burials, this is the only grave that can be clearly associated with elite Avar funerary practices. Within the context of Transylvania, the discovery of an Avar mounted warrior burial within a cremation cemetery is also unique. According to prevailing interpretations, the buried individual belonged to the Avar elite and may have served as the leader of the Slavic–Avar community living there during the 8th century[24]. At the same time, however, the classification of the cemetery remains uncertain, since it is referred to as part of the Mediaș group because of the cremation burials, while the elite Avar warrior assemblage also leads to its classification within the Gâmbaș group.

4. CIUMBRUD GROUP

The group currently includes only two cemeteries (Pl. III). The first is the eponymous site, excavated in the autumn of 1957 by István Ferenczi and Ádám Dankanits, where approximately 32 graves were uncovered[25]. The second consists of eight Early Medieval burials discovered in 1993–1994 at the Orăștie – *Dealul Pemilor X8 site*[26]. The defining characteristics of the group include west–east oriented graves, the presence of coffin burials, and highly varied arm positions. With regard to the grave goods, the simplicity of the male burials is particularly striking, as in most cases they lacked any accompanying finds. The cemetery assemblage is dominated by bronze jewellery and costume elements originating from female burials. At the same time, the custom of depositing ceramic vessels and animal offerings in graves is absent. On the basis of the finds, the cemetery population was associated with a Slavic group whose archaeological heritage remains otherwise unknown both within the Transylvanian Basin and in the broader microregion. The excavators dated the graves to the first half of the 10th century and compared their material with finds from other sites. Geographically, the closest region displaying similar material culture was considered to be South Moravia, and more specifically cemeteries of the Staré Město type[27]. Ferenczi's hypotheses continue to play a significant role in scholarship, and numerous subsequent studies have either supported or challenged his original conclusions. Following the publication of the cemetery, however, the question remained as to how a Moravian colony could have appeared in the region.

In the same year that the cemetery was published, Maria Comșa already treated the presumed West Slavic origin of the Ciumbrud cemetery as an established fact. She argued – not on archaeological but on historical grounds – that the population of Ciumbrud had fled Moravia after 906 and found refuge there from the Hungarian attacks[28]. She also connected the dating of the cemetery to this interpretation. The specific idea of a migration and resettlement thus originated with Comșa, whereas Ferenczi adopted a considerably more cautious position and avoided the pitfalls of combining archaeological and historical arguments too directly. Subsequently, Mircea Rusu also briefly addressed the issue and, in contrast to both Ferenczi and Comșa, dated the cemetery to the second half of the 9th century in his 1971 publication. According to Rusu, the population of Ciumbrud may have been followers of Methodius who, after the death of their master in 885, were forced to leave the Moravian region due to persecutions initiated by Wiching, bishop of Nitra, and subsequently fled to Transylvania, where they maintained close relations with their coreligionists[29]. Like Comșa, Rusu attempted to explain the presence of a Moravian population in Transylvania through historical arguments, although he connected it to a different historical event. Both hypotheses demonstrated that the chronology of the cemetery remained unresolved. On the one hand, the terminology "Ciumbrud group" emphasised that the phenomenon represented a culturally isolated and unique case[30]; on the other hand, the designation also appeared somewhat unusual, since at that time only the eponymous site belonged to the group.

Horedt synthesized the earlier scholarship but attempted to avoid taking a definitive position, and similarly to Ferenczi, he approached the question with caution and openness.

The use of the terminology received renewed momentum following the excavation of the Orăștie X8 cemetery during the 1990s and the publication of the site in 2001, which confirmed the validity of employing the term[31]. Despite the differing theories, one element remained constant: none of the studies published thus far questioned the determination of the cemetery's ethnic background. The central issue continued to be which historical context could explain the presence of this group within the microregion and closely connected to this was the lack of consensus regarding the chronology of the cemetery. A new perspective was introduced by István Bóna's synthetic work published in 1989, which broke with the earlier interpretations and identified the cemetery population as Bulgarian. He connected it with the Blandiana type cemeteries, thereby creating the concept of the "Ciumbrud–Blandiana horizon". By this, he understood a Proto-Bulgarian or Bulgar-Turkic population in which elements of Slavic admixture could occasionally also be observed[32]. From a methodological perspective, however, Bóna's new approach did not differ substantially from earlier interpretations for two reasons. First, he supported his argument with indirect evidence – particularly the report from 892 stating that the Bulgarian khan Vladimir prohibited the Moravians from purchasing salt. Second, he likewise emphasised parallels within the

[24] Cosma 2013, p. 21.
[25] Dankanits, Ferenczi 1959, p. 605.
[26] Pinter, Boroffka 2001, p. 319–320.
[27] Dankanits, Ferenczi 1959, p. 612.
[28] Comșa 1959, p. 73.
[29] Rusu 1971, p. 724–725.
[30] Horedt 1986, p. 79–80.
[31] Pinter, Boroffka 2001, p. 325–326.
[32] Bóna 1989, p. 97–98.

archaeological material. Following this, the interpretation of the group diverged significantly in Romanian and Hungarian scholarship. Hungarian researchers continue to follow Bóna's theory and identify the cemetery as Bulgarian, whereas the majority of Romanian scholars interpret it as a Moravian immigrant community. The principal reason for this continuing divergence of opinion is that significant differences can be observed between the burial customs of the Ciumbrud and Blandiana graves.

The primary distinction between the two groups lies in the presence or absence of ceramic grave goods and animal offerings. Within the Blandiana group these elements occur frequently, whereas in the Ciumbrud group their absence constitutes one of the defining characteristics. However, supporters of the Moravian theory tend to overlook the fact that cemeteries known from Moravian territory also frequently contain ceramic grave goods, and even animal offerings occur in graves there as well, as can be observed, for example, at the Staré Město cemetery[33]. At present, we are confronted with unresolved contradictions regarding the interpretation of the Ciumbrud and Orăștie cemeteries. Both the Bulgarian and the Moravian theories rely upon a combination of historical and archaeological arguments and employ methodologically similar approaches. The examination of burial customs and grave goods continues to leave numerous unanswered questions, and the research conducted over recent decades has not succeeded in resolving these contradictions.

5. BLANDIANA GROUP

Beginning in the 1950s, numerous ceramic vessels were recovered from the left bank of the Mureș River, in the vicinity of Blandiana (Pl. IV)[34]. Based on their morphological characteristics, these vessels can be divided into two clearly distinguishable groups. The first type consists of finely made amphorae of greyish, brownish, or brick-red colour, whose closest parallels are known from the Lower Danube region. The second type includes locally produced grey pottery decorated with bundles of wavy lines. The two types frequently occurred together at the same sites. By 1980, approximately thirty completely intact vessels had been discovered in the region, leading researchers to group these findings under the designation "Blandiana Group"[35]. The use of this designation was further reinforced by the excavations carried out at Blandiana in 1981–1982, during which eight graves were discovered[36]. Most of the burials were oriented west–east, traces of animal offerings were observed in several cases, and both ceramic types appeared among the grave goods. Similar phenomena were documented in other cemeteries as well. As early as the late 19th century, burials containing both ceramic types within the same grave were discovered in the vicinity of Sebeș[37]. Comparable graves were later identified in the Alba Iulia – *Stația de Salvare cemetery*, which was likewise assigned to this group.[38]

Based on Horedt's analyses, the distribution of the group was linked to Bulgarian expansion, and cemeteries of this type were therefore associated ethnically with the Bulgarians. Chronologically, he dated the appearance of the Blandiana Group to the period following the abandonment of the Avar cemeteries and continuing until the Hungarian Conquest. Alongside the designation *Blandiana Group*, scholarship has also employed the terms *Dridu culture* and *Danubian-Balkan culture*. The term *Danubian-Balkan* may be regarded as relatively objective from a geographical perspective, since the closest parallels for the ceramics are found within that region. By contrast, a substantial body of scholarship exists concerning the development and changing interpretation of the *Dridu culture* concept. Since excavations began at the site in 1956, its interpretation has undergone several revisions and has become the subject of significant scholarly debate. The two principal excavators, Ion Nestor and Eugenia Zaharia, interpreted the site in markedly different ways. Their methodological differences, however, were not particularly substantial, as both approached the finds from an ethnic perspective. Nestor's views were influenced primarily by the Pan-Slavic theories that emerged after the Second World War, whereas Zaharia represented the increasingly nationalist perspective that became prominent during the Gheorghe Gheorghiu-Dej era. The present study will not discuss the scholarly debate surrounding the Dridu culture in detail, since the issue has already been extensively documented and summarised elsewhere[39]. Instead, we seek to highlight why it is problematic to treat the concepts of the Dridu culture and the Blandiana group as equivalent or interchangeable.

First, the Dridu culture is fundamentally based on the excavation of a settlement, whereas the Blandiana group represents an archaeological phenomenon defined primarily through cemeteries. Second, the two phenomena are separated by a considerable geographical distance of approximately 400 kilometres. The connection between them rests mainly on similarities in the ceramic assemblages; however, the distribution of a ceramic form or pottery type cannot in itself be regarded as evidence of ethnic identity. Such similarities are more plausibly explained by trade relations, exchange networks, or cultural interaction than by the presence of the same population. Until these questions are clarified, it appears justified to maintain a distinction between the two terms. Furthermore, the political and historiographical burden associated with the concept of the Dridu culture cannot be ignored.

The interpretation of the group as Bulgarian also raises a number of problems. The Bulgarian hypothesis is based on a written source, the *Annales Fuldenses*, together

[33] Hrubỳ 1955, p. 96–100.
[34] Horedt 1954, p. 495–497.
[35] Horedt 1986, p. 72–78.
[36] Anghel, Ciugudean 1987, p. 179.
[37] Simina 2002, p. 49–51.
[38] Dragotă *et alii* 2022, p. 119–121.
[39] Madgearu 2007, p. 51–57.

with three archaeological arguments: the characteristics of the ceramic assemblage, the presence of cremation burials, and the occurrence of animal offerings. At the same time, the attribution of a Bulgarian ethnic identity is complicated by the fact that the cemeteries of the Blandiana Group themselves do not present a uniform picture. Among them, the Alba Iulia – *Stația de Salvare cemetery* stands out as particularly distinctive. The remaining sites are known in such a fragmentary manner that only limited conclusions can be drawn from them. In the *Stația de Salvare cemetery*, burial customs can be observed that cannot be regarded as typical of the group as a whole. These include the considerable heterogeneity of grave orientations, the presence of graves lined with brick and stone, and the diversity of burial practices. The internal cohesion of the Blandiana group is based primarily on the occurrence of similar pottery types and animal offerings. Nevertheless, with regard to burial customs, these cemeteries display considerable diversity. It therefore remains questionable whether the significant heterogeneity among the sites justifies treating all of them as a single, unified archaeological group. Moreover, the interpretation of these cemeteries has long been dominated by artefact-centred and ethnic approaches, making a critical reassessment of previous interpretations both necessary and timely.

6. CLUJ GROUP

The designation Cluj group derives from the cemetery excavated on Zápolya Street in Cluj-Napoca in 1911 and again in 1942[40], where a total of eleven graves were uncovered (Pl. V)[41]. This cemetery type belongs to the archaeological heritage of the Hungarian Conquest period and can be clearly distinguished from other cemetery types in the region. Horedt applied the term broadly to the whole of Transylvania and assigned numerous cemeteries from different regions to this category. The category included not only the classic Zápolya Street-type mounted warrior burials, but also cemeteries containing simpler grave goods that can be dated somewhat later, to the end of the 10th century and the beginning of the 11th century. For these cemeteries, Horedt also employed the designation *Bijelo Brdo culture*, a term that became widely accepted in international scholarship. In Hungarian archaeological research, however, neither terminology achieved particularly widespread use. In light of later, more detailed microregional evaluations of the Conquest-period cemeteries and finds from the region, the concept of the Cluj group appears increasingly imprecise, particularly with regard to the study area examined here. More detailed analyses indicate that the settlement of northern and southern Transylvania occurred at different times and probably also from different directions[42].

Chronological differences, together with variations in the archaeological material, suggest that the term Cluj group is overly general. The connections between the cemeteries of northwestern Transylvania and the Upper Tisza region indicate that Hungarian conqueror communities had already settled in the area by the beginning of the 10th century. In contrast, the colonisation of central and southern Transylvania remains considerably more uncertain, although current research suggests that it most likely began only from the middle of the 10th century[43]. The cemeteries in the vicinity of Alba Iulia are particularly distinctive in this regard. Partial horse burials placed in stone-lined graves and oriented east–west suggest the presence of groups with different cultural backgrounds. The burial customs, grave constructions, and associated grave goods all point to the contemporaneous presence of communities with diverse ethnic and cultural affiliations. All of this further strengthens the argument that the concept of the Cluj group is not suitable as a unified framework for describing the cemeteries of the Transylvanian Basin during the 10th and 11th centuries. The term Bijelo Brdo culture is internationally recognized and widely used; however, it never became firmly established within Hungarian archaeological scholarship. Its application is most common in regions located outside the territory of present-day Hungary. Fortunately, the most recent critiques of the terminology and its usage have also emerged from these regions[44].

The origin of the term is linked to the site of Bijelo Brdo, near Osijek in Croatia, where graves containing characteristic assemblages were excavated at the end of the 19th century. The finds recovered there were interpreted as the heritage of the indigenous Slavic population, who sought to distinguish themselves from the conquering Hungarians through the development of a distinct material identity. The sensitivity of the subject was further heightened by the fact that Slavic historiography often regarded criticism of this interpretation as an attempt to undermine Pan-Slavic unity. From the outset, the designation was associated with finds originating from cemeteries, particularly wire jewellery and S-terminalled lockrings, which occur in large numbers throughout the Carpathian Basin. The concept was popularised by the Czech archaeologist and specialist in Slavic studies Lubor Niederle, who defined a typological and chronological group based on finds from cemeteries of the Middle Danube region. He correlated these assemblages with Hampel's second group and interpreted them as representing a purely Slavic element[45]. As a consequence, the term became virtually synonymous with the material heritage of the Slavs within the territory of the former Kingdom of Hungary. Horedt, however, interpreted the concept of the *Bijelo Brdo culture* not only as an ethnic category but also as a chronological one, assigning to it cemeteries characterised by comparatively poorer grave inventories.

[40] Horedt 1986, p. 80–87.
[41] Gáll 2013, p. 280.
[42] Gáll 2013, p. 812–817.
[43] Gáll 2014, p. 86–87.
[44] Radišič 2024, p. 261–263.
[45] Radišič 2024, p. 270–271.

7. ARCHAEOLOGICAL CULTURE AND ETHNICITY: THEORETICAL APPROACHES

Before addressing, at the microregional level, the factors and influences that contributed to the development of Horedt's classification system, it is necessary to place the issue within the broader context of international scholarship. Our aim is to examine how the archaeological methods used to distinguish the Horedt groups fit into wider methodological frameworks and how these approaches are evaluated by current theoretical perspectives. The relationship between archaeological material and ethnic identity remains one of the most debated issues. The significance of this problem lies in the fact that archaeology, particularly in the study of the Early Middle Ages, has often sought to reconstruct communities, and even ethnic groups, on the basis of material culture (for example, the identification of the Ciumbrud group as Moravian or Bulgarian, the Mediaș group as Slavic, or the Blandiana group as Bulgarian).

The problem of identifying objects and archaeological cultures with specific ethnic groups already occupied a central place in archaeological thought at the end of the 19th and beginning of the 20th century, primarily through the work of Gustaf Kossinna. According to his fundamental premise, archaeological cultures constituted clearly defined systems that could be directly correlated with particular peoples or ethnic communities. This approach was based on the principle of "culture = people = territory"[46] and enabled researchers to draw conclusions about the distribution, movements, and migrations of populations on the basis of material culture[47]. In many respects, this methodology can be compared to the Early Medieval classification systems currently employed for Transylvania. Even today, the notion persists that clearly distinguishable and well-defined archaeological cultures existed within the Transylvanian Basin and can be delimited chronologically, geographically, and materially. This perspective is also reflected in interpretations concerning the settlement of the supposed Bulgarian and Moravian groups. Although this model shaped archaeological thinking for a long time, it has become increasingly clear that it carries significant methodological problems. A growing consensus in international scholarship holds that archaeological phenomena cannot be interpreted directly as ethnic categories but should instead be viewed as reflections of complex social, political, and cultural processes[48].

One of the fundamental insights of recent research is that an archaeological culture cannot be regarded as a closed social unit. The concept of "culture" is, in reality, a scholarly construct designed to organise archaeological material and is therefore unsuitable for directly representing ethnic communities. Accordingly, archaeological culture is now understood primarily as an analytical category, one that becomes problematic when treated as a historical or ethnic reality[49]. It follows that any direct correspondence between archaeological cultures and ethnicity is methodologically unfounded. Moreover, such interpretations have often served political and ideological purposes – as in the cases of the Dridu and Bijelo Brdo cultures – in which archaeological data were employed to reinforce national identities and support political legitimisation[50]. This approach was closely connected to nationalist ideologies and contributed to the incorporation of archaeology into political discourse[51].

The questioning of ethnicity as a concept has also necessitated its reinterpretation. Today, ethnicity is no longer understood as an objective category but rather as a social construct that emerges within specific historical and political contexts[52]. Consequently, ethnicity cannot be directly inferred from archaeological material, since objects do not inherently possess ethnic meaning[53]. A fundamental problem lies in the archaeological practice of directly equating material culture with social or ethnic identity. The spread of cultural elements does not necessarily imply population movement; similarities may equally result from trade, technological transfer, imitation, or networks of interaction. Therefore, cultural similarities cannot automatically be interpreted as evidence of ethnic identity[54].

The traditional interpretation of migration is similarly problematic, as it tends to describe historical processes as the movement of homogeneous ethnic communities. Research on the Early Medieval period in Transylvania has likewise frequently assumed the migration of entire groups, such as Avars, Slavs, Moravians, or Bulgarians. More recent scholarship, however, increasingly rejects this perspective and instead emphasises the mobility of individuals or smaller, often multiethnic groups. The assumption that entire populations migrate is largely the product of historical and ideological constructions[55], just as the settlement of Moravians and Bulgarians in the Mureș Valley was initially proposed on the basis of uncertain historical sources. Consequently, even if the appearance of new groups in the Mureș Valley could be demonstrated, this would not automatically justify assigning them to a single ethnic category. Archaeological evidence alone is insufficient to prove migration unequivocally, since the spread of material culture does not necessarily result from population movement but may instead reflect a variety of processes, including trade, interaction networks, technological transmission, and imitation. The diffusion of cultural phenomena is therefore not synonymous with the movement of populations, and a connection between the

[46] Kossina 1926, p. 21. Childe later adopted Kossina's views with minor modifications: Childe 1956, p. 28.
[47] Siklósi 2006, p. 73–74; Burmeister 2023, p. 51–52.
[48] Halsall 2011, p. 18–19; Curta 2002, p. 6–7.
[49] Burmeister 2019, p. 231–232; Curta 2002, p. 5–6; Siklósi 2006, p. 80; Burmeister 2023, p. 49.
[50] Burmeister 2023, p. 50.
[51] Burmeister 2023, p. 57
[52] Curta 2002, p. 5–6.
[53] Halsall 2011, p. 18–19.
[54] Burmeister 2000, p. 540–541; Burmeister 2019, p. 233–234.
[55] Burmeister 2019, p. 231; Burmeister 2000, p. 541; Halsall 2011, p. 19.

two can only be demonstrated in specific circumstances. Most earlier approaches have failed to convincingly distinguish whether the spread of a particular object type or cultural phenomenon reflects actual migration or merely the transmission of ideas, technologies, and artefacts[56].

In connection with these developments, the concept of culture itself has also been reinterpreted. Modern approaches no longer view culture as a closed and homogeneous entity but rather as a dynamic phenomenon that is continuously changing. In this sense, material culture is not a direct reflection of a community; instead, it constitutes one of the instruments of social communication, whose meaning is always context-dependent[57]. The interpretation of burial evidence is particularly important in this regard, as burials represent one of the most significant sources available to Early Medieval archaeology. Halsall has pointed out that burial practices are highly variable and are influenced by numerous factors, including social status, religion, and the political environment[58]. Grave goods and funerary rites are not merely survivals of tradition but active social practices that form part of a process of representation and social competition; consequently, they are only of limited value for ethnic identification[59]. Similar conclusions have been reached by Reher and Fernández-Götz, who emphasise that no single material element can serve as a reliable ethnic marker in itself. Ethnicity manifests itself only through certain cultural elements, whose meanings are always context-dependent, and overlap with other categories of identity[60]. This implies that ethnic identity cannot be reduced to a single artefact type or archaeological phenomenon.

A methodological approach has also emerged that distinguishes between the "external" and "internal" cultural spheres. The external sphere encompasses those practices that rapidly adapt to changing economic and social environments, whereas the internal sphere – the world of everyday life and interactions within the community – is more conservative and may preserve earlier patterns for longer periods. This approach assumes that traces of migration are more likely to be detected in less conspicuous everyday practices, which are less exposed to external influences and may therefore better reflect cultural continuity[61]. Such a perspective represents a significant departure from traditional archaeological approaches. Halsall also offered a specific critique of the view that costume elements – particularly women's jewellery and dress ornaments – can be regarded as reliable indicators of ethnicity. He demonstrated that such elements are highly variable and depend upon numerous factors, including social status, age, and fashion, and therefore cannot be associated with any single stable ethnic group[62]. Similar conclusions have been reached regarding other categories of artefacts as well[63]. These observations also call into question the ethnic interpretations that have been based primarily on the jewellery assemblages of the Ciumbrud and Blandiana groups. At the same time, contemporary research increasingly emphasises the multidimensional nature of identity. The identities of individuals and communities are not organised around a single factor but rather consist of multiple, simultaneously existing dimensions, such as gender, age, social status, and religious affiliation. Within this framework, ethnicity represents only one of several possible forms of identity[64].

Overall, it may be concluded that international archaeological scholarship has moved away from static, ethnicity-centred models toward dynamic, contextual, and interdisciplinary approaches. Archaeological material can no longer be regarded as a direct indicator of ethnicity but should instead be interpreted as part of complex social processes. These theoretical considerations are particularly relevant to the interpretation of Early Medieval cemeteries in Transylvania, where archaeological classifications have traditionally been imbued with ethnic significance. In light of these developments, a critical reassessment of these categories is warranted, as is an examination of the extent to which local phenomena can be integrated into the theoretical frameworks of contemporary international scholarship. It is important to emphasise, however, that the concept of archaeological culture – although seemingly a neutral scientific tool – is itself a theoretical construct that carries the legacy of Kossinna's nationalist thinking. This phenomenon is often described through the metaphor of the "Trojan horse": through the concept of culture, ideological elements became embedded within archaeological thought and continue to influence interpretations over the long term. Consequently, ethnic interpretations not only raise methodological problems but also reflect the persistence of a deeper intellectual tradition shaped by historical circumstances[65].

8. THE LIMITATIONS OF ARCHAEOLOGICAL CLASSIFICATION IN THE STUDY OF THE EARLY MIDDLE AGES IN TRANSYLVANIA

Horedt's classification system left a profound mark on the archaeology of the Early Middle Ages in Transylvania and, following its publication in 1986, may be regarded as a remarkably enduring framework (Fig. 1). At the same time, it is important to emphasise that the use of the various group designations differs considerably. The terms **Cluj group** and **Gâmbaș group**, for example, are much less widespread, since the designations **Avar** and *Hungarian*

[56] Burmeister 2019, p. 233–234; Burmeister 2000, p. 539–540.
[57] Burmeister 2019, p. 231–232.
[58] Halsall 2011, p. 20–21.
[59] Halsall 2011, p. 24–25.
[60] Reher, Fernandez-Götz 2015, p. 404–405.
[61] Burmeister 2000, p. 542–544.
[62] Halsall 2011, p. 21–23.
[63] Gulyás 2021, p. 140.
[64] Halsall 2011, p. 22–23.
[65] Burmeister 2023, p. 58–59.

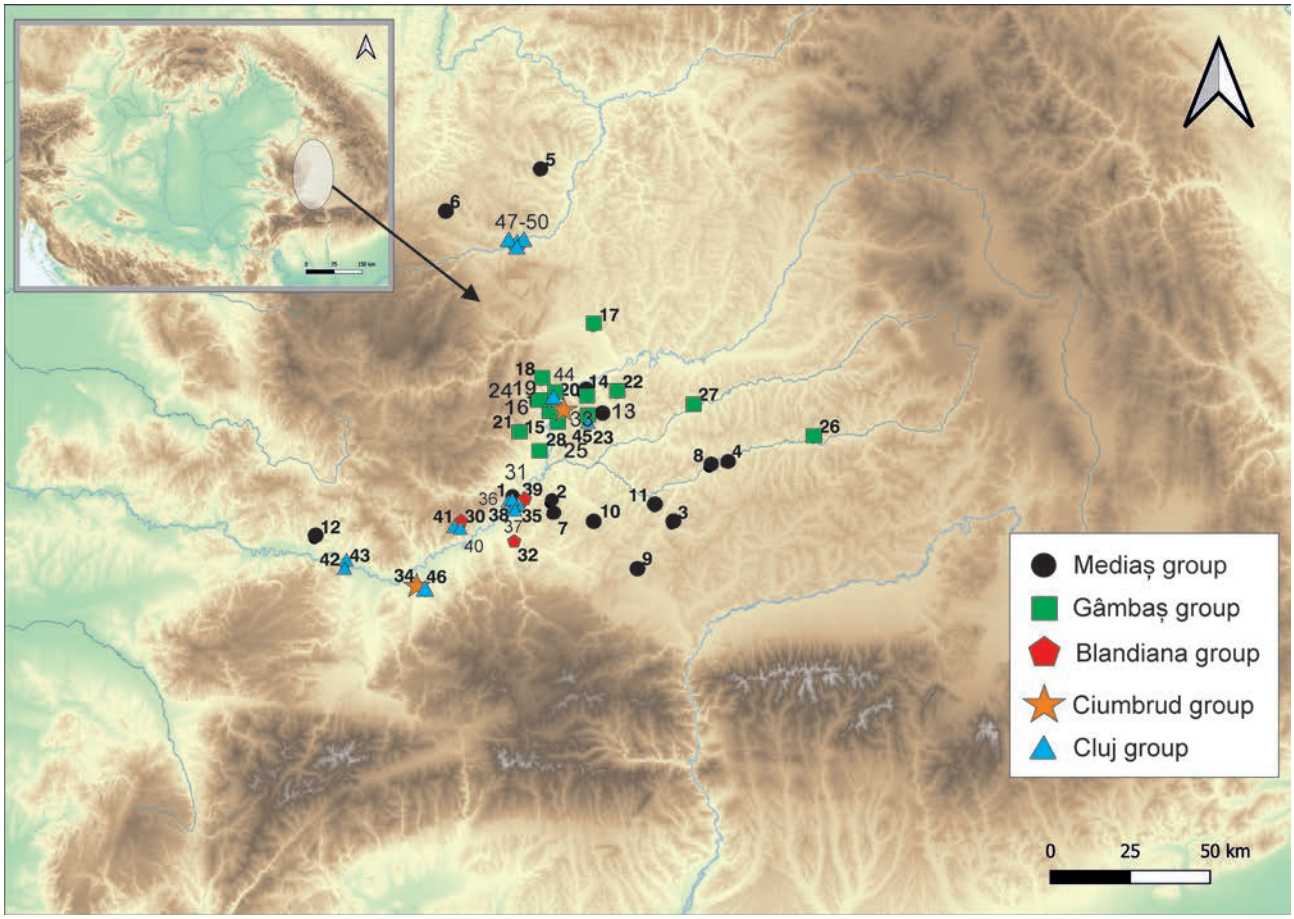


Figure 1. *The location of cemeteries and groups within the microregion:* ***Mediaș group:*** *1. Alba Iulia* – Stația de Salvare*, 2. Berghin, 3. Boarta, 4. Bratei II, 5. Dăbâca, 6. Dorolțu, 7. Ghirbom* – Gruiul Fierului*, 8. Mediaș, 9. Ocna Sibiului, 10. Păuca, 11. Șeica Mică, 12. Târnava, 13. Turdaș, 14. Uioare de Jos;* ***Gâmbaș group:*** *15. Aiud, 16. Aiudul de Sud, 17. Câmpia Turzii, 18. Cicău, 19. Gâmbaș* – Ogoarele de Jos*, 20. Gâmbaș* – Reformat cemetery*, 21. Geoagiu de Sus, 22. Heria, 23. Lopadea Nouă, 24. Măgina, 25. Sâncrai, 26. Târnava Mare, 27. Târnăveni, 28. Teiuș;* ***Blandiana group:*** *29. Alba Iulia* – Stația de Salvare*, 30. Blandiana, 31. Micieşti, 32. Sebeș;* ***Ciumbrud group:*** *33. Ciumbrud, 34. Orăștie* – Dealul Pemiilor X8*;* ***Cluj group:*** *35. Alba Iulia* – Brândușei street*, 36. Alba Iulia* – Izvorul Împăratului*, 37. Alba Iulia* – Poclișa*, 38. Alba Iulia* – Stația de Orange*, 39. Alba Iulia* – Stația de Salvare*, 40. Blandiana* – B. cemetery*, 41. Blandiana* – C. cemetery*, 42. Deva* – Micro*, 43. Deva* – north of the city*, 44. Gâmbaș, 45. Lopadea Nouă, 46. Orăștie* – Dealul Pemiilor X2*, 47. Cluj-Napoca* – Kalevala street*, 48. Cluj-Napoca* – Kalevala street II*, 49. Cluj-Napoca* – Plugarilor street*, 50. Cluj-Napoca* – Zápolya street.

Conquest-period are both more precise and more readily understood within an international scholarly context. Having reviewed the classification system, it is worth considering several factors that argue against this form of categorisation.

1. The boundaries between the groups are not clearly defined. Many cemeteries cannot be assigned exclusively to a single group and often display characteristics associated with multiple categories. A good example is Alba Iulia – *Stația de Salvare*, where Conquest-period graves occur alongside Mediaș-type urn burials and finds characteristic of the Blandiana group. The internal chronological division of the site likewise fails to provide support for a sharp separation between these categories. The burials assigned to Phase I of the cemetery are characterised primarily by the presence of amphorae, whereas Phase II is dominated by artefact types associated with the Hungarian conqueror population, such as arrowheads and axes. A similar distinction has been proposed regarding animal offerings: Phase I has been linked to partial animal deposits or skull offerings (cattle, sheep/goats, etc.), while Phase II has been associated with partial horse burials and egg offerings. However, several graves exhibit characteristics of both phases, making it impossible to distinguish the two phases with certainty[66]. Nor is this separation supported by the spatial distribution of the graves within the cemetery. A further problem arises from the fact that the division of the cemetery into phases became established in the scholarly literature even before the complete publication of the site[67]. As a result, later interpretations often began with pre-existing categories and approached the analysis of the

[66] Dragotă *et alii* 2022, p. 130.

[67] Heitel 1994–1995; Ciugudean *et alii* 2022, p. 82–97.

graves as already separated entities. A similar phenomenon can be observed at the Bratei II cemetery. Since both cremation burials and Avar-period graves occur at the site, it has been assigned simultaneously to the Gâmbaș group and the Mediaș group. Once individual cemeteries are routinely placed into multiple groups, the significance of the classification system itself begins to diminish.

The examples of the Alba Iulia and Bratei cemeteries demonstrate that scholars often attempt to describe archaeological phenomena that are far more nuanced and complex using categories that are overly narrow and rigid. At the same time, there are also cemeteries that do not fit satisfactorily into any of the existing groups. A good example is Ghirbom – *Gruiul Fierului*, where seven inhumation graves were excavated. The finds – including knives, rectangular buckles, fire steels, and handmade pottery – cannot be dated more precisely than to the period between the seventh and ninth centuries. Consequently, the site remained unassigned to any group for a long time. Only the cremation burials discovered during the second excavation campaign, whose connection to the cemetery remains uncertain, opened new possibilities for interpretation. All of this demonstrates that the boundaries between the groups are, in many cases, artificial constructs sustained more by scholarly traditions and established classificatory frameworks than by archaeological reality itself.

2. The emphasis placed on the identification of Horedt's cemetery groups and the characteristics attributed to them gradually pushed classical archaeological analyses into the background. The focus of research shifted significantly: typological studies and detailed chronological investigations became increasingly marginalised, as the issues they address were often interpreted exclusively within the framework of the established groups. As a result, the evaluation of cemeteries has, in many cases, ceased to be an independent and open-ended archaeological interpretation and has instead become a description fitted into the categories created by Horedt. This tendency is particularly evident in the case of the so-called biritual cemeteries. Despite the decades that have passed since the introduction of the classification system, the chronological assessment of these cemeteries has changed very little. In many instances, researchers continue to rely on historical sources or secondary data rather than developing independent relative chronological frameworks based directly on the archaeological material. The same pattern can be observed in typological analyses, where Horedt's system continues to dominate. Consequently, rather than serving merely as a tool for interpretation, it often functions as a constraint upon it. One of the principal reasons for the difficulties in dating these cemeteries is that a significant proportion of the artefacts recovered from the graves are inherently problematic to date. Simple knives, buckles, and other basic utilitarian objects provide only limited information. The problem is further compounded by the exceptionally high proportion of graves lacking any grave goods. Even for categories of finds that possess greater chronological dating potential – such as ceramics, beads, and various forms of jewellery – the development of more refined typological frameworks remains essential. Only through such detailed analyses can more reliable chronological systems be established and the dependence on pre-existing classificatory schemes be reduced.

3. Although the cemetery groups are formally treated in the scholarly literature as cultural categories, the interpretations associated with them are, in reality, often imbued with ethnic and chronological meanings. This tendency is particularly evident in the case of the Ciumbrud group, whose interpretation has been framed in ethnic terms since the very beginning of research. In relation to the two excavated cemeteries, the primary question has consistently been how to determine the ethnic affiliation of the individuals buried there, despite the fact that the burial customs and material culture have yet to be comprehensively investigated and even the chronology of the sites has yet to be fully established. This approach highlights one of the most fundamental structural problems of Early Medieval archaeology in Transylvania: cultural phenomena are too often interpreted exclusively within an ethnic framework. Moreover, these ethnic classifications are frequently tied to rigid categories that inadequately reflect the complexity of past social, political, and cultural processes.

It is important to consider that Transylvania, as a peripheral region, did not display the same degree of political and administrative centralisation as, for example, the central regions of the Carpathian Basin[68]. From the collapse of Avar power and until the period of the Hungarian Conquest – possibly even taking Bulgarian influence into account – it is difficult to speak of a unified or dominant political structure. Consequently, the straightforward correlation of cultural elements with specific ethnic groups becomes equally problematic. This does not imply that ethnic interpretations are entirely without relevance. On the contrary, owing to the particular historical circumstances of the region, such approaches have played an important role in scholarship and will likely retain a degree of significance in future research. Nevertheless, it is equally clear that ethnic interpretations have often become disproportionately dominant and, in many cases, have shaped the understanding of individual cemeteries more strongly than the archaeological evidence itself. This imbalance can only be overcome if future research moves away from treating ethnic classification as its primary objective. Rather than focusing principally on determining ethnic affiliation, greater emphasis should be placed on cultural practices, burial rites, the chronology of material culture, and interdisciplinary approaches capable of providing a more nuanced understanding of the archaeological record.

Before outlining the new approach that we consider necessary, it is worth examining the historical and methodological frameworks within which the archaeological

[68] Gáll 2014, p. 93–94.

classifications still in use today were developed. The identification of archaeological assemblages with specific cultures has long been treated critically by modern theoretical approaches, particularly within processual and post-processual archaeology[69]. These debates originated primarily in prehistoric archaeology, whereas periods for which written sources are available – and where the ethnonyms recorded in those sources are often employed in interpretation – have largely remained outside this discourse. As a result, the concept of cultural groups has often survived in these contexts as a practical tool for classifying archaeological material, frequently without critical reassessment. The development of archaeology in Central and Eastern Europe was particularly shaped by the political environment of the 19th century. As a consequence of the cultural revolution promoted by communist regimes, Marxist ideology largely dominated scholarly approaches, while new theoretical trends emerging in Western Europe penetrated the region only slowly and to a limited extent. Due to the relative isolation of researchers and the influence of political power, archaeology was for a long time unable to critically reflect upon the political and ideological foundations of its own classificatory systems[70].

Following the Second World War, Marxist ideology also became dominant within Romanian academic life. From 1955 onward, however, during the period of Gheorghe Gheorghiu-Dej, nationalist perspectives gradually came to the forefront. Although the political content of these two approaches differed, from a methodological standpoint they employed remarkably similar strategies: archaeology was used as an ideological instrument through which the Early Medieval period was incorporated into a unified ethnic framework. Consequently, the central task of research initially became the identification of Slavic groups and, later, the demonstration of an autochthonous population[71]. It was within this intellectual environment that the work of Kurt Horedt introduced a novel methodological direction. The Saxon-born scholar was strongly influenced by the German archaeological tradition, particularly the culture-historical approach, which emphasised the typological and chronological analysis of archaeological sites and the identification of cultural units (*Kulturgruppen*). Horedt defined his own groups within this framework. His distinctive contribution, however, lay in his consistent effort to place the archaeological material of Transylvania within a broader Central European context. The interaction between political and ideological constraints on the one hand and the methodological traditions of the German archaeological school on the other, shaped the framework within which the archaeological classifications discussed here were created. Consequently, these categories should not be viewed merely as products of typological and chronological systematisation; they also reflect the political and scholarly discourse of their time.

Medieval studies have by now largely moved beyond many of the earlier approaches, and the question of the ethnic identification of individual communities or cemeteries is raised far less frequently than in the past. Nevertheless, certain older conventions persist, such as the practice of naming archaeological cultures after their type-sites[72]. It is important to emphasise that these terms do not accurately reflect the actual ethnic composition of the communities under investigation; rather, they describe broader cultural characteristics shared by populations associated with particular political or power centres.

The archaeological evidence from the study area suggests not the existence of homogeneous ethnic or political structures, but rather a landscape characterised by cultural diversity and fluidity, especially during the period between the end of the Avar era and the Hungarian Conquest Period. Beyond the cemetery groups defined by Horedt, numerous other medieval archaeological cultures were established during the 19th and 20th centuries, including the Bijelo Brdo, Dridu, Köttlach, and Keszthely cultures. Most of these terms, however, originated not primarily from scientific necessity but from political considerations. A particularly illustrative example is the Dridu culture, whose meaning changed repeatedly throughout the 20th century, reflecting shifts in the prevailing political system[73]. The interpretation of the Bijelo Brdo culture was likewise heavily influenced by Soviet cultural policy and Pan-Slavic ideology. Although these approaches receded after the Stalinist period, the terminology that emerged from them remained in use. Consequently, the Bijelo Brdo culture should be regarded less as an ethnic category than as a political and historical construct[74]. At the same time, Horedt's work cannot be fully placed within this tradition. Although he employed a methodological framework developed in the mid-20th century, he was innovative in departing from the dominant normative ethnic approaches of his time. Rather than using classification as a means of homogenisation, he employed it to map and demonstrate cultural diversity. It is precisely for this reason that his work continues to enjoy considerable scholarly respect today.

Nevertheless, it must also be acknowledged that even Horedt's methodological framework bears the political and theoretical imprint of its era. With this in mind, it is advisable that these categories be applied in the future with greater critical awareness. Because these concepts of cultures and groups were originally created with ethnic intentions, they are difficult to reconcile with the interdisciplinary and nuanced perspectives of modern archaeology. Yet under current research conditions, these terms remain difficult to avoid. These terms should therefore be restricted as much as possible to chronological and regional contexts and employed primarily as tools for microregional analysis, rather than as exclusive indicators of ethnic affiliation.

[69] Barford 2002, p. 81–83; Siklósi 2006, p. 84–85.
[70] Langó 2007, p. 36–37.
[71] Madgearu 2007, p. 50–51.
[72] Radišič 2024, p. 261.
[73] Madgearu 2007, p. 56–58.
[74] Radišič 2024, p. 263.

When Horedt developed his archaeological classifications, he already emphasised that several different population groups coexisted in Transylvania between the seventh and eleventh centuries. Today, there is broad scholarly consensus in rejecting the notion of a homogeneous population within the region. This represented a significant contribution during the second half of the 20th century, as it challenged simplified historical narratives and schematic interpretations by emphasising cultural diversity. From a contemporary perspective, however, it is also necessary to recognise that the primary value of these categories lies not in their ability to reconstruct past reality, but in their usefulness within scholarly discourse.

The societies of the period did not possess the sharply defined boundaries implied by these classifications. On the contrary, communities lived alongside one another, interacted continuously, and left traces of these interactions in their material culture, burial practices, and settlement structures. The categories developed within archaeological discourse, however, often constrained research within rigid frameworks. Differences between groups tended to be emphasised, while similarities and interconnections received far less attention. This approach reflects an outdated model that seeks to determine ethnicity directly from material culture.

Future research should adopt a much stronger microregional focus. Rather than concentrating on the identification of discrete cultural groups, it should seek to understand how communities with different cultural backgrounds coexisted within the same region and what forms of interaction shaped their everyday lives and identities. Achieving this goal requires more precise chronological frameworks for cemeteries, as well as detailed analyses of the cultural interdependencies and internal developments of individual communities. A methodological framework is needed that allows for the integrated interpretation of archaeological sites and finds – including cemeteries, settlements, and artefacts – examining them not in isolation but within their broader archaeological and social contexts. Useful models for such an approach can be found in recent synthetic studies, such as the *Someșul Mic* volume[75], which evaluated the archaeological material of the region on a large temporal scale through collaborative research. In the future, only interdisciplinary projects and research conducted within collaborative teams will be capable of providing the level of analytical complexity necessary for understanding Early Medieval societies. Instead of organising cemeteries according to presumed ethnic affiliation, they should be examined primarily from chronological and microregional perspectives. This shift in emphasis would make it possible to identify broader patterns, shared developments, and regional networks of interaction that are otherwise obscured by traditional ethnic classifications.

[75] Gáll *et alii* 2017.

9. CONCLUDING REMARKS

For a long time, traditional ethnic-based classifications have played a decisive role in the interpretation of archaeological material from Early Medieval Transylvania. Although these categories initially proved useful for organising archaeological evidence, they have increasingly become overly generalising and imprecise, failing to accurately reflect the diversity and dynamism of the communities that inhabited the region during this period. Future research would therefore benefit from moving beyond ethnic-based categorisation and focusing instead on microregional analyses, as well as on the investigation of chronological and cultural relationships. Such an approach would make it possible to better understand the complex interactions between communities and the processes that shaped regional developments.

In summary, the archaeology of Early Medieval Transylvania requires a paradigm shift that moves beyond traditional ethnic categories and places greater emphasis on interactions between communities, as well as on broader cultural and social dynamics. This perspective would not only provide a more accurate understanding of the diverse populations that once inhabited the region but would also contribute to the further development of archaeological methodology itself.

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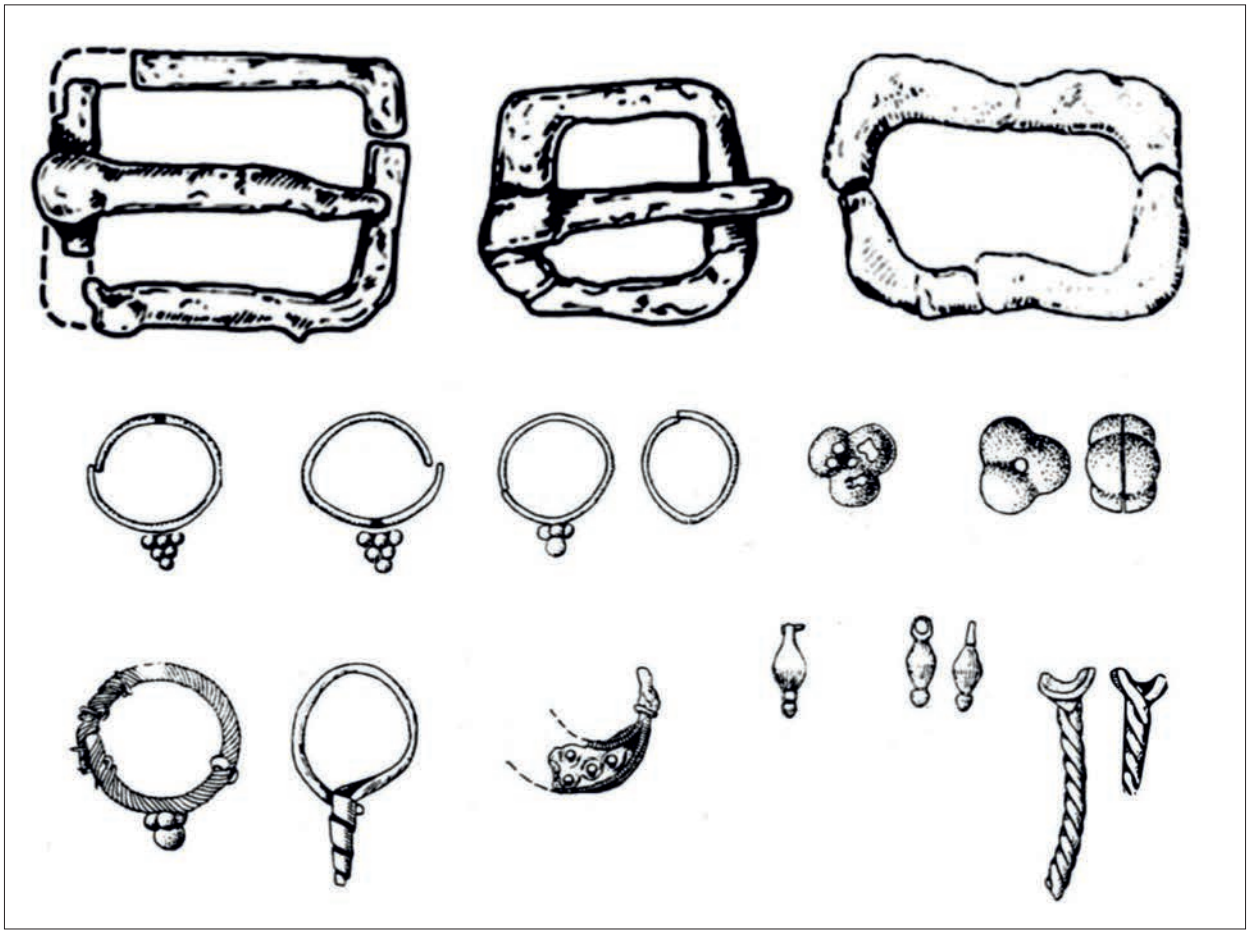




Plate I. *Selected artefacts from the Mediaș group cemeteries (after Zaharia 1977, fig. 31–32; Țiplic, Tomagea 2016, p. 44–45).*

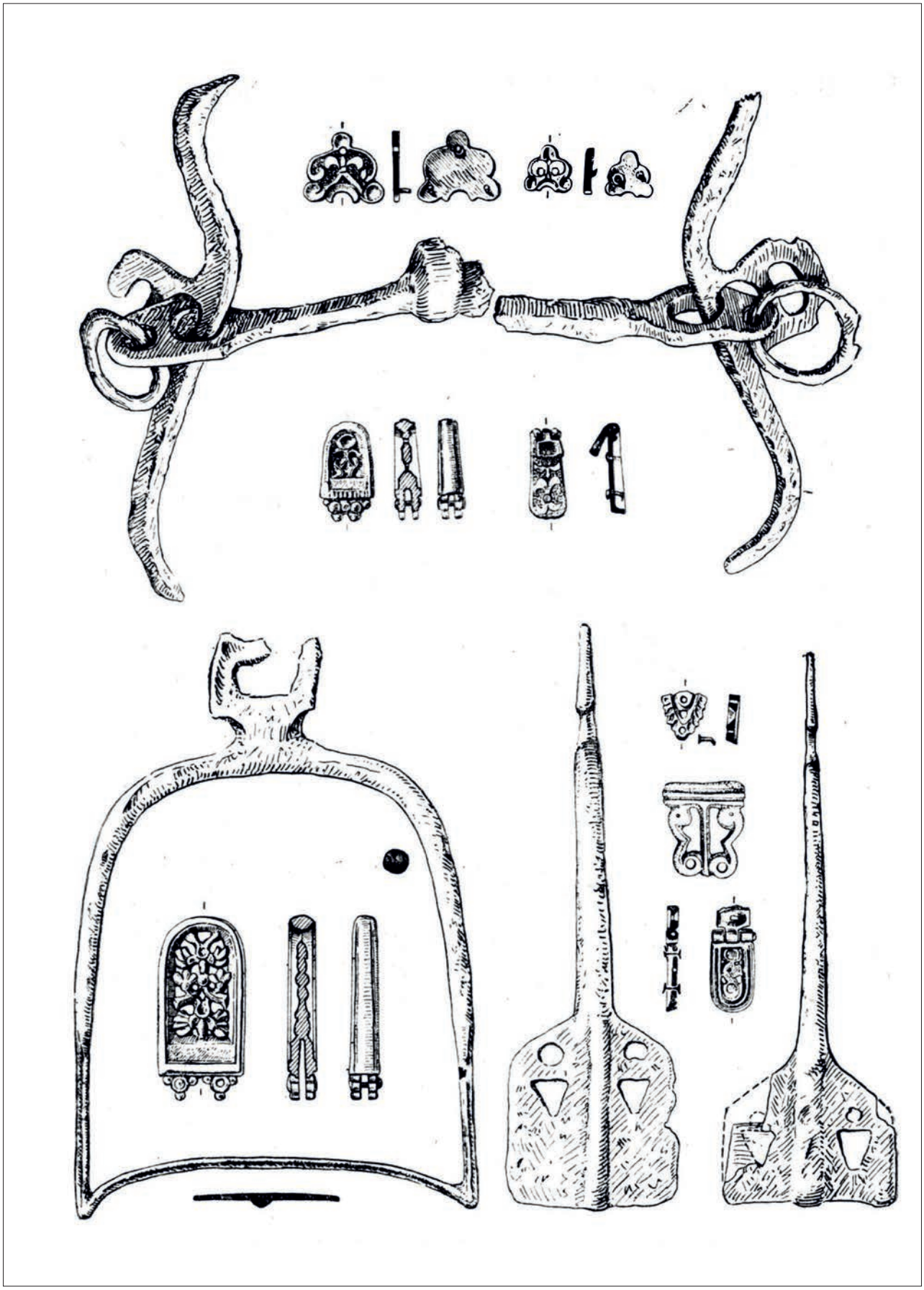


Plate II. *Avar-style artefacts found at the Bratei II Cemetery (after Zaharia 1977, fig. 29).*

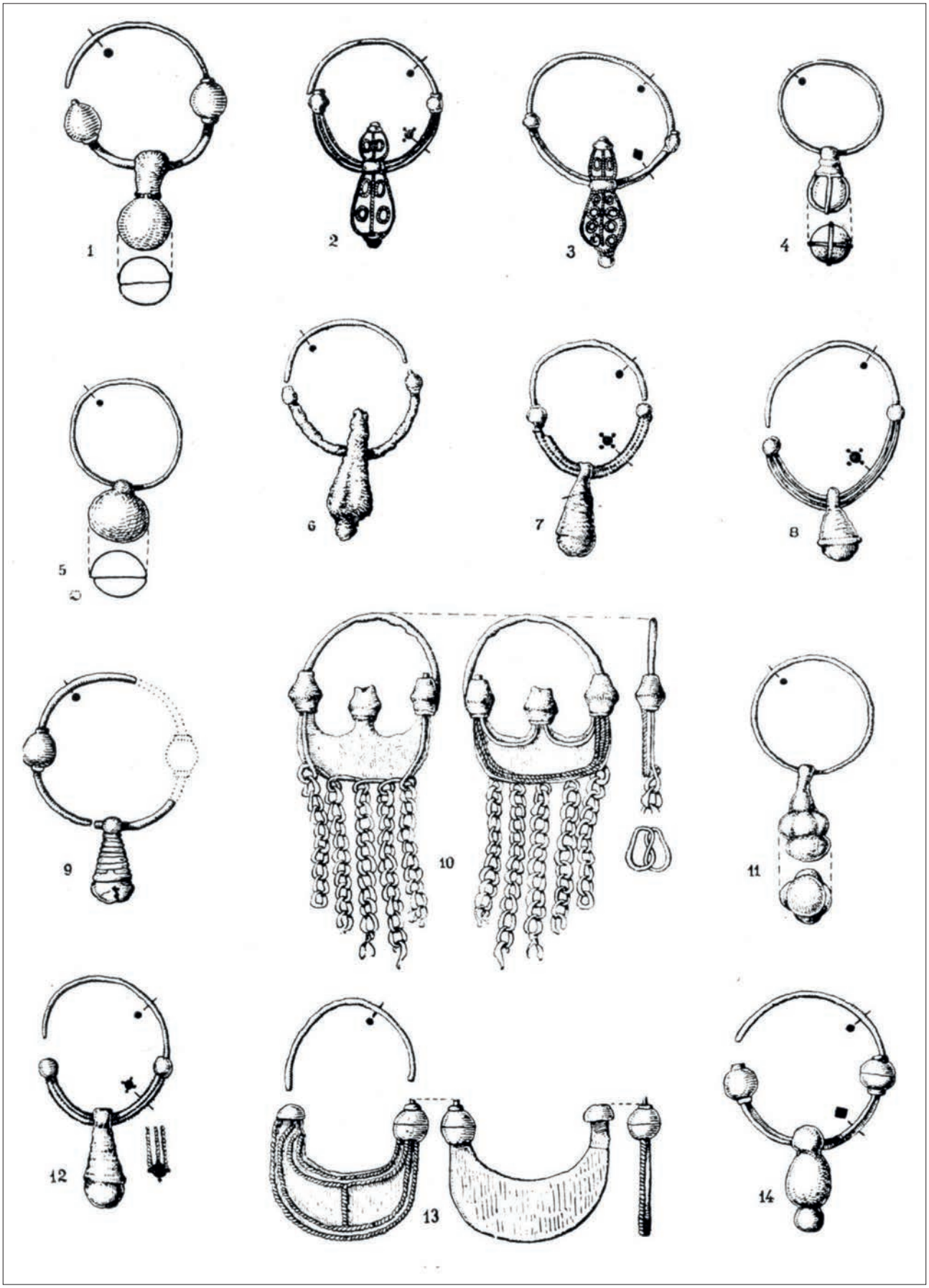
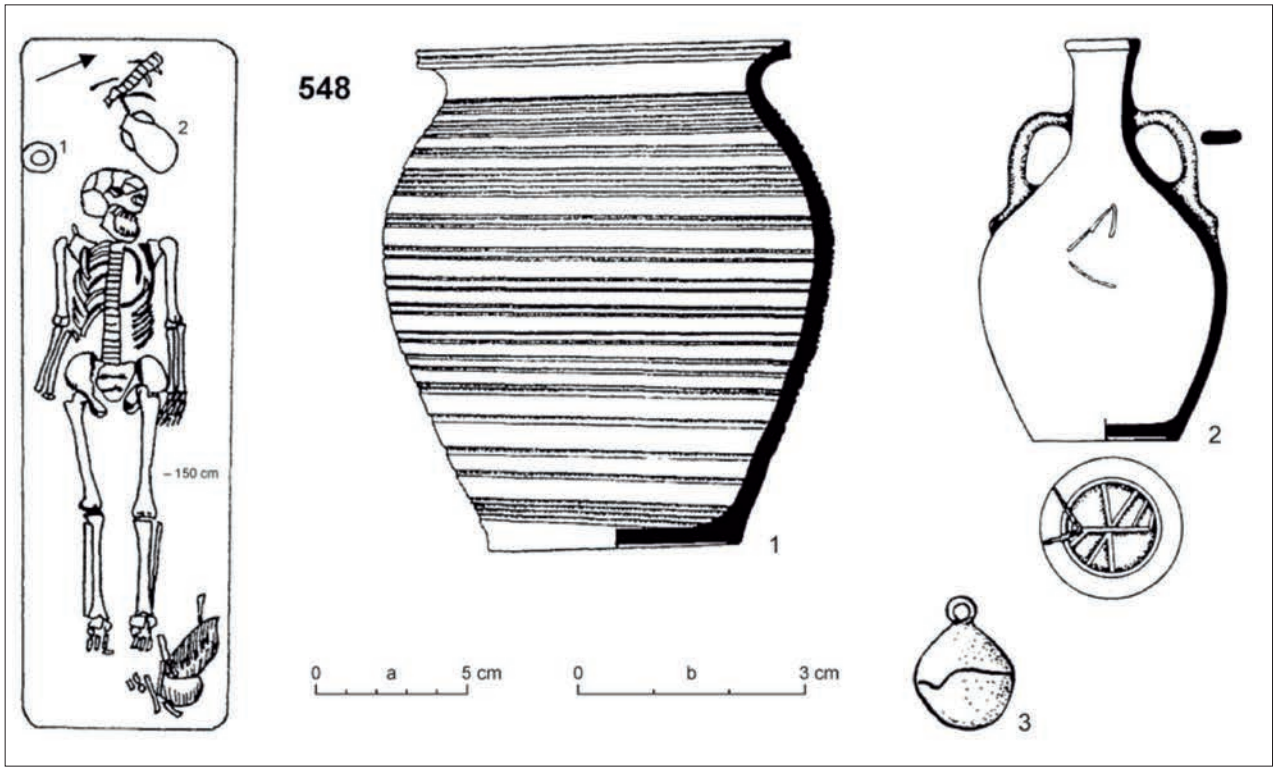


Plate III. *Two graves at Alba Iulia* – Stația de Salvare *classified as part of the Blandiana group (Dragotă* et alii *2022, p. 141–142).*



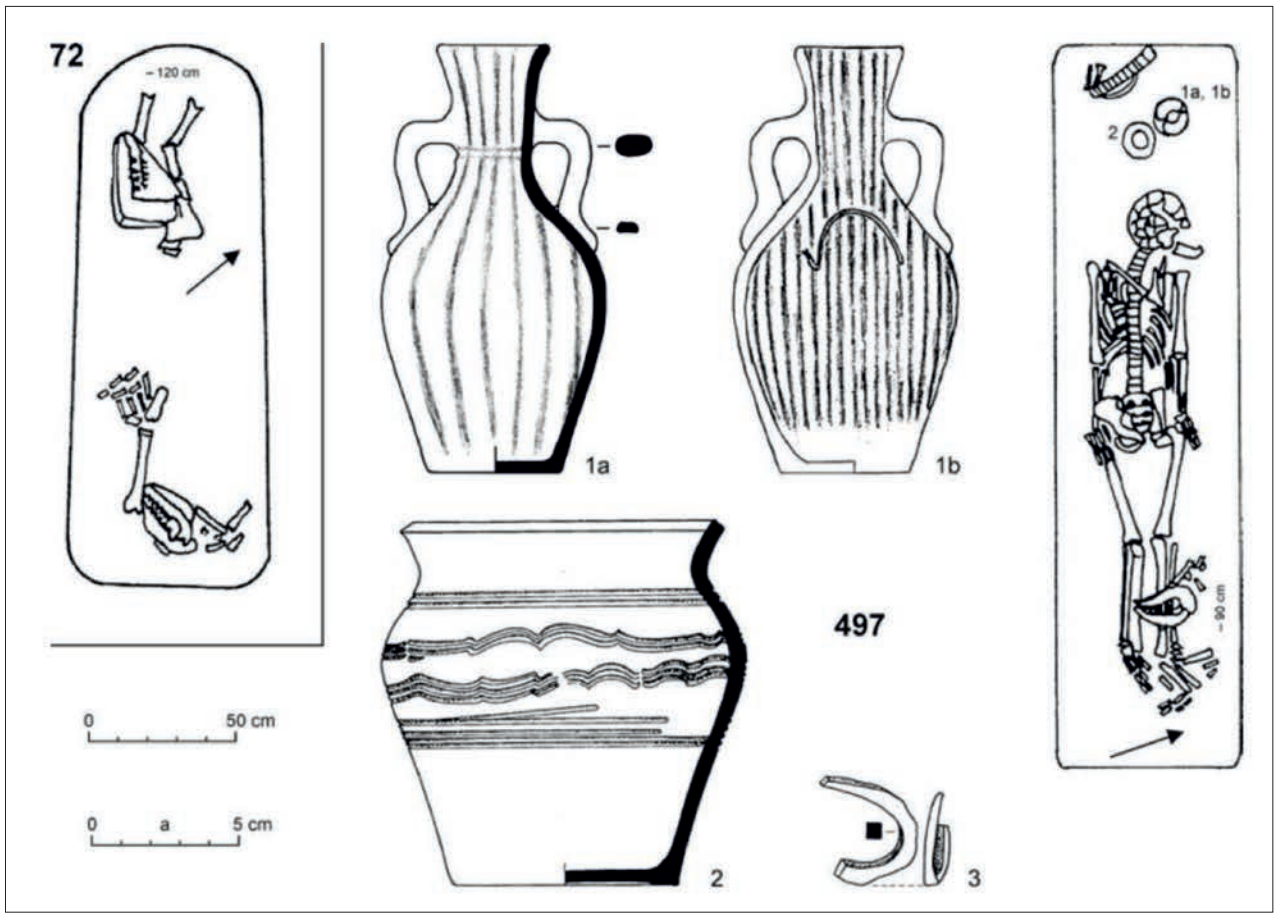
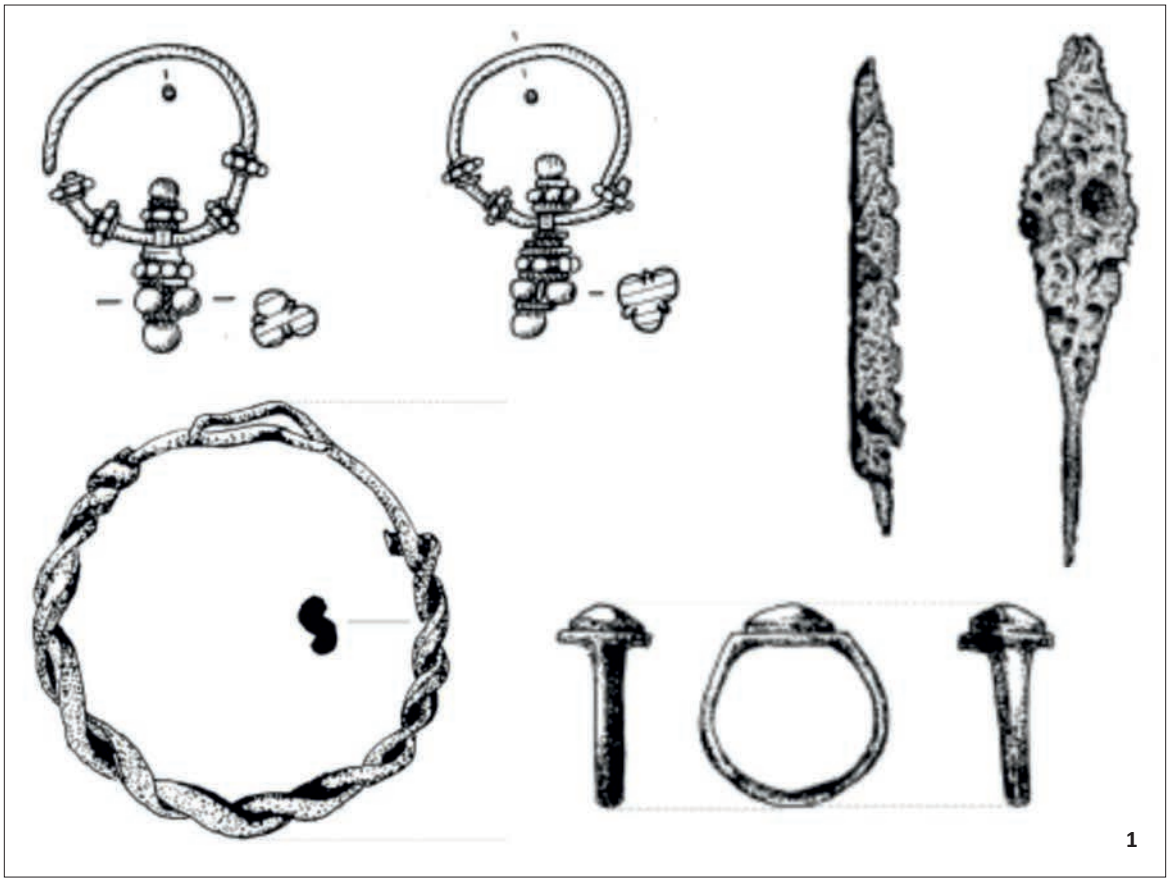


Plate IV. *Jewellery and accessories from the Ciumbrud cemetery (after Dankanits, Ferenczi 1959, fig. 4).*



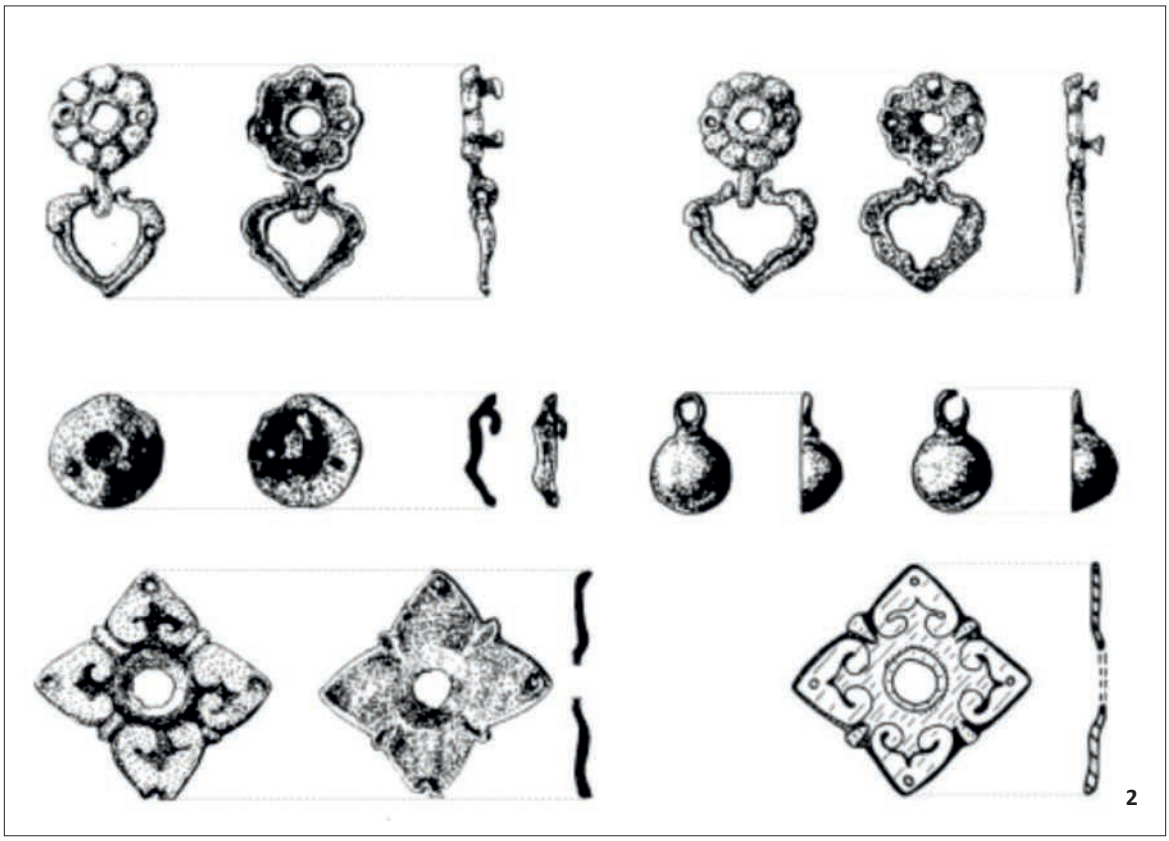


Plate V. *A selection of artefacts from the Hungarian Conquest Period at Gâmbaș (2) and Blandiana B. (1) cemetery (after Gáll 2013, p. 160–171).*

SFÂRȘITUL TIPO-CRONOLOGIEI?
PROBLEMA DATĂRII MORMÂNTULUI 113 CU DEPUNERE DE RESTURI DE CAL DE LA VĂLCANI – *VAMĂ*[1]

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Keywords: *10th–11th centuries, Vălcani, typo-chronology, radiocarbon dating, material culture*

Abstract: *The 10th–11th centuries funerary site in Vălcani –* Vamă *is the largest in Banat. The 196 graves uncovered here form the largest necropolis in the western part of today's Romania. Most of the graves are orientated – with minor differences – along the W–E axis, although, in some cases, we registered E–W orientations as well. The deceased were found in heterogeneous positions, primarily their arms. Some animal parts, probably sheep bones, were placed in the graves as food preparation.*

The material culture and ritual practices are both heterogeneous. Some aspects of the material culture have connections with the material culture of the Late Avar Age, such as the needle case.

Burials with parts of the horses (skull and the four extremities of legs) were documented in ten cases; in four cases only the horse trappings were deposited in the graves (stirrups, bits, harness buckles).

Grave 113 was radiocarbon-dated to obtain a more precise dating. Thus, the sample from the human skeleton conventionally indicates 1060 ± 18. Calibration using the Oxcal 4.4 Interface program *indicates a 95.4% probability that the death occurred between 992 and 1027 and a 68.3% probability that it occurred between 995 and 1022.*

Based on the results of the ^{14}C samples taken from the 30–40-year-old individual, as well as the typochronological analysis of the finds, Grave no. 113 was most likely dug in the first quarter of the 11th century, between 995 and 1022. This also means that, based on the available scientific research, the life course of the adult person began between 960 and 990. In conclusion, his life might have ended sometime between 992 and 1022, but most likely after 1000.

These data also demonstrate the persistence of the horse burial ritual in the first decades of the 11th century at the Vălcani burial site.

Together, Vălcani – Vamă Grave 113 *and sites with similar characteristics, such as Békés –* Povádzug*, Csanytelek –* Dilitor*, Sarkadkeresztúr –* Csapháti legelő*, and probably Dabas –* Paphegy*, Ópusztaszer –* Kiszner tanya*, Tiszabercel –* Újsor*, demonstrate that this "prestige phenomenon" was still relevant in the 11th century, particularly in peripheral (geographical and social meaning) communities that had not yet been deeply affected by Christianity.*

Cuvinte-cheie: *secolele X–XI, Vălcani, tipo-cronologie, radiocarbon, cultură materială*

Rezumat: *Situl funerar din secolele X–XI de la Vălcani –* Vamă*, cu cele 196 de morminte descoperite aici, reprezintă cea mai mare necropolă medieval timpurie din Banat. Majoritatea mormintelor sunt orientate – cu mici diferențe – pe direcția V–E, deși, în unele cazuri, am înregistrat și orientări E–V. Defuncții au fost identificați și documentați în poziții eterogene, în special în ceea ce privește poziția brațelor. Unele părți de animale, probabil de oaie, au fost așezate în morminte ca provizie de hrană. Atât cultura materială, cât și practicile rituale sunt eterogene. Anumite aspecte ale culturii materiale, cum ar fi un tub de os pentru ace, prezintă legături cu cultura materială din perioada târzie a epocii avare.*

Au fost înregistrate zece cazuri de înmormântări în care au fost depuse părți de cai (craniul și cele patru extremități ale picioarelor), iar în patru cazuri în morminte au fost depuse doar accesoriile de harnașament (scărițe, zăbale, catarame de chingă/curele?).

Pornind de la problema datării mai precise a mormântului 113, caracterizat de un inventar inexpresiv din punct de vedere cronologic, am propus verificarea plasării sale în timp cu ajutorul metodei radiocarbonului. Proba din scheletul uman din M. 113 indică în mod convențional 1060 ± 18, ceea ce corespunde unei plasări cronologice în intervalul 900–1030. Calibrarea în programul Oxcal 4.4. Interface *a indicat cu o probabilitate de 95,4% anul survenirii morții individului adult–matur (30–40 de ani) între 992–1027, respectiv cu o siguranță de 68,3% între anii 995–1022. Astfel, pe baza rezultatelor ^{14}C, putem concluziona că mormântul 113 de la Vălcani a fost săpat cel mai probabil în primele două decenii ale secolului al XI-lea. Putem afirma deci că individul s-a născut undeva între anii 960 și 990 d.Hr.*

Aceste date demonstrează, de asemenea, că ritualul de înmormântare cu resturile calului a continuat să fie practicat în primele decenii ale secolului al XI-lea în cazul sitului funerar de la Vălcani.

Mormântul 113 de la Vălcani – Vamă *și mormintele cu ritualuri funerare similare, precum cele de la Békés –* Povádzug*, Csanytelek –* Dilitor*, Sarkadkeresztúr –* Csapháti legelő *și, probabil, Dabas –* Paphegy*, Ópusztaszer –* Kiszner tanya*, Tiszabercel –* Újsor*, demonstrează că* „fenomenul de prestigiu" *de înmormântare a resturilor de cal împreună cu defuncții nu dispăruse în prima parte a secolului al XI-lea, în special în comunitățile periferice (în sens geografic și social), care nu fuseseră încă profund influențate de creștinism.*

[1] Proiectul nr. TKP2021-NKTA-24 a fost implementat cu sprijinul acordat de Ministerul Inovării și Tehnologiei din Ungaria din Fondul Național pentru Cercetare, Dezvoltare și Inovare, susținut în cadrul schemei de finanțare TKP2021 / Project no. TKP2021-NKTA-24 has been implemented with the support provided by the Ministry of Innovation and Technology of Hungary from the National Research, Development and Innovation Fund, financed under the TKP2021 funding scheme.

INTRODUCERE ȘI MOTIVAȚIE

Revoluția tehnico-științifică de la sfârșitul secolului al XX-lea și începutul secolului al XXI-lea[2], într-o multitudine de domenii – printre care și arheologia –, a determinat schimbări importante privind rezultatele demersurilor științifice. Implementarea metodelor de cercetare din domeniul științelor naturii în analizele arheologice datează încă din secolul al XX-lea, dar s-a realizat într-o mai mică măsură în arheologia medieval timpurie est-europeană. În cursul ultimilor ani, însă, integrarea diferitelor discipline și metode, printre care și datarea absolută cu radiocarbon, a marcat rezultate importante, punând sub semnul întrebării, în anumite cazuri, întregul sistem de tipo-cronologie[3] a epocii medieval timpurii.

Din acest punct de vedere, socotim că abordarea, inclusiv cu ajutorul științelor naturii, a unui aspect precum înmormântarea cu resturi de cal, considerată o caracteristică a *epocii păgâne*, merită luată în considerare. Înmormântarea cu resturi ale calului reprezintă una dintre caracteristicile socio-culturale păgâne cele mai tipice, practic *simbolul cultural al secolului al X-lea*, dar, totodată, este, în acel veac, și o manifestare de prestigiu social dedicată decedaților[4].

Având în vedere însă faptul că avem cunoștință, încă din anii ‘60 ai secolului al XX-lea, de un singur caz în care resturile calului dintr-un mormânt sunt datate în secolul al XI-lea pe baza contextului intern al necropolei (Békés – *Povád*)[5], am socotit necesar să ne întrebăm dacă, la Vălcani – *Vamă*, fiecare mormânt cu resturi de cal se datează cu precădere sau exclusiv în secolul X. Menționăm că, până acum, necropola se data în secolele X–XI pe baza tipo-cronologiei inventarelor funerare și a monedelor emise de Ștefan I, Andrei I și Solomon[6], depuse în morminte.

Încercarea noastră este, totodată, și una metodologică. Considerăm utilă și actuală abordarea critică a gândirii uniformizante, adânc întipărită în metoda de analiză aflată sub influența totală a sistemului de gândire tipo-cronologistă (care, la rândul său, este produsul gândirii moderniste de uniformizare[7]). Cu scopul de a nuanța această imagine uniformă, am recurs și la analize radiocarbon ale mormintelor cu resturi de cal și cu piese de harnașament de la Vălcani – *Vamă*. Am efectuat analize în cazul a șase astfel de morminte (M. 17, 22, 54, 91, 107, 113), urmând a cerceta încă o probă prelevată din M. 161.

Pe baza calibrării individuale a mormintelor, M. 113 are un rezultat care iese din tipare, motiv pentru care ne propunem să dezbatem rezultatele, observațiile și întrebările care s-au născut în urma acestor investigații.

A. RITUALUL ÎNMORMÂNTĂRII CU RESTURI ALE CALULUI. DATE STATISTICE

Înmormântarea cu resturi ale calului[8] este considerată, pe bună dreptate, cel mai caracteristic ritual funerar al *epocii păgâne (secolul X)*, fiind și cel mai dezbătut ritual în literatura privind arheologia funerară a secolului al X-lea din Bazinul Carpatic. Cercetătorii s-au ocupat de ritualul depunerii resturilor de cal încă din secolul al XIX-lea[9], însă primele analize mai riguroase au fost realizate de către Gyula László. În ceea ce privește obiceiurile funerare din perioada cuceririi, o clasificare primară a înmormântărilor cu resturi ale calului se leagă de numele arheologului transilvănean[10]. Însă clasificarea care, până la urmă, este folosită și astăzi se leagă de numele lui Csanád Bálint, care a identificat cinci grupuri.

Clasificarea lui Bálint este simplă și poate fi bine urmărită (Fig. 1). Din punct de vedere cantitativ, Bálint a încadrat un procent covârșitor al mormintelor în grupurile I (*înmormântare simbolică*, adică a fost depus în mormânt doar harnașamentul: 101 de cazuri) și II (*capul și cele patru extremități ale calului învelite în pielea sa (?) și depuse în zona picioarelor:* 136 de morminte). În clasificarea sa, un număr mult mai mic este reprezentat de mormintele din grupurile III (*cu resturile calului împăiat, care constă în înșirarea extremităților și capului calului pe toată lungimea gropii în formă anatomică, cu intenția de a reda animalul viu*), IV (*resturi de cabalină cu pielea împăturită*) și V (*resturi de cabalină cu pielea întinsă în mod haotic*)[11]. Indivizii din grupurile I și II au fost interpretați de către Bálint din punct de vedere etno-cultural, ca fiind reprezentanți ai populației *„maghiarilor cuceritori”* (*honfoglaló magyarság*, hungarian conquerors) din secolul al X-lea, iar cei din grupurile III–V ca fiind membrii unei populații *turcice*[12].

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[2] În acest sens, vezi spre exemplu: Narayanamurti, Tsao 2021.

[3] Tipo-cronologia cu *orizonturi de tipuri de artefacte* este cea mai răspândită (și cea mai fragilă) metodă, fiind însă ombilical legată de datarea cu monede. Astfel, tipo-cronologia ca sistem de clasificare se bazează pe datarea artefactelor identice sau asemănătoare cu acele artefacte care provin din complexele în care s-au descoperit monede.

[4] AH 1996, p. 38.

[5] Merită amintit că mormântul 58, datat cu o monedă arpadiană, a avut depus ca inventar un arc și o tolbă de săgeți. Vezi Trogmayer 1962, p. 18, 20, fig. VI. Acest ritual, la rândul său, caracterizează înmormântările epocii păgâne!

[6] Având în vedere că această chestiune a fost abordată într-o altă lucrare, ne rezumăm doar la a cita: Gáll *et alii* 2021, p. 69–88; Blaskó *et alii* 2025, p. 237–248.

[7] Vezi, în acest sens, paradigma modernă aflată sub influența naționalismului: Ariès 1997, p. 7–15.

[8] Pentru câteva date despre părțile care provin de la doi cai, vezi: Vörös 2013, p. 328. În afară de două descoperiri foarte vagi de la Rusovce – M. 42 și de la Kiszombor – *necropola* E M. 43, nu cunoaștem alte descoperiri având întregul schelet de cal depus în mormânt. În acest sens, vezi: Bálint 1968, p. 43, 91, nota 265.

[9] Cele mai importante sunt lucrările lui Géza Nagy: Nagy 1893a, p. 105–117; Nagy 1893b, p. 223–224; Nagy 1893c, p. 313–323. Chiar și în primul mormânt descoperit în 1834 au fost identificate capul și extremitățile calului. Langó 2007, p. 62–68.

[10] László 1943, p. 46–60. El a identificat două grupuri principale de înmormântare cu resturi ale calului.

[11] Bálint 1969, p. 107–114.

[12] Această interpretare a fost criticată de către István Fodor, care a demonstrat că aceste două grupuri au rădăcini comune și apar mult mai devreme decât secolul al X-lea; de exemplu, grupul al II-lea este

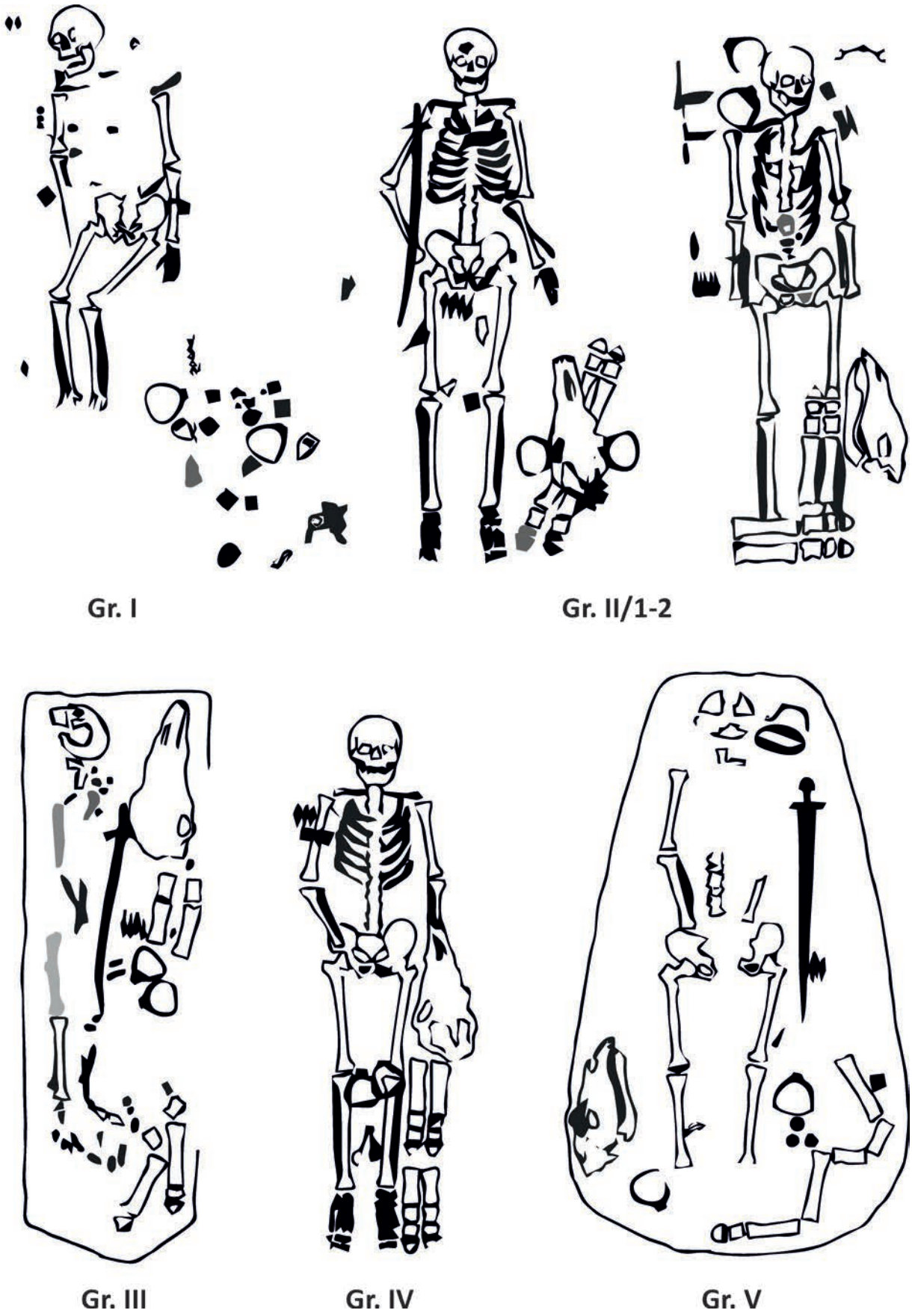


Figura 1. *Clasificarea propusă de Csanád Bálint privind formele înmormântărilor cu resturile de cal și/sau cu piese de harnașament (Bálint 1969, I. tábla).*

Figure 1. *Csanád Bálint's proposed classification of horse burial forms and with horse harness (Bálint 1969, I. tábla).*

Rezultatele lui Bálint au fost acceptate sau măcar recunoscute tacit în literatura de specialitate[13]. Unele completări au fost propuse, în anul 1996, de către László Révész. Potrivit lui, grupul al V-lea al lui Bálint reprezintă, de fapt, o variantă a grupului al II-lea[14].

Clasificarea lui Csanád Bálint a fost ulterior completată și, într-un fel, criticată de către arheozoologul István Vörös, pe baza unui rezumat cuprinzător al datelor din regiunea Tisei Superioare[15]. Mai recent, István Vörös a revizuit, într-o analiză detaliată, istoricul cercetărilor pe această temă, sistematizarea formală a mormintelor și alte aspecte (de exemplu, religioase)[16]. În articolul citat, Vörös a propus, de fapt, o nouă tipologie, care, însă, după părerea noastră, a rămas neargumentată. Ba mai mult, aplicată pe întregul lot de descoperiri, ar crea un haos total. Vörös a distins versiunile înmormântărilor cu *piele de cal* (I) și *fără piele de cal* (II), iar în prima a inclus cea *pliată* (1), *rulată* (2) și *întinsă* (3)[17]. Totodată, trebuie să menționăm că, în majoritatea cazurilor, nu avem dovezi clare privind pielea lăsată pe oasele calului; astfel, această clasificare implică foarte multă incertitudine și, în mod inerent, poate genera o serie de greșeli.

Unul dintre autorii acestor rânduri a propus, într-o lucrare, 17 variante privind modul de depunere a oaselor cailor în cadrul grupului al II-lea (fiind o completare a lucrării lui Bálint), acceptând totodată, în continuare, sistematizarea propusă de renumitul arheolog budapestan privind grupurile I, III–V[18].

Astfel, după mai mult de 55 de ani de la sistematizarea propusă de Bálint, și anume pe baza modului de depunere a resturilor de cai, considerăm că aceasta este valabilă și azi. În timp, numărul lor s-a modificat în mod evident: față de Bálint, care a colectat 296 de morminte (fără să specifice numărul siturilor)[19], am putut înregistra astfel de ritualuri în cazul a 1506 morminte/contexte funerare din 705 situri sau contexte arheologice[20]. Observațiile lui Csanád Bálint au rămas valabile și în ceea ce privește numărul cazurilor: grupurile I și II sunt și astăzi cantitativ cel mai bine reprezentate. Totodată, într-un număr foarte mare de cazuri, avem doar date indirecte privind *înmormântările cu resturi ale calului și/sau cu harnașament (simbolic)*[21].

Considerăm important de amintit încă un aspect în ceea ce privește *înmormântările cu resturi ale calului*, și anume problema persistenței ritualului în secolul al XI-lea. Până acum doar un număr foarte mic de cazuri a fost datat în secolul al XI-lea[22]. Nici până în prezent nu cunoaștem o lucrare în care să fi fost catalogate și analizate asemenea înmormântări. În literatura de specialitate nu s-au purtat discuții pe acest subiect, deoarece, de cele mai multe ori, în lipsa monedelor, adică a unei datări sigure *post quem*, specialiștilor le lipseau argumentele clare. Putem cita un exemplu din experiența noastră. Micro-topografic, în cazul sitului funerar de la Hodoni, mormântul 3 (având în inventar o scăriță de tip pară) a fost identificat în apropierea mormintelor 2 și 4, datate cu monedele lui Ștefan I, adică sigur datate după anul 1001. Putem însă data cu siguranță un mormânt (în acest caz în secolul al XI-lea) doar pe baza micro-topografiei[23]?

De obicei, acest ritual a fost legat *în mod inerent* de secolul păgân[24], deși au existat păreri și în sensul opus. Astfel, această practică păgână, după părerea lui László Kovács, poate fi documentată și în secolul al XI-lea, în necropola de la Dabas – *Paphegy*[25].

B. RITUALUL ÎNMORMÂNTĂRII CU RESTURI ALE CALULUI ÎN NECROPOLA DE LA VĂLCANI

Situl funerar de la Vălcani – *Vamă* conține 196 de morminte, fiind o necropolă în șiruri, ceea ce caracterizează o parte din siturile funerare din secolele X–XI[26]. Majoritatea mormintelor au fost orientate, cu diferențe minore, V–E, în timp ce unele au fost orientate în direcția inversă, adică E–V.

Principala caracteristică a sitului funerar este numărul destul de mare al înmormântărilor cu resturi cabaline (5,07% din morminte, însă procentul ar fi mult mai mare

documentat deja din secolul al XIV-lea î. Chr., la Sintașta. Fodor 1977, p. 104, nota 53; Fodor 2009, p. 24, fig. din mijloc.

13 Bálint a reluat tema și ulterior, publicând studii în anii '70–80. Autorul a abordat problema mormintelor pe care le-a încadrat în grupul al II-lea Bálint, făcând comparație cu cele din grupurile III–V: *„A sztyeppéi lovasnomádok emlékei között nem találni „lábhoz tett lóbőrös" temetkezést. Másrészt a sztyeppén – az egész ló eltemetése mellett – a „kitömött lóbőrös" változat fordul elő". „Foglaljuk össze, mit tudunk – szórványos adataink alapján – a „kitömött lóbőrös" temetkezési szokásról: a) legkorábban a IV–VI. században, a Kazah hátságon és a Felső-Ob mentén fordul elő; b) igen kis számban megvan a VI–VII. századi avaroknál és c) a IX–X. századi magyarok egy csoportját jellemzi. d) Dél-Oroszországban a IX. sz. vége előtt ismeretlen. A IX. sz. végéről való a Vereckétől mintegy 100 km-re talált két kryloszi sír, melyeket kutatásunk egyhangúan Árpád népéhez köt. Ebben az időben kezdtek el temetkezni a sarkeli kurgántemetőbe is. e) A X–XI. sz. folyamán besenyő emlékanyaggal kísérve, szélesen elterjedt a sztyeppén, f) Belső-Ázsiában csak jóval a IX. sz. után jelentkezik"*. Bálint 1971, p. 97, 99; vezi și Bálint 1982, p. 7–35.

14 Révész 1996, p. 39, nota 62.

15 Vörös 2001, p. 569–601.

16 Vörös 2013, p. 321–336.

17 Vörös 2013, p. 327–328, 2. táblázat.

18 Gáll 2013, Vol. I: p. 617–629, Vol. II: pl. 304–306.

19 Bálint 1969, p. 109–110.

20 Gáll *et alii* 2025, Annex 1.

21 Gáll *et alii* 2025, Annex 1.

22 Vályi 1994, p. 395–396.

23 Gáll 2013, vol. I, p. 230, 235.

24 *„..Az érmek tanúsága szerint a temetőt a XI. sz. első harmadától a XII. század első harmadának végéig használták. A temetkezési szokások és a tárgyi anyag egy része azonban régibb időre utal, a temetőnek jóval előbbi telepítését valószínűsíti….A 45. sír temetkezési módját és a mellékleteket vizsgálva, első pillanatra szembetűnik, hogy pogány módon eltemetett, s a X. századnál semmi esetre sem fiatalabb sírt találtunk."* Trogmayer 1962, p. 34, 36. *„...mely szerint lócsontokat is találtak, s feltételezzük, hogy a Banner Benedek által kibontott lókoponya és lólábak sírból származnak, akkor a temető használata esetleg már a 10. század végén elkezdődött".* Medgyesy 1992–1995, p. 202.

25 Kovács 1985, p. 380, 382.

26 Kovács 2013, p. 511–604 (cu bibliografie).

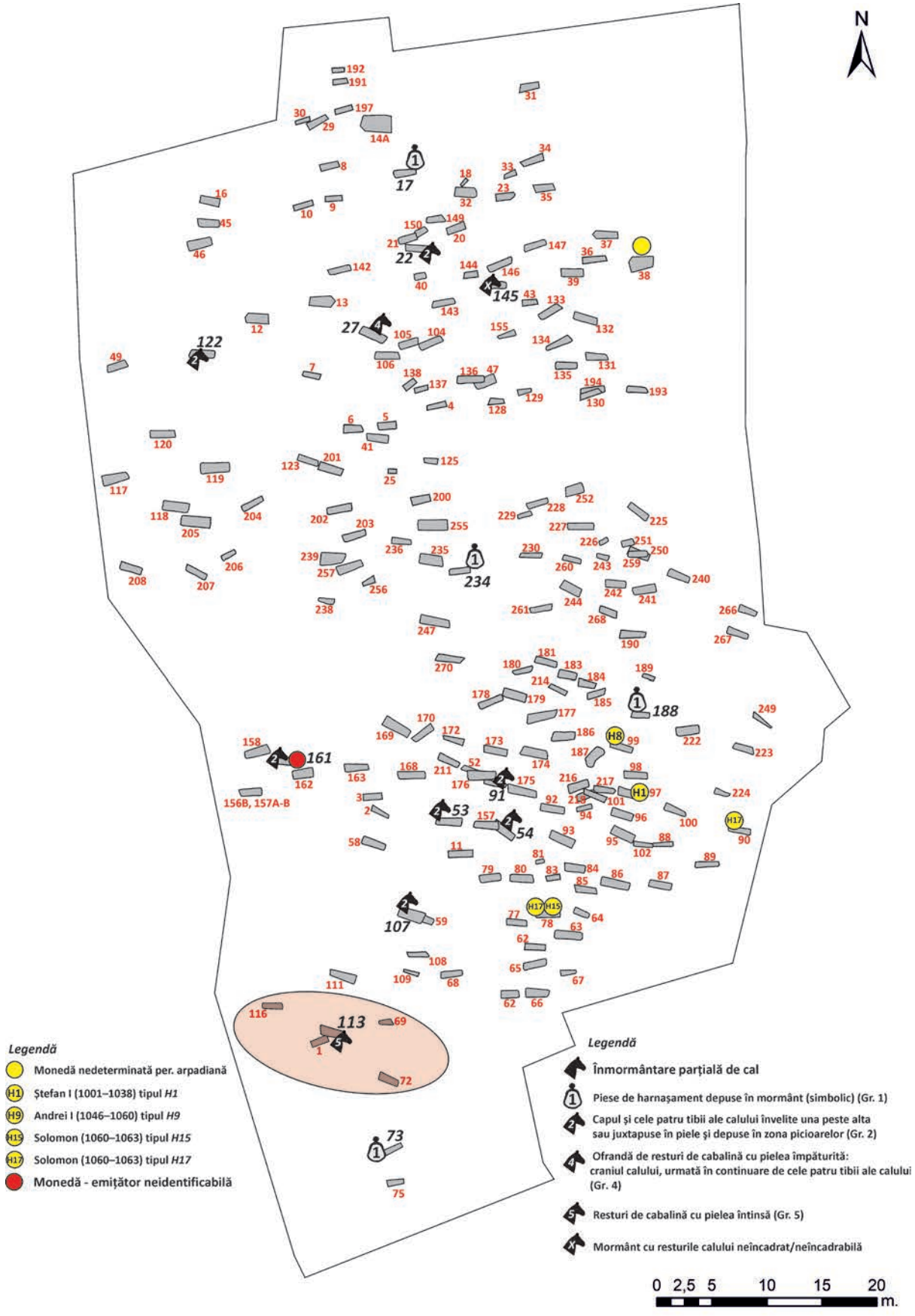


Figura 2. *Situl funerar din secolele X–XI, cu un număr mare de morminte cu resturi ale calului și harnașament.*

Figure 2. *Survey map of the 10th–11th century funerary site with increased number of graves with horse remains and harness.*

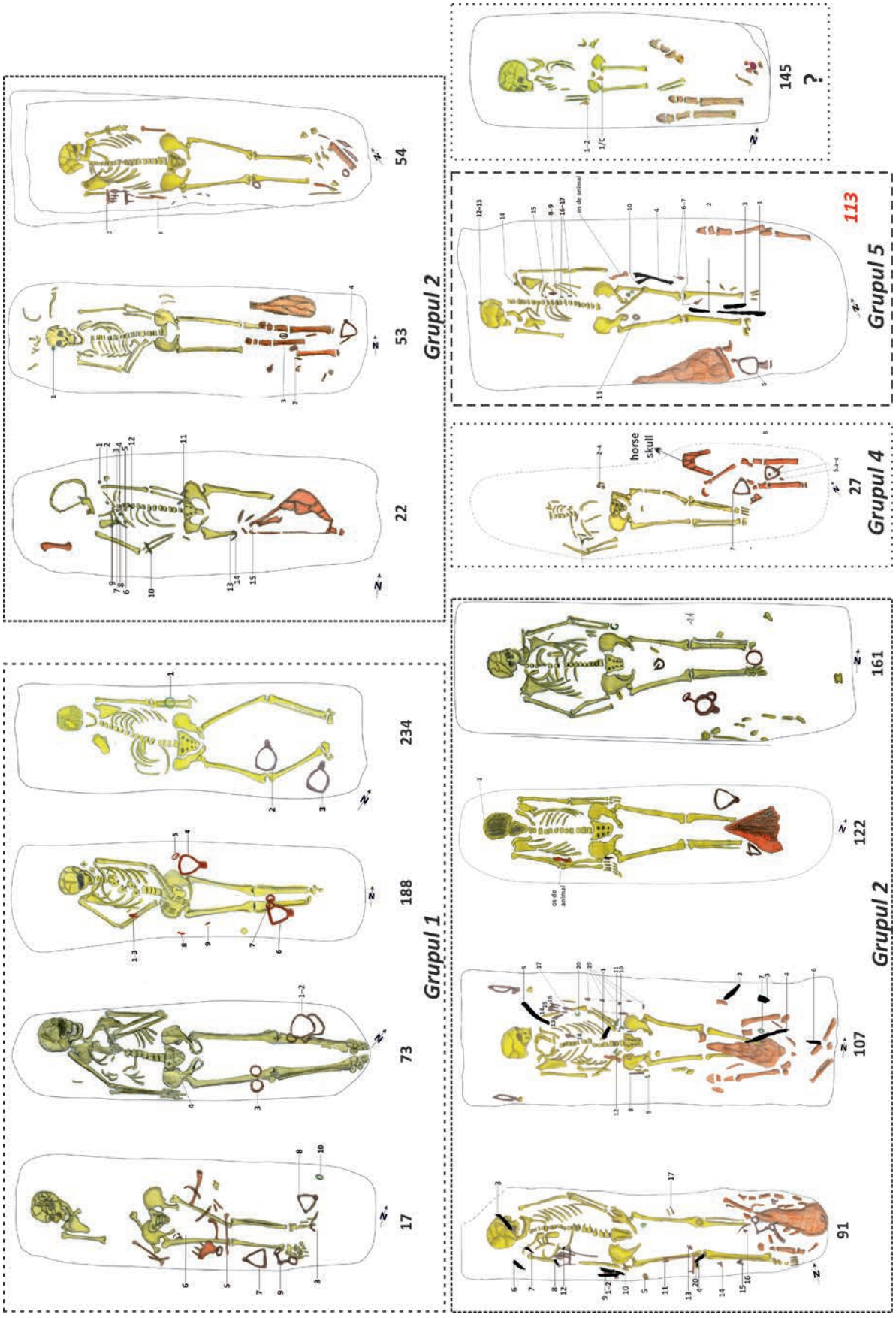


Figura 3. *Mormintele cu resturi ale calului și/sau cu piese de harnașament de la Vălcani – Vamă, pe baza clasificării lui Csanád Bálint (1969).*

Figure 3. *Horse burials (partial and symbolic and/or with horse harness) from Vălcani – Vamă based on classification by Csanád Bálint (1969).*

Grupul	Descrierea	Nr. de mormânt
Grupul nr. I	Piese de harnașament depuse în mormânt (simbolic).	M. 17, 73, 188, 234
Grupul nr. II	Capul și cele patru tibii ale calului învelite unele peste altele sau juxtapuse *în piele* și depuse în zona picioarelor.	M. 22, 53, 54, 91, 107, 122, 161[29]
Grupul nr. IV	Ofrandă de resturi de cabalină cu pielea *împăturită*: craniul calului, urmat de cele patru tibii ale calului.	M. 27
Grupul nr. V	Resturi de cabalină cu pielea întinsă.	M. 113
Neîncadrat	Doar părțile inferioare de la două picioare de cal[30].	M. 145

Tabelul 1. *Mormintele cu resturi ale calului și/sau cu piese de harnașament de la Vălcani* – Vamă*, pe baza clasificării lui Csanád Bálint (1969, p. 108, 110).*

Table 1. *Horse burials (partial and symbolic and/or with horse harness) from Vălcani* – Vamă *based on classification by Csanád Bálint (1969, p. 108, 110).*

dacă am cunoaște numărul exact al mormintelor din faza păgână a necropolei, deoarece o parte din morminte se datează – inclusiv pe baza monedelor depuse ca obol – în secolul al XI-lea, considerat primul veac creștin[27]), prin care Vălcani se integrează fenomenului de înmormântare cu resturi de cabaline – un *habitus cultural nomad*[28]*.* În ceea ce privește poziția lor în cadrul necropolei, nu putem observa o concentrare a acestora. Au putut fi documentate mai ales în părțile de nord și de sud ale sitului funerar, ele lipsind aproape în totalitate în zona de mijloc (în afară de M. 234, în care erau depuse doar piese de harnașament) (vezi Fig. 2).

Aplicând clasificarea lui Csanád Bálint, majoritatea celor 14 morminte cu resturi de cal și/sau cu harnașament le-am putut integra în grupurile 1–2, respectiv 4–5, propuse de arheologul maghiar (vezi Tab. 1 și Fig. 3).

C. MICRO-TOPOGRAFIA MORMÂNTULUI 113 (FIG. 2)

Mormântul se află în partea sudică a sitului funerar, în imediata vecinătate a M. 1, și destul de apropiat de M. 69, 72 și 116 (metrii 5–9). Mormântul 1 conținea doar un cuțit; defuncții din M. 69 *(infant I)* și M. 72 (*adult*) erau înmormântați fără inventar. În schimb, individul adult din M. 116 avea pe antebrațul drept o brățară turnată, cu secțiune romboidală (aceasta fiind considerată o caracteristică mai ales a culturii materiale din secolul al XI-lea[31]). Astfel, putem observa că, în jurul M. 113, am putut identifica doar morminte fără inventar sau cu inventare sărace. M. 116 se datează, foarte probabil, în secolul al XI-lea. În afară de aceste morminte, la circa 15–20 m distanță în direcția sudică, am mai putut înregistra M. 73 și M. 75 (vezi Fig. 2).

D. DESCRIEREA MORMÂNTULUI 113 (FIG. 4–6)

Nivel de conturare oseminte: 77,81 m (față de nivelul mării); adâncime: 77,49 m (față de nivelul mării). Adâncime de la conturare: 32 cm.

Schelet matur. Sex: bărbat. Vârsta: 30–40 de ani. Orientare: VNV–ESE (290°). Forma gropii de mormânt este rectangulară, cu colțurile rotunjite. Lungimea gropii: 230 cm; lățimea maximă a gropii: 102 cm.

Poziția scheletului: defunctul a fost întins pe spate, craniul căzut spre sud, brațul și antebrațul stâng întinse pe lângă corp, brațul drept paralel cu corpul, antebrațul dislocat între femure, picioarele întinse, apropiate la genunchi.

Lungimea scheletului (de la craniu până la călcâi): 162 cm.

Ritual funerar: ***I.*** craniul de cal a fost depus cu 25–30 cm mai sus decât oasele scheletului, lipit de marginea sudică a gropii de mormânt, paralel cu aceasta, cu botul spre vest. Osemintele inferioare ale picioarelor calului au fost depuse sub craniul animalului, în schimb celelalte două părți ale membrelor au fost documentate lângă peretele nordic al gropii de mormânt. Clasificare: grupul V[32] (Fig. 1). O scăriță de șa a fost descoperită în partea estică a craniului, pe baza căreia putem să ne gândim că șaua de lemn a fost și ea depozitată în mormânt; ***II.*** în zona mâinii stângi a fost depus un os de animal.

Inventare:

1. Plăcuță de os de la capătul arcului descoperită întinsă între cele două tibii, paralel cu plăcuța de os nr. 3. Înspre unul dintre capete, lateral, are o șănțuire semicirculară, în care a fost amplasată coarda arcului. Piesa este arcuită. Lungimea: 25,97 cm; lățimea maximă: 2,19 cm; grosimea plăcuței: 0,28 cm (Fig. 4/1).

2. Plăcuță de os de la capătul arcului, fragmentară, între cele două tibii, în partea superioară. Are formă aproape dreaptă, rotunjită la un capăt, iar în cealaltă parte

[27] Privind înmormântările creștine, în sens general, din secolul al XI-lea în Bazinul Carpatic, vezi: Lovag 2000, p. 399–401; Vargha 2022, p. 43–69. Ne întrebăm cum am putea vorbi de creștini printre păgânii secolului al X-lea, când, în condițiile inexistenței rețelelor ecleziastice, biserica nu recunoștea drept *creștin* în sensul teologic al cuvântului pe indivizii din afara lumii creștine, chiar dacă erau botezați. În acest sens, vezi: Heussi 2000, p. 53, 56, 63, 72, 79.

[28] Szenthe, Gáll 2022b, p. 315–335.

[29] Mormântul 161 a fost puternic afectat de lucrările agricole.

[30] Trebuie să subliniem faptul că avem de-a face doar cu două picioare de cal. Întrebarea rămâne, în schimb, dacă a existat craniul de cal, care putea să fi fost dislocat de arături/scarificări.

[31] Szabó 1978–1979, p. 66; Giesler 1981, p. 120, Tipul 7; Langó 2000, p. 40.

[32] Bálint 1969, I. tábla.

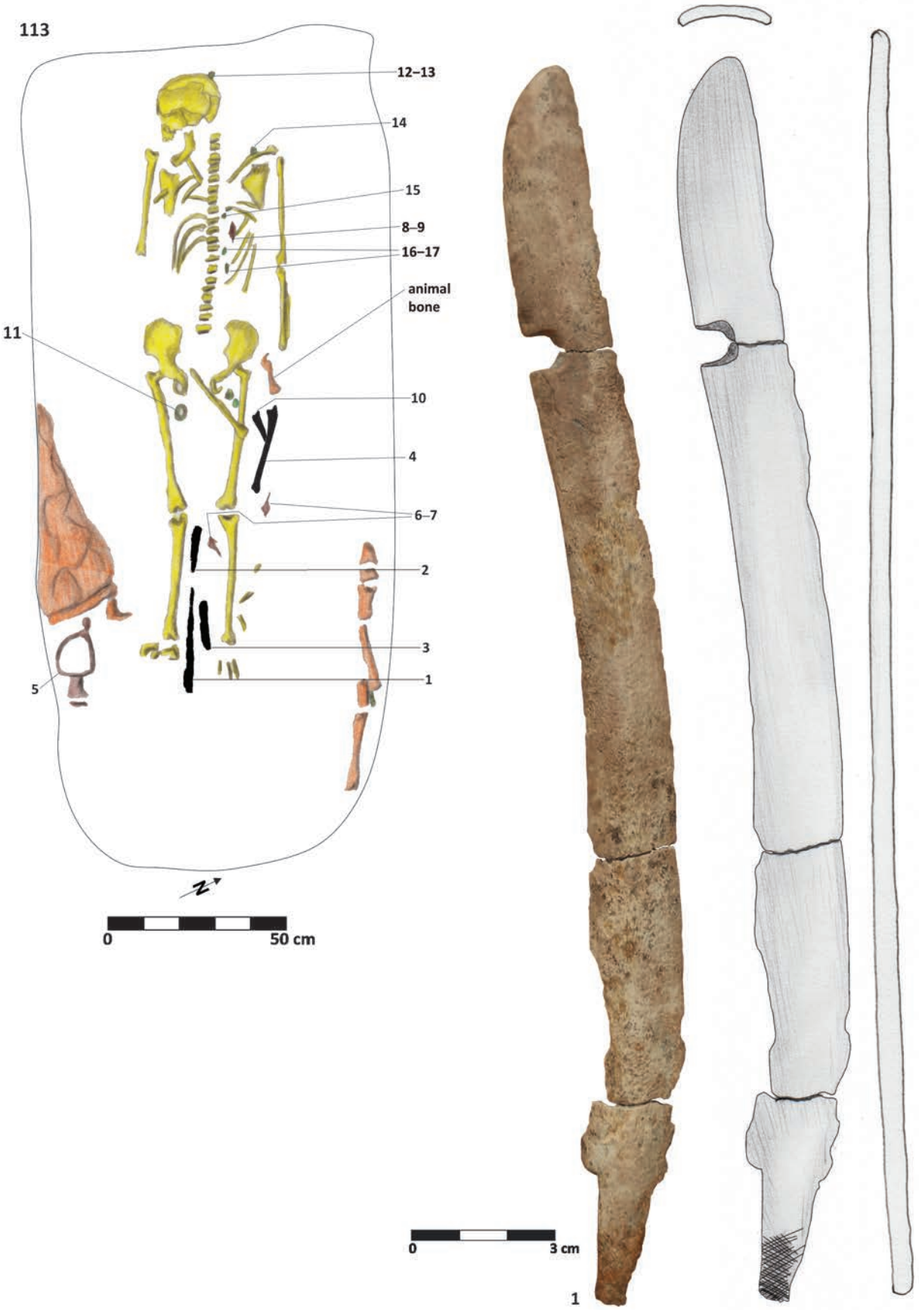


Figura 4. *Mormântul 113 de la Vălcani* – Vamă.

Figure 4. *Grave 113 from Vălcani* – Vamă.

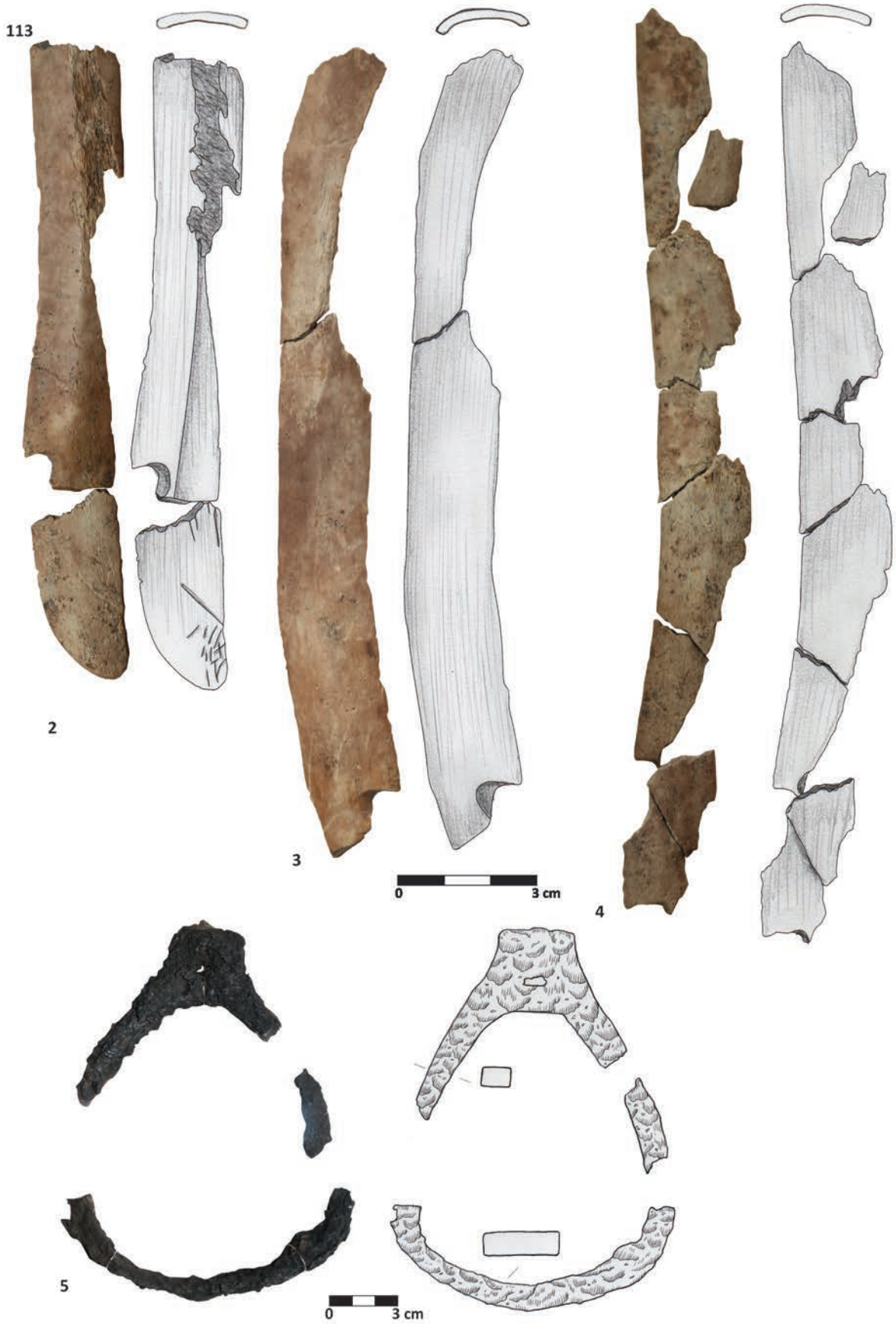


Figura 5. *Mormântul 113 de la Vălcani* – Vamă.

Figure 5. *Grave 113 from Vălcani* – Vamă.



Figura 6. *Mormântul 113 de la Vălcani – Vamă.*

Figure 6. *Grave 113 from Vălcani* – Vamă.

este prevăzută cu șănțuirea semicirculară specifică pentru amplasarea corzii arcului. Lungimea: 13,74 cm; lățimea maximă: 2,01 cm; grosimea plăcuței: 0,20 cm (Fig. 4/2; Fig. 5/2).

3. Plăcuță de os de la capătul arcului, fragmentară, între cele două tibii, lângă plăcuța nr. 1. Este arcuită; într-o parte se poate observa șănțuirea semicirculară specifică pentru amplasarea corzii arcului. Lungimea: 17,53 cm; lățimea maximă: 2 cm; grosimea plăcuței: 0,24 cm (Fig. 4/3; Fig. 5/3).

4. Plăcuță de os de la capătul arcului, fragmentară, ruptă; s-a putut restaura doar parțial. Este arcuită; într-o parte se poate observa șănțuirea semicirculară. A fost descoperită lângă femurul stâng. Lungimea aproximativă: 19,62 cm; lățimea maximă: 1,95 cm; grosimea plăcuței: 0,25 cm (Fig. 4/4; Fig. 5/4).

5. Scăriță de șa în formă de pară din fier, descoperită în partea estică a craniului de cal. Urechiușa este tronconică, bara are secțiune rectangulară cu colțurile rotunjite. Pe talpa scăriței nu se observă nervură. Înălțimea maximă: 16,44 cm; lățimea maximă: 12,0 cm; dimensiunile orificiului urechiușei: 1,0 × 0,8 cm; dimensiunile barei: 1,0 × 0,6 cm; lățimea tălpii: 0,35 cm (Fig. 4/5; Fig. 5/5).

6–7. Două vârfuri de săgeți romboidale din fier au fost descoperite în zona genunchiului stâng (Fig. 4/6–7).

8–9. Două vârfuri de săgeți romboidale din fier au fost descoperite printre coastele din partea stângă (Fig. 4/8–9).

10. Cuțit din fier, găsit în partea superioară a femurului stâng, sub bazin, cu vârful spre picioare (Fig. 4/10).

11. Cataramă din fier în partea dreaptă, sub bazin (Fig. 4/11).

12–13. Două inele de buclă din aliaj de bronz au fost descoperite sub craniu (Fig. 4/12–13).

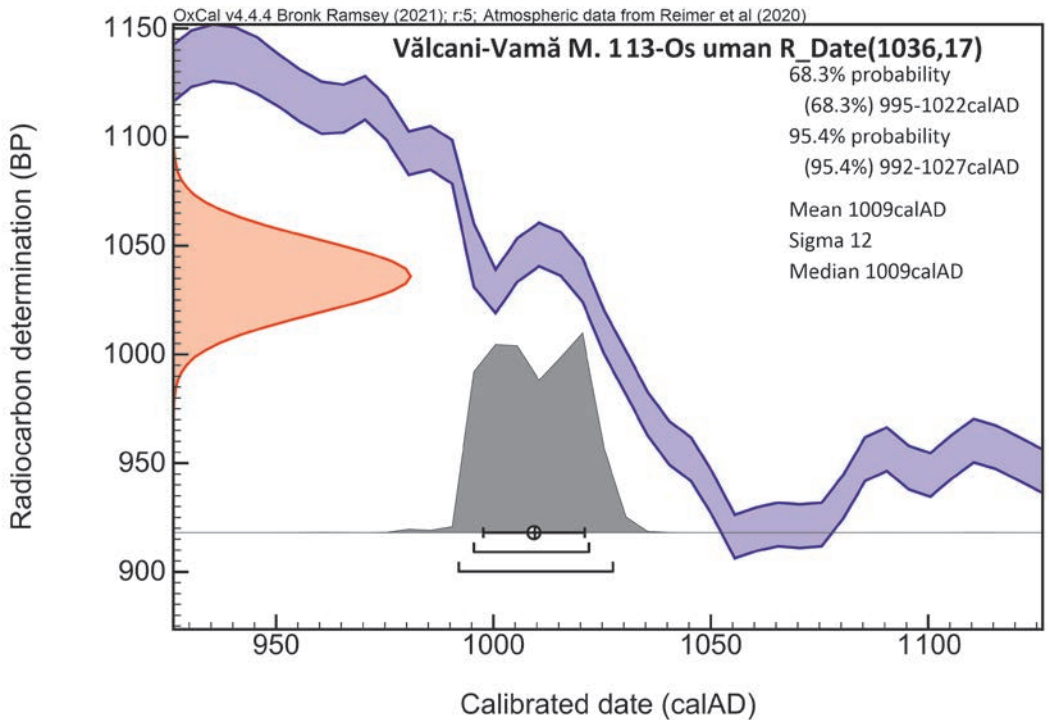


Figura 7. *Datele de radiocarbon calibrate ale eșantionului uman din mormântul 113 de la Vălcani* – Vamă *(Isotoptech Zrt. Laboratory, Debrecen).*

Figure 7. *Calibrated radiocarbon date of the human sample from Vălcani* – Vamă *Grave 113.*

14–17. Patru butoane din aliaj de bronz în zona umărului stâng și în partea stângă a coloanei vertebrale, dispuse într-o linie (Fig. 4/14–17).

E. DATAREA TIPO-CRONOLOGICĂ A INVENTARULUI MORMÂNTULUI 113

Inventarul mormântului 113 prezintă caracteristicile mormintelor simple de bărbați, care au fost duși pe ultimul lor drum însoțiți de armele clasice ale secolului al X-lea, frecvente în inventarele funerare ale perioadei[33]. Arcul din mormânt, care a fost deteriorat și spart în timpul ceremoniei de înmormântare, este datat cu precădere pe parcursul secolului al X-lea[34]. Este interesant faptul că cele patru vârfuri de săgeți (de tip romboidal) clasice pentru secolul al X-lea[35] au fost descoperite în două locuri diferite.

A fost identificat în mormânt un singur exemplar de scărița de șa în formă de pară, fiind un inventar tipic al mormintelor cu resturi de cai din secolul al X-lea[36]. Totodată, acest tip de scăriță este datat cu precădere în primele două treimi ale secolului al X-lea.

Celelalte inventare (inele de buclă, butoane, cataramă) nu asigură o datare mai precisă în intervalul secolelor X–XI.

În concluzie, tipo-cronologia nu ne oferă o datare precisă, ci doar una largă, întinsă pe un secol, motiv pentru care am recurs – și de această dată – la analize radiocarbon.

F. DATAREA ^{14}C A MORMÂNTULUI 113

Pornind de la problema datării mai precise a mormântului 113, caracterizat de un inventar nerelevant din punct de vedere cronologic, am propus verificarea plasării sale în timp cu ajutorul metodei radiocarbonului. În cercetarea arheologică a secolelor X–XI, metoda radiocarbonului a câștigat teren destul de recent[37], astfel încât fiecare probă nouă prezintă relevanță.

[33] Dintre regiunile Bazinului Carpatic, un catalog regional amplu a fost efectuat doar pentru Bazinul Transilvaniei, Crișana și Banat (Gáll 2013, Vol. I: p. 719–755, Vol. II: pl. 318–319). Pentru unități regionale mai mici (la nivel de județ), vezi seria cataloagelor referitoare la siturile funerare din secolele X–XI (https://ri.abtk.hu/hu/cikkek/51-kiadvanyok/84-monographs/85-series/88-corpus/116-mhkas/1082-mhkas-hu). Credem că, în total, putem vorbi de peste 1300 de înmormântări cu arc și/sau tolbă de săgeți. Bíró 2013, p. 373–422.

[34] Sebestyén 1932, p. 180–255; Bíró 2013, p. 373–422. Pentru fenomenul distrugerii armelor: Szenthe, Gáll 2022a, p. 132–133, 135.

[35] Sebestyén 1932, p. 193–206.

[36] Gáll 2015, p. 370, fig. 15.

[37] Szenthe *et alii* 2024, p. 443–492.

Oportunitatea acestei investigații a fost dată de un program de cercetare[38], în cadrul căruia, printre altele, am efectuat și analize de radiocarbon *AMS*[39]. Pentru analize au fost prelevate probe din oseminte umane, acestea fiind supuse și investigațiilor privind dieta[40]. Proba din scheletul uman din M. 113 indică în mod convențional 1060 ± 18 (BP), ceea ce corespunde calibrat plasării cronologice în intervalul 900–1030. Calibrarea modelată în programul *Oxcal 4.4. Interface* a indicat cu o probabilitate de 95,4% anul survenirii morții individului adult–matur (30–40 de ani) între 992 și 1027, respectiv cu o siguranță de 68,3% între anii 995 și 1022.

Astfel, pe baza rezultatelor ^{14}C, putem concluziona că mormântul 113 de la Vălcani a fost săpat cel mai probabil în primele două decenii ale secolului al XI-lea. Putem afirma deci că individul s-a născut undeva între anii 960 și 990 d.Hr.

CONCLUZII ȘI ÎNTREBĂRI

1. Bărbatul de vârstă adultă din M. 113 (30–40 de ani), cu inventar funerar compus din arme și resturi de cal (grupul V: *înmormântare cu piele de cal întinsă*) a fost, cel mai probabil, înmormântat în cursul primelor două decenii ale secolului al XI-lea. S-a născut „păgân" în jurul anilor 970–980/990–1000 – a murit „păgân" (?) și, aparent, a fost înmormântat conform ritualului păgân, probabil în primele decenii ale veacului al XI-lea!

2. Prin proba ^{14}C, am putut dovedi că anumite tipuri de obiecte identificate în siturile funerare din primele două treimi ale secolului al X-lea au rămas în uz și spre sfârșitul secolului al X-lea – începutul secolului al XI-lea. Ne referim la bijuterii (inele de bucle simple), dar, mai ales, la piese de harnașament, precum *scărița în formă de pară*, asociată frecvent cu prima parte a secolului al X-lea. **Fără analize ^{14}C, bazându-ne doar pe analizele de tipo-cronologie clasică, la rândul nostru am fi datat mult mai timpuriu mormântul (*ceea ce ar fi fost un rezultat fals*)!** *Acest rezultat ^{14}C ne-a determinat și titlul lucrării* „**Sfârșitul tipo-cronologiei?**"*, punând sub semnul întrebării credibilitatea tipo-cronologiei uniformizante*[41]*. Trebuie să punem astfel întrebarea: ne mai putem baza pe tipo-cronologia uniformizantă, care datează diferite elemente ale culturii materiale pe baza analogiilor pe distanțe mari?*

3. Așa cum am amintit înainte, până în prezent nu a fost realizată nicio analiză cu scopul datării absolute a mormintelor cu resturi ale calului din secolul al XI-lea – adică din era creștină (vezi *punctul 1*). Astfel, doar câteva morminte au putut fi datate sigur în secolul al XI-lea, dar și în cazul acestora rămân suspiciuni. Spre exemplu, chiar dacă László Kovács a datat M. 1 de la Dabas – *Paphegy* în secolul al XI-lea, orientarea mormântului diferă de cea a mormintelor datate sigur în acest secol. Astfel, nu putem exclude și o altă interpretare, precum înființarea, în secolul al XI-lea, a unui cimitir creștin sau proto-creștin în jurul unui mormânt singular datat în secolul anterior[42].

4. Într-o lucrare recentă am realizat catalogul mormintelor cu resturi de cal datate în secolele X–XI[43]. Dintre cele 1506 contexte funerare identificate în 705 situri, în afară de M. 1 la Dabas – *Paphegy*[44], Ópusztaszer – *Kiszner tanya*[45] și M. 2, 3, 12, 36 de la Tiszabercel – *Újsor*[46], descoperiri care însă ridică anumite semne de întrebare[47], precum și exceptând M. 113 de la Vălcani, doar mormintele M. 45 de la Békés – *Povád*, M. 12 de la Csanytelek – *Dilitor* și M. 117 de la Sarkadkeresztúr – *Csapháti legelő* au putut fi datate cu foarte multă siguranță în secolul al XI-lea. Mormântul M. 45 de la Békés – *Povád*, având printre inventare *scărițe în formă trapezoidală,* provine sigur dintr-o necropolă din secolele XI–XII[48], în schimb, M. 117 de la Sarkadkeresztúr – *Csapháti legelő* este datat de o monedă *H1* de la *Ș*tefan I (1001–1038)[49], alături de un inel de buclă cu capătul în formă de „S", respectiv *scărițe în formă trapezoidală*[50] (Fig. 8).

Mormântul 12 de la Csanytelek – *Dilitor*, având piese de harnașament și arme (resturile tolbei și vârfuri de săgeți) ca inventar, provine dintr-o necropolă datată cu monede emise de Petru Orseolo. În mormântul 54, pe lângă tolba de săgeți, a fost înregistrată o monedă a lui Petru Orseolo (1038–1041, 1044–1046) (tip *H9*)[51].

În concluzie, există doar câteva morminte cu resturi de cal, sigur databile în secolul al XI-lea, dar în realitate numărul lor trebuie să fi fost mult mai mare. Identificarea lor precisă în viitor – în lipsa unor elemente de datare mai sigure, precum monedele – ***poate fi posibilă, în opinia noastră, doar prin intermediul radiocarbonului.*** Acest demers poate deveni, fără îndoială, o temă de cercetare foarte interesantă.

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[38] Proiectul nr. TKP2021-NKTA-24. Vezi nota 1.

[39] Măsurătorile au fost efectuate de laboratorul *Isotoptech Zrt. Laboratory*, Debrecen.

[40] Analizele de dietă prelevate din mormintele din secolele X–XI de la Vălcani – *Vamă* vor fi analizate într-un alt studiu.

[41] Szenthe *et alii* 2024, p. 443–492.

[42] Kovács 1985, p. 380, 382.

[43] Gáll *et alii* 2025, Annex 1, fig. 1.

[44] Kovács 1985, p. 380, 382.

[45] Vályi 1994, p. 387–404.

[46] Istvánovits 2003, p. 200, 202, 345.

[47] Evident, am fi putut enumera un număr foarte mare de situri, datate foarte general, între a doua jumătate a secolului al X-lea și prima jumătate a secolului al XI-lea, însă, metodologic ar fi fost o greșeală!

[48] Trogmayer 1962, p. 34: primele monede care datează *post-quem* mormintele sunt emise de Béla *dux*, respectiv Solomon (1063–1074), iar ultima emisiune este cea lui Béla al II-lea (1131–1141).

[49] *„A szintén Békés megyében, a Sarkadkeresztúr, Csapháti-legelő, Barna-tanya lelőhelyen feltárt 10-11. századi temető 117. sírjában íjászfelszereléssel, lószerszámmal eltemetett halott sírjában* ***I. István pénze került elő"****.* Medgyesi 2002, p. 162.

[50] Medgyesi 1993, X–XI. Tábla.

[51] Széll 1941, p. 246, 249.

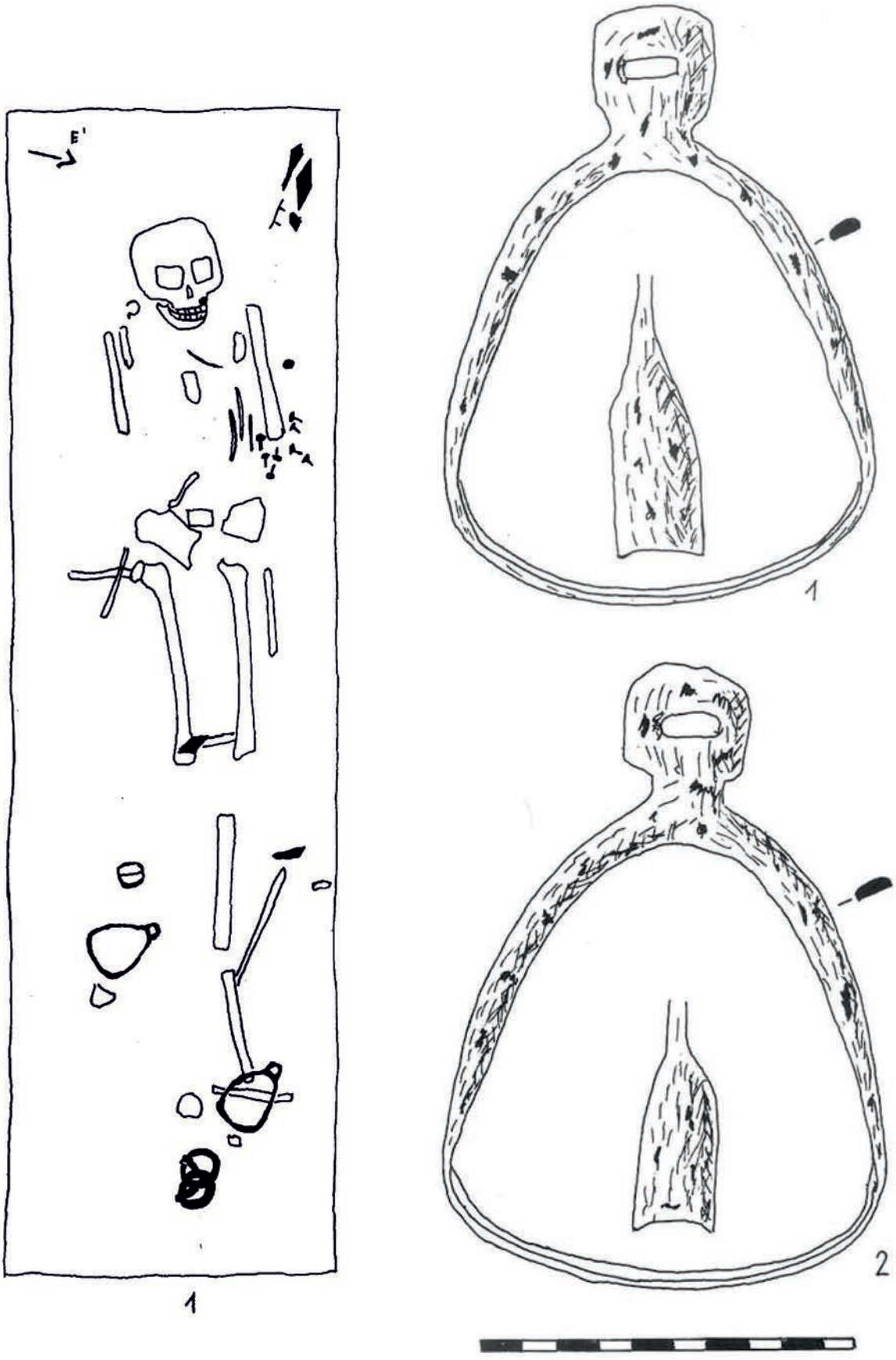


Figura 8. *Sarkadkeresztúr* – Csapháti legelő *legelő M. 117 (după Medgyesi 1993, IV, XI. tábla).*

Figure 8. *Sarkadkeresztúr* – Csapháti legelő *Grave no. 117 (after Medgyesi 1993, IV, XI. tábla).*

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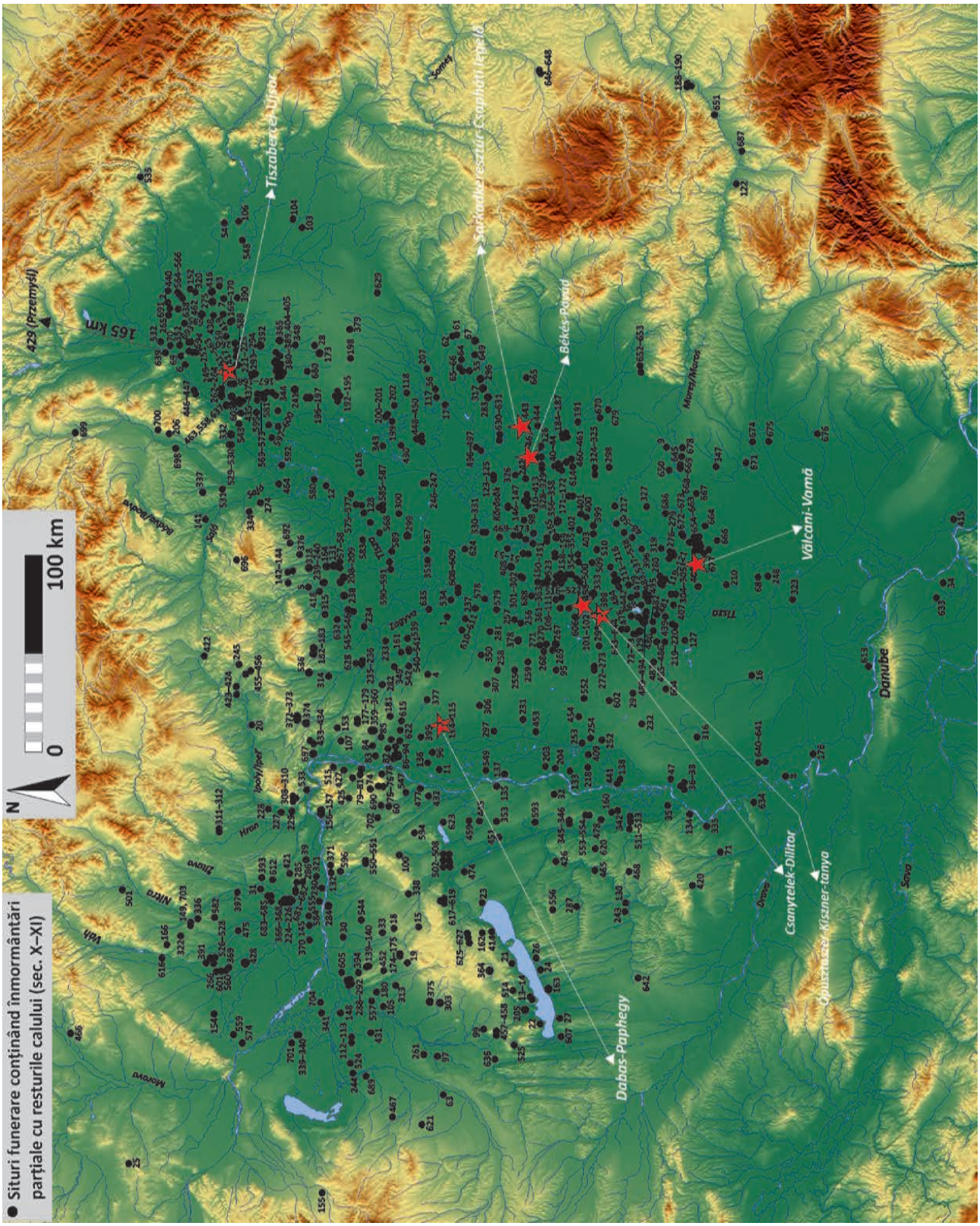


Figura 9. *Mormintele cu resturi ale calului și/sau cu piese de harnașament datate în secolele X–XI din Bazinul Dunării mijlocii (cu* ***stea roșie*** *sunt marcate siturile din care provin morminte datate sigur în secolul al XI-lea) (redesenat după Gáll* et alii *2025, Fig. 1) .*

Figure 9. *Horse burials (partial and symbolic/with horse harness) in the 10th–11th centuries from the Middle Danube Basin (burial sites with graves dated with certainty to the 11th century are marked with a* ***red star****) (redrawn after Gáll* et alii *2025, Fig. 1).*

UN MORMÂNT MEDIEVAL CU INEL SIGILAR ȘI VAS DE STICLĂ DESCOPERIT LA BUFTEA – *LA CÂRNĂ/MĂNEȘTI*[1]

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Keywords: *Wallachia, Middle Ages, signet ring, glass bottle, social status*
Abstract: *The paper focuses on one of the graves investigated at the Buftea –* La Cârnă/Mănești *site during the 2020–2021 campaign. This grave stands out from the others due to several features: its location (in the immediate vicinity of the church façade) and its grave goods – a silver signet ring and a glass bottle. The presentation of the funerary context will be accompanied by an anthropological analysis, as well as information regarding the state of preservation of the glass vessel. Finally, by comparing it with similar situations documented at other sites in Wallachia, the hypothesis that the grave belonged to a prominent figure in the 16th century Mănești community will be examined.*

Cuvinte-cheie: *Țara Românească, Evul Mediu, inel sigilar, vas din sticlă, statut social*
Rezumat: *Lucrarea se concentrează asupra unuia dintre mormintele cercetate în situl de la Buftea –* La Cârnă/Mănești *în perioada 2020–2021. Acesta se detașează față de celelalte morminte prin mai multe trăsături: poziția (în imediata vecinătate a fațadei bisericii) și inventarul funerar – un inel sigilar din argint și vas din sticlă. Prezentarea contextului funerar va fi însoțită de analiza antropologică, precum și de o serie de observații referitoare la starea de conservare a vasului de sticlă. La final, prin compararea cu situații asemănătoare documentate în alte situri din Țara Românească, va fi analizată ipoteza atribuirii mormântului unei figuri marcante în cadrul comunității de la Mănești din secolul al XVI-lea.*

COMPLEXUL FUNERAR 711/2021 DE LA BUFTEA – *LA CÂRNĂ/MĂNEȘTI*. PREZENTAREA CONTEXTULUI ARHEOLOGIC

Într-un studiu recent, am schițat un cadru interpretativ-istoric pentru complexele funerare medievale cercetate în situl arheologic de la Buftea – *La Cârnă/Mănești*, pe baza monedelor depuse în morminte[2]. Identificam atunci câteva repere temporale și spațiale ale dinamicii fenomenelor funerare derulate pe parcursul a peste 200 de ani: de la răscrucea secolelor XIV–XV până în primele două-trei decenii ale secolului al XVII-lea. Prima perioadă de înmormântări debutează pe la 1400 și atinge punctul culminant două decenii mai târziu; urmează un declin abrupt, iar pe la 1450 înmormântările încetează[3]. O trăsătură semnificativă a acestei perioade o constituie existența a două cimitire contemporane (II și III), aflate la 200 m unul de celălalt[4]. A doua perioadă, încadrată în intervalul cca 1520–1620, prezintă caracteristici asemănătoare: cele mai multe înmormântări se înregistrează pe la 1600, după care urmează o scădere accelerată[5]. Reluarea înmormântărilor coincide și cu relocarea spațiului funerar; de această dată funcționează un singur cimitir (I)[6], care pare a se concentra în jurul unei biserici[7].

[1] Lucrarea se compune din patru părți intercorelate, dar distincte; contribuțiile autorilor fiind următoarele: Alexandru Morintz, *Complexul funerar 711/2021 de la Buftea – La Cârnă/Mănești. Prezentarea contextului arheologic*; Franceska Știrbu, *Analiza antropologică a complexului funerar 711/2021 de la Buftea – La Cârnă/Mănești*; Ștefania Meșteriuc, Irina Huică, *Observații referitoare la starea de conservare a vasului din sticlă depus în complexul funerar 711/2021 de la Buftea – La Cârnă/Mănești*; Alexandru Morintz, *Cui aparține Complexul funerar 711/2021 din situl Buftea – La Cârnă/Mănești și cine a ctitorit biserica din Mănești?*

[2] Morintz, Coman 2024. Totodată, studiul conține istoricul cercetărilor (p. 212–216) și bibliografia adusă la zi (p. 227–228).

[3] Morintz, Coman 2024, fig. 7c.

[4] Morintz, Coman 2024, fig. 3.

[5] Morintz, Coman 2024, fig. 7c.

[6] Morintz, Coman 2024, fig. 3.

[7] Cel puțin pentru moment, relația dintre biserică și cimitirul I este neclară. Astfel, dacă nu există niciun dubiu că lăcașul de cult sfârșește odată cu cimitirul I, în primele două decenii ale secolului al XVII-lea, momentul ridicării acestuia ridică semne de întrebare (Morintz, Coman 2024, p. 226–227). A. Ștefănescu, ale cărui cercetări au fundamentat conceptul arheologic-istoric *Buftea – Mănești*, a oscilat în stabilirea momentului ridicării bisericii și identificarea ctitorului acesteia. Inițial, acesta considera că „Tipologic [...], biserica de zid a fost ridicată în prima jumătate a secolului al XVI-lea. În acest sens pledează și piesele de inventar [...] din cele cinci morminte ce au avut monede cea mai veche a fost emisă în [...] Polonia [...], în 1525" (Ștefănescu 1975, p. 388). Ulterior, el optează pentru o datare mai largă: „[...] stilistic – lăcașul de piatră din vatra satului Mănești se încadrează în coordonatele mijlocului secolului al XVI-lea." (Ștefănescu 1978, p. 184), precizând însă că „[...] singurul ctitor posibil rămâne Alexandru II Mircea, într-o fază anterioară daniei" (Ștefănescu 1978, p. 184). Ipoteza lui A. Ștefănescu ridică două probleme. În primul rând, ar reieși că biserica a fost ridicată după 11 iulie 1568 și înainte de 15 iunie 1577 (data la care Alexandru II Mircea urcă pe tronul Țării Românești, respectiv, data la care emite actul prin care donează „satul Mănești de pe Colentina, cu tot hotarul" Mănăstirii „Sfânta Troiță" din București). Totuși, nici în acest document,

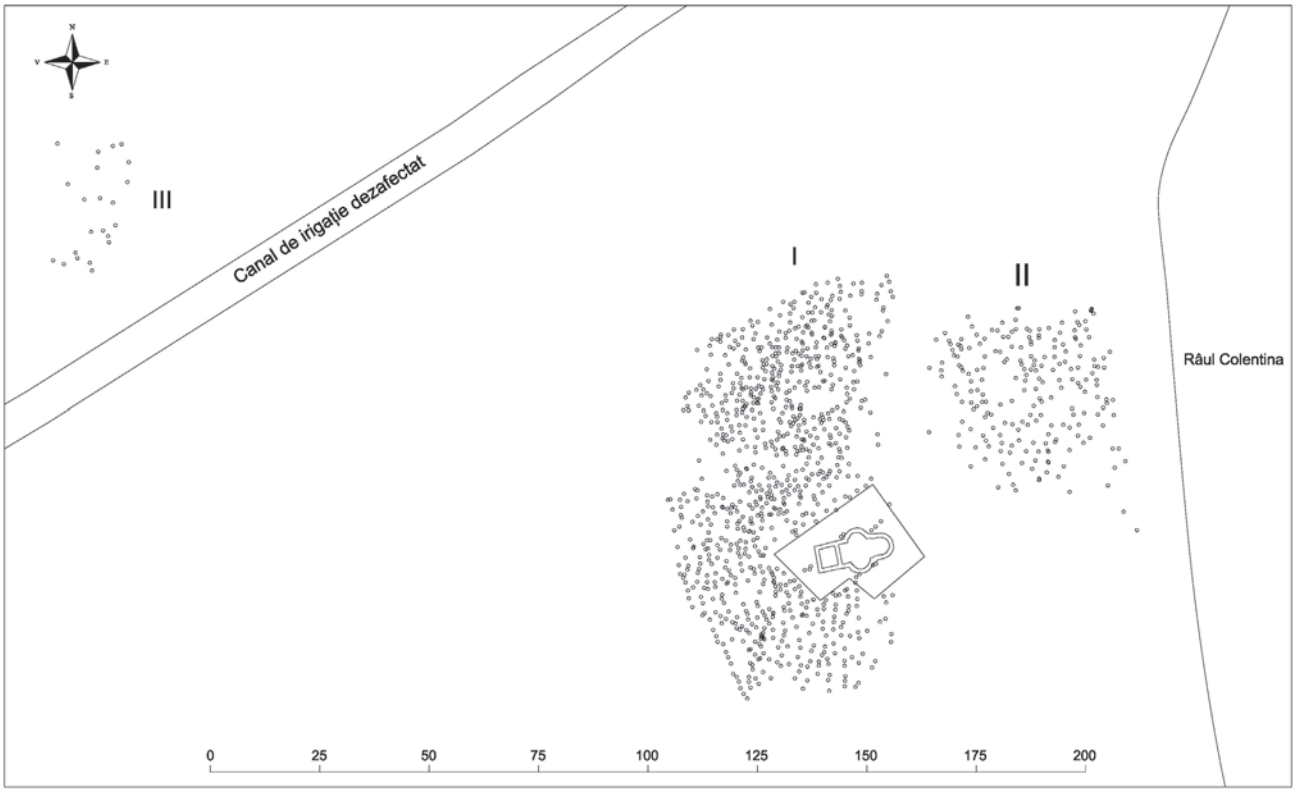


Figura 1. *Complexul funerar de la Buftea* – La Cârnă/Mănești*, zonele cu vestigii funerare medievale: cimitirele I, II și III și biserica (după Morintz, Coman 2024, Fig. 3).*

Figure 1. *The funerary context from Buftea* – La Cârnă/Mănești*, the area with funerary remains: cemeteries I, II and III and the church (after Morintz, Coman 2024, Fig. 3).*

În mod evident, cadrul interpretativ propus pentru situl de la Buftea – *La Cârnă/Mănești* trebuie privit doar ca un instrument de lucru, ipotetic și temporar, permanent supus reevaluărilor. Totuși, avantajele utilizării unui asemenea cadru depășesc inerentele limite metodologice. Astfel, pe de-o parte, un mormânt sau grup de morminte cu anumite trăsături particulare poate fi analizat individual și apoi integrat ansamblului, prin atributele sale culturale, cronologice și spațiale; pe de altă parte, respectivul mormânt sau grup de morminte poate contribui la nuanțarea cadrului interpretativ, oferind detalieri, completări sau chiar reconsiderări. O asemenea abordare punctuală face obiectul prezentei lucrări. Considerăm că trăsăturile ieșite din comun ale unuia dintre mormintele din cimitirul I (cpl. 711/2021) justifică pe deplin o prezentare separată și o analiză interdisciplinară.

Ansamblul complexelor funerare cercetate în perioada 2020–2021 la Buftea – *La Cârnă/Mănești* este prezentat în Fig. 1[8]; într-o manieră simplificată, fiecare mormânt este figurat convențional. Se remarcă prezența a trei concentrări de morminte: cimitirele II și III (cca 1400–1450) și cimitirul I (cca 1520–1620), în jurul bisericii. De asemenea, poate fi sesizat un aspect derutant, și anume faptul că în jurul bisericii (mai exact, în interiorul perimetrului poligonal din jurul acesteia), mormintele sunt mai rarefiate decât în oricare altă parte din cuprinsul celor trei cimitire. Această situație se datorează strict strategiei de cercetare, fiind dictată de considerente obiective. Astfel,

nici în cel de confirmare a deciziei sale, din 28 iulie 1577 (DRH-B, 1996, doc. 81, p. 131–134 și doc. 91, p. 148–150), Alexandru II Mircea nu menționează nimic referitor la o ctitorie a sa la Mănești. Ca urmare, absența oricărei mențiuni scrise referitoare la biserică lasă pe seama arheologiei stabilirea momentului în care aceasta a fost construită. În al doilea rând, ipoteza lui A. Ștefănescu, conform căreia biserica ar data din a doua jumătate (chiar ultimul sfert) a secolului al XVI-lea, indiferent de ctitor (acesta putând fi, mai probabil, chiar noul posesor după 1577, Mănăstirea „Sfânta Troiță"), implică un decalaj cronologic între începutul funcționării cimitirului I și cel al bisericii. Atât observațiile arheologice făcute de Aristide Ștefănescu (Ștefănescu 1975, p. 388; 1978, p.184), cât și cele ale noastre (Morintz, Coman 2024, Anexă, p. 230, pozițiile 26–28) datează primele înmormântări din cimitirul I în deceniul al treilea al secolului al XVI-lea (precizăm că datările s-au bazat exclusiv pe monedele depuse în morminte; pietrele funerare, în măsura în care au existat, nu s-au păstrat). Analizând distribuția spațială a mormintelor datate cu monede emise în diverse perioade din secolul al XVI-lea (Morintz, Coman 2024, fig. 8), se poate observa că cele mai târzii par a se concentra în vecinătatea bisericii, spre deosebire de cele mai timpurii, situate la distanță mai mare față de lăcaș. În acest context, analiza mormântului cu vas din sticlă și inel sigilar (cpl. 711), care face obiectul prezentei lucrări, poate juca un rol important în identificarea atât a momentului ridicării bisericii, cât și a ctitorului.

[8] Morintz, Coman 2024, fig. 3.

deși cercetarea complexelor funerare a avut în ansamblu un caracter cvasiexhaustiv, în zona bisericii, pentru protejarea fundației acesteia (Fig. 2), investigația a fost limitată doar la mormintele identificate la decopertare.

Mormântul reprezentat de cpl. 711/2021, alături de alte două morminte[9], este situat în imediata vecinătate a fațadei, în apropierea colțului sudic al acesteia (Fig. 3). Defunctul a fost depus în poziția decubit dorsal (lungime schelet: 1,70 m), orientat vest–est. Capul era ușor înclinat spre dreapta, antebrațul drept peste cel stâng, palmele pe bazin și picioarele întinse (Fig. 4). Inventarul funerar conține un vas din sticlă și un inel sigilar; din păcate, nu a fost documentată nicio monedă care să asigure o datare *post quem*.

Vasul era poziționat între humerusul drept și torace. Acesta a fost depus întreg în mormânt, fragmentarea producându-se ulterior, din cauza presiunii pământului. Ca urmare, fotografiile *in situ* (Fig. 5) au stabilit că este vorba de un vas bitronconic cu inele mediane. Exemplare asemănătoare, cu două sau chiar trei inele mediane și de dimensiuni variabile, au fost documentate la Suslănești (jud. Argeș)[10], Mănăstirea Radu Vodă[11], Biserica „Sf. Ioan Botezătorul" din Târgoviște[12], Mănăstirea Tutana[13]. Mai mult, un asemenea exemplar provine inclusiv de la Buftea – *La Cârnă/Mănești*, dintr-un mormânt cercetat anterior de Aristide Ștefănescu (a se vedea mai jos).

Inelul sigilar a fost găsit în zona palmei stângi (Fig. 6). Este din argint, cântărește 5,00 g și a fost realizat dintr-o singură bucată, astfel încât veriga și scaunul sigilar formează corp comun (Fig. 7). Veriga are o secțiune semicirculară pe suprafața exterioară și plată pe cea interioară; diametrul acesteia este de 18 mm, iar lățimea medie (prezintă ușoare variații) este de 3,5 mm. Pe umerii verigii, simetric, sunt reliefate două „medalioane" dispuse în câte un chenar ovoidal (dimensiuni: 8, respectiv 4 mm), delimitat în lungul verigii prin mici liniuțe incizate, poziționate oblic. Deși identificarea semnelor din interiorul chenarelor este îngreunată de uzura cauzată de purtarea inelului, putem presupune că în ambele „medalioane" sunt reprezentate câte două elemente identice, dar inversate ca poziție (asemănătoare formelor literelor „S" sau „J"?). Chaton-ul, realizat prin baterea și lățirea verigii, este de formă circulară, ușor alungit pe direcția verigii (12 mm, respectiv 10,5 mm pe direcția perpendiculară acesteia). Scaunul sigilar, delimitat printr-un chenar circular adâncit, redă în negativ un animal fantastic. În Fig. 8 am încercat, prin imprimarea scaunului sigilar, să reproducem imaginea pe care meșterul argintar a dorit să o redea.

Reprezentarea pe scaunul sigilar a unor animale mitologice, precum grifoni, himere, dragoni etc., este frecventă în Europa medievală. Exemplarele descoperite pe teritoriul Țării Românești par a fi de influență bizantină, cele mai timpurii piese de acest gen (secolele XII–XIII) fiind documentate la sud de Dunăre[14]. Inelul din mormântul/cpl. 711/2021 prezintă asemănări cu un altul găsit anterior tot la Buftea – *La Cârnă/Mănești*, de A. Ștefănescu[15], precum și cu altele două, de la Turnu-Severin[16], respectiv Șumen (Bulgaria)[17]. Menționăm și inelul de la Suslănești, la care reprezentarea era însoțită și de o inscripție, *Kazan spătar*, probabil numele posesorului[18].

Mormântul/cpl. 711/2021 nu este singurul caz de la Buftea – *La Cârnă/Mănești* în care un inel sigilar este asociat cu un vas din sticlă. Anterior, Aristide Ștefănescu a documentat un mormânt (M. 26) în care, pe lângă aceste două piese, a fost găsită și o monedă, emisă de Murad al III-lea (1577–1595)[19]. Inelul sigilar este „confecționat din argint de bună calitate, având veriga rotundă în secțiune, iar chaton-ul, rotund, obținut prin batere și lățire. Pe chaton, într-un chenar adâncit, sunt mai multe raze neregulate de circa 3 mm lungime, ce pornesc spre al doilea cerc gravat, împărțit de două diametre perpendiculare în patru sectoare, în care se află gravată câte

[9] Este vorba de mormintele/cpl. 154 și 712, ambele aparținând unor sub adulți, fără inventar.

[10] Vasul din sticlă de la Suslănești constituie unul dintre rarele exemple în care s-a putut stabili, cu anumite rezerve, atât numele posesorului (Stanca, soția lui Pârvu), cât și data exactă a decesului acestuia (31 octombrie 1562). Cercetările s-au derulat în mai multe etape. Anterior anului 1940, Comisiunea Monumentelor Istorice a fost sesizată că la Suslănești, într-o zonă din care localnicii extrăgeau piatră, au fost identificate ruinele unei biserici și mai multe pietre funerare. În acest context, Victor Brătulescu s-a deplasat la fața locului; în 1940, el a publicat o schiță a bisericii, cu localizarea în pronaos a patru pietre funerare, pentru care a reprodus și tradus din slavonă inscripțiile aferente (Brătulescu 1940, p. 5–12). Inscripțiile menționează numele defuncților: o femeie, Stanca, și trei bărbați: jupân Negre, jupân Pârvul și Stoica. În 1959, pietrele funerare au fost duse la Muzeul din Câmpulung și s-a decis efectuarea de săpături arheologice. Acestea au fost efectuate în același an de Dinu V. Rosetti și au vizat biserica și reședința nobiliară din apropiere (Rosetti 1972, fig. 1). În pronaos, au fost documentate 12 morminte (Rosetti 1972, p. 27, fig. 3). Stabilirea cărora dintre acestea le corespund cele patru pietre funerare (în acel moment nemaifiind *in situ*) a fost îngreunată de faptul că între schița lui Brătulescu (1940, fig. 3) și planul publicat de Rosetti (1972, fig. 3, întocmit de Eusebiu Mironescu) există numeroase inadvertențe. În consecință, Rosetti a fost înclinat să atribuie, nu fără rezerve, M. 1, cercetat de el (Rosetti 1972, p. 38, fig. 3, 4/1, 2), pietrei funerare nr. 2, identificate de Brătulescu (1940, fig. 3). Argumentul l-a constituit faptul că M. 1 este singurul mormânt cu defunct de sex feminin cert din pronaos. În consecință, este destul de probabil ca piatra funerară cu inscripția „A răposat roaba lui Dumnezeu Stanca, jupâneasa lui Pârvu, în zilele lui Ion Petru Voevod, luna Octomvrie, zile 31, la anul 7071" să aparțină femeii înmormântate (în M. 1) cu obiecte de valoare (vas din sticlă la cap, în partea dreaptă; ac din argint aurit cu capătul sub formă de disc, decorat cu pietre semiprețioase; încălțăminte din care s-au păstrat „mai multe ținte de fier având capetele în formă de piramidă", Rosetti 1972, p. 38, fig. 4/1, 2).

[11] Ionașcu, Zirra 1959, fig. 19; Mănucu-Adamești eanu 2005, p. 197, pl. 1/1.

[12] Cârciumaru, Petrică 2024, p. 127–128, fig. 8.

[13] Mănucu-Adamești eanu 2005, p. 218.

[14] Doncheva, Bunzelov 2017, p. 357, fig. 5, 10.

[15] Ștefănescu 1979, p. 43.

[16] Bărcăcilă 1959, p. 777–778, fig. 2/7.

[17] Doncheva, Bunzelov 2017, p. 357, fig. 1.

[18] Rosetti 1972, p. 28–29, pl. 6/5, fig. 7/2.

[19] Ștefănescu 1975, p. 388.



Figura 2. *Fotografie aeriană efectuată de Silviu Ene și Mihai Florea în 2021, moment în care se mai păstra doar fundația bisericii (după Morintz, Coman 2024, Fig. 3).*

Figure 2. *Aerial photo taken by Silviu Ene and Mihai Florea in 2021 when only the foundation of the church was still preserved (after Morintz, Coman 2024, Fig. 3).*



Figura 3. *Poziția mormântului/cpl. 711 în raport cu biserica.*

Figure 3. *The location of grave/cpl. 711 in relation to the church.*



Figura 4. *Mormântul/cpl. 711.*

Figure 4. *The grave/cpl. 711.*



Figura 5. *Mormântul/cpl. 711. Detaliu cu inventarul funerar: vasul din sticlă.*

Figure 5. *The grave/cpl. 711. Grave goods detail: the glass vessel.*



Figura 6. *Mormântul/cpl. 711. Detaliu cu inventarul funerar: inelul.*

Figure 6. *The grave/cpl. 711. Grave goods detail: the ring.*



Figura 7. *Mormântul/cpl. 711. Inelul sigilar.*

Figure 7. *The grave/cpl. 711. The signet ring.*



Figura 8. *Mormântul/cpl. 711. Inelul sigilar: scaunul sigilar (în partea stângă) și amprenta sigilară (în partea dreaptă).*

Figure 8. *The grave/cpl. 711. The signet ring: the seal (on the left side) and the seal imprint (on the right side).*

o steluță."[20]. Vasul prezintă evidente asemănări cu cel din cpl. 711/2021 (Fig. 9)[21].

Așa cum am menționat cu altă ocazie, absența publicării unui plan general al cercetărilor efectuate de Aristide Ștefănescu în perioada 1972–1983 creează dificultăți în stabilirea unei corelații spațiale exacte cu planul cercetărilor derulate în anii 2020–2021 (Fig. 1)[22]. Ca urmare, cel puțin pentru moment, nu putem poziționa precis mormântul M. 26/1973 în raport cu biserica și, implicit, cu cpl. 711/2021. Totuși, pe baza informațiilor din articolele și studiile publicate succesiv (de către Panait I. Panait și Aristide Ștefănescu)[23], se poate obține cel puțin o localizare aproximativă.

[20] Ștefănescu 1975, p. 388

[21] Arhiva Aristide Ștefănescu, carnet de șantier 1973; a se vedea și Ștefănescu 1975, fig. 5; Mănucu-Adameșteanu 2005, pl. 1/4. Considerăm necesar să atragem atenția asupra unui aspect, posibil generator de confuzii. Pe fila din carnetul de șantier reprodusă în fig. 9, se găsește consemnarea „Buciumeni 1973, S II, M. 26". Dacă asupra identificării și localizării secțiunii și mormântului ne vom referi imediat mai jos, se cuvine aici a aduce câteva lămuriri referitoare la denumirea locului de descoperire. Astfel, deși Aristide Ștefănescu își intitulează primul articol referitor la cercetările sale din zona Buftea, cel din anul 1975, *Cercetarea satului medieval Mănești de Colentina (sec. XIV–XV)*, în prezentarea inventarului mormântului M. 26, îl caracterizează pe acesta ca fiind cel mai bogat complex funerar cercetat la ... Buciumeni – Buftea (Ștefănescu 1975, p. 389). Totuși, imediat mai jos, când localizează biserica (în apropierea căreia s-a descoperit mormântul M. 26), el consemnează: „În momentul de față monumentul este izolat, aflându-se la o depărtare de circa un kilometru de satul Flămânzeni și cam la aceeași distanță de Buciumeni – Buftea [...]" (Ștefănescu 1975, p. 389). În schimb, începând cu al doilea articol referitor la cercetările sale din zona Buftea, publicat în anul 1978, deși face trimitere la o comunicare din anul 1974 (intitulată *Cercetarea arheologică de la Buciumeni – Buftea. Raport de săpături 1973*, Ștefănescu 1978, nota 4), Aristide Ștefănescu adoptă o nouă denumire a sitului, *Mănești – Buftea*, pe care o va utiliza cvasiconstant, adesea completată cu „de pe Colentina", pentru a evita confundarea cu alte sate medievale care purtau același nume (Filitti 1938). Prin urmare, putem afirma că denumirea de „Buciumeni – Buftea" a fost utilizată la început în mod provizoriu, având menirea de a localiza un sit relativ îndepărtat de oricare alte sate existente în momentul cercetărilor. Considerăm însă necesare aceste precizări pentru a evita confuzia cu cercetările efectuate de către Aristide Ștefănescu mai târziu, la biserica din chiar vatra satului Buciumeni – Buftea (Ștefănescu 1999).

[22] Morintz, Coman 2024, p. 216. Georeferențierea foilor de plan la scara 1:20 din Arhiva Aristide Ștefănescu rămâne un deziderat incert, singurul element de racordare fiind fundațiile bisericii.

[23] Prima campanie, din anul 1972, a fost condusă de către P. I. Panait. Pe parcursul celei de-a doua, din anul 1973, coordonarea cercetărilor a revenit lui A. Ștefănescu. Bazăm această opinie pe informațiile extrase din studiul retrospectiv al lui Panait referitor la Buftea (Panait 2005). Referindu-se la campania din 1972 (pe care o descrie amănunțit: numărul de morminte cercetate, poziție, sex, vârstă și inventar), P. I. Panait citează ca sursă documentară „carnet arheologic personal, m. 30/1972" (Panait 2005, p. 136–137, n. 40). În aceeași manieră detaliată începe descrierea campaniei din anul următor. Apoi, făcând precizarea: „Campania 1973 a marcat trecerea preocupărilor de studiu a sitului respectiv pe seama arheologului Aristide Ștefănescu cel care a reușit, cu consecvență și profesionalism, să organizeze un important șantier arheologic medieval la Buftea", continuă prezentarea campaniei la nivel de sinteză, făcând trimiteri la articolele și studiile publicate de Ștefănescu (Panait 2005, p. 138). Fără a comenta în niciun fel schimbarea survenită în 1973, nu putem să nu constatăm totuși că, în studiul din 1975, referitor la campaniile 1972 și 1973, Ștefănescu nu folosește ca sursă carnetul lui P. I. Panait. Publicarea parțială a acestuia

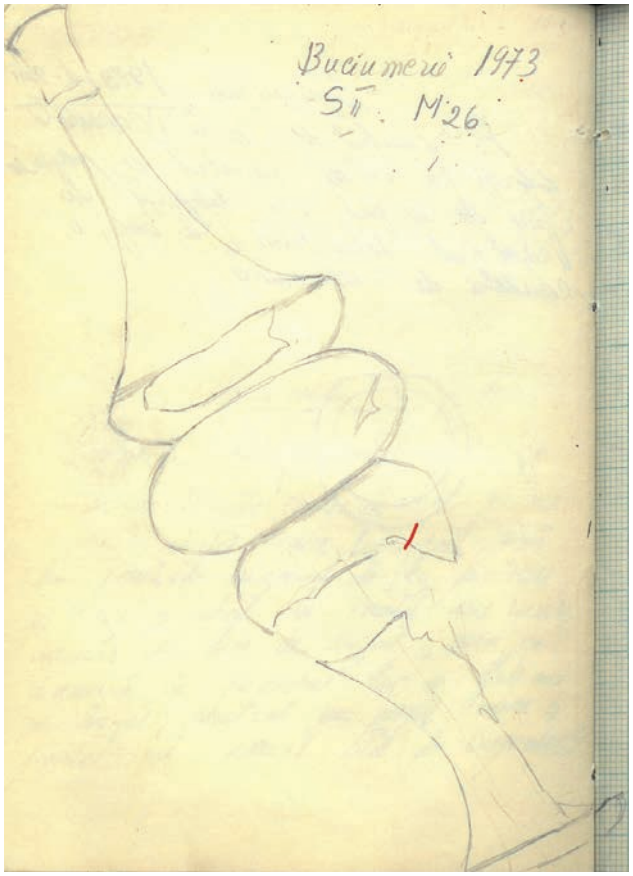


Figura 9. *Vasul din sticlă din mormântul M. 26/1973 (Arhiva Aristide Ștefănescu).*

Figure 9. *The glass vessel from the grave M. 26/1973 (Aristide Ștefănescu Archive).*

Astfel, A. Ștefănescu menționează: „Cercetările începute în 1972 și continuate în 1973 au pornit de la fragmentul de zidărie, extinzându-se și în împrejurimile lui. Cele trei secțiuni deschise până în acest moment au permis aprecieri privind etapele de locuire a terenului, forma bisericii, materialul de construcție și perioada de funcționare, precum și succinte informații asupra așezării din jur”[24]. Ulterior, el a publicat planul bisericii, pe care sunt figurate cele trei secțiuni, nenumerotate[25]: una dintre ele traversează biserica de la vest la est, iar celelalte două, orientate nord–sud, străbat naosul, respectiv pronaosul, prin centrul acestora.

La rândul său, P. I. Panait consemna: „În ziua de 27 octombrie 1972 s-a trasat Șanțul I, orientat N–S, săpat într-o zonă în care vegetația era mai firavă. Această secțiune măsura 39 m lungime și 1,50 m lățime, fiind practic axul lateral al fostului lăcaș, trasat perpendicular pe cele două abside ale naosului”[26]. Prin urmare, secțiunea care străbate biserica prin zona absidelor laterale ale naosului este SI. În această secțiune, în 1972 au fost cercetate 22 de morminte, nouă la nord și 13 la sud de biserică[27]. În continuare, se menționează: „Cea de-a doua campanie a fost deschisă la 23 iulie 1973, având la început ca obiectiv de studiu tot ruinele bisericii de zid. S-a trecut la cea de-a doua secțiune (SII), orientată E–V, respectându-se axul longitudinal al monumentului. Puține zile mai târziu, SII a fost prelungit cu cca 100 m, până la buza malului Colentinei. [...]. În imediata apropiere a altarului a fost găsit un singur mormânt și mai multe pe latura vestică, ajungându-se la cifra de 15 indivizi, copii și maturi. Doi dintre cei înhumați au avut, la cap, câte un vas de sticlă […]”[28]. Deci, fără a o spune explicit, P. I. Panait lasă să se înțeleagă următorul fapt: cele două morminte cu vas la cap fac parte din cele 14 morminte situate la vest de biserică, adică în zona din fața bisericii. De asemenea, referitor la mormintele cu vas de sticlă, trebuie adăugat că, în cel puțin unul dintre cazuri, vasul acesta era asociat cu un inel sigilar[29].

Rezumând, cercetările din cimitirul I au fost efectuate în primele două campanii (1972 și 1973). Au fost cercetate 51 de morminte, dintre care cinci conțineau monede[30]. În unul dintre ele (M. 26), pe lângă monedă, s-a mai găsit un inel sigilar de argint și un vas din sticlă[31]. Un vas din sticlă în stare fragmentară a fost găsit și în mormântul M. 31[32], fără a se menționa asocierea cu alte piese. Ambele vase erau localizate în zona capului, în partea dreaptă[33].

s-a produs la mai bine de trei decenii de la redactare, în anul 2005, moment în care cercetările erau de mult încheiate.

[24] Ștefănescu 1975, p. 388.

[25] Ștefănescu 1978, fig. 1.

[26] Panait 2005, p. 136.

[27] Panait 2005, p. 136–137.

[28] Panait 2005, p. 138.

[29] Atragem atenția asupra unei confuzii făcute de P. I. Panait, care poate afecta interpretarea corectă a mormintelor cu inel sigilar și vas din sticlă. Continuând prezentarea campaniei din 1973 prin trimiteri la lucrările lui A. Ștefănescu (a se vedea nota 23), P. I. Panait consemnează: „În imediata apropiere a altarului a fost găsit un singur mormânt și mai multe pe latura vestică, ajungându-se la cifra de 15 indivizi, copii și maturi. Doi dintre cei înhumați au avut, la cap, câte un vas de sticlă, asemănător cu cele găsite la Sfânta Troiță – Radu Vodă și mai aproape, la Măicănești, datate în secolul al XVI-lea. Un alt mormânt a avut un inventar funerar compus dintr-un inel sigilar și o monedă otomană emisă de padișahul Murad III (1574–1595)” (Panait 2005, p. 138). Din cele consemnate mai sus, ar rezulta trei morminte distincte: două cu vas din sticlă și unul cu inel sigilar și monedă. Trimiterea indicată de P. I. Panait (Ștefănescu 2005, p. 283) menționează însă altceva: „Prin inventarul funerar se remarcă un mormânt conținând un dirhem bătut de sultanul Murad III (1574–1595), la care s-au mai găsit un inel și un vas de sticlă.” De fapt, A. Ștefănescu relua observațiile făcute trei decenii anterior: „În lumina rezultatelor, un dirhem bătut de Murad al III-lea (1574–1595), aflat la M. 26, la care s-a mai găsit un inel și un vas de sticlă, reflectă perioada de avânt și maximă funcționalitate a edificiului” (Ștefănescu 1975, p. 388).

[30] Ștefănescu 1975, p. 388; Ștefănescu 2005, p. 283.

[31] A se vedea nota 29.

[32] Ștefănescu 1975, p. 389. Ilustrația publicată de Gh. Mănucu-Adameșteanu (2005) conține câteva inadvertențe. Astfel, în fig. 1/1 nu este prezentat vasul din M. 26, ci cel din M. 31. De asemenea, desenele vaselor din cele două morminte sunt inversate în pl. 1/3, 4.

[33] În lucrările publicate, A. Ștefănescu nu menționează locul depunerii vaselor în morminte; singurele informații în acest sens se găsesc la Gh. Mănucu-Adameșteanu, care precizează că i-au fost furnizate verbal de A. Ștefănescu (Mănucu-Adameșteanu 2005, p. 198, n. 10). Gh. Mănucu-Adameșteanu a propus și o clasificare a locurilor în care

Referitor la poziția mormântului M. 26, pot fi evidențiate câteva aspecte concludente. Știm că a fost descoperit în șanțul S II (Fig. 9), care urmează axul longitudinal al bisericii, de la vest la est. Întrucât în anul 1973 au fost cercetate 15 morminte, dintre care unul singur în zona altarului, la est de biserică, înseamnă că toate celelalte se aflau la vest de aceasta (nefiind menționată nicio înmormântare în interiorul bisericii[34]), inclusiv M. 26. Cât de aproape se afla mormântul de biserică este greu de spus; ținând cont însă de afirmația lui A. Ștefănescu, potrivit căreia cercetările „au pornit de la fragmentul de zidărie", putem presupune o distanță de cel mult câțiva metri la vest. Prin urmare, mormintele M. 26/1973 și cpl. 711/2021, cu un inventar foarte asemănător, se aflau plasate în apropierea fațadei bisericii. Asupra acestor aspecte vom reveni în partea a patra a prezentei lucrări[35].

Alexandru MORINTZ

ANALIZA ANTROPOLOGICĂ A COMPLEXULUI FUNERAR 711/2021 DE LA BUFTEA – *LA CÂRNĂ/MĂNEȘTI*

Analiza antropologică a inclus o etapă preliminară, constând în îndepărtarea sedimentului aderat materialului prin spălare cu apă. Ulterior, a fost realizată analiza antropologică propriu-zisă a rămășițelor umane.

În prima fază, au fost identificate elementele osoase și dentare, stabilindu-se, totodată, lateralitatea și simetria[36] acestora. Etapa următoare a constat în evaluarea gradului de reprezentare a materialului scheletic. Aceasta a fost realizată prin atribuirea unor valori numerice corespunzătoare procentului de reprezentare a fiecărui os, după cum urmează: 0 = osul este absent, 1 = prezent în proporție mai mică de 25%, 2 = prezent în proporție de 26–50%, 3 = prezent în proporție de 51–75%, 4 = prezent în proporție mai mare de 76%[37]. În cazul elementelor dentare, inventarierea a avut în vedere prezența (neerupte, în ocluzie) și absența acestora, specificându-se natura pierderii (*post-mortem*, *ante-mortem*, congenitală, absență dentară și alveolară)[38].

Estimarea vârstei la deces a fost realizată prin aplicarea mai multor metode complementare, întrucât precizia acesteia crește proporțional cu numărul și diversitatea criteriilor de evaluare utilizate, mai ales în cazul indivizilor adulți. În acest sens, au fost observate și interpretate modificările degenerative la nivelul simfizelor pubiene[39], metamorfoza suprafețelor auriculare ale oaselor coxale[40], gradul de obliterare a suturilor craniene în aspect exocranian[41], morfologia tuberculului și a extremității sternale ale primei perechi de coaste[42], precum și aspectul capetelor sternale ale celei de-a patra perechi de coaste[43]. De asemenea, au fost avute în vedere fuziunea completă a primelor două vertebre sacrale[44] și a crestei iliace[45], precum și epifizarea integrală a suprafeței mediale a claviculei[46].

Determinarea sexului antropologic a fost realizată prin observarea caracteristicilor morfologice cu diferențiere sexuală pronunțată, localizate la nivelul centurii pelviene și al craniului[47]. Pentru creșterea acurateței estimării, a fost efectuat și un set de măsurători ale oaselor coxale, utilizând un program specializat (DSP V2)[48].

În continuare, a fost realizat un set de măsurători craniene[49] și postcraniene[50]. Valorile obținute, împreună cu indicii aferenți (rapoartele procentuale dintre două dimensiuni), au fost încadrate în categorii, utile atât pentru caracterizarea morfometrică și conformațională a individului, cât și pentru estimarea altor doi parametri analizați: statura și greutatea scheletică. Statura scheletică a fost estimată pe baza unor ecuații de regresie, utilizând

erau depuse vasele în raport cu poziția mortului: în partea dreaptă a capului; lângă bazin, pe partea dreaptă; la îndoitura brațului; la picioare (Mănucu-Adameșteanu 2005, p. 213). Pentru depunerea unui vas de sticlă în partea dreaptă a capului, poate fi menționată și o descoperire (M. 45) din necropola Bisericii „Sfânta Vineri" de la Târgoviște (Petrică *et alii* 2025, p. 365, 367–368, fig. 4). Gh. Mănucu-Adameșteanu mai menționează o situație specială, precum cea surprinsă la Mănăstirea Snagov, unde depunerea mai multor vase din faianță și sticlă a impus amenajarea unui postament de cărămidă (Rosetti 1935, p. 31; Mănucu-Adameșteanu 2005, p. 195, 213). La clasificarea de mai sus pot fi adăugate încă două poziții de depunere: în partea stângă a capului (mormântul nr. 118 de la Mirijevo, Bikić 2011, fig. 4) și între humerusul drept și torace (mormântul/cpl. 711/2021 de la Buftea – *La Cârnă/Mănești*). Dat fiind numărul redus de situații documentate, este dificil de apreciat dacă poziția de depunere avea o anumită semnificație suplimentară sau se limita la cea conferită de prezența vasului. Mai trebuie precizat și faptul că descoperirea unor fragmente din sticlă în gropile mormintelor, în jurul acestora sau răspândite în întreg cuprinsul cimitirului, s-ar putea datora și altor cauze. Pentru contexte medievale din Salonic, A. Antonaras diferențiază vasele depuse alături de defunct de cele folosite la ritualul de înmormântare sau la alte ceremonii. Acestea din urmă nu mai puteau îndeplini altă funcție, nemaifiind curate; prin urmare, trebuiau sparte și lăsate în cimitir (Antonaras 2017, p. 21). La Buftea – *La Cârnă/Mănești* în anii 2020–2021, în afara vasului din mormântul/cpl. 711, au fost găsite foarte puține fragmente de sticlă (o buză și alte câteva mici fragmente). În schimb, prezența mai numeroasă a fragmentelor ceramice în umplutura gropilor unora dintre morminte poate fi pusă în legătură cu obiceiuri de înmormântare sau cu ceremonii de comemorare oficiate periodic în cimitir.

[34] Nici în cercetările lui A. Ștefănescu, nici în cele din anii 2020–2021 nu au fost identificate morminte în interiorul bisericii. În fig. 2 se pot vedea atât noile secțiuni, cât și urmele celor vechi. Împreună, însumează peste 50% din suprafața interioară a bisericii (cca 60 mp – naos, respectiv cca 17 mp – pronaos). Prin urmare, deși existența înmormântărilor este puțin probabilă, nu poate fi total exclusă.

[35] A se vedea nota 1.

[36] White *et alii* 2012.

[37] Nikita, Karligkioti 2019, p. 88.

[38] Metodă adaptată din Nikita, Karligkioti 2019, p. 91.

[39] Brooks, Suchey 1990.

[40] Lovejoy *et alii* 1985.

[41] Meindl, Lovejoy 1985.

[42] DiGangi *et alii* 2009.

[43] İşcan *et alii* 1984; İşcan *et alii* 1985.

[44] Ríos *et alii* 2008.

[45] Nikita, Karligkioti 2019, p. 33.

[46] Langley-Shirley, Jantz 2010.

[47] Buikstra, Ubelaker 1994, p. 16–21.

[48] Brůžek *et alii* 2017.

[49] Bräuer 1988, p. 160–192; Martin 1928, p. 625–678.

[50] Bräuer 1988, p. 193–232; Martin 1928, p. 1005–1052.

dimensiunile maxime ale oaselor lungi[51]. Greutatea scheletică a fost calculată, de asemenea, prin aplicarea unor ecuații de regresie, dar având la bază diametrul vertical al capului femural[52].

Ulterior, au fost investigați anumiți indicatori ai activității musculare, încadrați în categoria stresului biomecanic (funcțional și ocupațional), atât la nivelul dentiției (uzura dentară)[53], cât și la nivelul scheletului postcranian (gradul de dezvoltare a entezofitelor)[54].

Totodată, au fost înregistrate o serie de caractere non-metrice, cu rol important în stabilirea relațiilor de rudenie între indivizi sau la nivel populațional. Pentru dentiție, observarea caracterelor non-metrice s-a realizat conform sistemului propus de Universitatea de Stat din Arizona[55]. În ceea ce privește segmentele cranian și postcranian, înregistrarea acestor caractere s-a bazat pe referințe din literatura de specialitate[56].

Studiul a inclus, de asemenea, evidențierea unor caracteristici morfoscopice[57], identificarea manifestărilor patologice (osoase și dentare)[58], precum și observarea particularităților tafonomice[59].

În ceea ce privește analiza resturilor scheletice aparținând individului înhumat în cadrul structurii cpl. 711, au fost identificate elemente osteologice bine conservate (grad 1) și aproximativ complet reprezentate (grad 3), atribuite unui individ de sex antropologic masculin (tabelul 4). Vârsta estimată la momentul decesului este, în medie, de 34,1 ani (interval: 25,3–51,4 ani), valoare ce corespunde categoriei adult tânăr. Totodată, individul prezintă o statură scheletică estimată la 170,1 cm (mare) și o greutate scheletică calculată de 76,6 kg.

În ceea ce privește gradul de reprezentare scheletică (Fig. 10), craniul este incomplet păstrat în regiunea neurocraniului, lipsind parțial corpul sfenoidului, precum și osul etmoid. Din oasele feței au fost recuperate maxilele, fragmente din palatine, zigomaticele și mandibula. Scheletul postcranian este bine reprezentat, exceptând: hioidul, procesele acromiale ale omoplaților, coccisul, epifiza proximală a fibulei drepte, precum și o parte dintre oasele mâinilor și picioarelor (tabelul 1). De asemenea, au fost recuperați 28 de dinți permanenți. Trei dinți au fost pierduți *post-mortem* (I^1–I^2 stângi, M^3 stâng), iar un dinte este absent congenital (M^3 drept).

Datele biometrice (tabelul 2) relevă, la nivelul etajului cranian, un palat ortostafilin și o mandibulă extrem de largă intercondilar, foarte largă intergonial și de tip dolicostenomandibular. Clavicula dreaptă este robustă și scurtă, humerusurile sunt euribrahe, radiusul drept este mijlociu, iar ulna dreaptă este eurolenică. Sacrumul este dolichohieric. Femurul stâng prezintă un pilastru slab și este platimer, în timp ce femurul drept are, de asemenea, un pilastru slab și este eurimer. Patela dreaptă este largă. Tibia stângă este euricnemică, iar cea dreaptă este mezocnemică și brahicnemică.

Indicatorii activității musculare (tabelul 3) evidențiază, în general, un grad mediu-scăzut de dezvoltare a entezofitelor. Se remarcă însă câteva excepții, unde a putut fi observat un grad ridicat de extindere și dezvoltare, în special la nivelul omoplaților. Dinții prezintă, în ansamblu, un grad mediu de uzură (Fig. 11–12) (gradele 3–6), cu expunere parțială a dentinei pe suprafețele ocluzale ale caninilor, premolarilor și molarilor (gradele 3–5), respectiv pe suprafețe mai extinse la nivelul incisivilor (gradul 6).

La nivel cranian au fost identificate următoarele caractere non-metrice: foramenul zigomatico-facial (zigomatic, dreapta), foramenul palatin (palatin, dreapta), condilul occipital divizat (occipital, bilateral) și foramenul parietal (parietal, dreapta). În segmentul postcranian au fost observate: placa femurală (femur, bilateral), fațeta talară anterioară inferioară dublă (astragal, bilateral), fațeta calcaneană anterioară dublă (calcaneu, dreapta), fațeta articulară superioară dublă (atlas, bilateral) și foramenul transvers bipartit (C_3–C_7, bilateral). Dintre caracterele non-metrice dentare identificate, se remarcă următoarele: curbura labială a incisivilor superiori (urmă de convexitate: I^1 drept), numărul rădăcinilor caninului inferior (una: $C_{\#}$ drept), variația cuspizilor linguali ai premolarilor inferiori (doi cuspizi linguali, cuspidul distal este mult mai mare decât cuspidul mezial: P_1–P_2 stângi, P_1 drept; doi cuspizi linguali, cuspidul mezial este mai mare decât cuspidul distal: P_2 drept), fovea anterioară (șanț superficial: M_3 stâng; șanț adânc: M_3 drept), hipoconulid (cuspid mic: M_3 bilateral), numărul rădăcinilor molarilor inferiori (două: M_2–M_3 drepți), modelul șanțurilor ocluzale ale molarilor inferiori („X”: M_3 bilateral), numărul cuspizilor molarilor inferiori (cinci: M_3 bilateral).

Morfoscopic, au putut fi evaluate următoarele caracteristici craniene: tuberculul malar (grad 0) și sutura zigomatico-maxilară (grad 0).

Din punct de vedere patologic, au fost identificate următoarele modificări dentare și osoase:

1. Patologii orale – a) carii: M^2 stâng (o carie ocluzală) (Fig. 11), M_2 drept (o carie ocluzală); b) tartru: I^1 drept (labial, supragingival), I_1–I_2 stângi (lingual, supragingival), P_1–P_2 stângi (bucal, mezial, supragingival), M_1–M_3 stângi (lingual, supragingival), I_1–I_2 drepți (lingual, labial, supragingival), $C_{\#}$–P_1 drepți (labial/bucal, supragingival) (Fig. 13), P_2–M_1 drepți (lingual, supragingival); c) hipoplazie liniară de smalț dentar: I^1–I^2 drepți, I_1–$C_{\#}$ stângi, I_1–$C_{\#}$ drepți; d) fistule: între I^1 stâng și I^1 drept (pe palatul dur al maxilei) (Fig. 11), între M_1 și M_2 drepți (Fig. 12–13); d) absențe congenitale: M^3 drept (Fig. 11).
2. Boli articulare – a) hernie intervertebrală: noduli Schmorl pe corpurile vertebrale la o vertebră toracală (marginea superioară), la trei vertebre toracale

[51] Ruff *et alii* 2012.
[52] Ruff *et alii* 2012.
[53] Smith 1984.
[54] Mariotti *et alii* 2007.
[55] Turner II *et alii* 1991.
[56] Nikita, Karligkioti 2019, p. 53–58.
[57] Nikita, Karligkioti 2019, p. 61–62.
[58] Hillson 2005; Ortner 2003; Mann, Hunt 2005.
[59] Nikita, Karligkioti 2019, p. 70–73; Fernández-Jalvo, Andrews 2016.

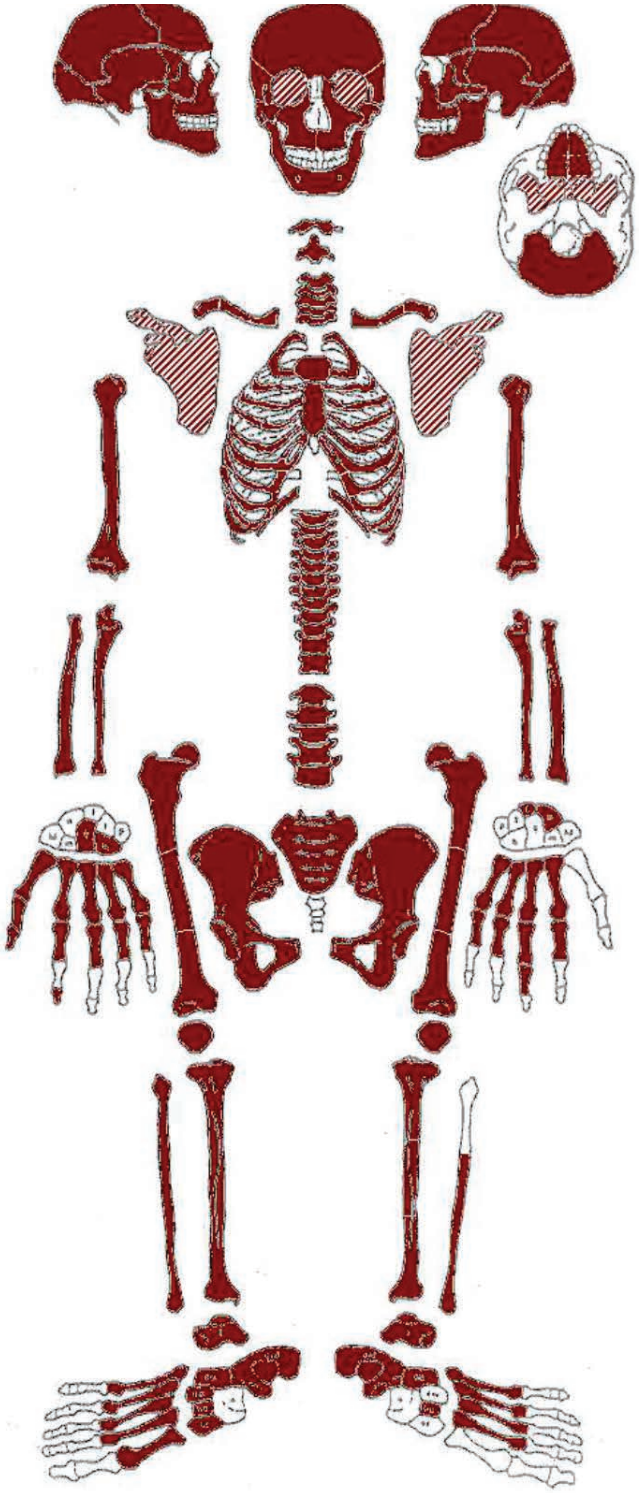


Figura 10. *Mormântul cpl. 711. Reprezentarea grafică a elementelor scheletice: colorare pentru elementele osteologice aproximativ complete, haşurare pentru fragmentele parțial păstrate și zone albe pentru cele absente.*

Figure 10. *The grave cpl. 711. Graphical representation of the skeletal elements: solid coloring for the approximately complete bones, hatching for the partially preserved fragments, and white areas for the missing ones.*

(marginea inferioară), la trei vertebre toracale (marginea superioară și cea inferioară) și la o vertebră lombară (marginea superioară).

Nu în ultimul rând, au fost identificate și câteva caracteristici tafonomice, distribuite neuniform pe întreaga suprafață a scheletului, atât cranian, cât și postcranian. Acestea includ amprente ale rădăcinilor vegetale, ușoare eroziuni și coroziuni ale periostului, precum și colorații verzui observate la nivelul manubriului, al metacarpianului IV stâng și al unei falange proximale stângi de la

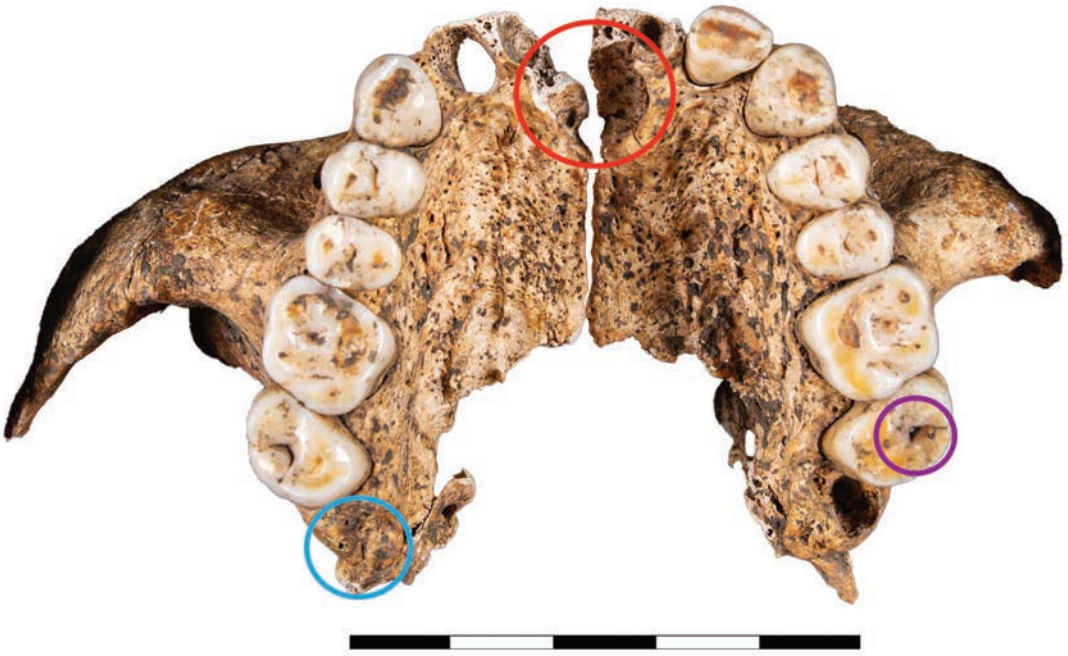


Figura 11. *Tablou patologic al maxilelor individului înhumat în structura cpl. 711: carie ocluzală pe M^2 stâng (violet), fistula între I^1 stâng și I^1 drept (roșu), M^3 drept absent congenital (albastru). De asemenea, se poate observa gradul mediu de uzură de pe suprafețele ocluzale ale dinților.*

Figure 11. *Pathological profile of the maxillae of the individual buried in structure cpl. 711: occlusal caries on LM^2 (purple), fistula between LI^1 and RI^1 (red), congenitally absent RM^3 (blue). Additionally, a moderate degree of wear can be observed on the occlusal surfaces of the teeth.*



Figura 12. *Grad mediu de uzură dentară pe suprafețele ocluzale ale dinților mandibulei individului înhumat în structura cpl. 711. Fistulă între M_1 și M_2 drepți (violet).*

Figure 12. *Moderate dental wear on the occlusal surfaces of the mandibular teeth of the individual buried in structure cpl. 711. Fistula between RM_1 and RM_2 (purple).*



Figura 13. *Tablou patologic al mandibulei individului înhumat în structura cpl. 711: tartru dentar pe $C_{\#}$–P_1 drepți labial/bucal supragingival (violet), fistulă între M_1 și M_2 drepți (roșu).*

Figure 13. *Pathological profile of the mandible of the individual buried in structure cpl. 711: dental calculus on the labial/buccal supragingival surfaces of $RC_{\#}$–RP_1 (purple), fistula between RM_1 and RM_2 (red).*

mâini (Fig. 14). Totodată, trebuie menționată prezența unei zone de porozitate la nivelul osului occipital, exocranian (Fig. 15) și endocranian, cel mai probabil rezultatul degradării *post-mortem* a materialului osteologic.

Analiza resturilor scheletice din structura cpl. 711 oferă date valoroase pentru caracterizarea biologică a individului și pentru încadrarea sa în contextul comunității de la Buftea. De asemenea, gradul bun de conservare și reprezentare a materialului osteologic a permis aplicarea unor metode variate, care au condus la conturarea unui profil bioantropologic detaliat.

Analiza trăsăturilor morfologice ale oaselor coxale și ale craniului, precum și a datelor metrice, a condus la atribuirea sexului antropologic masculin. Vârsta estimată la momentul decesului, de aproximativ 34,1 ani, cu un interval calculat între 25,3 și 51,4 ani, situează individul la limita dintre categoria adulților tineri și cea a adulților maturi.

Parametrii biometrici indică o statură scheletică mare (170,1 cm) și o greutate scheletică semnificativă[60] (76,6 kg), ceea ce, împreună cu robustețea anumitor segmente osoase, sugerează un individ cu o constituție solidă, adaptată unui stil de viață activ și solicitant fizic. Această ipoteză este susținută și de tiparul dezvoltării entezofitelor. Cu toate că tiparul este, în general, unul mediu-scăzut, acesta prezintă markeri clari în zone asociate musculaturii implicate în ridicarea, tragerea și manipularea repetată a greutăților (mușchii costoclavicular, conoid,



Figura 14. *Coloranție verzuie pe o falangă proximală de la mână.*

Figure 14. *Green staining on a proximal phalanx of the hand.*

triceps brachii, *biceps brachii*, *pronator teres*, *brachialis* și *cvadriceps*). Gradul scăzut de dezvoltare a entezofitelor de pe humerus, în contrast cu dezvoltarea clară a entezelor pe centura scapulară (costoclavicular, conoid, *triceps brachii*) și pe oasele antebrațului (*biceps brachii*, pronator

[60] Semnificativă comparativ cu restul adulților de sex antropologic masculin analizați până acum din cimitirul de la Buftea – *La Cârnă/Mănești* (Știrbu, Vasile 2023; Știrbu, Vasile 2024).



Figura 15. *Zonă poroasă la nivelul feței exocraniene a osului occipital (violet).*

Figure 15. *Porous area on the ectocranial surface of the occipital bone (purple).*

teres, *brachialis*), indică un tipar funcțional în care forța și mișcările repetitive erau concentrate pe stabilizarea umărului și controlul fin al antebrațului și mâinii, mai degrabă decât pe forța de împingere cu brațul[61]. Această distribuție sugerează activități ce implicau tracțiune, ridicare și manipulare cu precizie, cum ar fi lucrul cu unelte, și mai puțin activități bazate pe lovire directă sau împingere puternică. În plus, prezența markerilor pe partea stângă arată o preferință clară pentru folosirea acestui membru în sarcini solicitante, ceea ce poate indica fie că individul era stângaci, fie un model de lucru adaptat contextului ocupațional. Totodată, dezvoltarea mușchiului *quadriceps femoris* pe tuberozitatea tibială susține rolul membrelor inferioare în extensia și stabilizarea genunchiului[62], aspect care confirmă implicarea individului în activități ce presupuneau transportul de sarcini grele. Prin urmare, ansamblul acestor observații susține, ca ipoteză de lucru, ideea că individul ar fi putut desfășura activități care combinau un efort fizic moderat spre intens la nivelul umărului și antebrațului, cu un rol important de susținere și stabilizare la nivelul membrelor inferioare. Acest tipar funcțional ar putea fi compatibil cu lucrul manual calificat, manipularea sarcinilor grele sau implicarea directă în activități gospodărești și de supraveghere, însă interpretarea rămâne deschisă și necesită corelare atât cu contextul socio-economic al comunității, cât și cu rezultatele analizei bioantropologice ale indivizilor depuși în întregul spațiu funerar.

Parametrii biometrici detaliați în tabelul 2 oferă informații suplimentare privind constituția individului. La nivelul etajului cranian, palatul ortostafilin și mandibula de tip dolicostenomandibular, extrem de largă intercondilar și foarte largă intergonial, indică o conformație robustă a aparatului masticator. Centura scapulară evidențiază o claviculă dreaptă scurtă și robustă, morfologie compatibilă cu solicitarea frecventă a umărului și stabilizarea centurii scapulare, deși humerusurile, clasificate ca euribrahe, nu prezintă semne evidente de stres muscular. Sacrumul dolichohieric completează imaginea unui bazin mai îngust și alungit, frecvent întâlnit la indivizi cu constituție robustă. Lărgimea patelei confirmă solicitarea articulației genunchiului, în acord cu dezvoltarea inserțiilor mușchiului *quadriceps*. Ansamblul acestor caracteristici susține profilul unui individ bine adaptat la activități ce implicau reziliență și forță fizică.

[61] Hirst *et alii* 2023, p. 73–108.
[62] Hirst *et alii* 2023, p. 255–280.

Profilul dentar oferă informații valoroase despre regimul alimentar, igiena orală și starea generală de sănătate a individului. Gradul mediu de uzură dentară, corelat cu depunerile moderate spre consistente de tartru și prezența a două carii, sugerează un consum predominant de alimente cu textură dură sau impurități abrazive, slab prelucrate mecanic, tipic pentru dietele din mediile rurale ale secolului al XVI-lea[63]. Acest tip de dietă, bazată pe cereale măcinate grosier și alimente vegetale, favoriza retenția de resturi alimentare și dezvoltarea bacteriilor orale, ceea ce explică apariția cariilor și formarea tartrului. Dacă în cazul cariilor este bine stabilit că acestea sunt provocate de fermentația carbohidraților de către bacteriile orale care produc acizi ce demineralizează smaltul dentar[64], indicând astfel o dietă cu un aport crescut de carbohidrați fermentabili, în cazul tartrului, acesta se formează prin mineralizarea plăcii bacteriene depuse pe suprafața dinților, un proces a cărui relație directă cu dieta nu este încă pe deplin înțeleasă[65]. Tendința generală a fost de a asocia formarea tartrului cu un consum mai ridicat de proteine animale[66], însă această relație este adesea o suprasimplificare a fenomenului, întrucât procesele implicate sunt mai complexe și influențate de multiple variabile fiziologice și comportamentale. Totuși, în cazul de față, având în vedere atât incidența scăzută a cariilor, cât și gradul incipient de dezvoltare a celor două carii prezente (a căror apariție este cert corelată cu aportul crescut de carbohidrați și invers proporțională cu cel de proteine și lipide), ipoteza unei diete cu un aport semnificativ de proteine animale nu poate fi exclusă. De asemenea, prezența hipoplaziilor de smalț pe mai mulți dinți permanenți nu trebuie neglijată, întrucât ea reflectă episoade de stres fiziologic sau carențe nutriționale survenite în copilărie, în perioadele critice de amelogeneză[67]. Analizând dinții afectați de această patologie, se poate deduce că episoadele de stres au avut loc în intervalul aproximativ 0,5–5,5 ani de vârstă, adică între debutul formării acestor dinți și finalizarea mineralizării coroanei dentare[68]. Nu în ultimul rând, fistulele dentare observate la nivelul incisivilor și molarilor indică evoluția unor procese inflamatorii netratate, care au dus la infecții cronice ale apexurilor radiculare, cu drenaj direct pe palatul dur sau pe alveolele vecine. Acest tip de patologie reflectă absența unor intervenții stomatologice eficiente și controlul precar al igienei orale, fenomene frecvent întâlnite în comunitățile medievale și premoderne[69].

Identificarea nodulilor Schmorl pe mai multe vertebre toracale și lombare indică prezența unor hernii intravertebrale, asociate cu stres mecanic axial repetat. Deși cauza exactă a acestor manifestări articulare nu este pe deplin elucidată, literatura de specialitate[70] indică o influență cumulată a mai multor factori, precum vârsta, predispoziția genetică, sexul, obezitatea, traumatismele și, în special, mișcarea și solicitarea mecanică intensă, acestea din urmă fiind considerate determinante majore în formarea nodulilor Schmorl. În cazul individului înhumat în structura cpl. 711, prezența nodulilor Schmorl susține ipoteza unei activități cotidiene solicitante, cu încărcături mecanice semnificative asupra coloanei vertebrale, ceea ce corespunde observațiilor morfometrice și distribuției markerilor de stres ocupațional pe alte segmente osoase.

Observațiile tafonomice (amprente ale rădăcinilor vegetale, coroziuni ale periostului și colorații verzui localizate pe anumite segmente osoase) sunt compatibile cu un mediu de înhumare umed și cu o mineralizare neuniformă a solului, în asociere cu elemente metalice aflate în proximitatea rămășițelor, aspect susținut de identificarea unui inel sigilar din argint și a unui vas de sticlă pe parte de inventar funerar[71].

Franceska ȘTIRBU

OBSERVAȚII REFERITOARE LA STAREA DE CONSERVARE A VASULUI DIN STICLĂ DEPUS ÎN COMPLEXUL FUNERAR 711/2021 DE LA BUFTEA – *LA CÂRNĂ/MĂNEȘTI*

Deteriorarea sticlei în context arheologic este un proces complex, determinat și influențat de un ansamblu de factori: pe de o parte, intrinseci, cum ar fi compoziția chimică și proporțiile principalelor componente (silica, oxizi alcalini, stabilizatori, opacizanți și decoloranți), precum și prezența impurităților și a incluziunilor[72], iar pe de altă parte, factori extrinseci. Condițiile *in situ*, apa și umiditatea, fluctuațiile de temperatură, compoziția chimică și pH-ul solului, stresul mecanic[73] compun cei mai relevanți factori extrinseci ce pot afecta materialele vitroase.

Un obiect interesant descoperit în cadrul săpăturilor de la Buftea este un vas de sticlă cu o formă distinctă, un recipient bitronconic de dimensiuni reduse, caracterizat de prezența a două inele mediane (Fig. 16). Un fragment provenind de la o piesă similară (Fig. 17)[74], descoperită la Târgoviște, în timpul cercetărilor desfășurate în anul 1973 la Biserica „Sf. Ioan Botezătorul”[75], a oferit o oportunitate valoroasă de analiză comparativă privind starea de conservare.

Piesele au fost examinate în lumină directă și ultravioletă (365–385 nm); o analiză elementală

[63] Bilavschi 2021.
[64] White *et alii* 2012, p. 483.
[65] Hillson 2005, p. 290.
[66] Lieverse 1999.
[67] Ogden *et alii* 2007.
[68] Beaumont, Montgomery 2015, p. 408.
[69] Gurr *et alii* 2023.
[70] Ortner 2003, p. 550.
[71] Fernández-Jalvo, Andrews 2016.
[72] Zanini *et alii* 2023, p. 9.
[73] Verney-Carron *et alii* 2023, p. 8–11.
[74] Fragmentul analizat (1376/R5290) face parte din zona inferioară a gâtului vasului descoperit la Târgoviște.
[75] Cârciumaru, Petrică 2024, p. 127.



Figura 16. *Ansamblul vasului descoperit la Buftea* – La Cârnă/Mănești*, ilustrat în timpul procesului de asamblare a fragmentelor. Zona celui de-al doilea diametru maxim prezintă un grad ridicat de fragmentare și sensibilitate la nivelul structurii sticlei. Lacune extinse au fost de asemenea identificate la nivelul piciorului vasului, fapt care implică numeroase îndoieli în privința stabilității structurale a acestei zone.*

Figure 16. *The vessel ensemble discovered at Buftea* – La Cârnă/Mănești*, shown during the process of assembling the fragments. The area of the second maximum diameter displays a high degree of fragmentation and fragility in the glass structure. Extensive lacunae were also identified in the base of the vessel, raising numerous concerns regarding the structural stability of this particular section of the vessel.*



Figura 17. a. *Imagine de ansamblu a vasului descoperit la Biserica „Sf. Ioan Botezătorul" din Târgoviște (după Cârciumaru, Petrică 2024, p. 127, fig. 8), cu indicarea fragmentului analizat în cadrul acestui studiu;* ***b.*** *Ansamblu față exterioară a fragmentului analizat;* ***c.*** *Ansamblu față interioară a fragmentului analizat.*

Figure 17. a. *Ensemble image of the vessel discovered at the Church of "St. John the Baptist" (after Cârciumaru, Petrică 2024, p. 127, Fig. 8), with indication towards the fragment analysed in this study;* ***b.*** *View of the outer face of the analysed fragment;* ***c.*** *View of the inner face of the analysed fragment*

non-invazivă a fost efectuată cu ajutorul unui spectrofotometru XRF portabil[76]; de asemenea, au fost prelevate microprobe pentru înglobare în rășină, șlefuire și examinarea suprafeței rezultate la microscop, respectiv pentru investigații micro-invazive la spectrofotometrul FTIR (specrofotometrie în infraroșu cu transformată Fourier)[77].

Examinarea vizuală a pus în evidență procese de deteriorare mult mai avansate în cazul vasului de la Buftea, în comparație cu fragmentul de la Târgoviște, deteriorare rezultată din interacțiunea complexă dintre factorii intrinseci și extrinseci.

În spectru UV, în cazul vasului de la Buftea, sunt vizibile zone fluorescente pe pereții interiori, ceea ce sugerează prezența unor urme de substanțe organice, posibil asociate cu conținutul vasului la momentul depunerii în situl funerar. Analiza FTIR a unor depuneri prelevate din interiorul vasului (probe cu diametrul sub 1 mm, recoltate cu ajutorul bisturiului) nu a pus însă în evidență urme de substanțe organice. Spectre FTIR au fost achiziționate pentru micro-probe prelevate din suprafața internă, cea externă și din stratul intermediar (Fig. 18). În toate cazurile, acestea prezintă benzi caracteristice materialului vitros în zona 700–1300 cm^{-1}. Pe fața internă a vasului a fost identificat și carbonat de calciu (benzi la 1420, 873 și 713 cm^{-1}). Prezenţa acestuia poate fi corelată cu zone de cristalizare asociate fenomenului de *crizzling*, observabil pe arii extinse mai ales la interior.

O analiză comparativă non-invazivă a celor două vase a fost efectuată cu ajutorul spectroscopiei cu fluorescență de raze X (XRF), rezultatele indicând în ambele cazuri o sticlă potasică (potasiu 1,22%, exprimat drept K_2O, pentru piesa de la Buftea, respectiv 5,89% pentru fragmentul ce provine de la vasul de la Târgoviște). Câteva diferențe notabile în compoziția elementală a pieselor ar putea justifica anumite tipologii de degradare. Concentrația mai mare de calciu (exprimat drept CaO) în cazul vasului de la Târgoviște oferă un prim indiciu asupra stării de conservare

[76] Metoda analitică utilizată este XRF (fluorescență de raze X) cu spectrometru portabil tip Bruker, anticatod Rh, 45 kV, 10 microA (pentru identificarea elementelor grele); 15 kV, 27 microA (pentru identificarea elementelor ușoare); timp de achiziţie 60 s); analiză și determinări realizate de către fizician Dr. Gheorghe Niculescu.

[77] Analiza FTIR a fost efectuată pe echipamentul IRSpirit (Shimadzu) în mod de lucru ATR (Attenuated Total Reflectance).

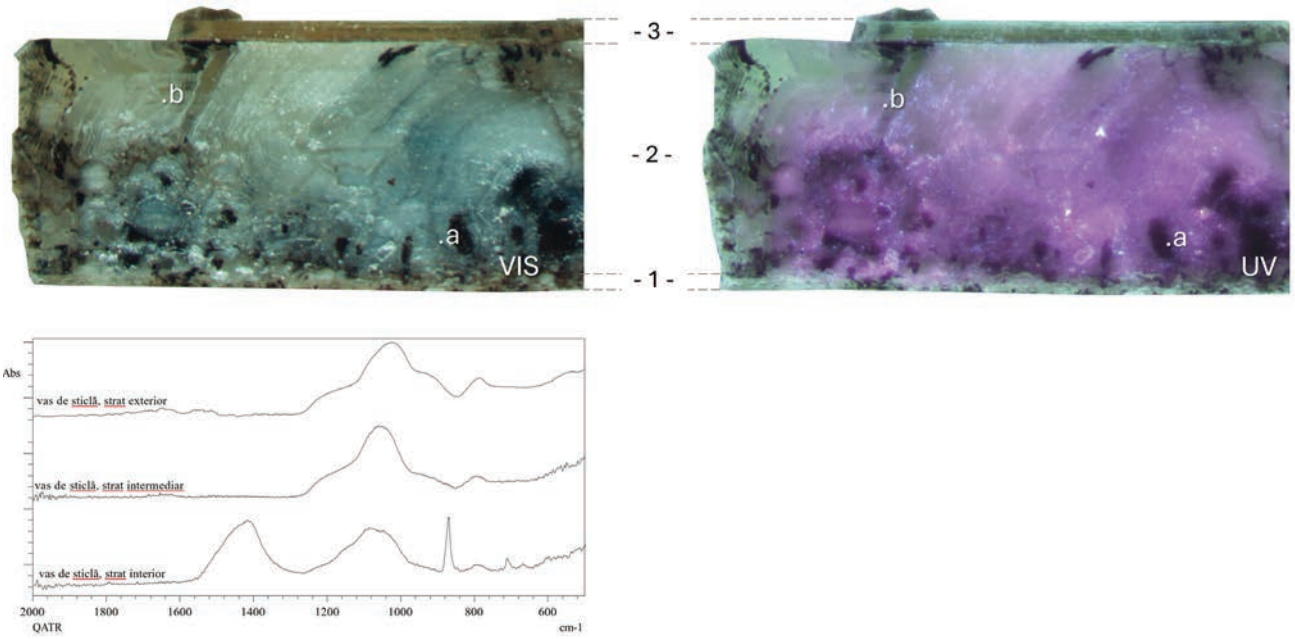


Figura 18. *Vasul descoperit la Buftea. Sus: secțiune transversală a unui fragment din vas, examinat la MO (200x), în spectru vizibil (stânga) și UV (dreapta); jos, stânga: spectre FTIR achiziționate pentru probe din cele trei zone ale peretelui sticlei;* ***1.*** *stratul interior, caracterizat de opacizare crescută, prezintă formațiuni sub formă de solzi; spectru FTIR cu benzi caracteristice pentru silicați și carbonat de calciu; prezintă fluorescență în UV;* ***2.*** *strat intermediar decoeziv; spectru FTIR cu benzi caracteristice pentru silicați;* ***a.*** *incluziuni negre – zone de acumulare de oxizi;* ***b.*** *zone lamelare indicând un proces activ de deteriorare a materialului vitros;* ***3.*** *strat exterior, stratificare orizontală, structură relativ compactă; spectru FTIR cu benzi caracteristice pentru silicați; prezintă ușoară fluorescență în UV.*

Figure 18. *The Buftea vessel. Top: cross-section of a fragment examined under optical microscopy (200x), in visible light (left) and UV light (right); bottom left: FTIR spectra acquired from samples taken from three distinct zones of the glass wall:* ***1.*** *inner layer, characterized by increased opacification and scale formations; FTIR spectra shows characteristic bands for silicates and calcium carbonate; displays fluorescence under UV light;* ***2.*** *intermediate decohesive layer, FTIR spectrum with characteristic bands for silicates and calcium carbonate; displays fluorescence under UV light;* ***a.*** *black inclusions – areas of oxide accumulation;* ***b.*** *lamellar areas indicating an active degradation process of the vitreous material;* ***3.*** *outer layer, horizontal stratification presenting a relatively compact structure; FTIR spectrum with characteristic silicate bands, shows fluorescence under UV light.*

mai bune a acestei piese. Acest compus reprezintă un stabilizator adăugat în procesul de fabricație al sticlei, cu rolul de a împiedica formarea cristalelor în timpul răcirii și de a crește rezistența și stabilitatea chimică a materialului pe termen lung[78].

Prezența manganului (Mn) în ambele piese este de asemenea interesantă, fiind identificat într-un procent mai ridicat la Buftea, 1,6%, comparativ cu doar 0,3% la Târgoviște. În producția sticlei, manganul era utilizat drept agent decolorant, având drept scop neutralizarea tentei verzi indusă de prezența fierului[79]. Însă, în timp, oxidarea manganului și a fierului poate duce la modificări cromatice și la pierderea transparenței. Pentru piesa descoperită la Buftea, prezența manganului și a fierului poate reprezenta explicarea fenomenului de brunizare a suprafeței piesei, precum și a prezenței acumulărilor punctiforme de culoare brun închis în masa materialului (Fig. 19 c), semne clare ale unui proces avansat de degradare. Alte elemente prezente în urme, precum titanul (Ti), stronțiul (Sr), bariul (Ba), cuprul (Cu), nichelul (Ni), zincul (Zn), pot indica atât utilizarea unor materii prime suplimentare, cât și prezența unor contaminanți în procesul de fabricație[80], sau pot proveni din sol.

Dealcalinizarea este un mecanism de degradare observat la nivelul ambelor piese. Acesta este un proces prin care ionii alcalini (precum Na^+ și K^+) sunt extrași din rețeaua structurală a sticlei și înlocuiți cu ioni de hidrogen din apa prezentă în mediu[81]. Această reacție chimică duce în timp la formarea unui strat de alterare caracterizat de o compoziție modificată, mai exact un strat hidratat și bogat în silice[82]. Dealcalinizarea este un fenomen accentuat în cazul sticlei care conține potasiu, deoarece, spre deosebire

[78] Davison 2003, p. 177. Prevenirea cristalizării contribuie direct la stabilitatea chimică a sticlei în fața acțiunii apei, ceea ce reprezintă unul dintre cei mai relevanți factori în procesul de degradare al sticlei.

[79] Davison 2003, p. 78.

[80] Davison 2003, p. 8. Titaniul (Ti) și stronțiul (Sr) sunt elemente caracteristice materiilor prime utilizate în procesul de fabricație al sticlei. Davison evidențiază faptul că nisipul ce conține scoici prezintă un conținut ridicat de stronțiu, comparativ cu calcarul. Astfel, analiza cantității de stronțiu din compoziția sticlei poate oferi informații privind intenționalitatea adăugării acestui element în procesul de producție.

[81] Zanini *et alii* 2023, p. 3–5.

[82] Vezi Davison 2003, p. 173–175. Acest strat are diverse denumiri: strat deficient în alcali (indicând pierderea ionilor alcalini esențiali pentru stabilitatea sticlei), strat bogat în silice (rezultat al dezechilibrului chimic cauzat de extracția ionilor mobili), sticlă hidrogenată sau *gel layer* (termen utilizat pentru a descrie structura modificată a materialului după reacția cu ionii de hidrogen din apă).



Figura 19. *Vasul descoperit la Buftea. Ansamblul zonei superioare a vasului, care include buza, gâtul, primul diametru maxim și primul inel median, a fost analizat în baza unei documentații fotografice realizate în trei tipuri de iluminare:* ***a.*** *lumină directă,* ***b***. *lumină razantă,* ***c.*** *transiluminare (iluminare internă difuză). Fotografiile relevă diferențe semnificative în comportamentul optic al materialului în special în ipostaza* ***c****, unde iluminarea internă accentuează variațiile de transparență. Se observă un aspect mat pronunțat în zona buzei și a gâtului, opacitatea crescută fiind un aspect determinat de un grad în continuă evoluție a stării de degradare. Prin contrast, zona diametrului maxim prezintă o transparență mai ridicată, ce sugerează un grad mai scăzut de deteriorare a materiei componente a vasului și menținerea proprietăților optice ale sticlei.*

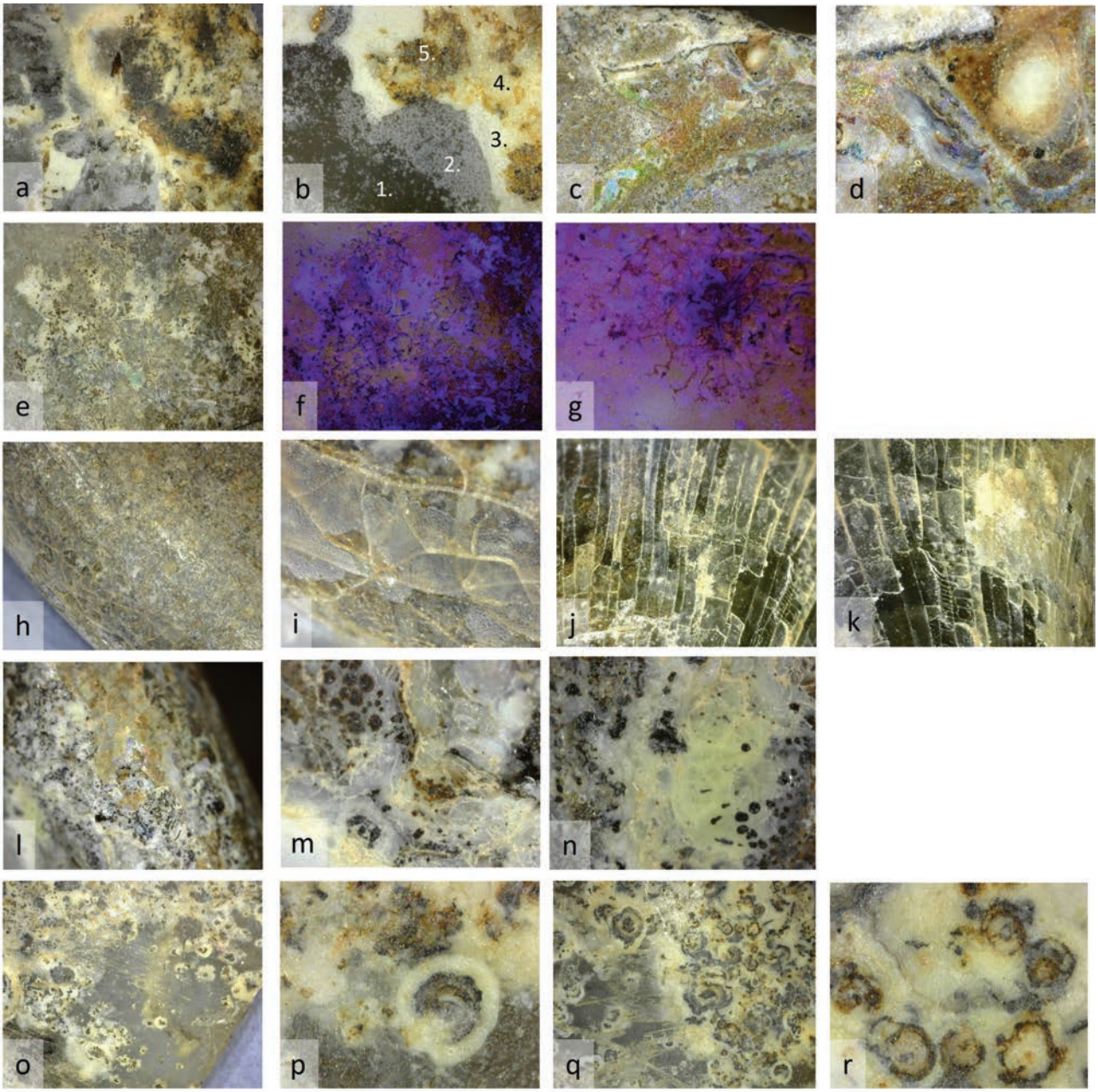
Figure 19. *The Buftea vessel. The upper section of the vessel including the rim, neck, first maximum diameter as well as the first median ring, was analysed based on photographic documentation in three types of lighting:* ***a.*** *direct lighting,* ***b.*** *raking light,* ***c.*** *transillumination (diffused internal lighting). The documentation reveals significant differences in the optical behaviour of the material, especially under condition* ***c****, where internal lighting has highlighted variations in transparency. A distinctly matte appearance has been observed on the rim and neck areas, with increased opacity, indicating an ongoing degradation process. In contrast, the area around the maximum diameter shows higher transparency, suggesting a lower degree of deterioration of the vessel's material and the partial preservation of the glass's original optical proprieties.*

de sticlele sodice, schimbul de ioni la nivelul rețelelor este dramatic din punct de vedere al volumului înlocuit, iar procentul de contracție în cadrul stratului degradat este mare[83]. Acest fenomen constituie stadiul incipient al unui proces complex de degradare, care poate evolua spre diverse tipologii de deteriorări observabile pe suprafața piesei. Printre acestea se numără pierderea clarității și transparenței, modificări cromatice ale suprafeței sticlei, dezvoltarea unor rețele extinse de microfisuri, apariția unor microcristale, precum și desprinderea progresivă a straturilor componente ale sticlei.

Un tip de degradare notabil la nivelul suprafețelor ambelor piese este mătuirea, manifestată prin pierderea clarității și a transparenței sticlei, determinată de formarea unor cruste de deteriorare[84] (Fig. 20 a, b). Zone extinse

[83] Conform Scholze *et alii* 1975 și contextualizat de Davison 2003, p. 175, ionii de potasiu din cadrul sticlei potasice au un volum mai mare decât ionii de sodiu din cadrul sticlelor sodice; prin urmare, ionii de potasiu ocupă un spațiu mai mare în cadrul structurii de silice a sticlei. Când acești ioni sunt extrași din cadrul structurii de silice, permit unui număr mai mare de molecule de apă să îi înlocuiască. Cu toate acestea, are loc o reducere a volumului stratului în care se produce acest schimb, ceea ce determină contracția acestui strat. Acest fenomen de contragere continuă atunci când acest strat pierde moleculele de apă ce au înlocuit ionii de potasiu (de ex. în momentul excavării și îndepărtării piesei din pământ). Prin urmare, *deshidratarea* sticlei reprezintă, de fapt, o consecință a unui fenomen de degradare. Contracția și micșorarea volumului determină micro-porozitatea straturilor de sticlă, ceea ce produce efectul stratificării crustelor de suprafață.

[84] Zanini *et alii* 2023, p. 5.



de suprafețe mate sunt observabile la nivelul piciorului vasului de la Buftea (Fig. 21), precum și la nivelul buzei și gâtului (Fig. 19 a, b, c). Fenomenul este recognoscibil și în cadrul piesei de la Târgoviște, în special la nivelul lateralelor fragmentului analizat (Fig. 17 b). Acest tip de degradare a suprafețelor este indus de un mediu acid, care favorizează migrarea către suprafață a ionilor alcalini din compoziția sticlei[85]. Ulterior, acești compuși extrași interacționează cu umiditatea ambientală din mediul în care piesa este depusă, având ca rezultat formarea produșilor de deteriorare, cum ar fi sărurile[86], care se depun în mod stratificat pe suprafața obiectului[87]. Zanini abordează fenomenul de mătuire ca fiind un proces evolutiv în alterarea sticlei, argumentând că formarea patinei iridescente reprezintă o etapă avansată a acestui fenomen. Această patină (Fig. 20 c, d) marchează vizual extinderea procesului de deteriorare, după cum observăm și la nivelul piesei descoperite la Buftea, în care regăsim zone de iridescență la nivelul bazei și peretelui inferior al vasului. Fragmentul analizat din cadrul ansamblului vasului descoperit la Târgoviște nu prezintă acest fenomen la nivelul suprafeței. Deopotrivă, prezența iridescenței indică faptul că straturile în proces activ de degradare au ajuns într-un punct critic, în care aderența

[85] Davison 2003, p. 176.
[86] Kunicki-Goldfinger 2008, p. 52.
[87] Davison 2003, p. 179.

◀ ***Figura 20.*** *Fragment din vasul descoperit la Târgoviște:* ***a.*** *(VIS 50x) Zona analizată de pe fața exterioară a fragmentului prezintă deopotrivă zone translucide și mate. Alternanța acestor zone expune prezența crustelor degradate stratificate, recognoscibile prin variația cromatică de alb translucid la nuanțe de ocru și brun, ceea ce indică procese diferențiate ale evoluției degradării sticlei;* ***b.*** *(VIS 170x) Detaliu ce identifică straturi succesive, ilustrând procesul de pierdere progresivă a transparenței sticlei :* ***1.*** *strat transparent – sticlă aparent neafectată de procese de degradare;* ***2.*** *zonă translucidă – debutul fenomenului de mătuire prin pierderea parțială a clarității;* ***3.*** *strat alb opac - corespunde pierderii totale a transparenței;* ***4.*** *strat ocru – reflectă o etapă avansată de degradare, în care au loc desprinderi și pierderi ale materiei de pe substratul original;* ***5.*** *strat brun – caracterizat de pulverulență și semnalează o stare critică de degradare în care materialul este instabil, friabil și predispus pierderilor complete, în absența unor măsuri de conservare preventivă și de restaurare a piesei;* ***c.*** *(VIS 50x) Zonă localizată pe fața exterioară a piciorului vasului descoperit la Buftea unde se observă patina iridescentă asociată unui proces avansat de degradare;* ***d.*** *(VIS 170x) Detaliu al unei zone de iridescență;* ***e.*** *(VIS 50x) Zonă localizată pe fața exterioară a gâtului vasului descoperit la Buftea;* ***f.*** *(UV 50X) Aceeași zonă observată în spectrul de lumină ultraviolet evidențiază incluziuni cu morfologie dendritică;* ***g.*** *(UV 170x) Detaliu al unei structuri dendritice unde este vizibil nucleul formațiunii și extensiile ramificate ce par să sugereze o dinamică de creștere radială în lumina ultraviolet;* ***h.*** *(VIS 50x) Detaliu de pe fața exterioară – inelul bazei vasului descoperit la Buftea: stadiul incipient al fenomenului de* crizzling*;* ***i.*** *(VIS 170x) Detaliu: delaminare activă a straturilor de sticlă asociată cu pierderi complete de material;* ***j.*** *(VIS 50x) Detaliu fața interioară – centrul bazei vasului descoperit la Buftea: stadiul avansat al fenomenului de* crizzling*;* ***k.*** *(VIS 170x) Detaliu cu mătuiri ale straturilor afectate de* crizzling *(față internă);* ***l.*** *(VIS 50x) În cadrul vasului de la Buftea observăm acest fenomen pe fața exterioară a inelului bazei;* ***m.*** *(VIS 170x) Detaliu: fenomen de stratificare în jurul zonelor degradate definite de o nuanță brună;* ***n.*** *(VIS 170x) Detaliu: inele concentrice ce indică un stadiu avansat al acestei tipologii de degradare;* ***o.*** *(VIS 50x) Zone concentrice radiale la nivelul lateralelor fragmentului studiat;* ***p.*** *(VIS 170x) Detaliu: nucleul formațiunilor concentrice (o).*

Figure 20. *The vessel fragment discovered at Târgoviște:* ***a.*** *(VIS 50x) The analysed area on the outer face of the fragment shows both translucent and matte areas. The alternation of these areas reveals the presence of stratified degradation crusts, recognizable by a chromatic variation from translucent white to ochre and brown tones, evidence of differentiated degradation processes affecting the glass;* ***b.*** *(VIS 170x) Detail showing successive layers, illustrating the progressive loss of transparency in the glass:* ***1.*** *transparent layer – apparently unaffected glass;* ***2.*** *translucent area – onset of hazing through partial loss of clarity;* ***3.*** *opaque white layer – complete loss of transparency;* ***4.*** *ochre layer – an advanced degradation phase, involving material detachment and loss from the original substrate;* ***5.*** *brown layer – characterized by a pulverulent texture, signalling a critical degradation state in which the material is unstable, friable, and prone to total loss without preventive conservation and restoration;* ***c.*** *(VIS 50x) Area on the outer face of the vessel's foot (Buftea), showing an iridescent patina associated with advanced degradation;* ***d.*** *(VIS 170x) Detail of an iridescent zone;* ***e.*** *(VIS 50x) Outer face of the vessel's neck (Buftea);* ***f.*** *(UV 50x) Same area observed under ultraviolet light, highlighting dendritic inclusions;* ***g.*** *(UV 170x) Detail of a dendritic structure, showing a visible nucleus and branching extensions suggesting radial growth dynamics under UV light;* ***h.*** *(VIS 50x) Detail from the outer face – the ring base of the Buftea vessel: early stage of crizzling;* ***i.*** *(VIS 170x) Detail: active delamination of glass layers, with complete material loss;* ***j.*** *(VIS 50x) Inner face detail – centre of the vessel base (Buftea): advanced stage of crizzling;* ***k.*** *(VIS 170x) Detail: hazing in layers affected by crizzling (inner face);* ***l.*** *(VIS 50x) On the Buftea vessel, this phenomenon is observed on the outer face of the base ring;* ***m.*** *(VIS 170x) Detail: stratification around degraded zones defined by a brown hue;* ***n.*** *(VIS 170x) Detail: concentric rings indicating an advanced stage of this degradation phenomenon;* ***o.*** *(VIS 50x) Radial concentric zones on the sides of the studied fragment;* ***p.*** *(VIS 170x) Detail: nucleus of the concentric formations seen in (o).*



Figura 21. *Vasul descoperit la Buftea. Ansamblul bazei prezintă variații cromatice notabile:* ***a.*** *latură a bazei care expune fața exterioară a vasului;* ***b.*** *latură a bazei care expune fața interioară a vasului.*

Figure 21. *The vessel discovered at Buftea. The base displays notable chromatic variations:* ***a.*** *side of the base showing the outer face of the vessel;* ***b.*** *side of the base showing the inner face of the vessel.*

lor față de substratul adiacent este compromisă, favorizând astfel detașarea acestora[88].

Avansarea procesului de degradare nu este însă explicația integrală privind aspectul cromatic al vasului de la Buftea. Acesta se remarcă prin nuanțe de brun și gri, care nu sunt determinate exclusiv de straturile superficiale, ci par a fi inerente materiei sticlei. Zone punctiforme de culoare brună (Fig. 19 c) sunt prezente pe arii extinse în regiunea superioară a primului diametru maxim și mai puțin în zona primului inel median. O explicație a acestui fenomen poate fi atribuită oxidării ionilor de mangan (Mn) și fier (Fe)[89]. Schlam abordează în mod detaliat problematica originii acestui tip de degradare, investigând atât legătura dintre zonele brune și condițiile de microclimat din sit, cât și ipoteza că acestea ar putea fi rezultatul proceselor tehnologice de fabricare a sticlei, în care manganul (Mn) este utilizat drept agent de decolorare[90]. Una dintre concluziile cercetărilor desfășurate este că formarea incluziunilor bogate în mangan (Mn) are loc simultan cu extinderea suprafeței straturilor dealcalinizate. Aceste incluziuni se localizează la nivelul straturilor deteriorate și pot avea morfologii diverse: dendritică[91] (Fig. 20 e, f, g) sau tubulară. De altfel, progresia acestor deteriorări are loc de la nivelul suprafeței sticlei către profunzimea acesteia, iar localizarea lor depinde de proprietățile solului în care piesa de sticlă a fost depusă. Prin urmare, proprietățile cromatice identificate la nivelul vasului de la Buftea reflectă atât procesele de deteriorare de la nivelul suprafeței, cât și transformările chimice interne, evidențiind astfel interacțiunea complexă dintre compoziția inițială a sticlei și factorii de mediu care au influențat evoluția stării sale de degradare în timp.

În zona bazei, atât pe suprafața exterioară, cât și pe cea interioară, vasul de la Buftea prezintă zone afectate de un proces de degradare cunoscut sub denumirea de *crizzling*, caracterizat prin rețele de micro-fisuri fine cu aspect geometrizat[92]. În stadiul incipient al procesului de degradare, micro-fisurile caracteristice sunt dificil de detectat cu ochiul liber (Fig. 20 h, i). Pe suprafața interioară, acest fenomen de degradare este mult mai avansat, manifestându-se printr-o rețea extinsă de fisuri pronunțate (Fig. 20 j, k). Aceste fisuri favorizează în timp delaminarea straturilor superficiale ale sticlei, desprinderea lor și apariția lacunelor în structura materialului. Acest proces de deteriorare este cauzat în mare parte de dezechilibrele chimice din compoziția sticlei, în special de instabilitatea rețelei de siliciu și de pierderea componentelor alcaline, fenomene intensificate de expunerea la umiditate și variații de temperatură[93]. Această situație nu a fost observată în cazul fragmentului din vasul provenind de la Târgoviște.

Un tip de degradare prezent la ambele piese constă în apariția zonelor concave brune pe suprafața sticlei[94]. În procesul de identificare și caracterizare al acestei tipologii de degradare, s-a observat că formarea lor pornește de la un nucleu specific, situat fie la nivelul suprafeței, fie imediat sub aceasta, urmând să se dezvolte sub forma unor inele concentrice, care se extind în jurul punctului inițial. Pe măsură ce acest proces avansează, se formează o zonă concavă în regiunea punctului de origine, fapt observat la nivelul ambelor piese (Fig. 20 l, m, n). În anumite zone, inelele concentrice de deteriorare apar extinse și unite, indicând un stadiu avansat de degradare extinsă și intensificată a sticlei[95].

Formarea acestor zone localizate de degradare este cauzată de expunerea prelungită la umiditate ridicată la nivelul suprafeței sticlei[96] și rezultă dintr-un mecanism care se desfășoară în două etape distincte. În prima fază, denumită *faza de hidratare*, se formează fisuri izolate; ulterior, în a doua fază, *faza de dezvoltare a concavităților*, are loc procesul de dealcalinizare și o deteriorare progresivă a rețelei de silice, determinând extinderea fisurilor și apariția unor concavități la nivelul suprafeței[97]. Această evoluție secvențială a procesului de formare a concavităților la nivelul materiei sticlei este strâns legată de formarea straturilor lamelare concentrice. Expunerea prelungită la variațiile ciclice de temperatură sau umiditate determină reorganizarea straturilor deteriorate de la nivelul suprafeței sticlei într-o succesiune de structuri lamelare concentrice și radiale[98] (Fig. 20 o, p, q, r).

Interpretarea și evaluarea corectă a stării de conservare a celor două piese au loc, astfel, prin analiza tuturor factorilor pe care îi cunoaștem și pe care îi putem deduce pentru cele două piese. Vasul descoperit la Buftea se remarcă prin prezența fenomenului de *crizzling*, asociat unei stări avansate de degradare, care nu este identificabil pe piesa de la Târgoviște. Aceasta din urmă pare să păstreze o structură relativ stabilă, cu zone extinse de claritate și transparență.

Principala cauză a diferențelor în starea de conservare a pieselor nu este determinată doar de compoziția lor, ci și de condițiile din sit. În cazul vasului de la Buftea, localizarea în vecinătatea lacului și expunerea la factori de microclimat specifici acestei zone, au contribuit constant

[88] Zanini *et alii* 2023, p. 6 ; Davison 2003, p. 183.

[89] Davison 2003, p. 186. În stare redusă, ionii de fier (Fe(II)) și de mangan (Mn(II)) generează o nuanță verde. În timpul procesului de alcalinizare (*leaching*), acești ioni se hidratează și trec prin procesul de oxidare, ceea ce determină transformarea lor în compuși cu proprietăți cromatice diferite. Mai exact, ionii de mangan, care inițial contribuie la o nuanță roz palidă, sunt convertiți în MnOOH, iar ionii de fier, care inițial contribuie la o nuanță de verde pal, se transformă în FeOOH. Ambii compuși se manifestă printr-o nuanță brun închis. Această schimbare cromatică reflectă evoluția condițiilor de mediu și starea de oxidare a materiei sticlei.

[90] Schalm *et alii* 2011, p. 103–122. Studiul se axează pe analiza unui număr de 500 de fragmente de sticlă de vitraliu, datate în secolele XIV–XVII, în urma unei campanii expuse în Schalm *et alii* 2007, p. 663–668.

[91] În cazul vasului descoperit la Buftea, a fost pusă în evidență această morfologie în urma examinării suprafeței în lumină ultraviolet.

[92] Kunicki-Goldfinger 2008, p. 51.

[93] Van Giffen *et alii* 2018, p. 3.

[94] Davison 2003, p. 191.

[95] Van Giffen *et alii* 2018, p. 2.

[96] Zanini *et alii* 2023, p. 8.

[97] Palomar *et alii* 2016, p. 27.

[98] Lombardo *et alii* 2023, p. 18.

la procesele de deteriorare. Umiditatea ridicată a favorizat fenomene precum dealcalinizarea sticlei, pierderea transparenței și fragilizarea materialului. Stresul mecanic exercitat de presiunea solului a contribuit la transformarea sticlei într-un material pulverulent și extrem de sensibil. Prin comparație, vasul descoperit la Târgoviște se prezintă într-o stare mult mai bună, deși cele două piese sunt similare în ceea ce privește forma și contextul arheologic (funerar). Diferențele, relativ minore, în compoziția chimică, precum și diferențele de mediu, în principal umiditatea, au avut un impact major asupra conservării vaselor analizate.

Ștefania MEȘTERIUC, Irina HUICĂ

CUI APARȚINE COMPLEXUL FUNERAR 711/2021 DIN SITUL BUFTEA – *LA CÂRNĂ/MĂNEȘTI* ȘI CINE A CTITORIT BISERICA DIN MĂNEȘTI?

Dacă primele trei părți ale prezentei lucrări s-au concentrat asupra analizei tuturor datelor disponibile pentru mormântul/cpl. 711/2021, partea a patra propune extinderea demersului, aventurându-se pe terenul alunecos al ipotezelor. Deși suntem conștienți de vulnerabilitățile unei asemenea abordări, credem, totuși, că un scenariu bazat pe integrarea unor informații de natură diversă (arheologice, istorice, antropologice și de restaurare/conservare) poate constitui un instrument de lucru, provizoriu și perfectibil, pentru viitoarele cercetări. Pentru fluidizarea lecturii, am optat pentru înlocuirea denumirilor arheologice ale celor două complexe funerare, la care vom face referire frecvent, cu două antroponime generice, atribuite ipotetic: *Anghel* pentru cpl. 711/2021 și *Vintilă* pentru M. 26/1973.

Conform analizei antropologice efectuate de Franceska Știrbu (a se vedea mai sus), Anghel era un bărbat cu o constituție solidă, având o înălțime de 1,70 m și cântărind cca 75 kg. De timpuriu, înainte de a împlini un an și până spre vârsta de cinci ani, viața sa a fost marcată de perioade de restriște (perioade de stres fiziologic sistemic, probabil nutrițional și/sau infecțios). Ajuns la maturitate, Anghel a dus o viață activă, reflectată prin dezvoltarea musculaturii la nivelul membrelor superioare și prin prezența unor hernii intravertebrale. Este posibil să fi desfășurat activități care presupuneau mișcări repetitive ale brațelor; de asemenea, există posibilitatea ca acesta să fi fost stângaci. De remarcat este și faptul că nu a pierdut niciun dinte în timpul vieții și că avea doar trei carii. Analiza dentiției a evidențiat un grad mediu de uzură și depuneri de tartru, fapt care sugerează o dietă diversificată. Cauzele morții lui Anghel, în jurul vârstei de 35 de ani, nu au putut fi stabilite prin analiza antropologică. Vasul din sticlă depus în mormântul său a făcut obiectul unei analize comparative (cu un fragment provenit dintr-un vas asemănător, descoperit la Târgoviște[99]) efectuate de Ștefania Meșteriuc și Irina Huică (a se vedea mai sus). Absența urmelor de substanțe organice în interiorul vasului poate sugera că acesta ar fi conținut apă sfințită.

Faptul că, în timpul vieții, Anghel se bucurase de un anume prestigiu explică cinstea acordată postum, prin înmormântarea sa la intrarea în biserică, în partea dreaptă. Care era însă natura acestui prestigiu? Vasul de sticlă din mormântul lui Anghel prezintă evidente asemănări cu două piese provenite din descoperiri (din alte locuri) de morminte situate în interiorul bisericii[100], dar și cu vasul descoperit în mormântul lui ... Vintilă[101], situat în apropiere. Mai mult, și aici, întocmai ca în mormântul lui Anghel, vasul a fost găsit asociat cu un inel sigilar din argint. Doar ca ipoteză de lucru, considerăm, pe de-o parte, că înmormântările în biserică reflectă statutul de ctitor sau de membru al familiei acestuia[102]; bineînțeles, probabilitatea ca aceștia să provină din rândul boierimii este foarte mare, chiar dacă pot apărea și excepții, precum Crăstiian cel Mare[103]. Pe de altă parte, prezența vasului într-un mormânt, situat sau nu în biserică, are conotații de natură religioasă[104], în unele cazuri defuncții fiind chiar preoți sau călugări[105]. Prin urmare, faptul că Anghel și Vintilă au fost înmormântați în vecinătatea bisericii, dar în afara ei, face puțin probabilă calitatea lor de ctitori. Reamintim și faptul că, în interiorul bisericii de la Mănești, nu au fost identificate morminte; acestea nu pot fi însă excluse, suprafața din naos și pronaos nefiind săpată integral. În plus, atât în cazul lui Anghel, cât și al lui Vintilă, vasul era asociat cu un inel sigilar diferit de cele aparținând categoriilor sociale superioare din Țara Românească. La inelele sigilare ne vom referi în continuare.

În general, cercetarea inelelor sigilare s-a concentrat pe cele heraldice ale domnilor și marii boierimi[106]. Preponderent din aur și purtând însemne heraldice, adesea gravate pe pietre prețioase, aceste piese erau realizate la comandă, în ateliere specializate din Brașov sau Sibiu,

[99] Cârciumaru, Petrică 2024, p. 127, fig. 8.

[100] Suslănești, mormântul jupânesei Stanca (a se vedea nota 10) și biserica „Sf. Ioan Botezătorul" din Târgoviște (Cârciumaru, Petrică 2024, p. 127).

[101] În cazul mormântului M. 26/1973, se pare că stabilirea sexului masculin al defunctului a fost făcută doar pe baza inventarului funerar (Mănucu-Adameșteanu 2005, p. 213).

[102] A se vedea și Rosetti 1972, p. 30.

[103] A se vedea nota 118.

[104] Gh. Mănucu-Adameșteanu consideră că, în cele mai multe cazuri, prezența vaselor de sticlă reflectă o poziție socială înaltă a defunctului (Mănucu-Adameșteanu 2005, p. 215). M. Cârciumaru și F. G. Petrică pun sub semnul întrebării această opinie (Cârciumaru, Petrică 2024, p. 136), bazându-se pe descoperiri recente de la Târgoviște (Petrică et *alii* 2023, p. 134, 139; Petrică *et alii* 2025, p. 365, 367–370), în care vasele sunt puse în legătură cu mortalitatea crescută în rândul copiilor de până la 12 ani (Vasile 2023, p. 163; Vasile 2025, p. 373, 382–389). De asemenea, trebuie menționată și prezența vaselor din sticlă în morminte de femei, precum în situația de la Suslănești (a se vedea nota 10). Fără a intra în mai multe detalii, considerăm că prezența vasului ar fi putut avea fie menirea de a sublinia latura spirituală (pioasă) a defunctului, fie de a-i asigura acestuia protecție.

[105] Mănucu-Adameșteanu 2005, p. 213–214.

[106] Moisil 1942; Moisil 1935–1942; Minea, Boga 1935–1942; Anton Manea 1980; Ghimpu 2004; Tiron 2013; Cârciumaru, Olteanu 2019; Cârciumaru 2021. Referitor la documentele semnate și sigilate de însuși domnul, menționăm formule diplomatice de încheiere, precum „carte pecetluită cu pecetea *mare*, sau cu cea *mică* sau cu *inelul* de la mâna domniei mele" (Vîrtosu 1956, p. 356).

de către meșteri riguros instruiți[107]. Trăsătura definitorie a unui inel sigilar o constituie matrița sigilară, adică gravarea reprezentărilor de pe chaton în negativ, astfel încât, prin imprimare în ceară, tuș sau fum, să fie reprodusă imaginea dorită. Elementele gravate, care aveau menirea de a-l reprezenta pe posesor, sunt imaginea – plasată în partea centrală, în interiorul unui cerc și legenda (inscripția) – dispusă circular, în exterior. De regulă, inelele sigilare erau realizate dintr-o singură bucată, chaton-ul și veriga formând corp comun. În acest fel, presiunea exercitată în momentul sigilării se distribuia pe întreaga suprafață a inelului, prevenind deteriorarea piesei.

Pe lângă inele sigilare heraldice, există, într-un număr covârșitor mai mare, piese cu aceeași funcționalitate, dar de o factură mult mai modestă. În cazul acestora, aurul este înlocuit cu argintul sau chiar cu bronzul, iar însemnele heraldice sunt absente; spre deosebire de primele, acestea erau produse în ateliere locale. În cele ce urmează, vom defini aceste inele ca „non-heraldice", pentru a sublinia faptul că, exceptând câteva cazuri[108], reprezentarea de pe inel nu poate fi legată direct de posesor. Importanța inelelor sigilare non-heraldice nu trebuie însă subestimată. Adesea, inelele sigilare heraldice provin din colecții sau tezaure, astfel încât informațiile referitoare la contextul descoperirii pot fi limitate sau chiar absente. În schimb, pentru cele non-heraldice, descoperite preponderent în contexte funerare, pot fi adunate numeroase informații, precum: vârsta și sexul posesorului, mâna la care era purtat, asocierea cu alte podoabe sau obiecte etc. În plus, numărul relativ mare al acestor piese poate permite stabilirea unor arii de distribuție ale unui anumit tip de inel.

O clasificare a acestor inele a fost propusă de Cristina Anton Manea, care a identificat două tipuri: *inele sigilare* și inele *de tip sigilar*[109]. Inelele sigilare erau „piese funcționale create în acest scop"[110], iar din punct de vedere constructiv „erau lucrate dintr-o singură bucată de metal, turnată și erau masive, pentru că erau supuse unui efort"[111]. Atunci când aveau reprezentată o inscripție, aceasta „se desfășoară de la dreapta la stânga [literele fiind gravate în negativ] și a fost marcată la început cu o cruce"[112], având semnificația „cruce ajută"[113]. În schimb, inelele de tip sigilar sunt acele inele care inițial au îndeplinit o altă funcție, dar ulterior „au putut fi folosite ca sigilii propriu-zise"[114]. În acest sens, C. Anton Manea citează o informație oferită de către Eugen Nicolae, referitoare la inele cu inscripții turco-osmane: „încă din epoca clasică inscripțiile cu caracter apotropaic de pe piesele artelor minore au suferit, din varii motive, un proces de stilizare, ajungând adesea pseudo-inscripții sau ornamente a căror semnificație inițială putea chiar să rămână necunoscută posesorilor lor"[115]. Compararea inelelor sigilare cu cele de tip sigilar evidențiază diferențe semnificative. Inelele sigilare se aseamănă, constructiv și ca formă, cu cele heraldice[116]. Inele de tip sigilar erau, de regulă, compuse din două elemente distincte, veriga și chaton-ul. Calitatea artistică și tehnică scăzută a unora dintre acestea le recomandă drept produse de târg, realizate de către meșteri ambulanți, care turnau mai multe piese în aceeași matriță, iar apoi le gravau, la cerere, cu diverse motive decorative[117].

Rezumând, C. Anton Manea împarte inelele non-heraldice în două categorii: inele sigilare (propriu-zise, am adăuga noi) și inele de tip sigilar. Prima categorie se recomandă prin ea însăși, imaginea gravată în negativ pe chaton dovedindu-i în mod evident funcționalitatea. În schimb, pentru inelele de tip sigilar, utilizarea în acest scop trebuie probată prin identificarea amprentei de pe document[118].

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[107] Dobândirea statutului de *magister aurifaber* era strict reglementată de către breaslă, așa cum reiese din statutele aurarilor brașoveni (Tihamér 1912, p. 38–76). Aspirantul trebuia să parcurgă stagii pregătitoare (ucenic, calfă) care se derulau pe parcursul mai multor ani. Urma proba finală, care consta în realizarea a trei piese: un pocal sau o cupă decorate, o matriță sigilară, cu o reprezentare heraldică și un inel din aur, cu o piatră montată pe chaton (Tihamér 1912, p. 64–65). Ca o anecdotă, îl menționăm pe Cristoferus, meșter aurar din Brașov, din prima jumătate a secolului al XVI-lea. Presupusele sale fapte (furt și instigare la furt din două ateliere de aurari din Ungaria) au făcut obiectul unor dispute între breslele din Transilvania și Ungaria. Intervenția regelui maghiar Vladislav al II-lea a dus, în cele din urmă, la reabilitarea lui Cristoferus (Gross 2019, p. 242–245).

[108] Doar în unele cazuri aceste inele conțin și o inscripție, precum *Kazan spătar* (Rosetti 1972, p. 31, 38, fig. 7/2), *Lăudat* (Anton Manea 1996, p. 237) sau *Crăstiian cel Mare* (Păunescu 1996, p. 233–234; Anton Manea 2000, p. 102, 110; Anton Manea 2003, p. 333; Mihai 2021, p. 66, fig. 47), inscripția fiind interpretată ca numele posesorului.

[109] Anton Manea 2002–2003, p. 334.

[110] Anton Manea 2002–2003, p. 333.

[111] Anton Manea 2002–2003, p. 237.

[112] Anton Manea 2002–2003, p. 334.

[113] Anton Manea 1996, p. 237.

[114] Anton Manea 2002–2003, p. 334.

[115] Anton Manea 2002–2003, p. 334.

[116] De exemplu, inelul lui *Kazan spătar* de la Suslănești (Rosetti 1972, p. 38).

[117] Anton Manea 2002–2003, p. 332.

[118] La Orașul de Floci a fost identificat un astfel de caz. În pronaosul unuia dintre lăcașurile de cult („Biserica nr. 2"), a fost documentat un mormânt al cărui inventar se compunea din „șase nasturi globulari din argint, un flacon de sticlă (spart) așezat lângă craniu, o monedă din argint (gros, emis în 1606 de principele Transilvaniei Ștefan Bocskay) și un inel din argint cu o inscripție gravată pe suprafața chaton-ului" (Păunescu 1996, p. 233, n. 3; a se vedea și Mihai 2021, fig. 43, 46 și 48). Inelul era realizat dintr-o singură bucată (Păunescu 1996, fig. 1; Anton Manea 2000, cat. 12, fig. 1; Mihai 2021, fig. 47). Inscripția de pe chaton, scrisă cu litere chirilice pe două rânduri, a fost citită «XRASTI», respectiv «BKH», aceasta din urmă reprezentând prescurtarea cuvântului „velikii" (Păunescu 1996, p. 233 și n. 3). C. Anton Manea încadrează piesa în categoria inelelor criptogramate (Anton Manea 2002–2003, p. 335). Șansa a făcut ca amprenta inelului să fie identificată pe un document redactat pe 5 octombrie 1605 la Orașul de Floci (Păunescu 1996, p. 233 și n. 4). Rezumând textul: Radu județul împreună cu cei 12 pârgari ai orașului, soluționează disputa lui Enache și verii săi (Androne și Iorga) cu Chiriță și Lațcar pentru o moșie și ocină la Vlădeni. Documentul se încheie astfel: „Și mărturie omini buni: Mihaiu Murginul și Costandin petrarili și Matiou și Cos<tan>din Bondroil și Cos<tan>din cojocarul și Nidelco cojo<carul> și Crăstiian cel Mare și Nae Cos<tan>din Avan și Baico slug<a> mân<ă>stirii și Alecse. Luna oh<tomvrie> 15 văleat 7117 <1605>." (DIR-B, p. XXI, p. 291). Deși actele emise în Orașul de Floci sunt numeroase, menționând notabilități locale, precum Anghel, Enușcul (Ianușcul), Fra(n)gulea, Hranita, Tudor județ etc., singurul inel sigilar descoperit prin cercetări arheologice și identificat prin documente este cel al lui Crăstiian cel Mare (Mihai 2000, p. 590).

Dacă problematica inelelor sigilare heraldice a fost intens studiată, referitor la posesorii și funcția celor non-heraldice persistă numeroase necunoscute. Începând cu anii 1570, actele de vânzare-cumpărare sau cele care tranșau soluționarea unor litigii se încheiau cu formule de autentificare, precum: „și pentru credința ne-am pus pecețile și dégetele", „și pentru credința mi-am pus dégetul, că inel n-am avut", „pecéte n-am avut, ci mi-am pus dégetul"[119]. Respectivele acte erau redactate preponderent în limba română, nu în slavă, precum actele de cancelarie. Mai mult, cei care întăreau prevederile documentului, prin amprenta unui inel sau prin substitutul acestuia (amprenta degetului), proveneau din categorii sociale inferioare, precum țărani liberi sau comercianți implicați în tranzacții funciare. Credem totuși că între cele două modalități de autentificare, prin impresiunea degetului, respectiv a inelului, pot fi sesizate diferențe. În primul caz, poate fi vorba de un gest simbolic: imprimarea amprentei degetului în prezența martorilor era esențială, nu urma fizică rămasă pe document. În al doilea caz, amprenta inelului, însoțită și de nume, stabilea identitatea persoanei[120].

Referindu-ne în continuare la inelele de la Buftea – *La Cârnă/Mănești*, întregul lot se ridică la 157 de piese[121], 64 din cercetările lui A. Ștefănescu[122] și 93 din cele efectuate în perioada 2020–2021, care vor face obiectul unui studiu separat. Conform clasificării propuse de C. Anton Manea, în categoria inelelor sigilare (propriu-zise) pot fi încadrate cu siguranță două piese[123], cele descoperite în mormântul lui Anghel, respectiv al lui Vintilă. În schimb, pentru utilizarea altor piese ca inele de tip sigilar, lipsesc amprentele sigilare aferente acestora pe documente referitoare la Mănești. Mai exact, deși au putut fi identificate inele de aici care corespund unor amprente ce apar pe acte redactate în alte localități contemporane, ca urmare a folosirii la sigilare a unor inele de „serie"[124], lipsesc dovezile directe. Singurele documente referitoare la satul medieval „Mănești de pe Colentina" au fost emise de către domnitori ai Țării Românești și făceau referire la donarea „satului cu tot hotarul" Mănăstirii „Sfânta Troiță" din București, care l-a stăpânit până spre sfârșitul secolului al XVIII-lea[125]. Prin urmare, trecerea satului din stăpânirea domnului în cea a mănăstirii ar exclude existența unor mici proprietari de pământ și, implicit, a unor tranzacții funciare din care să rezulte acte de vânzare-cumpărare. Cum s-ar explica atunci prezența inelelor sigilare non-heraldice în mormintele lui Anghel și Vintilă?

O posibilă clarificare ar putea-o aduce relaționarea cronologică a mormintelor lui Anghel și Vintilă cu ridicarea bisericii. Conform monedei găsite în mormântul său, emisă de Murad al III-lea (1574–1595), Vintilă a fost înmormântat, cel mai probabil, cândva, în ultimele două decenii ale secolului al XVI-lea. Referitor la Anghel, datarea poate fi făcută doar indirect, fie prin analogie cu cazul lui Vintilă, fie prin raportarea la un moment ulterior ridicării bisericii, mormântul său fiind în mod evident plasat în funcție de aceasta.

Biserica satului Mănești nu este menționată în niciun document al vremii. La 15 iunie 1577, cu puțin înainte de a-și găsi sfârșitul, la 11 septembrie în același an, domnitorul Alexandru II Mircea dăruiește Mănăstirii „Sfânta Troiță" din București „satul Mănești de pe Colentina, cu tot hotarul"[126], hotărâre pe care o va întări la 28 iulie 1577[127]. Ulterior, la 31 august 1580, Mihnea Turcitul confirmă dania tatălui său,

[119] Alternanța în acte a termenilor de *pecete* și *inel* pare a sugera echivalența lor. Se pune însă întrebarea dacă nu cumva folosirea a două denumiri avea menirea de a evidenția anumite diferențe: pecetea – matriță sigilară destinată acestui scop; inelul – obiect cu caracter personal, al cărui ornament de pe chaton putea fi folosit și pentru sigilare. Astfel, conform clasificării propuse de C. Anton Manea (2002–2003, p. 334), corespondența ar putea fi *inel sigilar* – pecete și inel de *tip sigilar* – inel ornamental-simbolic.

[120] De la Orașul de Floci provin acte autentificate de către aceeași persoană, Ianușcul (Enușcul), care folosea inele diferite (Mihai 2000, p. 589). Există însă și cazuri în care amprenta sigilară avea semnificații similare impresiunii degetului. Exemplificăm cu un caz în care aceeași amprentă sigilară se regăsește sub trei nume diferite (Anton Manea 2000, p. 101). Este atestată astfel folosirea ca inel de tip sigilar a unor piese de „serie", având gravate imagini identice. Este de presupus că inelele de tip sigilar au fost folosite într-o etapă tranzitorie, numărul acestora scăzând, treptat, în favoarea celor sigilare. Începând cu secolul al XVII-lea, dar mai ales în următoarele două, acestea tind să sublinieze nivelul ocupațional al posesorului, ca, de exemplu, inelele sigilare de negustori (Nanu 1985, p. 93, fig. 13–14, 18).

[121] Din punct de vedere al confecționării, acestea se împart în două grupe: inele realizate dintr-o singură bucată (chaton-ul și veriga formând corp comun) și inele la care chaton-ul și veriga au fost realizate separat și apoi lipite între ele. La a doua grupă, preponderentă numeric, formele elementelor componente sunt variate: veriga – simplă sau torsionată, cu secțiune circulară, semicirculară sau plată; chaton-ul – discoidal, sub forma unei protuberanțe sau cu pastile circulare sau rectangulare; decorul poate fi geometric, floral sau, mai rar, zoomorf; destul de rare sunt și inele cu piatră montată.

[122] În absența unei sinteze finale a cercetărilor, stabilirea numărului total de inele descoperite în perioada 1972–1982 a fost făcută prin însumarea numărului de piese menționate în rapoartele de săpătură, articolele și studiile publicate (Ștefănescu 1975, p. 388–389, 391, fig. 1, 2, 3/a, b; Ștefănescu 1979a, p. 40–41, 43; Ștefănescu 1979b, p. 376; Ștefănescu 1980a, p.139; Ștefănescu 1980b, p. 626, 630, fig. 2; Ștefănescu 1981, p. 144–145; Panait, Ștefănescu 1981, p. 123; Ștefănescu 1983, p. 533; Ștefănescu 1989, p. 64, 67; Ștefănescu 1993, p. 479, 481; Ștefănescu 2005, p. 283).

[123] În cadrul cercetărilor din anii 2020–2021, au fost documentate 16 inele realizate dintr-o singură bucată. Gradul de uzură din cauza purtării, în unele situații, precum și deteriorarea imaginii de pe chaton în altele, ne împiedică, cel puțin pentru moment, să le considerăm inele sigilare certe. Singurul caz în care piesa însăși evidențiază în mod vădit această funcționalitate este inelul din mormântul/cpl. 711/2021 (Anghel). Acestuia i se adaugă cel din mormântul M. 26/1973 (Vintilă), descoperit anterior de A. Ștefănescu.

[124] A se vedea nota 120.

[125] Alexandru II Mircea dăruia (15 iunie 1577) satul Mănești de pe Colentina Mănăstirii „Sfânta Troiță" din București; decizia va fi reconfirmată de același domnitor (28 iulie 1577), apoi de fiul său, Mihnea Turcitul (31 august 1580); a se vedea DRH-B, 1996, doc. 81, p. 131–134 și doc. 91, p. 148–150, doc. 317, p. 515–516. Dania va fi ulterior întărită (1649) de Matei Basarab. Stăpânirea mănăstirii încă mai persista pe la 1786, când, pe locul moșiei Mănești, apar trei sate: Flămânzeni, Cocoși și Buftea (Filitti 1938, p. 4–5).

[126] DRH-B, 1996, doc. 81, p. 131–134.

[127] DRH-B, 1996, doc. 91, p. 148–150.

de data aceasta indicând foarte detaliat hotarele moșiei[128]. În încercarea de a lămuri această situație, A. Ștefănescu consideră ca potențiali ctitori pe Mihnea cel Rău, Radu de la Afumați, Alexandru II Mircea și Mănăstirea „Sfânta Troiță", apreciind că „numai acestora le poate fi atribuită construcția lăcașului de piatră, ale cărui resturi de zidărie le mai păstrăm și astăzi"[129]. Puțin mai jos, el concluzionează: „singurul ctitor posibil rămâne Alexandru II Mircea, într-o fază anterioară daniei"[130], fără însă a contraargumenta celelalte variante pe care le propusese.

Pe baza cercetărilor efectuate în anii 2020–2021, există suficiente argumente pentru a susține că biserica nu poate fi anterioară ultimului sfert al secolului al XVI-lea. Practic, toate mormintele cu monedă situate în vecinătatea bisericii indică această datare sau una chiar mai târzie[131]. Prin urmare, din punct de vedere cronologic, singurii ctitori nu pot fi decât Alexandru II Mircea sau Mănăstirea „Sfânta Troiță". Deși nu există informații care să sprijine una dintre variante, lipsa acestora poate fi apreciată diferit. Astfel, Alexandru II Mircea ar fi putut menționa, în două rânduri, mica sa ctitorie din satul Mănești. Absența informațiilor și după anul 1577 nu trebuie să surprindă: luarea în stăpânire a moșiei, administrarea acesteia și chiar ridicarea unei biserici deveneau o chestiune internă a Mănăstirii „Sfânta Troiță". În acest fel s-ar putea explica și prezența neobișnuită a unei biserici de cărămidă într-o perioadă în care, în mediul rural, acestea lipsesc, iar în orașe încă predomină cele construite din lemn.

Prin urmare, considerăm că există suficiente argumente pentru datarea mormintelor lui Anghel și Vintilă și a bisericii în ultimele două decenii ale secolului al XVI-lea[132]. Legătura celor doi cu lăcașul de cult pare a fi sugerată de inventarul „standard": inel sigilar din argint și vas din sticlă. Sunt singurele asocieri de acest gen documentate la Buftea – *La Cârnă/Mănești*; totodată, situațiile similare contemporane sunt foarte rare[133]. Cele două vase, dacă nu identice, sunt, în orice caz, foarte asemănătoare ca formă și dimensiuni (Fig. 5, 9), indicând, poate, același furnizor. Totodată, inelele sigilare sunt asemănătoare prin realizarea dintr-o singură bucată, diferită fiind doar imaginea gravată pe chaton.

Concluzionând, cele două inele sigilare non-heraldice de la Buftea – *La Cârnă/Mănești* permit excluderea folosirii lor la autentificarea unor documente de vânzare-cumpărare. Prezența lor poate însă să indice utilizarea în alte scopuri, precum aplicarea amprentei sigilare pe diverse înscrisuri

[128] „pe apa Colintinii în jos, pană în piatra de către Gorganele și până în Lacul Stejarului și de la Lacul Stejarului, până în stejarul ce iaste mai din sus, de la Fătăciunea Barbului și până în Stejarul lui Iapeș, pe Calea Popeștilor, unde să întâmpină moșia Colintinii cu moșia Dâmboviții și pană în Lacul lui Tologaci și până in Lacul cu Răchițile și pană in Calea Bălțăcaciului, în Geamănul. Și de către Crețulești, la puț și până in Zăgasul Grămăticilor, în malul Colintinii." (DRH-B, 1996, doc. 317, p. 515–516). Enumerarea amănunțită a unor repere de natură topografică nu menționează existența unei biserici pe moșia Mănești în anul 1580. Dacă aceasta ar fi existat deja, fără îndoială că ar fi constituit un element proeminent în peisajul unui sat medieval de câmpie din Țara Românească. Două secole mai târziu, ruinele lăcașului de cult erau încă vizibile de la distanță, marcând punctul de trecere peste râul Colentina (Morintz 2025, p. 181).

[129] Ștefănescu 1978, p. 183.

[130] Ștefănescu 1978, p. 184.

[131] Morintz, Coman 2024, p. 226–227, fig. 10.

[132] Conform datării cu monedă, jumătate (51,43%) dintre înmormântările efectuate în cimitirul I datează din intervalul cca 1575–1600, al cărui început coincide cu dania moșiei Mănești Mănăstirii „Sfânta Troiță". Astfel, stabilirea unei strânse legături între satul de pe Colentina și București explică decăderea rapidă de la începutul secolului al XVIII-lea. În vremea lui Mihai Viteazul, Bucureștiul a fost devastat de trupele otomane și orașul a avut nevoie de mai bine de trei decenii pentru a se reface. Mănăstirea „Sfânta Troiță" a fost în mod special afectată, întrucât Sinan pașa a transformat-o într-o fortificație, pe care a incendiat-o în momentul retragerii. Devastarea economică și demografică a regiunii a fost, cu siguranță, principalul factor al decăderii satului Măneștilor și al încetării folosirii cimitirului I (Morintz, Coman 2024, p. 227). Prin urmare, deși înmormântările vor continua până spre deceniul al treilea al secolului al XVII-lea, biserica era fie dezafectată (Ștefănescu 1975, p. 389), fie a mai funcționat un scurt răstimp, deconectată însă de Mănăstirea „Sfânta Troiță".

[133] Dacă depunerile individuale de vase din sticlă, respectiv de inele sigilare sunt rare, cele care să le conțină pe amândouă sunt de-a dreptul rarisime. Vom prezenta în continuare trei cazuri, asemănătoare celor descoperite la Buftea. Primul îl constituie mormântul lui *Crăstiian cel Mare* de la Orașul de Floci, la care ne-am referit deja (a se vedea nota 118), astfel că ne vom limita aici doar la a relua trăsăturile definitorii: mormânt amplasat în pronaos (și identificat ca aparținând ctitorului), inventarul funerar cuprinde un inel sigilar din argint, un vas din sticlă și o monedă emisă în 1606. Al doilea caz a fost documentat la Retevoiești (com. Pietroșani, jud. Argeș). Cercetările lui D. V. Rosetti au vizat biserica, ctitorită în 1516 de către Vlaicu, mare logofăt și Vâlcu, mare stolnic (Rosetti 1959, p. 710, fig. 8). În incinta bisericii au fost investigate 15 morminte, inclusiv cele ale ctitorilor, având ca inventar inele din aur și argint, unele împodobite cu geme antice (Rosetti 1959, p. 711–714, fig. 14). La un singur mormânt (M. 15, în pronaos), inventarul se compunea din inel sigilar și vas din sticlă. Inelul, din argint, fără inscripție, purtat la mâna stângă, avea montată o gemă romană pe care erau gravate două mâini strânse. Vasul, poziționat la cap în partea dreaptă, de tip „ciorchine", fără analogii în alte contexte funerare din Țara Românească, provine din Transilvania (Rosetti 1959, p. 711, fig. 8, 13, 14/1a, b; Mănucu-Adameșteanu 2005, p. 206, 214–215, n. 86, 138; Fulga 2004, p. 110–212). În sfârșit, al treilea caz provine dintr-un ansamblu ecleziastic, compus din cimitir și biserică (datat în secolele XV–XVI), descoperit recent la Târgoviște. La mormântul M. 19, aparținând unui adult, sex și vârstă nedeterminabile, inventarul era compus din inel sigilar din argint și vas din sticlă. Inelul era realizat dintr-o singură bucată; reprezentarea gravată pe chaton ridică dificultăți de interpretare. Vasul are corpul cilindric, baza bombată și gura evazată (Petrică *et alii* 2023, p. 134, 137, fig. X/1a-c, X/2a-b; Vasile 2023, p. 168). Comparând cele trei cazuri prezentate cu cele două de la Buftea – *La Cârnă/Mănești*, putem evidenția câteva aspecte semnificative. În primul rând, în doar două situații mormântul se află în interiorul bisericii: cel al lui Crăstiian cel Mare de la Orașul de Floci și cel de la Retevoiești. Acesta din urmă, în raport cu toate celelalte patru cazuri, prezintă mai degrabă deosebiri decât asemănări. Spațiul funerar select rezervat defunctului, alături de ctitorii bisericii, foști demnitari ai țării, ne face să presupunem că ar fi avut o poziție socială înaltă. În plus, inelul sigilar cu gemă, chiar dacă nu poate fi considerat o piesă heraldică, are un pronunțat caracter de reprezentare, fiind relativ diferit față de inelele sigilare non-heraldice. De asemenea, vasul din sticlă constituie o apariție singulară în contextele funerare medievale din Țara Românească. În celelalte trei cazuri, mormintele sunt situate în exteriorul bisericii, dar în imediata vecinătate a acesteia. În al doilea rând, în patru situații, cunoaștem localizarea vasului din sticlă: la cap, în partea dreaptă – M. 26/1973 și cel de la Retevoiești; la cap, fără alte precizări – Crăstiian cel Mare; între humerus și torace – cpl. 711/2021.

efemere: liste de inventar, înștiințări, confirmări etc. O asemenea corespondență, autentificată de expeditor și destinatar, ar putea fi corelată cu schimbările survenite după 1577. Donarea de către domn a satului și moșiei Mănești Mănăstirii „Sfânta Troiță", „ca să-i fie de întărire, fraților care trăiesc în sfânta Mitropolie de hrană"[134] ar fi justificat adoptarea de către aceasta din urmă a unor măsuri menite a gestiona resursele proprietății primite. Cazuri de sigilare a spațiilor de depozitare a alimentelor, a butoaielor de vin sau a sacilor cu făină au fost documentate în contexte din Ungaria, aparținând aceleiași perioade[135]. Deși ezităm în a-i identifica pe Anghel și Vintilă ca laici ori preoți sau călugări[136], îndrăznim să sugerăm calitatea lor de reprezentanți la Mănești ai Mănăstirii „Sfânta Troiță". O asemenea calitate îl conturează pe Anghel drept un bărbat tânăr, voinic, capabil să participe și să coordoneze colectarea și transportul resurselor moșiei către București. La rândul său, Vintilă ar fi putut îndeplini aceleași sarcini anterior sau ulterior lui Anghel. Faptul că au fost documentate doar două asemenea morminte poate sugera scurta perioadă în care mănăstirea și-a exercitat stăpânirea (două-trei decenii), până la dramaticele evenimente de la sfârșitul secolului al XVI-lea.

Încheiem, conștienți de vulnerabilitatea ipotezelor avansate mai sus. Credem, totuși, că atribuirea Mănăstirii „Sfânta Troiță" a calității de ctitor al Bisericii de la Mănești se bazează pe o serie de indicii, care, în cazul lui Alexandru II Mircea, lipsesc cu desăvârșire. Ne exprimăm speranța că analiza descoperirilor din anii 2020–2021, aflată încă la început, va răspunde la numeroasele întrebări legate atât de biserică, cât și de cimitirul din jurul acesteia.

Alexandru Morintz

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[134] DRH-B, 1996, doc. 81, p. 133.

[135] Adresăm, pe această cale, mulțumiri lui Dániel Kálmán și István Pánya, care au avut amabilitatea de a ne permite consultarea studiului lor, în curs de publicare, *Impressions. Seal matrices and signet rings from Bács-Kiskun County*.

[136] Am înclina, totuși, pentru apartenența personajelor la prima categorie, având în vedere numele laice ale acestora (Anghel și Vintilă), nu ecleziastice (precum Athanasie, Mardarie sau Ioachim, egumeni ai mănăstirii din București).

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INFORMAȚII SUPLIMENTARE

Os	Cpl. 711
Frontal	4
Parietal (S/D)	4/4
Temporal – scuamă (S/D)	4/4
Temporal – piramidă (S/D)	4/4
Ciocan (S/D)	0/0
Nicovală (S/D)	0/0
Scăriță (S/D)	0/0
Occipital	4
Maxilă (S/D)	4/4
Palatin (S/D)	1/1
Vomer	0
Cornet nazal inferior (S/D)	0/0
Etmoid	1
Lacrimal (S/D)	0/0
Nazal (S/D)	0/0
Zigomatic (S/D)	4/4
Sfenoid – corp	1
Sfenoid – aripi	3
Mandibulă – corp	4
Mandibulă – ram ascendent	4
Hioid	0
Vertebre cervicale*	7
Vertebre toracale*	12
Vertebre lombare*	5
Stern – manubriu	4
Stern – corp	4
Stern – apendice xifoid	0
Coaste (S/D)*	12/12
Claviculă – epifiză medială (S/D)	4/4
Claviculă – diafiză (S/D)	4/4
Claviculă – epifiză laterală (S/D)	4/4
Omoplat – corp (S/D)	3/3
Omoplat – proces acromial (S/D)	0/0
Omoplat – proces coracoid (S/D)	4/4
Omoplat – fosă glenoidă (S/D)	4/4

Os	Cpl. 711
Humerus – epifiză proximală (S/D)	4/4
Humerus – diafiză (S/D)	4/4
Humerus – epifiză distală (S/D)	4/4
Radius – epifiză proximală (S/D)	4/4
Radius – diafiză (S/D)	4/4
Radius – epifiză distală (S/D)	4/4
Ulnă – epifiză proximală (S/D)	4/4
Ulnă – diafiză (S/D)	4/4
Ulnă – epifiză distală (S/D)	4/4
Carpiene (S/D)*	2/2
Metacarpiene (S/D)*	4/5
Falange mână – proximale*	9
Falange mână – intermediare*	1
Falange mână – distale*	2
Sacrum*	5
Coccis*	0
Ilion (S/D)	4/4
Ischion (S/D)	4/4
Pubis (S/D)	4/4
Femur – epifiză proximală (S/D)	4/4
Femur – diafiză (S/D)	4/4
Femur – epifiză distală (S/D)	4/4
Rotulă (S/D)	4/4
Tibie – epifiză proximală (S/D)	4/4
Tibie – diafiză (S/D)	4/4
Tibie – epifiză distală (S/D)	4/4
Peroneu – epifiză proximală (S/D)	4/4
Peroneu – diafiză (S/D)	4/4
Peroneu – epifiză distală (S/D)	4/4
Tarsiene (S/D)*	3/4
Metatarsiene (S/D)*	2/2
Falange picior – proximale*	0
Falange picior – intermediare*	0
Falange picior – distale*	0

Tabel 1. *Gradul de reprezentare al individului din mormântul cpl. 711 de la Buftea* – La Cârnă/Mănești.[137]

Table 1. *The degree of representativeness of the individual from grave 711 at Buftea* – La Cârnă/Mănești.

[137] În cazul coastelor, vertebrelor și oaselor de la mâini și picioare, au fost înregistrate numărul de piese ososase prezente, nu procentul păstrat din segmentul osos; în tabelul 1 au fost marcate cu simbolul „*”).

Dimensiuni, indici	Cpl. 711
60. Pr–Alv	56,6
63. Enm–Enm	42,2
64. Palat ↕ (S/D)	12,8/–
I59. (64:63) x 100 (S/D)	30,4/–
65. Kdl–Kdl	140,4
66. Go–Go	110,5
68. Po–Go (proiecție)	90,9
I62. (68:65) x 100	64,7
80(2). P_1–M_3 (S/D)	44,9/–
C1 (S/D)	–/146,8
C6 (S/D)	43,0/45,0
(C6:C1) x 100 (S/D)	–/30,6
(C1:H2) x 100 (S/D)	–/45,4
H1 (S/D)	330,0/337,6
H2 (S/D)	319,5/323,1
H3 (S/D)	67,0/67,1
H5 (S/D)	24,1/25,1
H6 (S/D)	22,6/23,6
(H6:H5) x 100 (S/D)	93,8/93,7
R1 (S/D)	–/249,0
(R1:H2) x 100 (S/D)	–/77,1
U1 (S/D)	270,3/–
U13 (S/D)	–/15,6

Dimensiuni, indici	Cpl. 711
U14 (S/D)	–/19,5
(U13:U14) x 100 (S/D)	–/80,0
S2	110,9
S5	97,6
(S5:S2) x 100	88,0
F1 (S/D)	476,0/474,9
F2 (S/D)	473,0/470,1
F6 (S/D)	23,9/30,0
F7 (S/D)	27,2/27,5
F9 (S/D)	34,7/32,3
F10 (S/D)	29,1/29,0
F18 (S/D)	48,9/50,8
F21 (S/D)	82,0/82,2
(F6:F7) x 100 (S/D)	109,1/109,0
(F10:F9) x 100 (S/D)	83,8/89,7
R2 (S/D)	–/46,7
(R2:F21) x 100 (S/D)	–/56,8
T1a (S/D)	–/394,7
T1b (S/D)	–/381,2
T8a (S/D)	36,0/37,8
T9a (S/D)	27,0/25,9
(T9a:T8a) x 100 (S/D)	74,9/68,6
(T1b:F2) x 100 (S/D)	–/81,1

Tabel 2. *Valorile principalelor dimensiuni (mm) și principalilor indici cranieni și postcranieni ai individului din mormântul cpl. 711 de la Buftea* – La Cârnă/Mănești.

Table 2. *The values of the main measurements (mm) and the principal cranial and postcranial indices of the individual from grave 711 at Buftea* – La Cârnă/Mănești.

Os	Enteze (S/D)	Cpl. 711
Claviculă	*L. costoclaviculare*	2/2
	L. conoideum	2/2
	L. trapezoideum	1/1
	M. pectoralis major	1/1
	M. deltoideus	1/1
Omoplat	*M triceps brachii*	3/3
Humerus	*M. pectoralis major*	1/1
	M. latissimus dorsi/teres major	1/1
	M. deltoideus	1/1
	M. brachioradialis	–/–
Radius	*M. biceps brachii*	2/1
	M. pronator teres	2/1
	Membrana interossea antebrachii	1/1

Os	Enteze (S/D)	Cpl. 711
Ulnă	*M. triceps brachii*	–/–
	M. brachialis	2/2
	M. supinator	1/1
Femur	*M. iliopsoas*	1/1
	M. gluteus maximus	1/1
	M. vastus medialis	1/1
Rotulă	*T. quadriceps*	0/1
Tibie	*L. patellae*	2/2
	M. soleus	1/1
Calcaneu	*T. Achillis*	–/–

Tabel 3. *Înregistrarea gradelor de dezvoltare a entezofitelor ale individului din mormântul cpl. 711 de la Buftea* – La Cârnă/Mănești.

Table 3. *The degrees of enthesophyte development of the individual from grave 711 at Buftea* – La Cârnă/Mănești.

Dimensiuni	Cpl. 711
PUM	69,09
SPU	23,13
DCOX	215,33
IIMT	32,93
ISMM	114,15
SCOX	148,22
SS	74,80
SA	76,31
SIS	38,65
VEAC	59,78
Sex	100,0% masculin

Tabel 4. *Dimensiuni ale oaselor coxale (mm) utilizate pentru determinarea sexului individului din mormântul cpl. 711 de la Buftea* – La Cârnă/Mănești.

Table 4. *Coxal bone measurements (mm) used for the sex determination of the individual from grave 711 at Buftea* – La Cârnă/Mănești.

CERCETĂRI ARHEOLOGICE LA „ANSAMBLUL FOSTULUI CONAC LECCA MICȘUNEȘTI” (SAT MICȘUNEȘTII MARI, COM. NUCI, JUD. ILFOV)

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Keywords: *mansion, cellar, gate tower, enclosure wall, archaeological research, 18th century*
Abstract: *The Lecca Micșunești complex is located in the village of Micșunești Mari (Nuci commune, Ilfov county), about 45 km northeast of Bucharest. It was originally composed of a house/mansion, a gate tower, a walled enclosure, and a church, and was considered typical of the boyar residences of 18th century Wallachia. The house, partially built on a quadrangular cellar with brick vaults and a central pillar, comprises a low ground floor and a higher first floor. The gate tower is built of brick, with a hemispherical vault and two arched openings under which one could pass from west to east into the manor courtyard. Today, the church is no longer part of the complex, as it belongs to the local parish, and the enclosure wall has been demolished, its route no longer known with certainty. Due to its poor state of preservation, especially the gate tower, a project to conserve and enhance the complex began in 2022. On this occasion, diagnostic archaeological research was carried out. Although limited and subject to field conditions and the technical requirements of the designer, these initial surveys provided a number of clarifications: there are no archaeological deposits or archaeological materials prior to the 18th century in the surveyed areas; no substantial construction phases were found. The foundations of the house and tower are built in a similar manner, using the same type of brick and mortar for the elevations; the ground level around the house has risen by about 0.40 m and by about 0.60–0.70 m at the gate tower; the tower had a room (called the guard's room) on its south side, built at the same time as the tower, which was demolished after the middle of the 20th century. The enclosure wall was most likely 2.70 m high and was built at the same time as the gate tower, and its existence is documented to the north over a length of more than 66 m. The few ceramic fragments discovered during the excavations broadly date to the 18th–19th centuries. The archaeological dating of the investigated structures is consistent with the architectural style of the monument and with documentary information about the church (part of the complex in the past) and the houses of the Iordache Micșunescu family, mentioned in the mid-18th century.*

Cuvinte-cheie: *conac, pivniță, turn de poartă, zid de incintă, cercetări arheologice, secolul al XVIII-lea*
Rezumat: *Ansamblul Lecca Micșunești se află în satul Micșunești Mari (com. Nuci, jud. Ilfov), la circa 45 km nord-est de București. Inițial era compus dintr-o casă/conac, un turn de poartă, o incintă zidită și o biserică, fiind considerat o alcătuire tipică pentru reședințele boierești din Muntenia secolului al XVIII-lea. Casa este înălțată parțial pe o pivniță patrulateră cu bolți de cărămidă și stâlp central, cuprinzând un parter scund și un etaj mai înalt. Turnul de poartă este construit din cărămidă, fiind prevăzut cu o boltă semisferică și două goluri arcuite pe sub care se pătrundea de la vest către est în curtea conacului. Astăzi, biserica nu mai face parte din ansamblu, aparținând parohiei locale, iar zidul de incintă a fost demolat, traseul său nemaifiind cunoscut cu exactitate. Datorită stării precare de conservare, în special a turnului de poartă, în anul 2022 a început un proiect de conservare și punere în valoare a ansamblului. Cu această ocazie, au avut loc cercetări arheologice cu caracter de diagnostic. Deși limitate și supuse condiționărilor din teren și necesităților tehnice ale proiectantului, aceste prime sondaje au adus o serie de clarificări: în locurile sondate nu există depuneri arheologice ori materiale arheologice anterioare secolului al XVIII-lea; nu s-au constatat mai multe faze substanțiale de construcție. Fundațiile casei și turnului sunt construite în maniere asemănătoare, la elevații utilizându-se același tip de cărămidă și mortar; nivelul de călcare în jurul casei a crescut cu circa 0,40 m și cu circa 0,60–0,70 m la turnul de poartă; turnul a avut pe latura sudică o încăpere (denumită camera pazniculuí), construită în același timp cu acesta și demolată în a doua parte a secolului al XX-lea; zidul de incintă a avut foarte probabil înălțimea de 2,70 m și a fost construit în aceeași etapă cu turnul de poartă, existența zidului fiind documentată către nord pe o lungime de peste 66 m. Puținele fragmente ceramice descoperite în timpul săpăturilor se încadrează larg în perioada secolelor XVIII–XIX. Datarea arheologică a obiectivelor cercetate concordă cu stilul arhitectural al monumentului și cu informațiile documentare privind biserica (parte componentă a ansamblului în trecut) și casele familiei Iordache Micșunescu, amintite către mijlocul veacului al XVIII-lea.*

LOCALIZAREA ȘI DESCRIEREA SITULUI

Satul Micșunești Mari (com. Nuci, jud. Ilfov), în intravilanul căruia se află Ansamblul fostului conac Lecca Micșunești, este situat pe malul vestic al Lacului Mare (fosta Baltă Micșunești), la limita dintre județul Ilfov și județul Ialomița, la aproximativ 45 km nord-est de București și la circa 3 km nord-vest de Fierbinți Târg. Forma de relief care domină este cea a câmpiei, altitudinea fiind de 73 m față de nivelul mării. Rețeaua hidrografică este relativ bogată, incluzând Ialomița și o salbă de lacuri.

Localitatea este atestată pentru prima dată în anul 1501 sub numele de Micșenești într-un document emis de Radu cel Mare (1495–1508), prin care satul, alături de alte sate și bunuri aparținând lui jupan Gherghina (rudă a domnitorului și ctitor al Mânăstirii Nucet, jud. Dâmbovița), era donat Mânăstirii Nucet, punerea în posesie urmând să intre în vigoare după decesul donatorului[1]. În 1516, Neagoe Basarab (1512–1521) întărea Mânăstirii Nucet proprietatea asupra mai multor sate printre care și Micșinești[2]. Este

[1] DIR, B, veacul XVI, vol. I, p. 7.
[2] DIR, B, veacul XVI, vol. I, p. 113.

o consfințire a daniei din 1501 conform obiceiului, dar foarte probabil, acum, ca urmare a dispariției jupanului Gherghina, mânăstirea intra în posesia efectivă a bunurilor donate, conform actului inițial. În 1579, Mihnea Turcitul (1577–1583, 1585–1591) întărea lui Mitrea, mare vornic, părți din satul Micșenești (de Jos) cumpărate de la Dobrotă postelnic[3]. Numele satului mai apare în 1594, când într-o listă de martori este menționat Șărban, logofăt de Micșănești[4]. În vremea lui Mihai Viteazu (1593–1601), fiul acestuia, Nicolae Pătrașcu, cândva între noiembrie 1599 și august 1600, dăruia satul Micșenești către biserica din Șcheii de lângă Brașov[5]. Nu cunoaștem în ce circumstanțe s-a petrecut donația și ce s-a întâmplat ulterior, dar, în 1623, cu prilejul unei tranzacții, este amintit în finalul actului și un anume Dumitru logofăt din Micșăniști[6], dovadă că o schimbare de proprietar avusese loc. Zece ani mai târziu, în 1633, Matei Basarab (1632–1654) dăruia lui Iancu căpitan, ocina și rumânii de la Micșenești, confiscate de la Necula vistier, care la rândul său le cumpărase mai de demult[7].

Ulterior, fără a putea preciza când și în ce mod, satul ajungea în patrimoniul cunoscutei familii Grecianu[8], după care, în anul 1734 avea să treacă prin intermediul unei alianțe matrimoniale, în posesia lui Iordache Asan, fiul cămărașului Asan din vremea lui Constantin Brâncoveanu (1688–1714). Acesta se căsătorise cu Smaranda, care primise satul ca zestre din partea tatălui său Șerban vel Spătar Grecianu[9]. Iordache, devenit mare stolnic, preia numele de Micșunescu de la denumirea satului și, în 1743, împreună cu soția, construiește biserica[10] cu hramul Nașterea Sf. Ioan, Sf. Gheorghe, Sf. Nicolae și casele familiei Micșunescu (actualul ansamblu din Micșunești Mari, jud. Ilfov)[11]. La începutul secolului al XIX-lea, prin căsătoria Mariei, nepoata celor doi (Iordache și Smaranda), cu Dimitrie Polizu, proprietatea intră în posesia acestuia, care-și schimbă numele în Dimitrie Micșunești. Pentru scurt timp, în 1879 domeniul ajunge prin cumpărare în posesia Ecaterinei Mavrocordat, care, în 1882, îl vinde lui Simeon A. Mihălescu. După decesul acestuia, proprietatea este cumpărată în 1904 de Constantin C. Lecca, care o dă ca zestre fiicei sale, Silvia, la căsătoria acesteia cu Henric Aslan, apoi cu Constantin Lehliu. Moșia a fost expropriată prin decretul din martie 1949, în conac funcționând o școală, apoi după 1990 a reintrat în posesia moștenitorilor de drept.

Ansamblul Lecca Micșunești, în prezent proprietate a familiei Stavraca, ocupă o suprafață de aproximativ 55 500 mp, aflându-se într-un loc pitoresc, pe malul lacului, înconjurat de copaci și arbuști de diverse specii. În momentul de față, acesta este compus dintr-o clădire (conacul/casa propriu-zisă) cu etaj și un turn rectangular de poartă situat la circa 60 m sud-vest de aceasta. Inițial, din ansamblu făcea parte și biserica[12], aflată la aproximativ 80 m sud de casă și 40 m sud-est de turnul de poartă (Fig. 1/c; 2). Ansamblul era înconjurat, cel puțin parțial, de o incintă zidită, astăzi dispărută și uitată. Harta lui Specht din anul 1791 consemnează la marginea estică a satului Micșunești existența ansamblului compus din conac, incintă și biserică (Fig. 1/a). Imaginea este redată și mai clar pe hărțile topografice militare habsburgice din secolul al XIX-lea[13] (Fig. 1/b).

Conacul este înălțat parțial pe o pivniță patrulateră (l: cca 9,10 m) aflată în partea de nord-est, având o suprafață de circa 83 mp. Aceasta este împărțită în pătrate egale, boltite cu calote semisferice pe pandantivi în patru arcuri, sprijinite central pe un stâlp masiv de zidărie. Deasupra se află un parter scund, dreptunghiular, cu o suprafață utilă de 183 mp și un etaj mai înalt, având o suprafață utilă de 220 mp. Acoperișul, având șarpanta cu pantă mică în patru ape și streașinile, de asemenea, mici, a suferit foarte probabil modificări de-a lungul timpului. Zidurile exterioare, construite exclusiv din cărămidă, sunt groase de circa 0,70 m. Clădirii în discuție, ale cărei dimensiuni sunt: L (laturile de est și vest): 16,40 m; l (laturile de nord și sud): 16,10 m; H: circa 9,00 m, i-a fost adăugată, pe latura

[3] DIR, B, veacul XVI, vol. IV, p. 374.

[4] DIR, B, veacul XVI, vol. VI, p. 100.

[5] DRH, B, vol. XI, p. 582.

[6] DIR, B, veacul XVII, vol. IV, p. 245.

[7] DRH, B, vol. XXIV, p. 6.

[8] Începând cu Papa din Greci, mare vornic menționat în 1623, în vremea lui Alexandru Coconul (1623–1627), descendenții acestuia au stăpânit întinse moșii în zonă și au ocupat diferite funcții în veacurile XVII–XVIII, înrudindu-se la un moment și cu familia Brâncoveanu. Strănepoata acestuia, Ilinca, fiica lui Papa Grecianu, vistier (ocupând funcția de mai multe ori în timpul mai multor domnitori în perioada 1664–1675), s-a căsătorit cu Șerban Grecianu (familie originară din Dâmbovița), cărturar și sfetnic al voievodului Constantin Brâncoveanu, frate cu Radu Grecianu, binecunoscutul cronicar. A ocupat și funcțiile de vistier (1694–1703) și logofăt (1704–1710). Din căsătoria acestora au rezultat mai mulți copii, dintre care, în cazul de față ne interesează Șerban Grecianu (II), devenit ulterior logofăt (1710–1714) și spătar (1717). Mai menționăm că o soră a acestuia, Păuna, a fost căsătorită cu voievodul Ștefan Cantacuzino (1714–1716); vezi Dumitrescu, Crețeanu 1973, p. 23, 25.

[9] Șerban vel Spătar Grecianu (II) a fost căsătorit cu Ilinca, cea de-a treia fiică a lui Constantin Brâncoveanu, și din această uniune s-a născut Smaranda; vezi Dumitrescu, Crețeanu 1973, p. 26.

[10] Viitoarele cercetări arheologice vor arăta dacă sub actualul monument se află sau nu resturile unei biserici mai vechi.

[11] Stoicescu 1970, p. 426, și cu literatura mai veche.

[12] Actualmente, biserica cu hramul „Născătoare de Dumnezeu", monument istoric de clasă A, în special datorită picturii sale și elementelor decorative sculptate în piatră, aparține parohiei Micșunești Mari (Fig. 1/c). Biserica are o absidă centrală poligonală la exterior, rotunjită la interior și două abside laterale, mai mici, trapezoidale la exterior și, de asemenea, rotunjite la interior, spațiul dintre acestea constituind naosul, peste care se înalță o turlă pătrată. Naosul se leagă printr-o latură foarte scurtă de pronaos, trecerea fiind delimitată de doi stâlpi. Pronaosul are o formă dreptunghiulară cu laturile lungi orientate nord-sud. La exterior, pe latura sudică, aproape de capătul sud-vestic, se află scara pentru acces în clopotniță, casa scării având trei laturi, cu intrarea pe latura vestică. Pronaosul se continuă cu un pridvor, comunicarea făcându-se printr-o ușă. Pridvorul are două intrări, una obișnuită în ax și cealaltă pe latura de nord, destinată familiei boierești, indiciu că biserica servea atât ca paraclis al curții boierești, cât și ca biserica satului. Vezi o descriere amănunțită la: Ghika-Budești 1936, p. 97–98, fig. 775–785.

[13] A doua și a treia ridicare topografică militară austriacă – Franzisco-Josephinische Landesaufnahme: 1806–1869; 1869–1887.



Figura 1. *Satul Micșunești cu locul în care sunt amplasate conacul și biserica construite de familia Micșunescu: a. Harta Specht – 1791, b. hărțile topografice militare austriece din secolul al XIX-lea; c. vedere aeriană a ansamblului Lecca Micșunești.*

Figure 1. *The village of Micșunești, showing the location of the manor house and church built by the Micșunescu family: a. Specht Map – 1791; b. 19th-century Austrian military survey maps; c. aerial view of the Lecca Micșunești complex.*

de nord, în apropierea colțului de nord-vest, o încăpere mai mică de plan rectangular (aproximativ 4,50 × 4,00 m), clădirea ajungând astfel la o lungime de circa 20,40 m și o suprafață totală construită de 282 mp. Intrarea către parter și etaj se află pe latura vestică, iar accesul actual către pivniță se face de pe latura nordică printr-un gârlici situat în camera din colțul de nord-vest al conacului (Fig. 3/a–e).

Monumentul se încadrează în formele arhitecturii civile din Țara Românească în veacul al XVIII-lea, având ca model planul palatelor Renașterii italiene[14]. Prototipul, cel mai bine reprezentat de palatele de la Potlogi și Mogoșoaia, constă în esență într-un dreptunghi regulat (peste o pivniță) și în mijlocul fiecărei fațade câte o ieșitură, un salon mai mare pe fațadele laterale, un foișor cu o scară de piatră alăturată de el pe fațada principală, iar pe fațada opusă, o „loggie", formând un salon mare, deschis cu arcade susținute de coloane de piatră. Conacul Lecca Micșunești are un plan simplificat și nu mai dispune actualmente de loggie, foarte probabil ca urmare a unor modificări constructive petrecute la finele secolului al XIX-lea. Cazul nu este singular, constatându-se pentru o serie de monumente asemănătoare intervenții pe parcursul veacului menționat, care au dus la dispariția totală a foișorului, scara fiind introdusă în volumul clădirii, în spațiul sălii mari sau al coridorului central[15].

Turnul de poartă, aflat într-o stare de conservare destul de precară, este construit din cărămidă, cu o calotă semisferică, golurile intrării fiind arcuite în plin cintru printr-o arhivoltă retrasă față de planul fațadei. Dimensiunile aproximative ale turnului sunt: L (laturile de vest și est): 6,80 m; l (laturile de nord și sud): 5,60 m; H: 6,00 m, zidurile având grosimea de circa 0,70 m. Intrarea are deschiderea de 4,00 m și înălțimea de circa 3,50 m, trecerea către curtea conacului făcându-se liber de la vest la est pe sub bolta turnului (Fig. 3/f–g). Se pare că nici în vechime nu a existat o poartă de închidere a căii de acces, exceptând perioada de după 1950, când a funcționat o structură cu asemenea rol[16].

În cadrul ansamblului au mai existat și alte anexe, de pildă grajduri, fânare și remize pentru trăsuri, care au dispărut între timp[17].

CERCETAREA ARHEOLOGICĂ

Dată fiind starea de conservare a întregului ansamblu, dar mai ales a turnului de poartă, în anul 2022 a fost demarat un proiect intitulat *Conservarea, restaurarea, consolidarea și punerea în valoare a Conacului și Turnului de poartă din cadrul „Ansamblului fostului conac Lecca Micșunești"*[18]. Cu această ocazie, în vara anului respectiv, s-au desfășurat primele săpături arheologice, care au avut un caracter limitat de diagnostic[19].

Obiectivele evaluării arheologice au constat în obținerea datelor tehnice primare (stratigrafia generală a sitului, nivelul de adâncime al fundațiilor, nivelul de construcție, maniera și materialele de construcție, eventuale fisuri, niveluri de călcare etc.) pentru elaborarea proiectului tehnic de restaurare, care ulterior a fost supus aprobării comisiilor de specialitate. De asemenea, s-au recoltat probe de mortar și cărămidă în vederea datării prin metoda ^{14}C. La final au fost executate în profunzime sub fundații și carote geologice pentru stabilirea compoziției geologice a straturilor (argile) din adâncime. De asemenea, s-a urmărit surprinderea traseului zidului de incintă al ansamblului la nord de turnul porții, a cărui existență era presupusă, dar nedovedită documentar cu claritate.

Din punct de vedere metodologic, diagnosticul arheologic a fost gândit sub forma efectuării mai multor secțiuni și casete de dimensiuni diferite, care vizau trei obiective ale ansamblului, devenite convențional sectoare de lucru: casa propriu-zisă, turnul de poartă și zidul de incintă (Fig. 2).

Amplasarea secțiunilor și casetelor, al căror număr în final a ajuns la 12, s-a făcut în acord cu nevoile tehnice exprimate de către proiectant, structurist și geolog. Acestea au fost condiționate însă de existența unor amenajări, a vegetației abundente și de faptul că Ansamblul fostului conac Lecca Micșunești este locuit de către actualul proprietar. Săpătura s-a executat în totalitate manual, o parte dintre secțiuni fiind astupate imediat ce au fost documentate pentru a nu perturba activitățile cotidiene ale locatarilor. Pentru întregul ansamblu, cota W ± 0,00 m stabilită de către proiectant este considerată intrarea în casa propriu-zisă.

Casa propriu-zisă (Fig. 3/a–e; 4/a–e; 5/a–e; 17/a–b)

Casa a fost cercetată prin practicarea a trei secțiuni/casete, două în exterior (S.1, S.12) și una în interiorul pivniței (S.2). Orientarea exactă a casei este NNV-SSE (latura cea mai lungă), convențional însă o vom considera nord-sud.

[14] Ghika-Budești 1936, p. 114.

[15] Brătuleanu 1997, p. 71.

[16] O fotografie de la începutul anilor `70 consemnează o poartă ușoară, alcătuită din două rame dreptunghiulare întărite pe câte o diagonală, cele două părți închizându-se pe un stâlp fixat în axul intrării turnului; vezi Dumitrescu, Crețeanu 1973, p. 22, fig. 33.

[17] Dumitrescu, Crețeanu 1973, p. 20.

[18] Proiectul s-a desfășurat în perioada 2022–2023, fiind finanțat prin Timbrul Monumentelor Istorice de Institutul Național al Patrimoniului. A fost condus de arh. Ruxandra Nemțeanu, cuprinzând o echipă interdisciplinară de specialiști de la mai multe instituții de profil. O prezentare a proiectului a fost făcută de către Ruxandra Nemțeanu, Irina Nemțeanu și Radu Comănescu la Sesiunea de comunicări Arhitectură Restaurare Arheologie, „Citind printre absențe. Arheologia pierderilor", ediția XXIII, Institutul de Arheologie „Vasile Pârvan", București, 20–22 aprilie 2023.

[19] Raportul arheologic și primele date arheometrice au fost prezentate de către Adrian Ioniță și Corina Anca Simion, *Arheologie și arheometrie la Conacul Lecca-Micșunești (Micșuneștii Mari, com. Nuci, jud. Ilfov)*, în cadrul sesiunii de comunicări mai sus menționată.

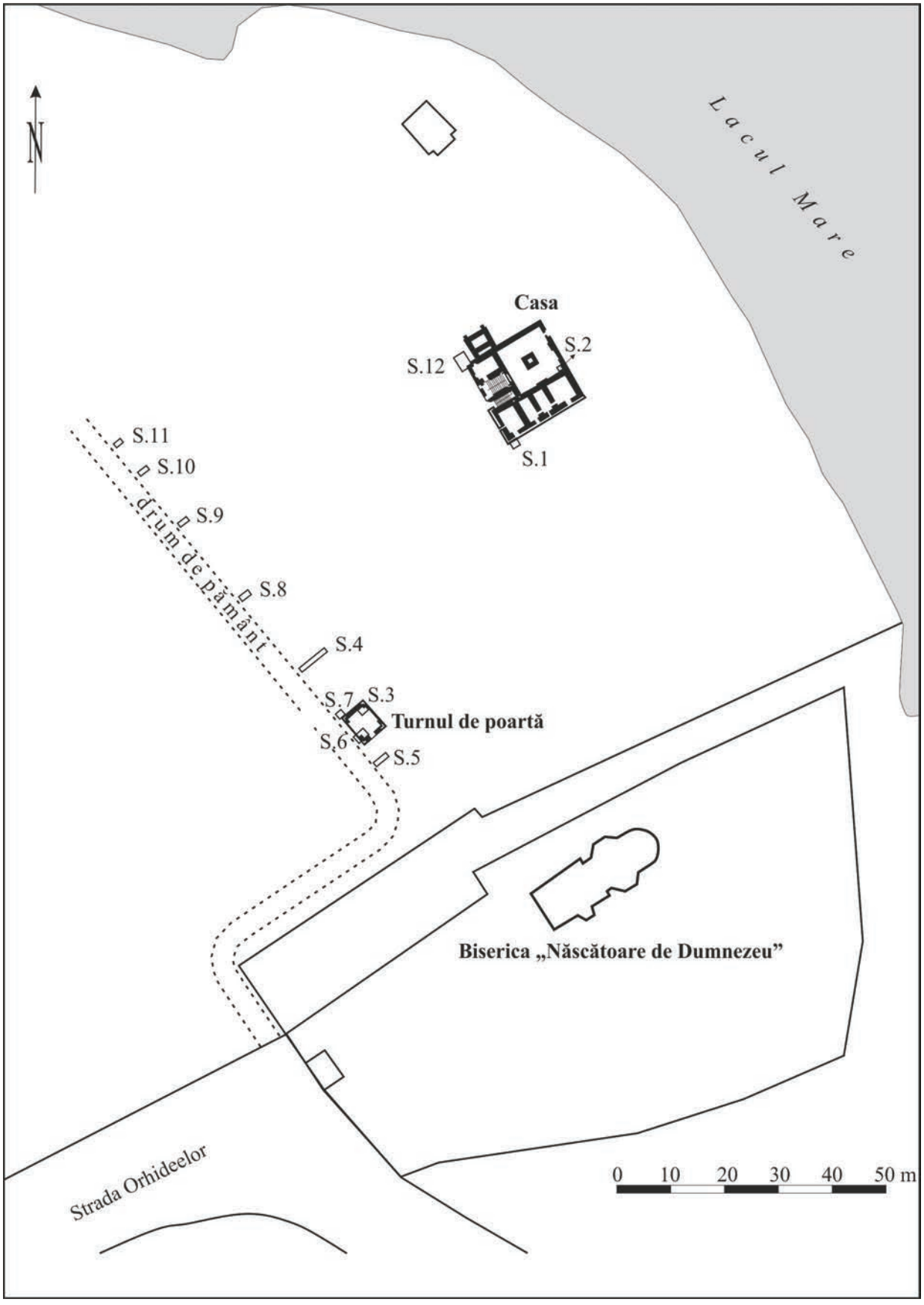


Figura 2. *Ansamblul fostului conac Lecca Micșunești. Plan general cu amplasarea secțiunilor.*

Figure 2. *The complex of the former Lecca Micșunești manor house. General plan showing the location of the archaeological excavations.*

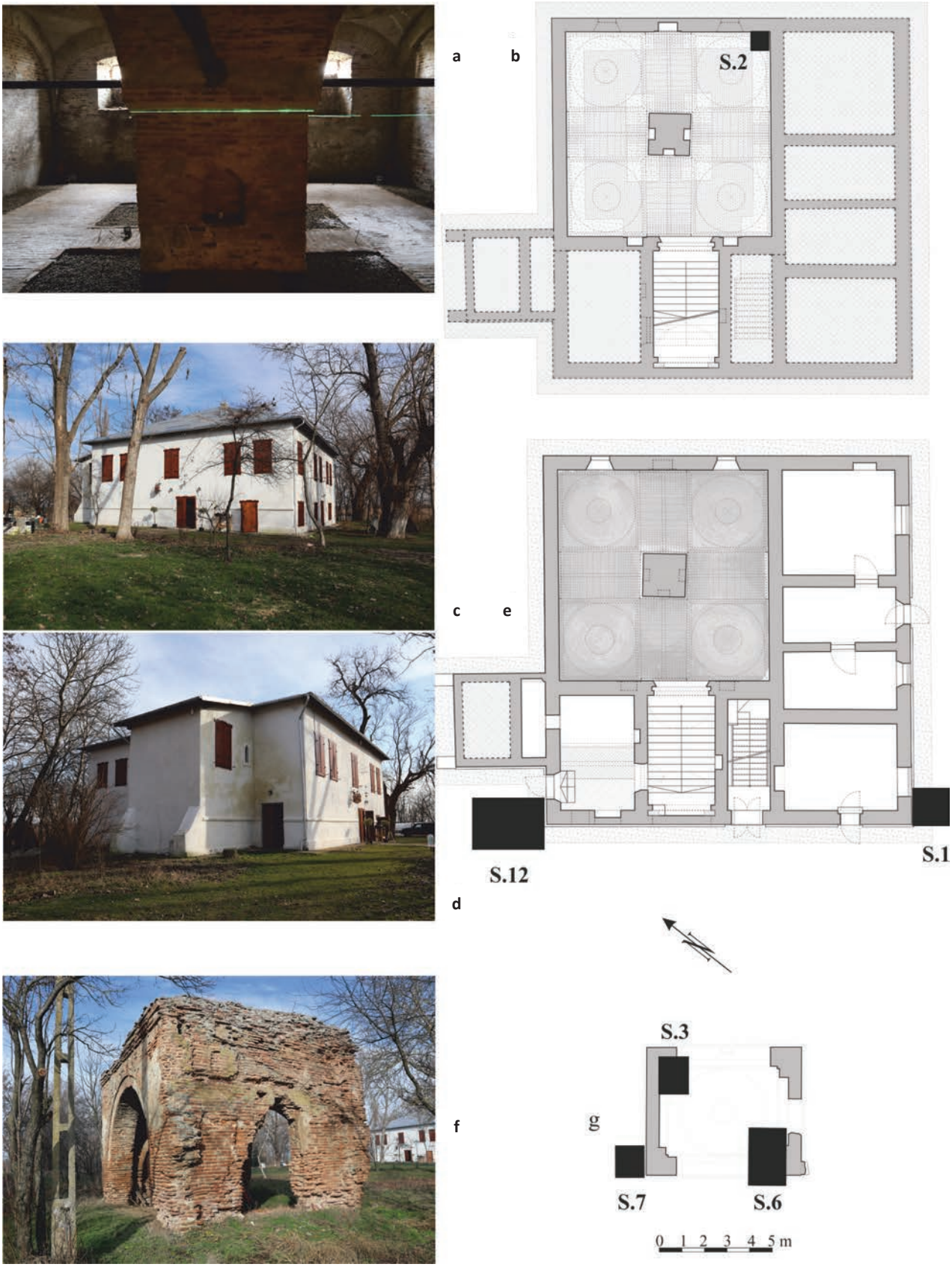


Figura 3. *Obiectivele cercetate – fotografii: a. pivnița, c. casa, vedere dinspre sud-vest, d. casa vedere dinspre nord-vest, f. turnul de poartă vedere dinspre sud-vest; planuri cu amplasarea secțiunilor: casa – b. subsolul, e. parterul, g. turnul de poartă.*

Figure 3. *Investigated structures – photographs: a. the cellar, c. the house (view from the southwest), d. the house (view from the northwest), f. the gate tower (view from the southwest); floor plans showing the layout of the trenches: the house – b. the basement, e. the ground floor, g. the gate tower.*

Exteriorul casei

S.1 (1,50 × 1,50 m) a fost trasată perpendicular pe peretele sudic al casei, la colțul de sud-vest al acesteia, cu scopul de a surprinde în principal nivelul de construcție și talpa fundației casei (Fig. 4). Săpătura a fost condiționată de existența unui arbore în apropiere, de trotuarul de beton din jurul casei, de conducta de scurgere a apei pluviale și de platbanda metalică perimetrală și țărușul de împământare reprezentând protecția împotriva fulgerelor.

Pe profilul nordic al S.1 a fost înregistrată următoarea situație stratigrafică: W -0,26 – nivelul de călcare actual reprezentat de trotuarul de beton din jurul casei; -0,26–0,36 m – trotuarul de beton; -0,36–0,76 m – peretele tencuit al casei, astăzi aflat în pământ ca urmare a creșterii nivelului în jurul monumentului; -0,76–0,84 m – nivelul de construcție al casei; -0,84–1,44 m – fundația casei; -1,54 m – fundul secțiunii (Fig. 4/b).

Fundația casei este construită din cărămizi cu grosimea de 4 cm, așezate regulat, legate cu mult mortar var-nisip de culoare gălbuie de bună calitate. Dacă socotim și nivelul de construcție, fundația ajunge la înălțimea de 68–69 cm. Talpa fundației este la W -1,44 m. Tencuiala surprinsă pe peretele dezvelit în secțiune pare să aibă același aspect cu materialul utilizat la fundație. Stratul de tencuială este de câțiva centimetri și acoperă cărămizi de cca 26 × 15 × 4 cm.

Pe profilul estic al S.1 a fost înregistrată următoarea situație stratigrafică: W -0,26–0,46 m – trotuarul de beton; de la marginea acestuia către sud, -0,36–0,48 m – stratul de pământ vegetal; -0,48–0,50 m – strat fin de mortar (surprins doar de la limita trotuarului către exterior); -0,50–0,76 m – pământ cenușiu pigmentat cu resturi de mortar și fragmente de cărămidă; -0,76–0,84 m – nivelul de construcție al casei; -0,84–1,54 m – pământ brun castaniu compact argilos (Fig. 4/c, e).

Trotuarul cu lățimea de 0,60 m își dublează grosimea începând de la limita estică a secțiunii. Imediat sub marginea exterioară a acestuia, într-o groapă de mici dimensiuni, a fost introdusă platbanda cu rol de protecție împotriva fulgerelor.

În S.1 nu s-au găsit materiale arheologice.

S.12 (3,00 × 2,10 m) a fost trasată la colțul de nord-vest al casei, în apropierea intrării care duce la pivniță, acolo unde săpăturile efectuate de către proprietar, cu scopul introducerii unei conducte pentru scurgerea apei pluviale, semnalaseră prezența unui zid, secțiunea menționată având scopul de a urmări în principal traseul acestuia (Fig. 17).

Zidul, având o lățime de 0,60 m, a apărut la W -0,49 m. Fundația, ușor lățită cu o crepidă/plintă de circa 0,10 m, începea la W -0,86 m. Talpa fundației nu a fost surprinsă, fundația fiind dezvelită doar pe o adâncime de circa 0,15 m. Este construită în aceeași manieră, din același tip de cărămidă și mortar precum cele constatate în S.1. Nu este clar dacă zidul continuă către nord sau se închide la 90° la limita construcției anexe (actualmente baie și toaletă) situată pe latura nordică a casei. Nu putem preciza în această fază a cercetării funcția acestui zid și raportul lui cu fundația casei din cauza trotuarului existent. Deocamdată putem aprecia că făcea parte dintr-o structură zidită, probabil în relație cu accesul către pivniță, la care, la un moment dat, poate cu ocazia adăugării băii, s-a renunțat. La capătul sud-vestic al secțiunii, la W -0,44 m, se află un șir de cărămizi contemporane cu scopul de a proteja un cablu electric.

În S.12 s-au descoperit patru fragmente ceramice aparținând secolelor XVIII–XIX (Fig. 18/g–j).

Pivnița casei (Fig. 3/a–b; 5/a–e)

S.2 (0,95 × 0,95 m) a fost trasată în interiorul pivniței, în colțul de sud-est, cu scopul de a surprinde în principal nivelul de construcție și talpa fundației pivniței (Fig. 5). Săpătura a fost limitată la spațiul liber rămas între pereții pivniței și un pavaj de cărămidă amenajat în interiorul acesteia. Nivelul actual de călcare în interiorul pivniței constă în pavajul de cărămidă menționat, care acoperă parțial suprafața pivniței și se află la -3,13 m față de W ± 0,00 m – intrarea în casă.

La W -3,48 m, a fost surprinsă o crepidă cu lățime neregulată de 0,09–0,12 m; -3,48–3,96 m – fundația pivniței; -4,06 m – fundul secțiunii. Fundația pivniței este construită asemănător cu cea a casei, din cărămizi (26 × 15 × 4 cm), așezate regulat, legate cu mult mortar var-nisip de culoare gălbuie de bună calitate. Fundația este adâncă de maximum 0,48 m. Talpa fundației este la W -3,96 m. De la crepida menționată începea elevația propriu-zisă a pereților pivniței. Nu s-a surprins un nivel de construcție, dar acesta foarte probabil se afla la nivel cu crepida. Între nivelul actual de călcare și crepidă se află un strat de pământ castaniu argilos afânat. De la crepidă în jos se află argilă compactă (Fig. 5/b).

În S.2 nu s-au găsit materiale arheologice și nici resturi de la construcția pivniței.

Turnul de poartă (Fig. 3/g–f, Fig. 6–7, 11–12)

Este o construcție de plan patrulater, cu boltă, ridicată integral din cărămidă și aflată într-o stare de degradare accentuată. Intrarea se făcea dinspre VSV printr-o deschidere arcuită, ieșirea către curte având un aspect asemănător. Convențional, pentru ușurința exprimării, vom considera deschiderea turnului prin care se circula ca fiind orientată vest-est. La W -0,61 m se află actualul nivel de călcare în turn considerând centrul geometric al acestuia (teren natural) față de cota W ± 0,00 m – intrarea în casă. Facem această precizare deoarece suprafața din interiorul turnului și din jurul acestuia este ușor denivelată, astfel încât nivelul de călcare variază puțin. Turnul a fost cercetat prin practicarea a două secțiuni/casete în interior (S.3 și S.6).

S.3 (1,30 × 1,50 m) a fost trasată în interiorul turnului de poartă, în colțul de nord-est, cu scopul de a surprinde în principal nivelul de construcție și talpa fundației (Fig. 6–7).

Pe profilul vestic al S.3 a fost înregistrată următoarea situație stratigrafică: W -0,61–0,71 m – strat vegetal; -0,71–1,21 m – strat de pământ cenușiu pigmentat cu

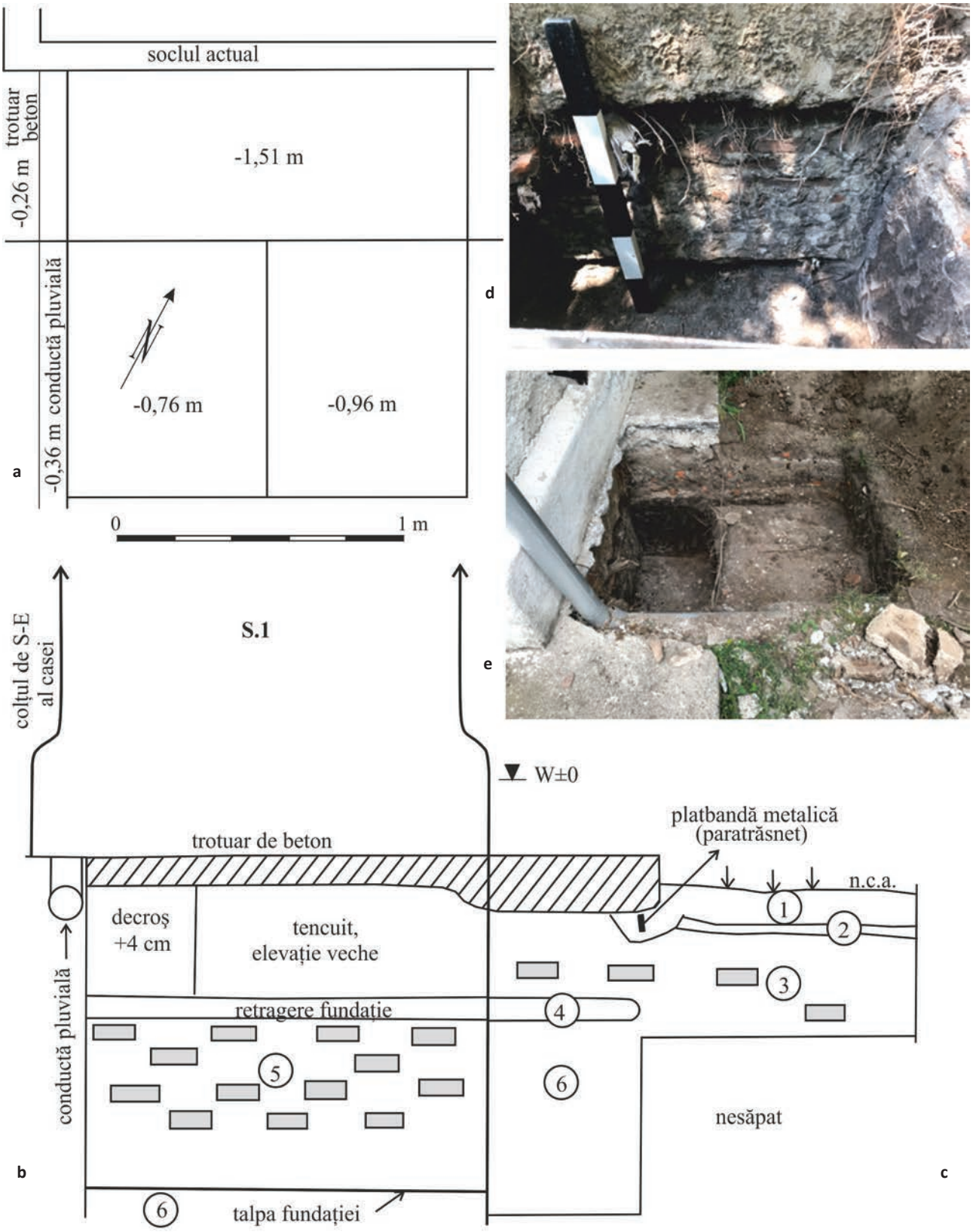


Figura 4. *Casa: S.1 – a. plan, b. profil nord, c. profil est; fotografii: d. fundația sudică, e. profil est.*

Figure 4. *The house: T.1 – a. plan, b. north profile, c. east profile; photographs: d. southern foundation, e. east profile.*

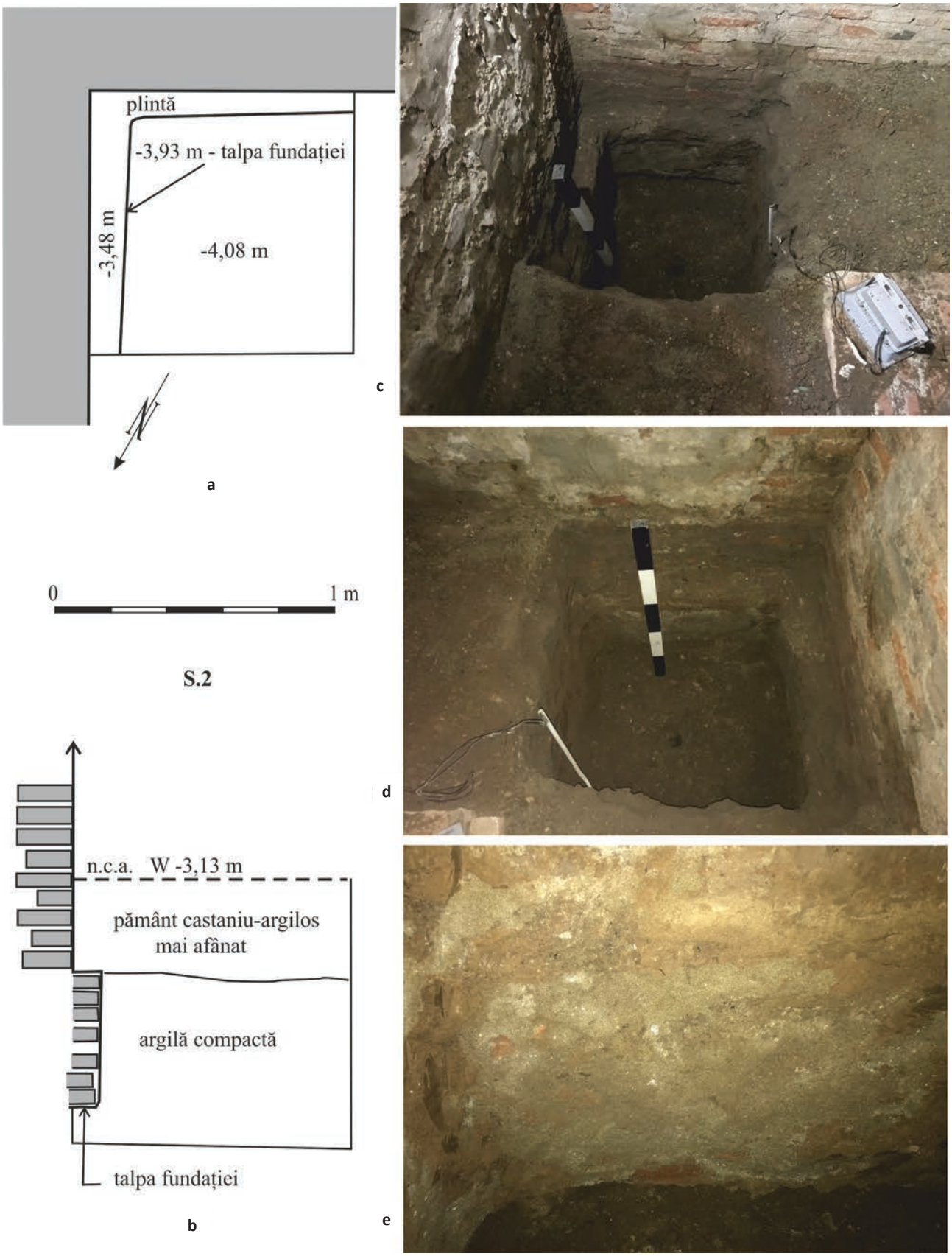
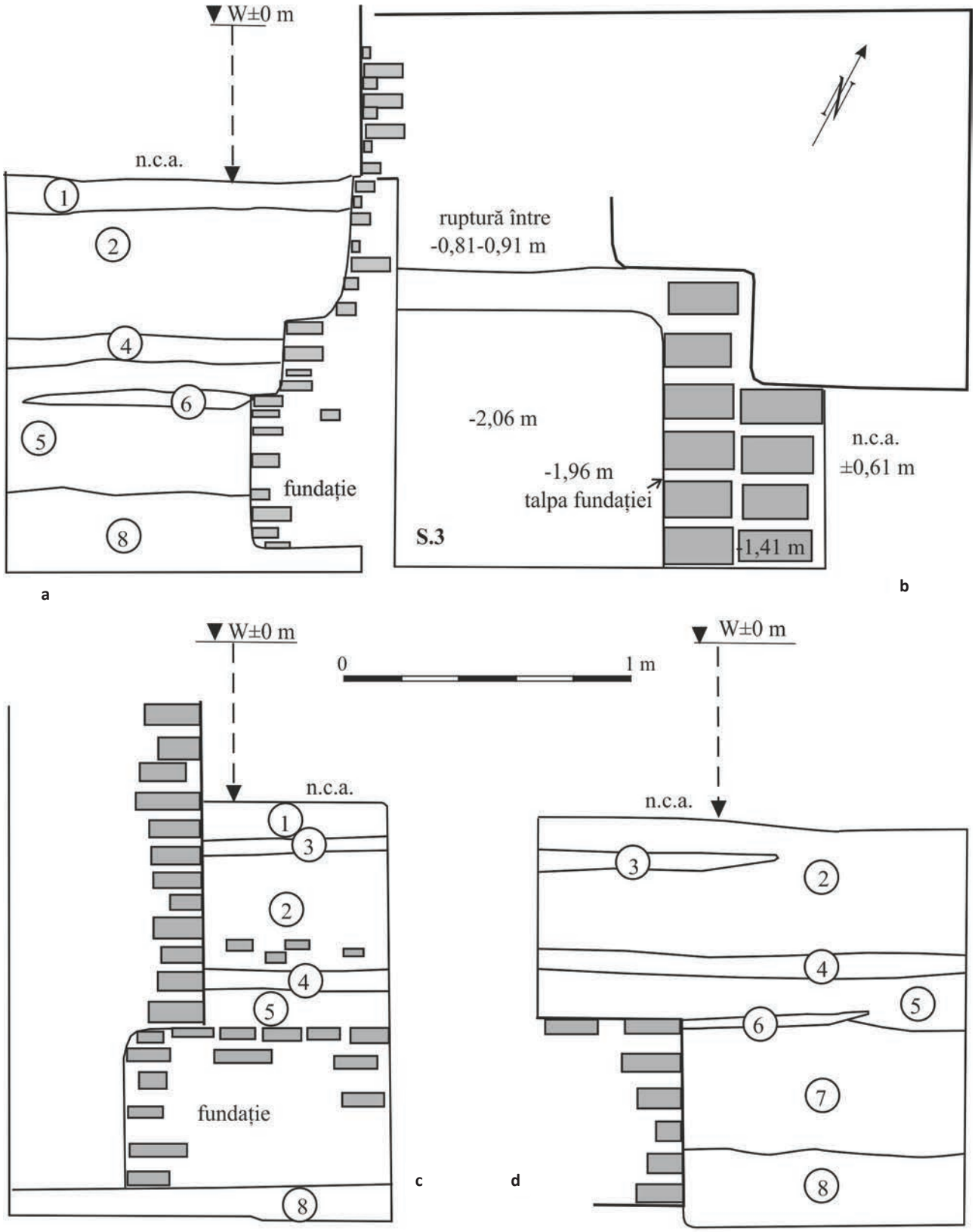


Figura 5. *Pivnița: S.2 – a. plan, b. profil vest; fotografii: c. fundația sudică, d. fundația estică, e. detaliu fundație.*

Figure 5. *The cellar: T.2 – a. plan, b. west profile; photographs: c. southern foundation, d. eastern foundation, e. foundation detail.*



1 - strat vegetal; 2 - pământ cenușiu cu resturi de materiale; 3 - mortar albicios; 4 - mortar gălbui cu resturi de cărămidă; 5 - pământ castaniu pigmentat cu mortar; 6 - mortar gălbui (nivel de construcție); 7 - pământ castaniu compact; 8 – argilă gălbui maroniu.

Figura 6. *Turnul de poartă: S.3 – a. profil vest, b. plan, c. profil est, d. profil sud.*

Figure 6. *Gate tower: T.3 – a. west profile, b. plan view, c. east profile, d. south profile.*



Figura 7. *Turnul de poartă: S.3 – fotografii: a. profil nord, b. profil vest, c. profil est.*

Figure 7. *Gate tower: T.3 – photos: a. north profile, b. west profile, c. east profile.*

mortar și cu resturi de cărămidă; -1,21–1,29 m – strat de mortar gălbui cu resturi de cărămidă; -1,29–1,41 m – strat de pământ cenușiu pigmentat cu mortar și cu resturi de cărămidă; -1,41–1,46 m – strat de mortar gălbui (nivel de construcție al fundației); -1,46–2,06 m – castaniu argilos (Fig. 6/a; 7/b).

Pe latura de nord, fundația turnului are talpa la W -1,96 m; are o crepidă, lată de 0,10 m la W -1,41 m, și o a doua crepidă, cu lățimea de 0,12–0,13 m la W -1,13 m. Judecând după urmele de pe zid, pare să fie o porțiune ruptă, crepida inițială fiind cu circa 0,30 m mai sus. Nivelul de construcție, constând într-un strat de mortar gălbui, se află în dreptul crepidei de la W -1,41 m. De acolo începea elevația inițială a turnului. Fundația turnului este construită din cărămizi (26 × 15 × 4 cm), așezate regulat, legate cu mult mortar var-nisip de culoare gălbuie de bună calitate.

În S.3 s-au descoperit două artefacte – un fragment ceramic și un cui de fier, aparținând secolelor XVIII–XIX (Fig. 18/a, k).

S.6 (2,30 × 1,75 m) a fost trasată în interiorul turnului de poartă, în colțul de sud-vest, cu scopul de a surprinde în principal nivelul de construcție și talpa fundației (Fig. 11–12).

Pe profilul nordic al S.6 a fost înregistrată următoarea situație stratigrafică: W -0,62/0,74–0,67/0,79 m – strat vegetal; -0,60–0,76 m – strat amestecat de pământ și moloz; -0,76–0,80 m – strat de cărămidă sfărâmată, compact și dur; 0,80–0,84 m – strat nisipos de nivelare; -0,84–1,22 m – strat cenușiu deschis cu pigmenți de cărămidă; -1,23–1,42 m – nivel de pământ castaniu deschis cu resturi de cărămizi și mortar (nivel de construcție, îngroșat prin depunerea de pământ și cărămizi pentru amenajarea nivelului inițial de călcare în turn); -1,42–2,04 m – strat castaniu argilos. La W -1,42 m este surprinsă fundația continuă (pe conturul turnului). Talpa fundației este la W -1,99 m. Lățimea fundației este de 1,00 m (Fig. 11/b; 12/c).

Pe latura de sud, fundația turnului are talpa la W -1,99 m; are trei crepide: o crepidă, lată de 0,10 m la W -1,42 m, a doua crepidă, cu lățimea de 0,15 m la W -0,87 m, și a treia crepidă, lată tot de 0,15 m la W -0,72 m. Fundația este construită din cărămizi (26 × 15 × 4 cm), așezate regulat, legate cu mult mortar var-nisip de culoare gălbuie de bună calitate. Au fost găsite și resturi de lemn de la un buștean masiv (Fig. 12/b), care te duc cu gândul la un stâlp de susținere a unei porți de lemn, (probabil de la cea consemnată fotografic la începutul anilor `70), actualmente intrarea prin turn fiind deschisă.

În S.6 s-au descoperit două fragmente ceramice și un cui de fier, încadrate cronologic în secolele XVIII–XIX (Fig. 18/c, f, l).

Conform celor două sondaje (S.3 și S.6), s-a observat că, din punct de vedere tehnic, mai întâi s-a construit o fundație continuă (înaltă de 0,55–0,57 m – surprinsă la W -1,41–1,42 m), lată de 1,00 m, urmând planul rectangular al turnului. Peste această fundație s-a clădit turnul de poartă, cu ziduri de circa 0,60 m în elevație, laturile de nord și sud ale turnului fiind înălțate peste aceasta, iar cele de vest și est fiind cu goluri, arcuite la partea superioară, pentru a permite trecerea.

Zidul de incintă (Fig. 8–10, 13–16)

Tronsonul sud – denumim astfel convențional partea aflată la SSE de turn. Imediat în apropierea laturii sudice a turnului sunt încă vizibile, în vegetația abundentă, urmele unei construcții constând într-o cameră (locuința paznicului). Existența ei era cunoscută și din fotografiile de epocă. Zidul de incintă a fost cercetat către sud prin practicarea unei secțiuni (S.5).

S.5 (3,00 × 1,00 m) a fost trasată la 3,50 m, paralelă cu latura sudică a turnului, perpendiculară pe resturile zidului de incintă, cu scopul de a surprinde dimensiunile exacte ale acestuia și relația cu peretele sudic al încăperii de lângă turn (Fig. 9–10).

Ruinele zidului de incintă au apărut la W -0,72 m, imediat după ce s-a făcut curățenie prin îndepărtarea vegetației. Putem considera această cotă ca fiind aproximativ nivelul actual de călcare la sud de turn. Fundația, ușor lățită cu o crepidă de 0,05–0,06 m de o parte și alta a zidului, începea la W -1,20 m. Tot aici se situează și nivelul de construcție. Talpa fundației este la W -1,75 m. Fundația are o lățime de circa 0,70 m, iar zidul de incintă în elevație este lat de 0,60 m. Fundația zidului de incintă și cea a zidului sudic al încăperii sunt țesute, ceea ce dovedește că au fost construite în același timp. Zidul sudic al încăperii și cel estic sunt mai înguste (fiind late de 0,50 m, respectiv 0,55 m) față de zidul vestic – zidul de incintă propriu-zis (lat de 0,60 m). Între zidul sudic al turnului și zidurile menționate se afla o încăpere cu dimensiunile (la interior) de 3,10 × 4,10 m (Fig. 10). Conform datelor actuale, încăperea a fost concepută și executată odată cu turnul de poartă, iar demantelarea acesteia s-a petrecut în a doua parte a secolului al XX-lea. Fundațiile zidurilor sunt construite din cărămizi, așezate regulat, legate cu mult mortar var-nisip de culoare gălbuie de bună calitate. Aceleași materiale au fost utilizate și în elevație.

În S.5 s-a descoperit un singur fragment ceramic (Fig. 18/b).

Tronsonul nord – denumim astfel, convențional, partea aflată la NNV de turn. Zidul de incintă a fost cercetat prin practicarea a cinci secțiuni, ajungându-se la 66,25 m nord de turn, fără a i se putea surprinde limita. Amplasarea secțiunilor a fost condiționată de existența unor arbori de talie mare și de vegetația abundentă. Cu excepția unei singure secțiuni (S.7 amplasată lângă latura nordică a turnului), în toate celelalte a fost surprins doar negativul fundației, uneori păstrându-se 1–4 rânduri de cărămizi prinse cu mortar var-nisip gălbui de bună calitate. Groapa (de demantelare a fundației zidului de incintă) conținea numeroase bucăți de mortar și mici fragmente de cărămidă („negativul zidului”) și era lată de 0,50–0,60 m. Stratigrafia este extrem de simplă: stratul vegetal (grosime circa 0,10–0,15 m); strat brun de pădure

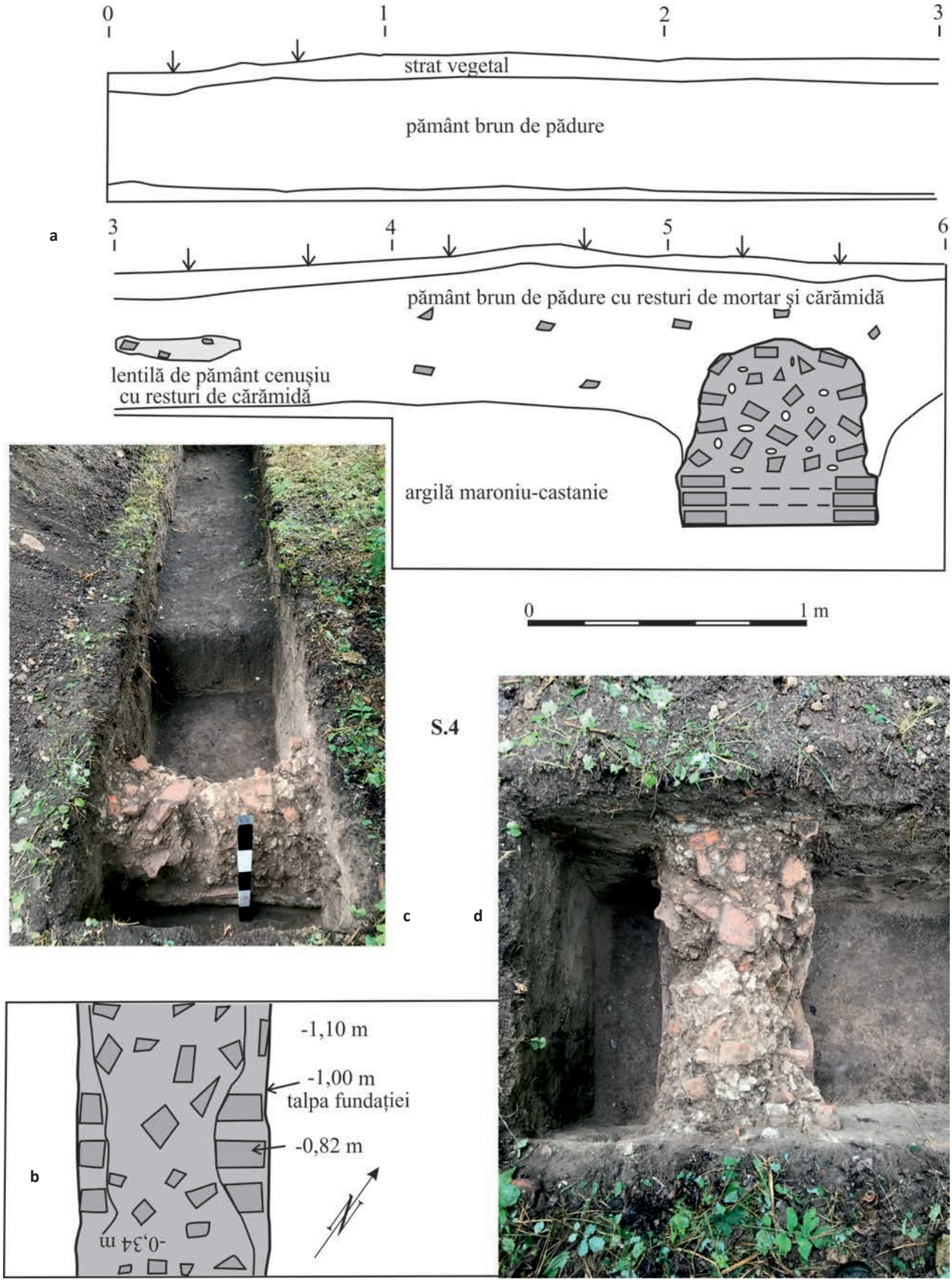


Figura 8. *Zidul de incintă – tronson nord: S.4 – a. profil sud, b. plan; fotografii: c. vedere dinspre vest, d. vedere dinspre sud.*

Figure 8. *Enclosure wall – northern segment: T.4 – a. south profile, b. plan; photographs: c. view from the west, d. view from the south.*

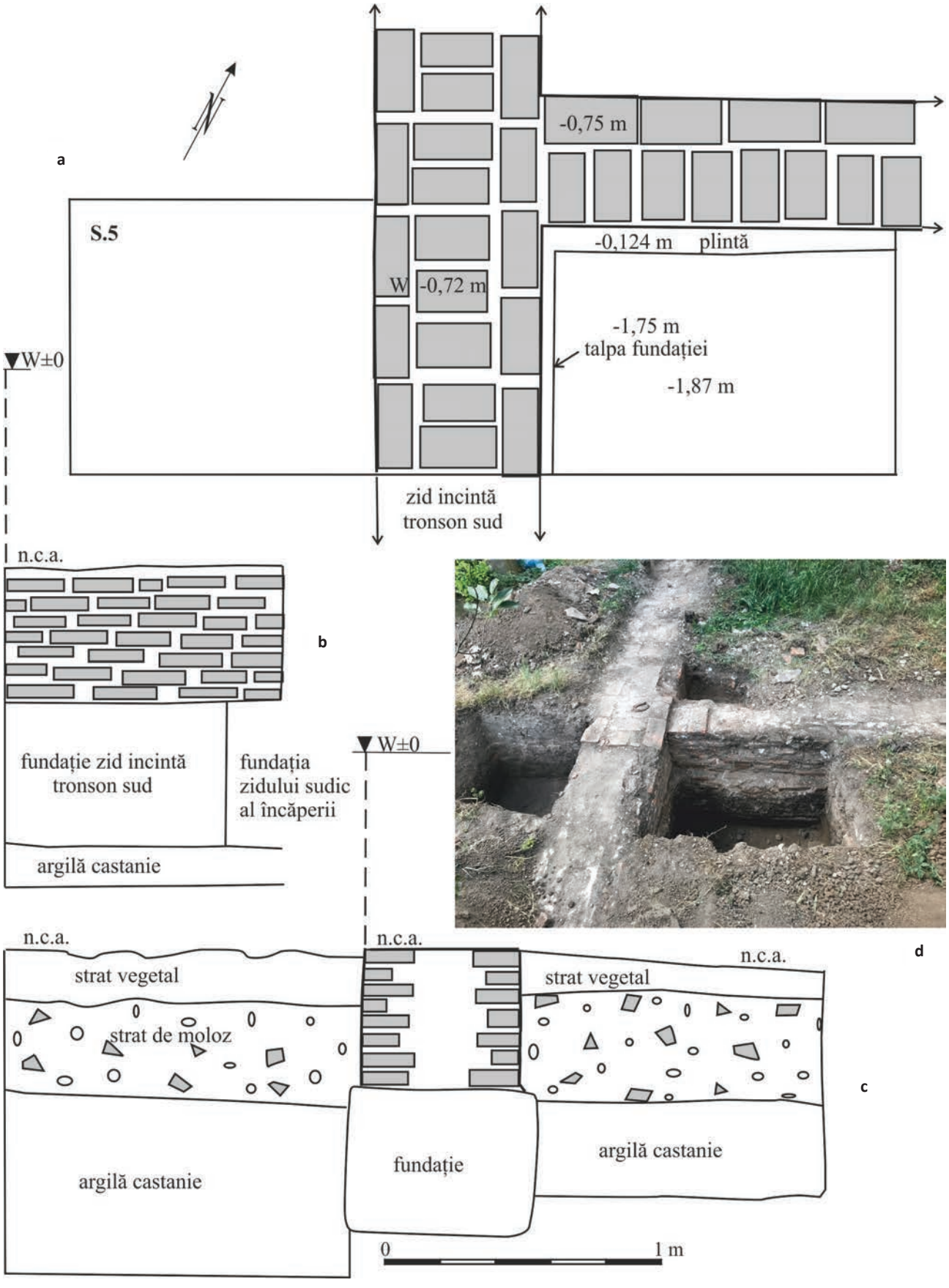


Figura 9. *Zidul de incintă – tronson sud: S.5 – a. plan, b. profil intermediar vestic, c. profil sud, d. fotografie profil nord.*

Figure 9. *Enclosure wall – southern segment: T.5 – a. plan view, b. western intermediate profile, c. southern profile, d. photograph of the northern profile.*

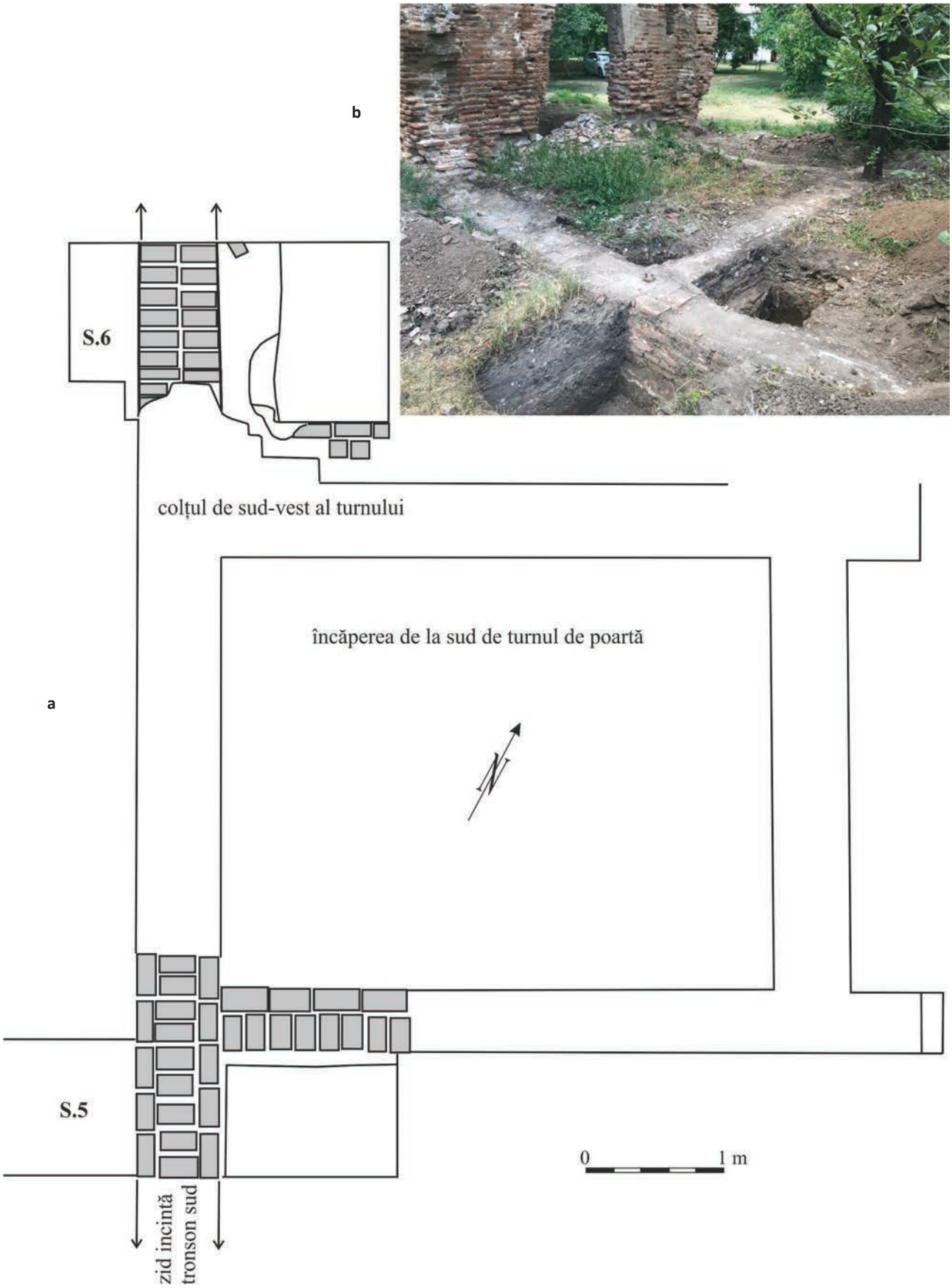


Figura 10. *Încăperea de la sud de turnul de poartă: a. plan, b. fotografie, vedere dinspre sud-vest.*

Figure 10. *The room south of the gate tower: a. floor plan, b. photograph taken from the southwest.*

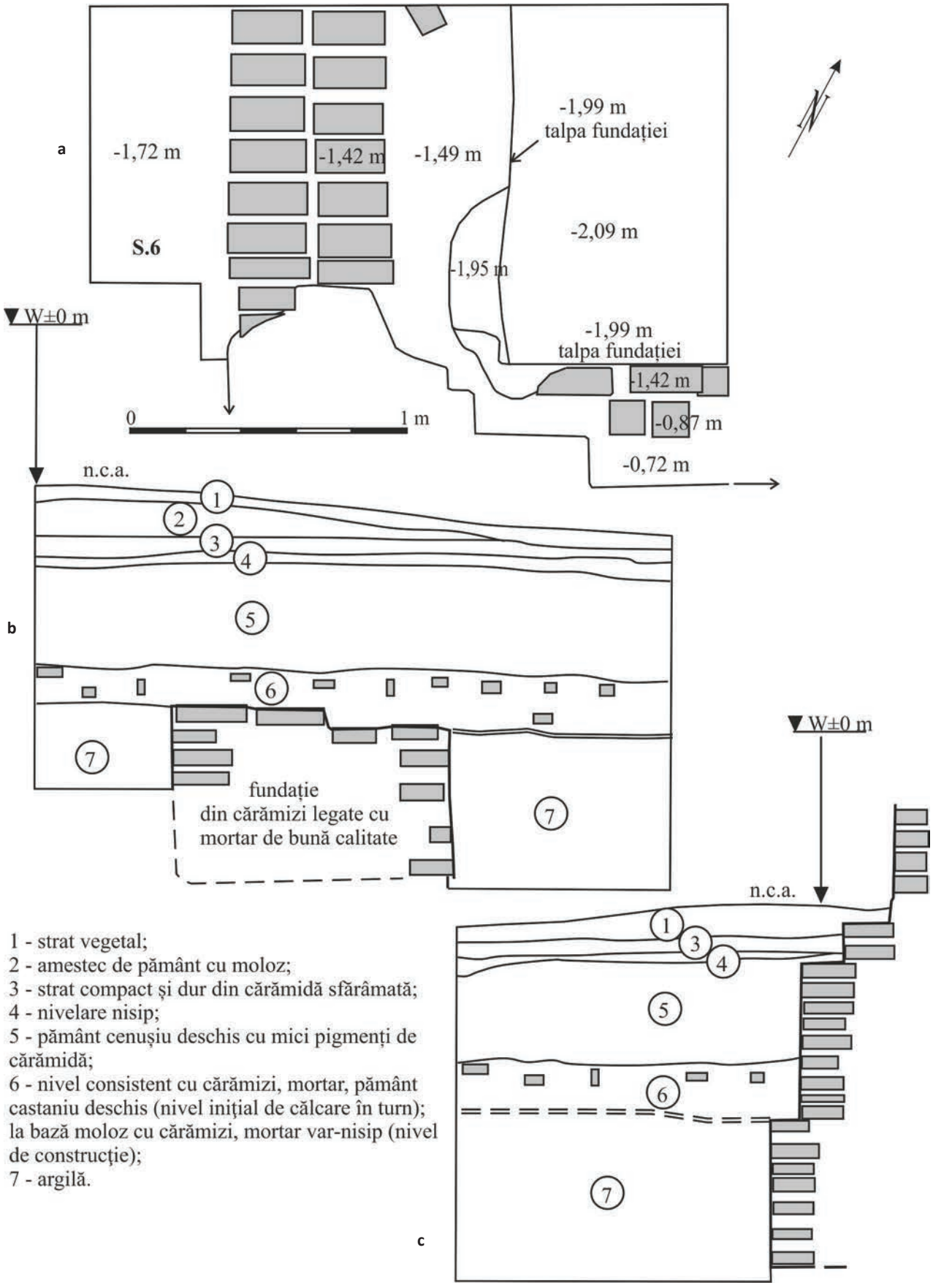


Figura 11. *Turnul de poartă: S.6 – a. plan, b. profil nord, c. profil est.*

Figure 11. *Gate tower: T.6 – a. plan view, b. north profile, c. east profile.*



Figura 12. *Turnul de poartă: S.6 – fotografii: a. vedere dinspre est, b. detaliu cu resturile de lemn ale presupusului stâlp al porții, c. profil nord, d. profil est, e. vedere dinspre nord.*

Figure 12. *Gate tower: T.6 – photos: a. view from the east, b. detail showing the wooden remains of the presumed gatepost, c. north profile, d. east profile, e. view from the north.*

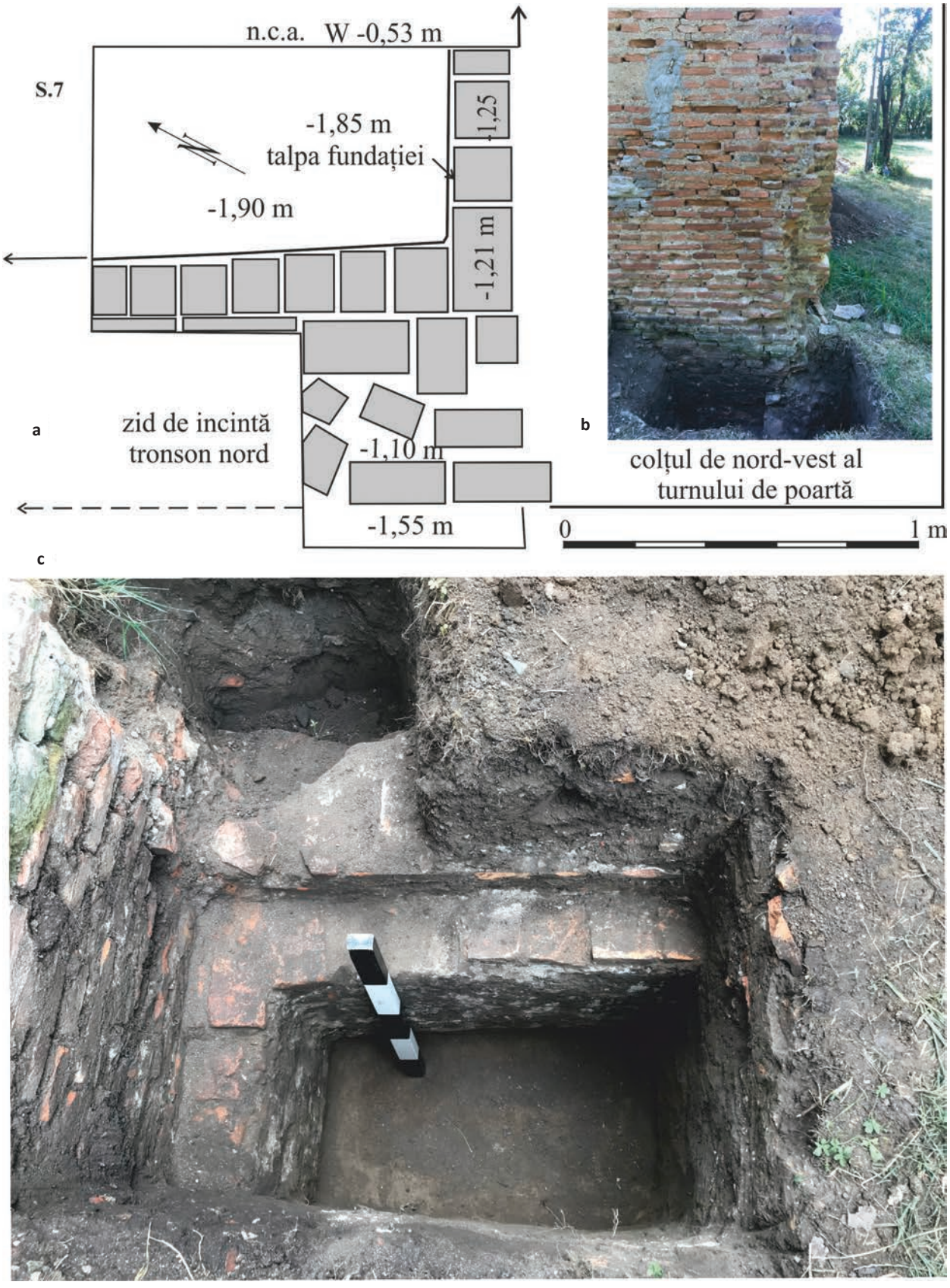


Figura 13. *Zidul de incintă – tronson nord și turnul de poartă: S.7 – a. plan; fotografii: b. vedere dinspre nord cu urmele zidului de incintă pe paramentul turnului, c. vedere dinspre est.*

Figure 13. *Enclosure wall – northern segment and the gate tower: T.7 – a. plan; photographs: b. view from the north showing the traces of the enclosure wall on the face of the tower, c. view from the east.*

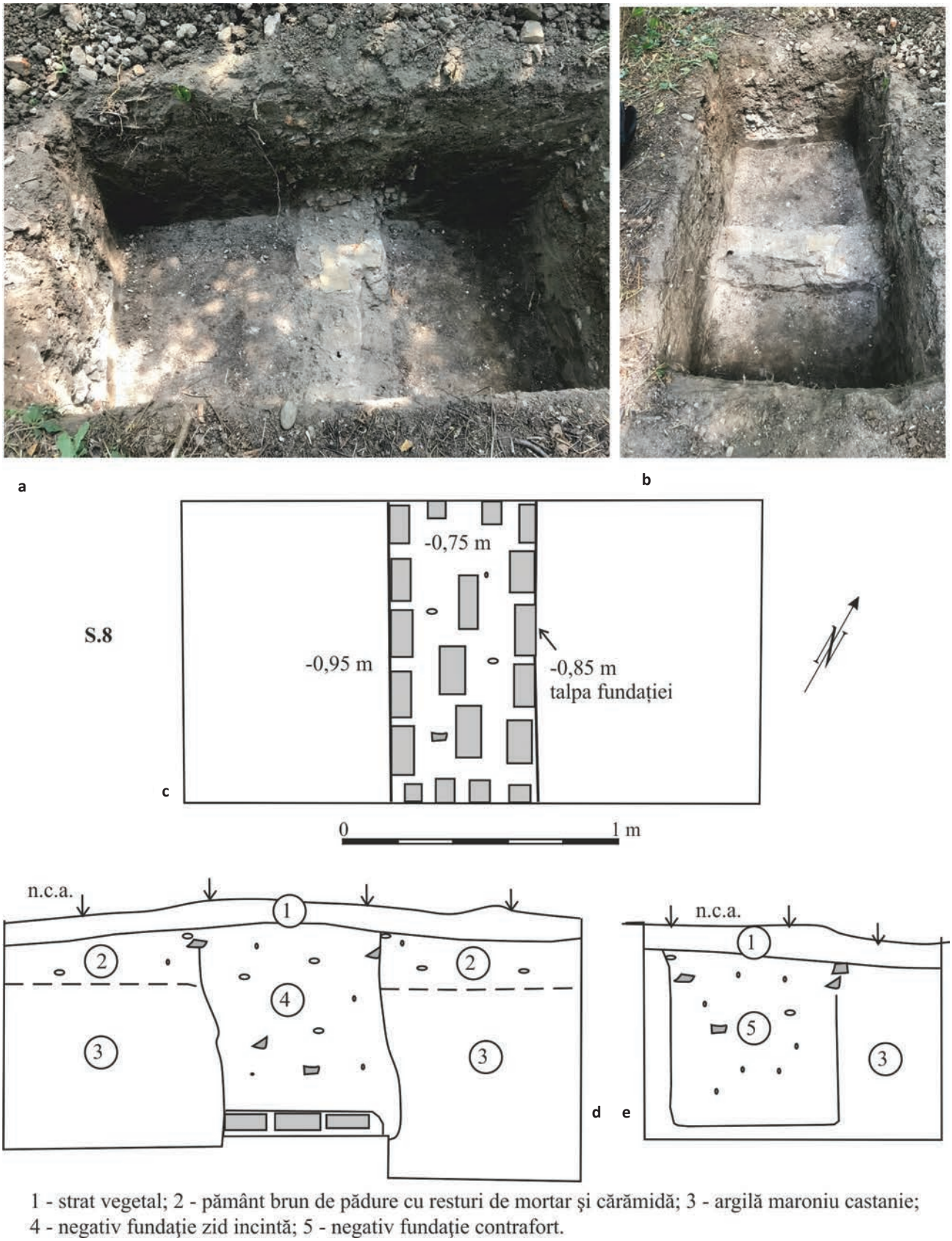


Figura 14. *Zidul de incintă – tronson nord: S.8 – fotografii: a. vedere dinspre nord, b. vedere dinspre vest, cu negativul contrafortului pe profilul estic; c. plan, d. profil sud, e. profil est.*

Figure 14. *Enclosure wall – northern segment: T.8 – photographs: a. view from the north, b. view from the west showing the negative of the buttress on the eastern profile; c. plan, d. southern profile, e. eastern profile.*

(grosime circa 0,30–0,40 m), castaniu argilos. Pentru secțiunile S.4, S.8, S.9, S.10, S.11, adâncimile sunt date de la nivelul actual de călcare, nefiind corelate cu Wagrissul general. Acesta se află cu 0,50–0,70 m mai sus decât nivelul de călcare din zona traseului fostului zid de incintă. Terenul este destul de accidentat, fiind acoperit cu vegetație, dar și cu resturi de moloz contemporan.

S.4 (6,00 × 1,00 m) a fost trasată la 11,25 m nord de turn, paralelă cu latura nordică a acestuia. La -0,30 m au apărut primele resturi din negativul zidului de incintă. Din fundația acestuia se păstrau intacte doar trei rânduri de cărămizi. Talpa fundației era la -0,95 m. Lățimea fundației este de 0,70 m (Fig. 8).

S.7 (1,40 × 1,20 m) a fost trasată în exteriorul turnului, perpendicular pe latura nordică, lângă colțul de nord-vest, cu scopul de a surprinde pornirea zidului de incintă către nord și relația dintre fundațiile celor două construcții (Fig. 13). În acest loc, pe elevația turnului se observa că a existat pornirea unui zid (Fig. 13/b**)**. Nivelul de călcare actual se află la W -0,53 m.

La W -1,10 m a fost surprins zidul de incintă. Fundația, lățită cu o crepidă neuniformă de 0,15–0,20 m, începea la W -1,21–1,25. Tot aici se situează și nivelul de construcție. Talpa fundației zidului de incintă este la W -1,85 m. Lățimea zidului este de aproximativ 0,55 m, iar a fundației acestuia de circa 0,70 m (asemănător cu situația din S.5). Conform urmelor de pe elevația turnului, de la crepida anterior menționată, zidul de incintă avea o înălțime de 2,70 m. Fundația zidului de incintă este construită din cărămizi cu grosimea de 4 cm, așezate regulat, legate cu mult mortar var-nisip de culoare gălbuie de bună calitate. În elevație, s-au utilizat materiale asemănătoare cu cele descrise la casă și la turn. Fundația zidului de incintă și cea a turnului se leagă în mod organic („țes"), ceea ce dovedește că au fost construite în același timp.

În S.7 s-au descoperit două fragmente ceramice aparținând unor oale din secolele XVIII–XIX (Fig. 18/d–e).

S.8 (2,10 × 1,10 m) a fost trasată la 16,30 m nord de S.4, paralelă cu aceasta. Urmele negativului zidului de incintă au fost surprinse imediat sub stratul vegetal, la -0,10–0,12 m. Din fundația zidului de incintă se păstra intact un singur rând de cărămizi, la -0,75 m. Talpa fundației era la -0,85 m. Lățimea fundației este de 0,55 m (Fig. 14). Pe profilul estic a fost surprins negativul unui alt șanț de demantelare cu lățimea de 0,60 m, care începea, ca și în cazul zidului de incintă, imediat de sub stratul vegetal. Fundul gropii negativului (acolo unde ar fi trebuit să fie talpa fundației, din care însă nu se păstra niciun rând de cărămidă) era la -0,70 m (Fig. 14/b, e). Probabil, în acest loc a existat un contrafort care sprijinea zidul de incintă.

S.9 (2,00 × 1,00 m) a fost trasată la 16,80 m nord de S.8, paralelă cu aceasta. La -0,45 m au apărut primele resturi din negativul zidului de incintă și continuau până la -0,70 m. Din fundația propriu-zisă se păstrau intacte doar două rânduri de cărămizi. Lățimea fundației este de 0,50 m (Fig. 15/a–c).

S.10 (2,00 × 1,00 m) a fost trasată la 11,20 m nord de S.9, paralelă cu aceasta. La -0,15 m au apărut primele resturi din negativul zidului de incintă și continuau până la -0,70 m. Din fundația propriu-zisă se păstrau intacte patru rânduri de cărămizi. Lățimea fundației este de 0,50 m (Fig. 15/d–f).

S.11 (1,60 × 1,00 m) a fost trasată la 5,70 m nord de S.10, paralelă cu aceasta. La -0,50 m au apărut primele resturi din negativul zidului de incintă și continuau până la -0,90 m. Din fundația propriu-zisă se păstrau intacte trei rânduri de cărămizi. Lățimea fundației este de 0,50 m (Fig. 16).

În S.4, S.8, S.9, S.10 și S.11 nu s-au descoperit materiale arheologice.

Renunțarea la zidul de incintă s-a făcut, cel mai probabil, cândva în jurul anului 1900, însă nu avem mărturii documentare (fotografice) din acea perioadă. O dovadă, însă, în acest sens o constituie prezența unor arbori foarte groși crescuți pe traseul fostului zid, ceea ce ar indica o perioadă de aproximativ 150 de ani. Demantelarea s-a produs în mod sistematic pe traseul exact al zidului, cărămida fiind recuperată până aproape de talpa fundației[20]. Foarte probabil, zidul a avut mai mulți contraforți, din loc în loc, pe latura estică (spre interiorul curții) așa cum sugerează situația surprinsă în S.8.

În această fază a cercetării, nu a mai fost posibilă sondarea pe traseul presupus al zidului în continuare pe aceeași direcție, din cauza unei cantități mari de moloz contemporan depozitat acolo și a vegetației abundente. Putem avansa ipoteza că zidul continua către nord până la lac sau își schimba direcția către est și se închidea tot pe malul lacului. Identificarea traseului complet rămâne un obiectiv pentru o altă etapă a cercetării.

MATERIALELE ARHEOLOGICE

În cinci dintre secțiunile efectuate (S.3, S.5, S.6, S.7, S.12) au fost găsite materiale arheologice constând în zece fragmente ceramice (Fig. 18/a–j) și două cuie de fier (Fig. 18/k–l). Toate fragmentele provin de la vase lucrate la roata cu turație rapidă și se împart în două mari categorii: smălțuite și nesmălțuite. Materialul este extrem de fragmentat; ca tipuri de forme pot fi identificate oale și farfurii. **a.** Burtă de la oală, din pastă roșie fină, pictată cu dungi albe, cu urme de ardere secundară (S.7); **b.** Burtă cu rest de toartă de la oală, din pastă roșie fină (S.7); **c.** Fund și burtă de oală, din pastă roșie nu foarte fină, cu urme de ardere secundară (S.6); **d.** Burtă de la oală, din pastă poroasă gălbuie (S.5); **e.** Burtă de vas (oală?), din pastă nu foarte fină de culoare albicioasă (S.6); **f.** Buză de vas, din pastă nu foarte fină de culoare roșie, cu urme de ardere secundară (S.12); **g.** Fund fragmentar de farfurie, din pastă fină roșie cu smalț albicios la interior (S.3); **h.** Burtă de vas,

[20] Nu este exclus ca din cărămida recuperată să se fi construit încăperea (baia și toaleta) adăugată pe latura de nord a casei.

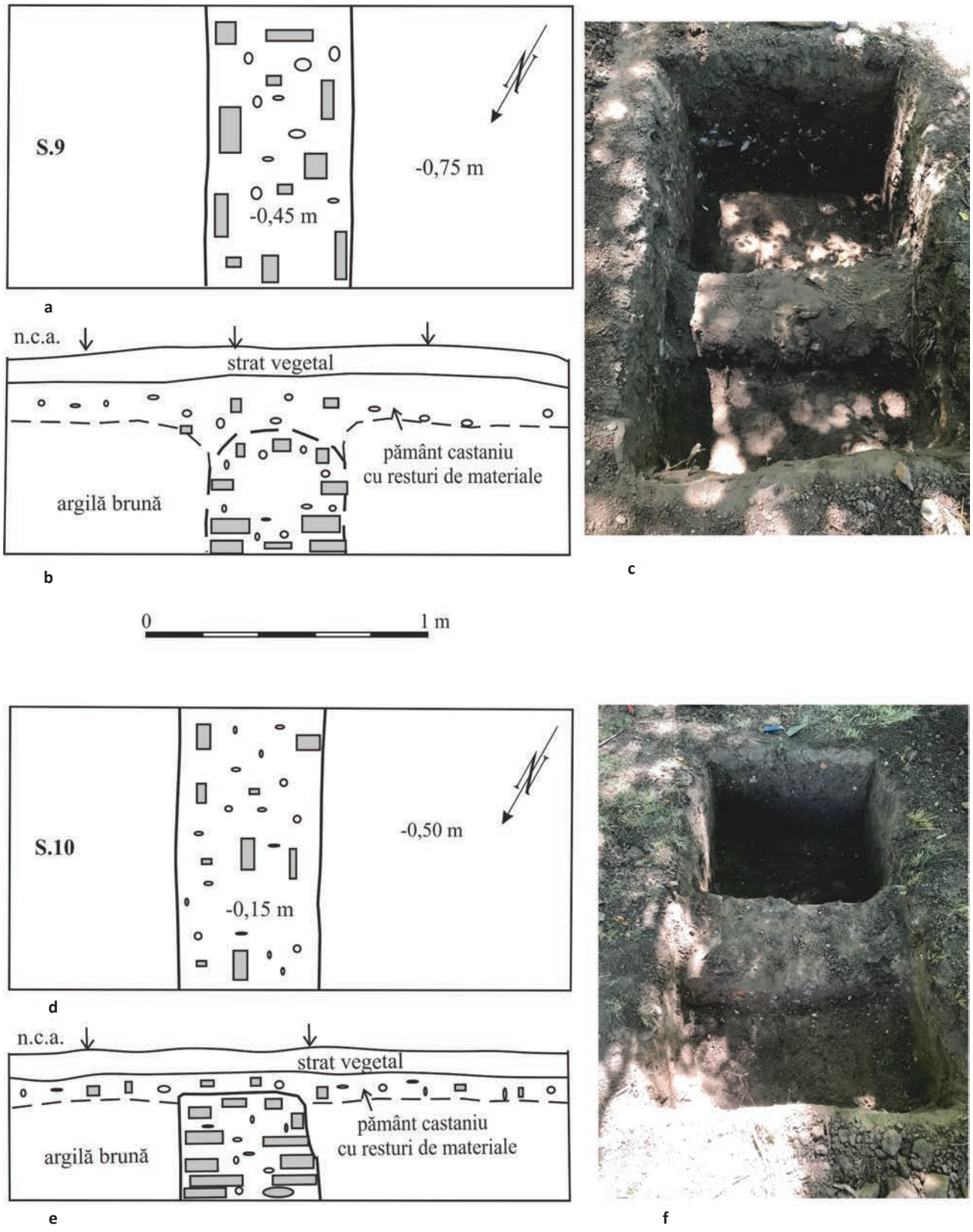


Figura 15. *Zidul de incintă – tronson nord: S.9 – a. plan, b. profil sud; c. fotografie, vedere dinspre est; S.10 – d. plan, e. profil sud, f. fotografie vedere dinspre est.*

Figure 15. *Enclosure wall – northern segment: T.9 – a. plan view, b. southern profile; c. photograph showing the view from the east; T.10 – d. plan view, e. south profile, f. photograph showing the view from the east.*

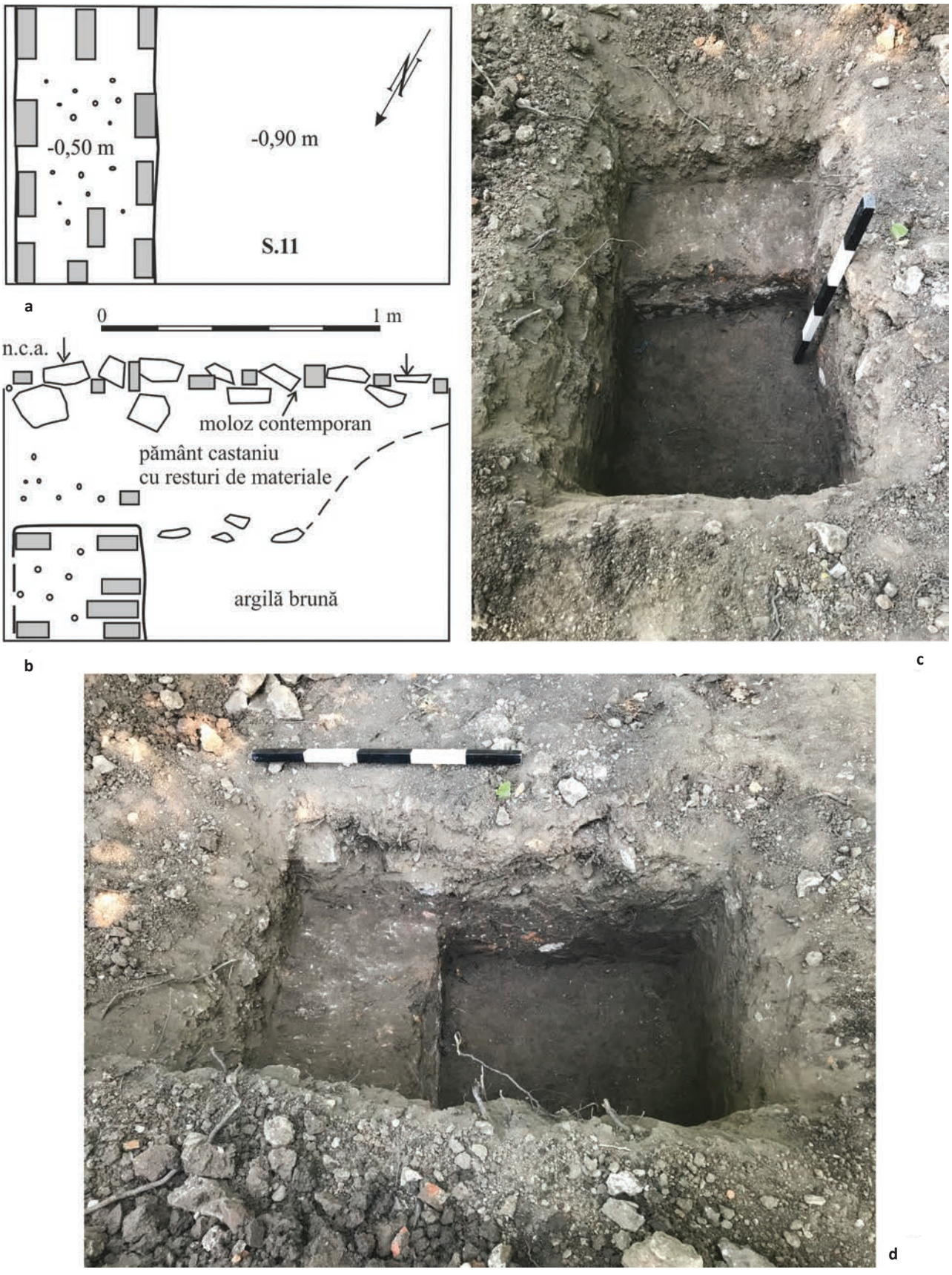


Figura 16. *Zidul de incintă – tronson nord: S.11 – a. plan, b. profil sud; fotografii: c. vedere dinspre vest, d. vedere dinspre nord.*

Figure 16. *Enclosure wall – northern segment: T.11 – a. plan view, b. southern profile; photographs: c. view from the west, d. view from the north.*

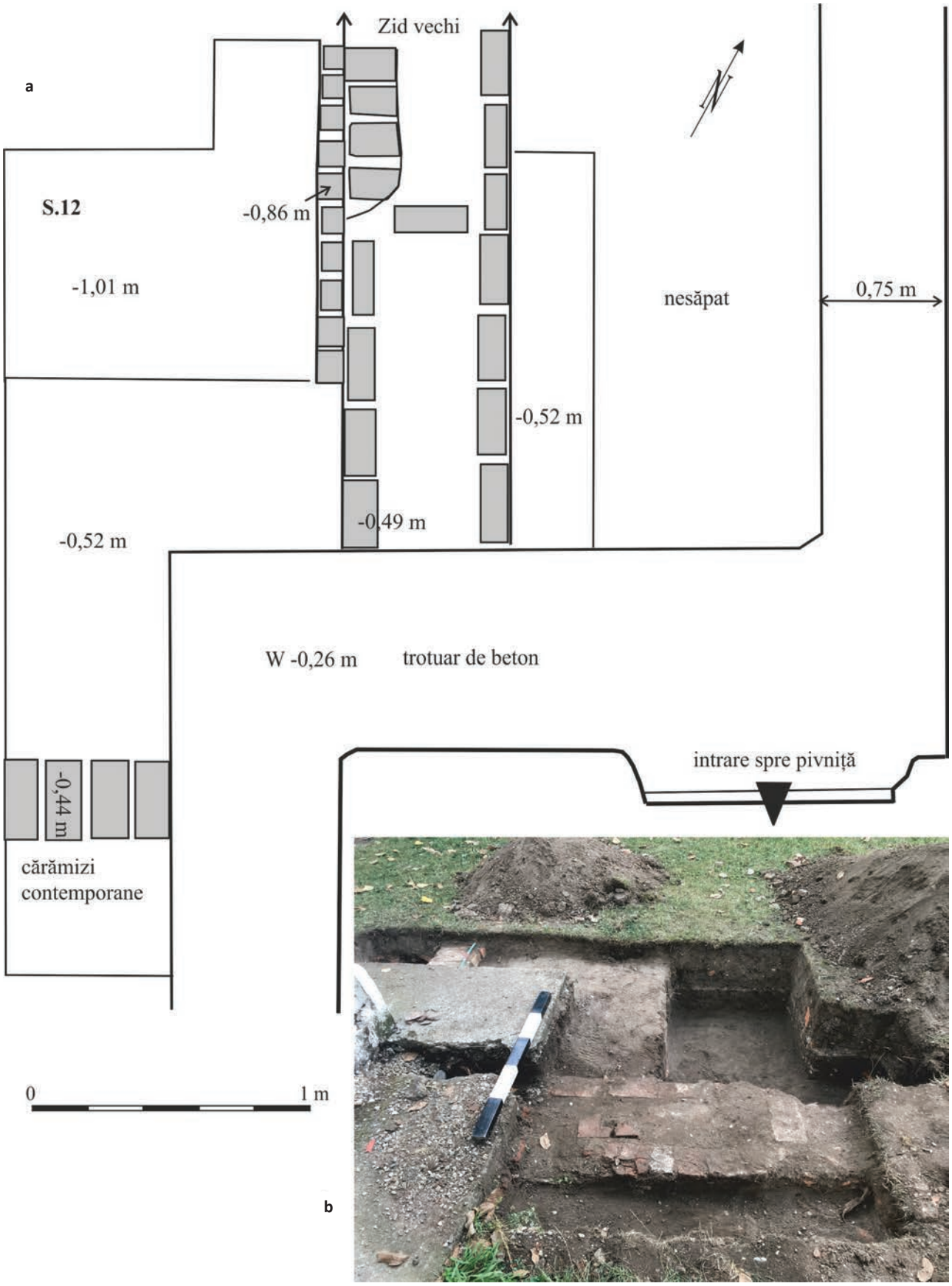


Figura 17. *Casa – zid lângă colțul de nord-vest: S.12 – a. plan; b. fotografie vedere dinspre est.*

Figure 17. *The house – wall near the northwest corner: T.12 – a. floor plan; b. photograph viewed from the east.*



Figura 18. *Fragmente ceramice: a–b (S.7), c, e (S.6), d (S.5), g (S.3), f, h–j (S.12); cuie de fier: k (S.3), l (S.6); m monedă de argint Abdulhamid I – 1788, găsită întâmplător în perioada interbelică „în curtea conacului”.*

Figure 18. *Ceramic fragments: a–b (T.7), c, e (T.6), d (T.5), g (T.3), f, h–j (T.12); iron nails: k (T.3), l (T.6); m silver coin of Abdulhamid I – 1788, found by chance during the interwar period “in the courtyard of the mansion”.*

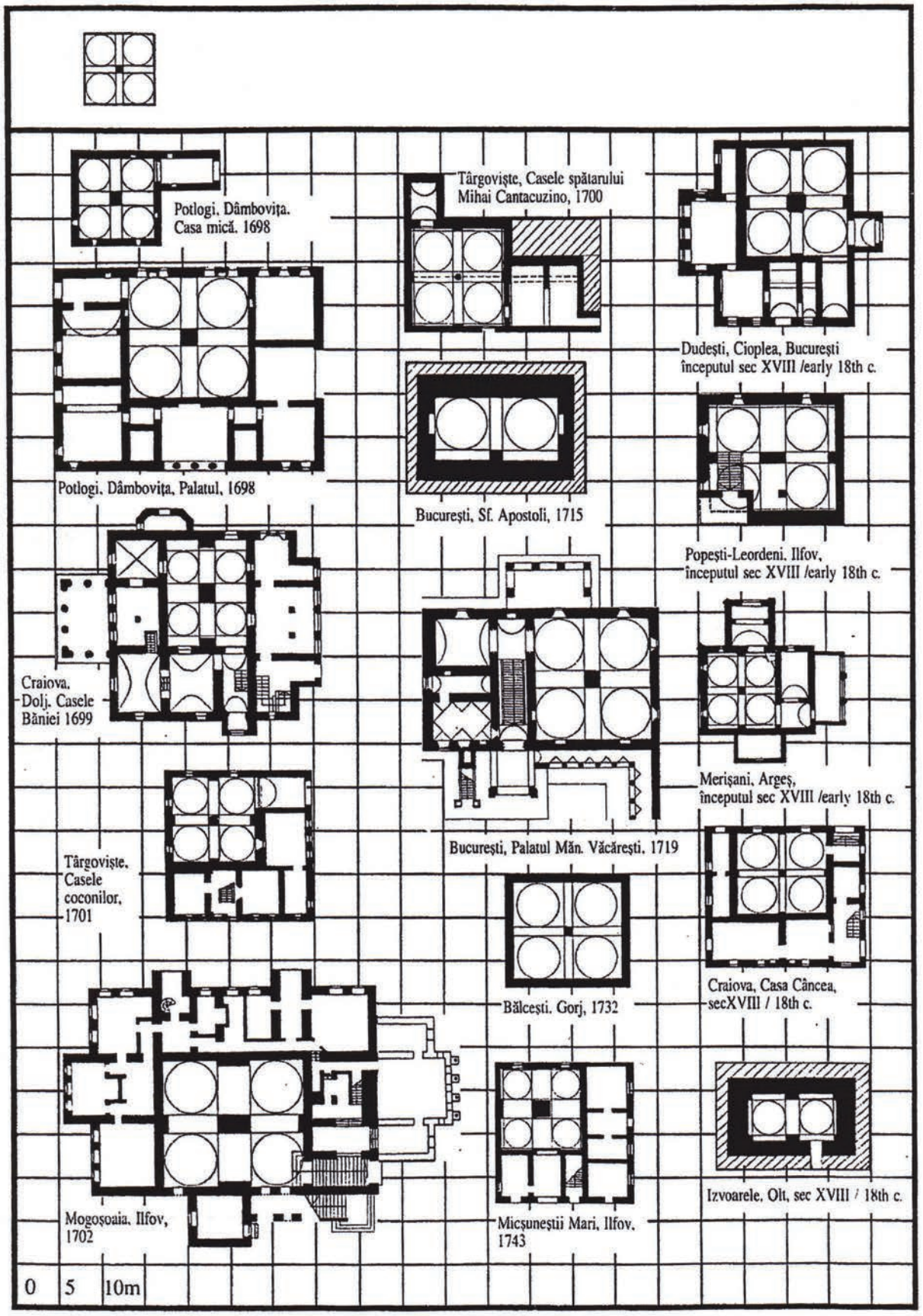


Figura 19. *Sinteza tipologiilor de conace cu pivnițe din Valahia secolelor XVII–XVIII (după Brătuleanu 1997, pl. III).*

Figure 19. *A synthesis of the types of manor houses with cellars in Wallachia during the 17th and 18th centuries (according to Brătuleanu 1997, pl. III).*

din pastă fină roșie cu smalț galben (S.12); **i.** Fund de oală, din pastă fină roșie, cu urme de ardere secundară (S.12); **j.** Fund de farfurie, din pastă fină roșie cu smalț verde la interior (S.12); **k.** Cui de fier, patrulater în secțiune, L: 7 cm (S.3); **l.** Cui de fier, patrulater în secțiune, L: 8,5 cm (S.6).

Din punct de vedere cronologic, ceramica se încadrează în perioada secolelor XVIII–XIX. Cuiele, lucrate manual, provin de la turnul de poartă și se datează în aceeași perioadă de timp.

CONCLUZII PRELIMINARE

Aceste prime sondaje nu au clarificat toate aspectele evoluției Ansamblului fostului conac Lecca Micșunești, ceea ce nici nu era posibil, ele fiind supuse condiționărilor din teren și necesităților tehnice menționate anterior. De aceea, se impun ca obiective viitoare, desprinse din rezultatele arheologice de până acum, cel puțin următoarele: identificarea completă a traseului zidului de incintă și cercetarea mai amplă a casei, în special a părții de nord-vest, în zona S.12, unde a apărut acel zid exterior. Se știe că, în timp, au mai fost executate adăugiri (baia actuală) la corpul inițial al clădirii.

Cu toate limitările săpăturii, o serie de concluzii se schițează cu suficient temei. Pornind de la suprafețele extrem de reduse cercetate pe cuprinsul ansamblului, putem afirma că în locurile sondate nu există depuneri arheologice ori materiale arheologice anterioare secolului al XVIII-lea[21]. Nu s-au constatat mai multe faze succesive de construcție, exceptând adăugirea târzie a băii pe latura nordică a casei[22]. Fundațiile casei, pivniței și turnului sunt construite în maniere asemănătoare, exclusiv din cărămizi, așezate regulat, legate cu mult mortar var-nisip, de culoare gălbuie, de bună calitate. La elevații s-a utilizat același tip de cărămidă, cu dimensiuni de 26 × 15 × 4 cm sau cu dimensiuni foarte apropiate de aceste valori, mortarul fiind asemănător cu cel întrebuințat la fundații. Față de perioada menționată, nivelul de călcare a crescut totuși destul de mult: cu circa 0,40 m în jurul casei și cu circa 0,60–0,70 m la turnul de poartă. Pe latura sudică a turnului se afla o încăpere construită în aceeași etapă cu acesta, având dimensiunile interioare de 3,10 × 4,10 m. Camera respectivă era destinată paznicului în perioada funcționării ansamblului ca reședință boierească, fiind demolată după mijlocul secolului al XX-lea.

Zidul de incintă a avut, foarte probabil, înălțimea de 2,70 m și a fost construit în aceeași etapă cu turnul de poartă, materialele și maniera de zidărie fiind similare. Nu cunoaștem încă traseul complet, existența zidului fiind documentată către nord pe o lungime de peste 66 m. Către sud, zidul continua circa 25 m până în apropierea bisericii.

Ca observație generală, maniera de zidărie pentru toate structurile dezvelite în timpul săpăturilor este asemănătoare în privința tipului de cărămidă și a mortarului folosit, existând similarități chiar și la lățimea zidurilor. Piatra nu este utilizată deloc, spre deosebire de secolele anterioare, când piatra era întâlnită alături de cărămidă, atât în fundații, cât și în paramentul diverselor construcții civile, militare sau religioase.

Puținele fragmente ceramice descoperite în timpul săpăturilor se încadrează larg în perioada secolelor XVIII–XIX. Singurul element de datare absolută, care poate fi relaționat cu ansamblul, este o monedă de argint otomană (60 parale), emisă de sultanul Abdulhamid I (1774–1789) în anul 1788, găsită întâmplător în perioada interbelică „în curtea conacului" (Fig. 18/m), aflată în posesia proprietarului[23]. Datarea arheologică a obiectivelor cercetate concordă cu aspectul arhitectural al monumentului și cu informațiile documentare privind biserica (parte componentă a ansamblului) și casele familiei Iordache Micșunescu, amintite către mijlocul veacului al XVIII-lea. Din punct de vedere stilistic, casa se încadrează în formele arhitecturii brâncovenești de conac cu plan dreptunghiular, construit parțial pe o pivniță[24] (Fig. 19), cu un parter scund și un etaj mai înalt. De asemenea, datarea arheologică se armonizează și cu o parte a datărilor radiocarbon ale mortarelor, în special din elevația zidurilor, precum și cu alte date arheometrice, după cum vom vedea în continuare [25].

Un lucru este cert, construirea ansamblului s-a făcut după o viziune unitară, elementele componente (casa cu pivniță și turnul de poartă cu zidul de incintă) fiind construite concomitent sau la intervale de timp extrem de apropiate. În logica lucrurilor, biserica (element de bază al ansamblului) a fost ridicată în paralel cu acestea, cea de-a doua intrare pe latura de nord a pridvorului, cu funcția de intrare privată a boierului, datorându-și existența concepției ctitorului, familia Micșunescu, care locuia în casa aflată puțin mai la nord.

[21] Constatarea este ușor surprinzătoare, având în vedere că ansamblul se situează pe malul lacului și nu departe de cursul Ialomiței, într-o zonă extrem de favorabilă locuirii. La aceasta se adaugă și faptul că în aria localităților Fierbinți Târg și Dridu (aflate la câțiva kilometri în aval de Micșunești) există numeroase descoperiri arheologice, aparținând mai multor epoci istorice, inclusiv faimoasa așezare de pe malul lacului Comana, care a dat numele eponim al culturii Dridu (vezi Zaharia 1967), sau cea din punctul „La Metereze" (vezi Ioniță 1998, p. 305–382).

[22] Clădirea a cunoscut, în diferite etape de timp, fără îndoială, mai multe modificări (dispariția loggiei, modificări la intrări și la ferestre, adăugarea băii, eliminarea unei structuri zidite – situație observată în S.12 etc.), cele mai multe fiind însă greu de surprins prin mijloace arheologice. Acestea ar putea fi clarificate în bună măsură prin intermediul unui studiu de parament.

[23] Moneda a fost identificată de către dr. Aurel Vîlcu de la Institutul de Arheologie „Vasile Pârvan", căruia îi mulțumim și pe această cale.

[24] Brătuleanu 1997, p. 80, pl. III.

[25] Simion *et alii* 2026, p. 523–537.

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CERCETĂRI ARHEOMETRICE LA „ANSAMBLUL FOSTULUI CONAC LECCA MICȘUNEȘTI” (SAT MICȘUNEȘTII MARI, COM. NUCI, JUD. ILFOV)

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Keywords: *radiocarbon dating, XRF analysis, mortar, wood, textile fibres*

Abstract: *The archaeometric assessment of chronology of the historical phases of the former Lecca Micșunești Manor complex employed a multidisciplinary approach based on minimally invasive and complementary techniques, specifically radiocarbon dating and the X-Ray Fluorescence (XRF) method. Sampling targeted the principal architectural components of the ensemble – the gate tower, the enclosure wall, and the manor house – with sample types and collection points selected in close coordination with ongoing archaeological research. The materials analysed to reconstruct the sequence of construction included mortar, bricks, wood, and textile fibres or associated pigments. Although each material type presents inherent limitations regarding contextual association and interpretive resolution, the integration of radiocarbon results with XRF data, together with historical architectural sources, inherited local traditions, and eyewitness accounts, supports the attribution of the gate tower's construction to the mid 18th century. This timeframe also corresponds to the erection of the manor house in its current form. Subsequent modifications to both structures occurred several decades later, at the beginning of the 19th century, possibly extending until the mid-19th century, while the last major interventions recorded prior to the 21st century are linked to the agricultural collectivization policies of the early second half of the 20th century. The radiocarbon dating of mortars produced a range of possible interpretations concerning the earliest construction activities at the site. However, situating these results within their broader historical, architectural, and archaeological context extends beyond the scope of this archaeometric study.*

Cuvinte-cheie: *datare radiocarbon, analiză XRF, mortar, lemn, fibre textile*

Rezumat: *Aprecierea încadrării arheometrice în perioadele istorice ale evoluției Ansamblului fostului conac Lecca Micșunești s-a realizat printr-o abordare multidisciplinară, axată pe tehnici minim invazive și complementare: datarea radiocarbon și metoda XRF. Elementele de construcție selectate au fost principalele componente ale ansamblului: turnul de poartă, zidul de incintă și conacul, punctele de prelevare și tipul de probe fiind în conexiune cu cercetările arheologice. Materialele folosite pentru stabilirea fazelor de evoluție au fost mortarul, cărămizile, lemnul, fibrele textile și pigmenții asociați. Deși fiecare tip de material prezintă, datorită naturii sale, o serie de limitări de asociere în funcție de analizele alese, combinarea datelor radiocarbon cu metoda Fluorescenței de Raze X (XRF), precum și cu sursele istorico-arhitecturale, cu tradițiile locale moștenite și cu informațiile martorilor oculari poate reconfirma momentul construcției turnului de poartă ca fiind plasat în jurul mijlocului secolului al XVIII-lea, perioadă în care a fost ridicată și actuala formă a conacului. Câteva decade mai târziu, la începutul secolului al XIX-lea, apar o serie de modificări la ambele construcții, posibil extinse până la mijlocul secolului al XIX-lea, ultimele intervenții majore surprinse până în secolul al XXI-lea fiind asociate cu cooperativizarea agriculturii de la începutul celei de a doua jumătăți a secolului al XX-lea. Datarea mortarelor a dus la o dispersie a interpretării momentului primelor forme construite, iar punerea acestor rezultate în context istorico-arhitectural și arheologic nu face obiectul prezentului studiu arheometric.*

INTRODUCERE

Metodele arheometrice folosite în studiul din acest articol sunt datarea radiocarbon și tehnica XRF (X-Ray Fluorescence). Astfel, cronologiei relative date de încadrarea crono-tipologică a diferitelor elemente ale ansamblului și a probelor reprezentative date spre analiză la IFIN-HH în urma a cercetărilor arheologice i se vor asocia rezultatele datării prin cronologia absolută și cele ale analizei compoziționale. Scopul demersului este interpretarea multidisciplinară a contextului istorico-arhitectural în care a apărut și a evoluat până în prezent Ansamblul fostului conac Lecca Micșunești.

Investigațiile de teren au furnizat o serie de materiale arheologice, fragmente de cărămizi și mortare excavate în perimetrul clădirii principale a conacului, al turnului de poartă și al ruinelor zidului de incintă. Materiale suplimentare, lemn provenind din perimetrul turnului de poartă, de la scara interioară principală de acces la etaj în conac, precum și fibre textile dintr-o tapiserie expusă în una dintre camere au furnizat, de asemenea, date de cronologie absolută.

Analiza XRF asupra cărămizilor, prin comparație cu alte tipuri de materiale aparținând unor regiuni și epoci distincte între ele, a pus în evidență particularități specifice locului și perioadei de construcție[1], dar și diferențe mai subtile între fazele de evoluție ale ansamblului conacului, dintre care unele vor fi detaliate în această lucrare. Interpretarea diferențelor date de sursele de materii prime/rețete de fabricație, prin prisma datelor radiocarbon, va ajuta la selectarea celor mai probabile vârste radiocarbon calibrate

[1] Cristea-Stan *et alii* 2023, art. nr. 805.

dintre cele oferite de mai multe sub-fracții databile extrase din mortar. O contribuție în acest sens a avut-o și analiza XRF a suprafeței și pigmenților tapiseriei.

Interpretările arheometrice oferă modele care vor fi ulterior integrate cu celelalte rezultate arheologice, stabilindu-se în ce măsură vor putea fi încadrate în fazele de evoluție istorică și arhitecturală cunoscute din documente și diverse surse istorice.

Următorul palier de integrare va fi dat de informațiile oferite de analiza lemnului și de proiectul privind conservarea, restaurarea, consolidarea și punerea în valoare a conacului și turnului de poartă din cadrul Ansamblului fostului conac Lecca Micșunești.

Izvoarele și documentele istorice invocate reprezintă și ele repere de integrare a rezultatelor arheometrice, acestea fiind succint prezentate mai sus în partea dedicată cercetărilor arheologice. Alături de ele vor fi urmărite tradițiile locale și informațiile provenite de la actualii proprietari, cu ascendent în istoria ansamblului prin legătura cu familia Lecca Micșunești.

Ca elemente de noutate, prezentul studiu arheometric aduce:

(1) separarea, datarea și interpretarea rezultatelor obținute pentru mai multe sub-fracții de carbonat de calciu/calcit izolate din probele de mortar;

(2) integrarea rezultatelor pentru mortare cu cele pentru cărămizi;

(3) corelația dintre rezultatele obținute pentru materiale recuperate din săpătură și fundații și cele obținute pentru diverse materiale din zona în elevație a construcțiilor existente.

MATERIALE ȘI METODE

Pentru datarea radiocarbon:

În perimetrul turnului de poartă s-au analizat următoarele probe: Proba 4/RoAMS 2204.50: mortarul provine din fundația turnului de poartă, din S.3; o probă dintr-un par de lemn aflat sub nivelul de călcare din interiorul turnului de poartă, în colțul de sud–vest al acestuia, din S.6 (Proba 7/RoAMS 2207.50); o probă dintr-o pană din lemn provenită din zona de interior a zidului turnului de poartă, latura de nord (RoAMS 2230.1); o probă de mini-nodul de var din piciorul turnului de poartă, zona exterioară, colțul de sud–vest (RoAMS 2231.1). Cele patru probe au fost selecționate pentru a urmări evoluția construcției turnului de poartă (inițială: mortarul din fundație și proba de mini-nodul de var din mortar; intermediară: pana de lemn de la întreteserea dintre arcul interior de susținere și zidul de nord–vest al turnului și finală: ultima străpungere a nivelului de călcare de la interiorul turnului).

În perimetrul zidului de incintă (actualmente dispărut) s-au analizat următoarele probe: Proba 5/2205.50: mortarul provine din fundația zidului de incintă tronson nord (față de turnul de poartă), din S.4; Proba 6/2206.50: mortarul provine din fundația camerei aflate la sud de turnul de poartă al ansamblului, din S.5; Proba 8/2208.50: mortarul provine din fundația zidului de incintă lângă latura nordică a turnului de poartă, din S.7. Probele au fost selectate pentru a pune în evidență traseul, evoluția și legătura zidului de incintă al ansamblului cu turnul de poartă.

În perimetrul clădirii principale au fost analizate următoarele probe: Proba 1/2201.50: mortarul provine din fundația casei propriu-zise (-0,70 m), din S.1; Proba 2/2202.50: mortarul provine din tencuiala elevației, aflată în pământ (-0,30 m), ca urmare a creșterii nivelului de călcare, din S.1; Proba 9/2209.50: mortarul provine din zidul de lângă latura nordică a casei, apărut la săparea unui șanț pentru o conductă de scurgere a apei pluviale, din S.12; Proba 3/2203.50: mortarul provine din fundația pivniței casei/conacului Lecca Micșunești, din S.2; o probă de lemn desprinsă din scara principală de acces la etaj (RoAMS 2232.1) și o probă de fibre textile dintr-un fragment extras dintr-o tapiserie (RoAMS 2233.1) aflată în una dintre camerele de la etaj. Aceste probe au fost alese pentru a urmări evoluția construcției conacului la exterior și la interior. Proba de lemn și proba de fibre textile au fost selectate pentru că lor li se asociază informații provenite din familia proprietarului, potrivit cărora atât scara de lemn (sau elemente din ea), cât și tapiseria (formă dreptunghiulară, prinsă într-un cadru de lemn și expusă pe un perete) provin din etapa inițială de construcție și de înzestrare a clădirii. Acestea intră în segmentul probelor medieval-târzii, moderne sau contemporane (în general, probe cu intervenție antropică, post 1650). Este vorba despre „pragul Stradivarius", dincolo de care intervalele se întind pe mai multe picuri de probabilitate redusă, în locul unui pic unitar sau al unor sub-intervale importante și restrânse ca interval ani-calibrați, chiar dacă proba a fost tratată cu succes din punctul de vedere al decontaminării și măsurată în condiții optime la laboratorul RoAMS[2].

În principiu, mini-nodulul de var s-a transformat direct în țintă AMS, fiind considerat ca provenind din momentul întăririi varului în construcție[3]. Probele de mortar au fost pretratate conform procedurilor dezvoltate la RoAMS[4], dar s-au obținut, pentru prima dată în cadrul laboratorului, mai multe seturi complete de sub-fracții de carbonat de calciu/calcit format după aplicarea mortarului în zidărie. Probele de lemn au fost considerate probe arheologice și li s-a aplicat un tratament standard RoAMS cu bază-acid-bază-acid-bleaching (cu clorit de sodiu). Cât despre fibrele de țesătură, tratamentul a fost personalizat în funcție de rezultatele analizei XRF și va fi comentat în următoarea secțiune. Toate probele au fost uscate la final la etuva de vid, grafitizate la sistemul EA-AGE-3 (ETH Zürich), închise în conuri și măsurate la acceleratorul de particule de 1 MV tip Cockroft-Walton Tandetron[5].

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[2] Jull 1998.

[3] Simion *et alii* 2022, p. 349–356; Abrudeanu *et alii* 2025, art. nr. 1149.

[4] Ghizdăveț *et alii* 2025, art. nr. 5780; Marcu-Istrate *et alii* 2026, art. nr. 118.

[5] Sava *et alii* 2019, p. 649–658; Stan-Sion *et alii* 2015, p. 105–109.

Pentru analiza XRF:

Pentru analiza XRF s-au folosit fragmente de cărămizi descoperite în timpul săpăturilor, asociate cu probele de mortar, precum și pigmenți identificați pe suprafața țesăturii expuse pe perete, asociată cu proba RoAMS 2233.1. Astfel, informațiile complementare obținute din analiza XRF vor ajuta la selecția rezultatelor, sub-fracțiilor databile în analiza mortarului sau a sub-intervalului dominant din histograma radiocarbon pentru țesătură, dat fiind că aceasta aparține unei perioade tardive, în care datarea radiocarbon poate deveni imprecisă, așa cum s-a menționat în paragraful anterior.

În timpul cercetărilor arheologice au fost prelevate șapte probe de fragmente de cărămidă în vederea investigării lor prin metoda XRF. Dintre acestea, în paginile de față vor fi prezentate detaliat rezultatele a trei dintre acestea. Prima probă, denumită 1-bis, constă în două fragmente de cărămidă (unul mai mare și celălalt mai mic), prelevate din fundația casei, din S.1. A doua probă, denumită 3-bis, constă într-un fragment de cărămidă prelevat din fundația pivniței, din S.2. Cea de-a treia probă, denumită 4-bis, constă într-un fragment de cărămidă prelevat din fundația turnului de poartă, din S.3. Celelalte patru probe au fost prelevate după cum urmează: proba 5 (bis) din fundația zidului de incintă tronson nord (față de turnul de poartă), din S.4; proba 6 (bis) din fundația camerei aflată la sud de turnul de poartă, din S.5; proba 8 (bis) din fundația zidului de incintă lângă latura nordică a turnului de poartă, din S.7; proba 9 (bis) din zidul de lângă latura nordică a casei, apărut la săparea unui șanț pentru o conductă de scurgere a apei pluviale, în S.12[6].

Cărămizile au fost măsurate în laborator la IFIN-HH, iar pigmenții de pe tapiserie au fost investigați *in situ*, printr-o vizită la conac, când a fost prelevat și eșantionul pentru datare la laboratorul RoAMS.

Probele de cărămizi au fost inspectate vizual, fotografiate și fragmentate/analizate prin metoda XRF fără o curățare a lor prealabilă, iar măsurarea s-a făcut doar pe zona curată, proaspăt expusă.

Strategia punctelor de măsurare a vizat:

- Comparația între mai multe puncte de măsurare/probă; s-a urmărit *determinarea omogenității fiecărei probe în parte.*

- Comparația între probe; s-au căutat *asocieri spațio-temporale între diferitele faze de construcție analizate.*

A fost folosit un spectrometru portabil cu fluorescență de radiații X și dispersie de energie (EDXRF) model TRACER Series, varianta constructivă TRACER 5^{i}, care utilizează un generator de raze X pe bază de Rodiu. Detectorul aparatului este de tip Silicon Drift (SDD), poziționat la un unghi de aproximativ 45° față de planul normal de referință și de aproximativ 90° față de tubul generator. O tensiune de 40 keV a fost aplicată pe tub pentru a obține fasciculul de raze X incidente. S-a folosit un colimator care a restricționat diametrul fasciculului pe probă la un punct cu diametrul de 8 mm. Spectrometrul portabil asigură o analiză rapidă, furnizând un set de rezultate util în identificarea elementelor componente. Asigură moduri de lucru specializate pentru tipuri variate de probe. Limita de detecție depinde de matricea probei. Variază în funcție de Z și poate ajunge până la câteva ppm (pentru elementele cu Z mediu). Dispune de un tub pe bază de Rodiu (Rh), care poate fi încărcat cu o tensiune variabilă, dar limitată la 50 kV. Anodul pe bază de Rh asigură un avantaj, analiza obiectelor confecționate din aur sau argint devenind posibilă. Rezultatele experimentale au fost obținute utilizând un mod de lucru special adaptat de producător pentru probele ceramice (Ceramic Dual) în cazul cărămizilor. Pentru țesătură s-a folosit modul Alloys 2. Prin acest tip de analiză nu se pot identifica elementele ușoare, respectiv H, Li, Be, B, C, N, O, F, Na și nici nu se poate simula prezența lor. În schimb, se poate detecta prezența Mg, Al, Si, S, P și Cl. De asemenea, nu se pot determina clasele/grupele mari de compuși chimici în combinațiile cărora intră elementele măsurate.

REZULTATE ȘI DISCUȚII

Rezultatele radiocarbon

Rezultatele exprimate în Ani Radiocarbon (RA, ani BP) pentru vârstele necalibrate anterioare „anului zero" care este 1950 sau în Fracții Carbon-14 modern ($F^{14}C$) pentru vârstele de după 1950, amendate cu impreciziile respective de măsurare (în partea dreaptă sus a histogramelor, după codul probelor), sunt, în ultima etapă, transformate în ani calibrați, ale căror intervale, pentru $\sigma = 2$ (95,4% probabilitate ca evenimentul istoric sau vechimea să fie cuprinse în unul dintre intervale sau sub-intervale) se regăsesc individual în aceste grafice (Fig. 1–4; 6–13; 17). Calibrarea s-a efectuat cu ajutorul programului OxCal Online, oferit gratuit de laboratorul din Oxford (ORAU).

Pentru zonele în elevație (Fig. 1–4: piciorul turnului de poartă, pana de lemn din zidul turnului de poartă, scara de lemn din conac, fibrele de țesătură din tapiserie), se poate obține un grafic compus (Fig. 5), mai greu de interpretat, cu maxime cuprinse între a doua jumătate a secolului al XVI-lea și a doua jumătate a secolului al XIX-lea, sub-intervalele fiind incluse în „pragul Stradivarius".

Pentru fundații și ziduri îngropate, dacă este luată în considerare fracția de mini-noduli de var (Fig. 6–13), separată în laborator din toate fracțiile de mortar, pentru o valoare medie de 350 ani BP se obține o deviație standard de ± 65 ani BP, care este mai mare decât fiecare incertitudine de măsurare a probelor individuale. S-au separat și fragmente mici, albe, dense din patru probe. Valorile, în acest caz, au fost 967 ani BP ± 771 ani BP; cel mai probabil, este vorba despre fragmente de calcar geologic (incomplet ars, cu diferite grade de recarbonatare). Alt set

[6] Vezi o prezentare sintetică a rezultatelor pentru toate probele la Cristea-Stan *et alii* 2023, p. 2, 6–7, tab. 3a și 3b.

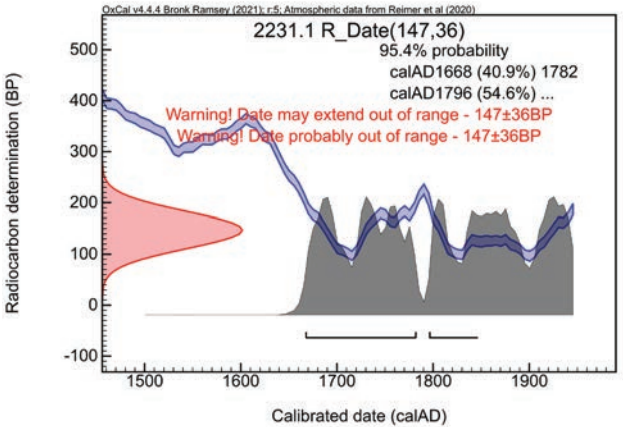


***Figura 1**. Rezultatul datării radiocarbon a piciorului turnului de poartă.*

***Figure 1.** Radiocarbon dating result of the base masonry of the gate tower.*

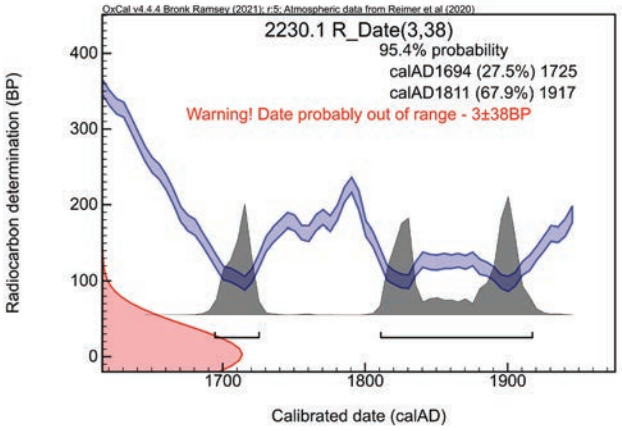


***Figura 2**. Histograma pentru pana de lemn din peretele nordic al turnului de poartă.*

***Figure 2.** Histogram for the wooden wedge sampled from the north wall of the gate tower.*

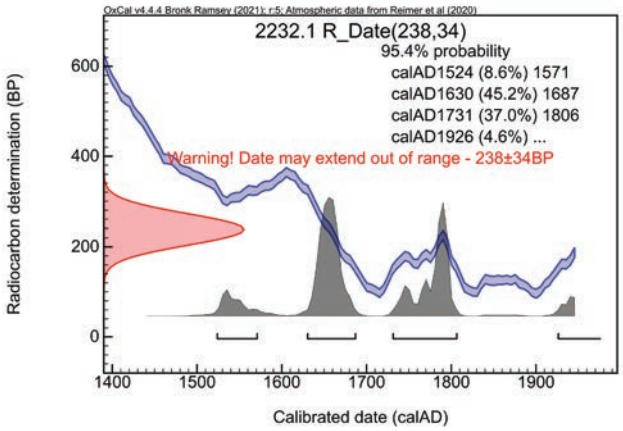


***Figura 3**. Histograma obținută pentru fragmentul de lemn din scara principală de acces la etajul conacului.*

***Figure 3.** Histogram of the radiocarbon sample taken from the wood fragment in the main staircase of the manor.*

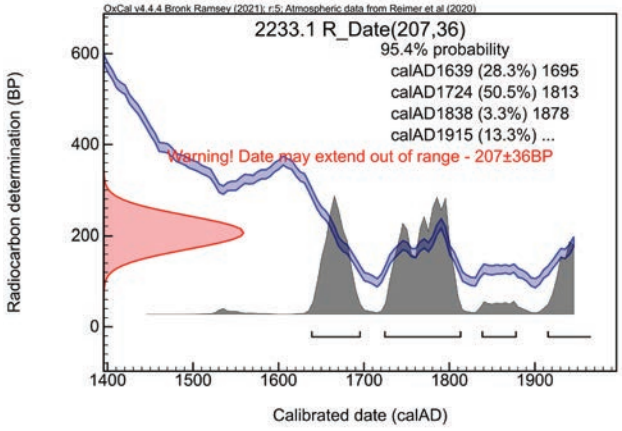


***Figura 4**. Histograma pentru fibrele textile din tapiseria de la etaj.*

***Figure 4.** Histogram for the textile fibers from the upstairs tapestry.*

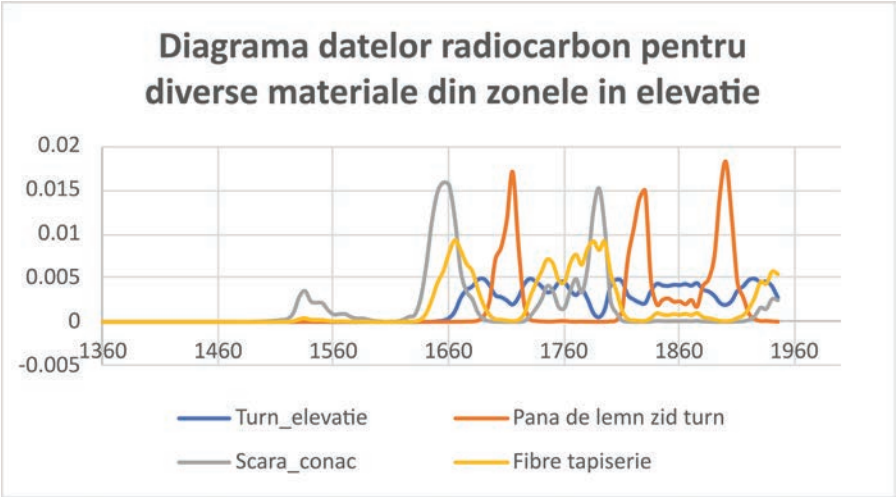


***Figura 5**. Suprapunerea histogramelor pentru zonele în elevație.*

***Figure 5.** Overlapping histograms for the elevated masonry sections.*

separat din aceleași patru probe este reprezentată de fracția de calcit sub-micronic, de obicei asociată cu momentul întăririi mortarului în zidărie: 285 ani BP ± 122 ani BP. Ultimul set, format din cinci probe de fracție calcit micronică, asociată cu alte transformări ale mortarului, duce la 474 ani BP ± 287 ani BP. Celor două serii de fracții, de altfel recomandate și de literatură (fracția mini-nodul de var și fracția calcit sub-micronic separate din aceeași probă), li se pot aplica funcția R_combine din OxCal. Aceasta, dacă sunt îndeplinite criteriile de convergență, arată în ce măsură două seturi de fracții separate din aceeași probă sunt corelate între ele/exprimă același eveniment sau evenimente contemporane. Pentru că s-au atins criteriile de convergență (Fig. 14) și pentru că seria completă de date radiocarbon s-a obținut pe fracțiile de mini-noduli/noduli de var, în continuare acestea vor fi luate în interpretări.

În cazul combinării rezultatelor considerate pentru fracția de mini-noduli de var cu fracția de calcit sub-micronic, cu valori mediate (Fig. 14), criteriile de convergență sunt îndeplinite. Această verificare arată că rezultatele pe cele două seturi de fracții se susțin reciproc, oferind un interval cuprins între a doua jumătate a secolului al XV-lea și prima jumătate a secolului al XVII-lea. Singura valoare care, în diagramele optimizate (Fig. 15), se suprapune peste intervalul precedent al probelor din zonele în elevație este cea corespunzătoare fragmentului de zid îngropat descoperit lângă latura nordică a casei, apărut la săparea șanțului pentru conducta de scurgere a apei pluviale (în S.12). Mai mult, considerând doar fracția de mini-noduli de var pentru fiecare probă individuală, combinarea tuturor rezultatelor pentru fundațiile/vestigiile îngropate nu îndeplinește criteriul de convergență (Fig. 16).

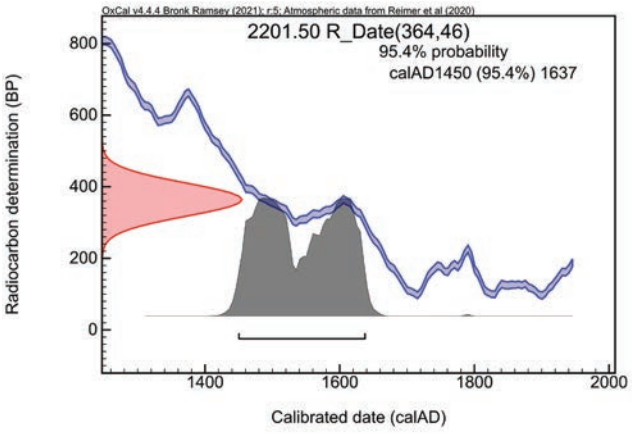


***Figura 6**. Proba 1. Mortarul provine din S.1 – fundația casei (-0,70 m); fracția mini-nodul de var.*

***Figure 6.** Sample 1. Mortar from Trench S.1 – house foundation (-0.70 m); lime mininodule fraction.*

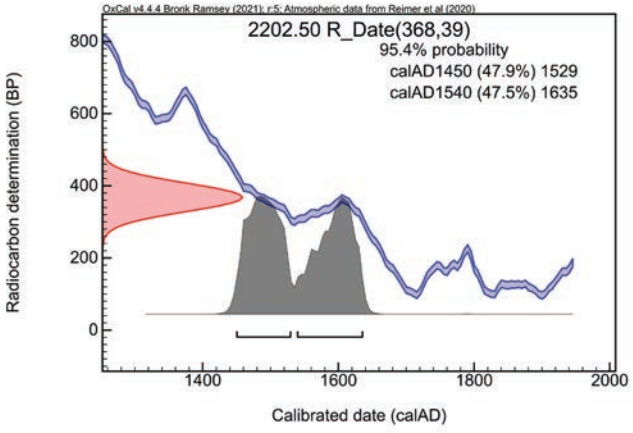


***Figura 7**. Proba 2. Mortarul provine din S.1 – tencuiala elevației aflată în pământ (-0,30 m) ca urmare a creșterii nivelului de călcare; fracția mini-nodul de var.*

***Figure 7.** Sample 2. Mortar from Trench S.1 – elevation plaster buried at -0.30 m due to the rise of the walking level; lime mininodule fraction.*

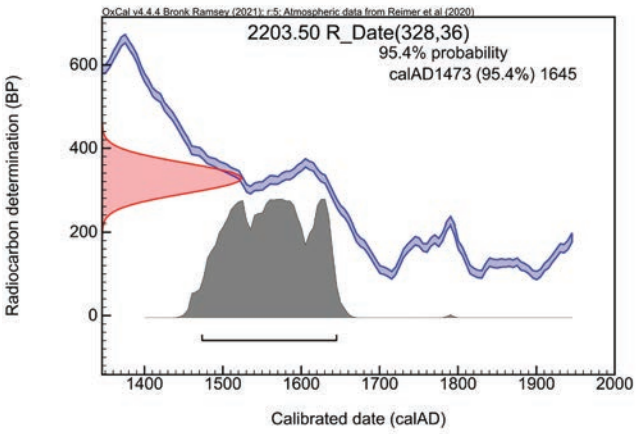


***Figura 8**. Proba 3. Mortarul provine din S.2 – fundația pivniței conacului; fracția mini-nodul de var.*

***Figure 8.** Sample 3. Mortar from Trench S.2 – foundation of the manor cellar; lime mininodule fraction.*

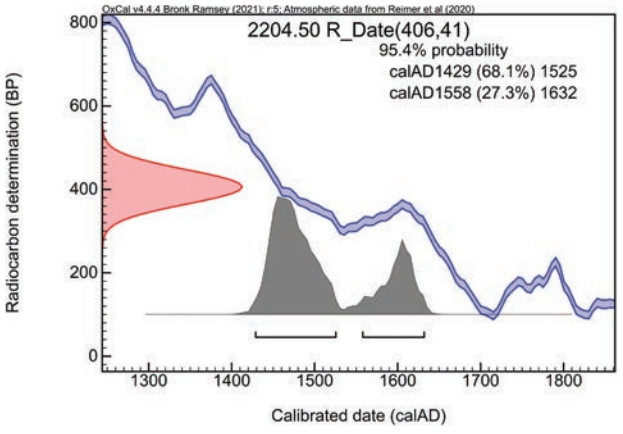


***Figura 9**. Proba 4. Mortarul provine din S.3 – fundația turnului de poartă; fracția mini-nodul de var.*

***Figure 9.** Sample 4. Mortar from Trench S.3 – foundation of the gate tower; lime mininodule fraction.*

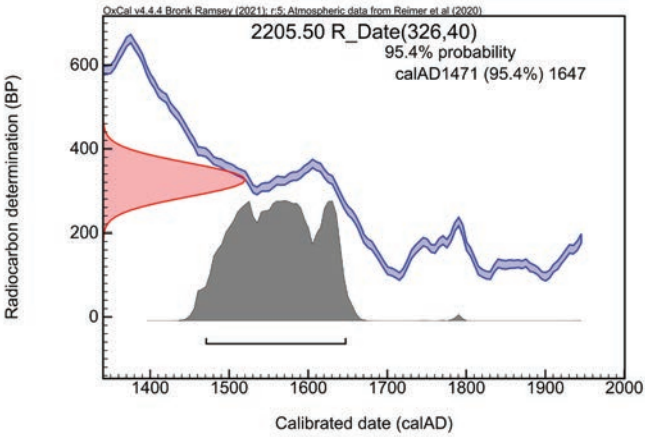


Figura 10. *Proba 5. Mortarul provine din S.4 – fundația zidului de incintă tronson nord; fracția mini-nodul de var.*

Figure 10. *Sample 5. Mortar from Trench S.4 – foundation of the enclosure wall, north section; lime mininodule fraction.*

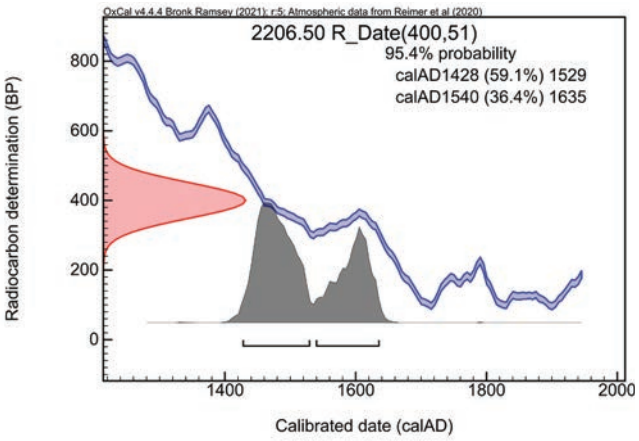


Figura 11. *Proba 6. Mortarul provine din S.5 – fundația camerei aflată la sud de turnul de poartă; fracția mini-nodul de var.*

Figure 11. *Sample 6. Mortar from Trench S.5 – foundation of the room located south of the gate tower; lime mininodule fraction.*

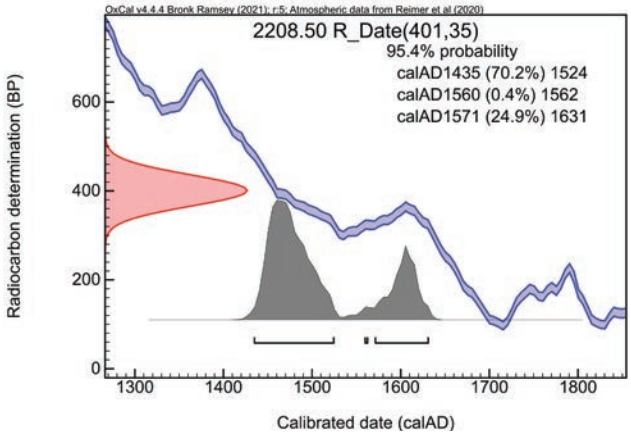


Figura 12. *Proba 8. Mortarul provine din S.7 – fundația zidului de incintă lângă latura nordică a turnului de poartă; fracția mini-nodul de var.*

Figure 12. *Sample 8. Mortar from Trench S.7 – foundation of the enclosure wall near the north side of the gate tower; lime mininodule fraction.*

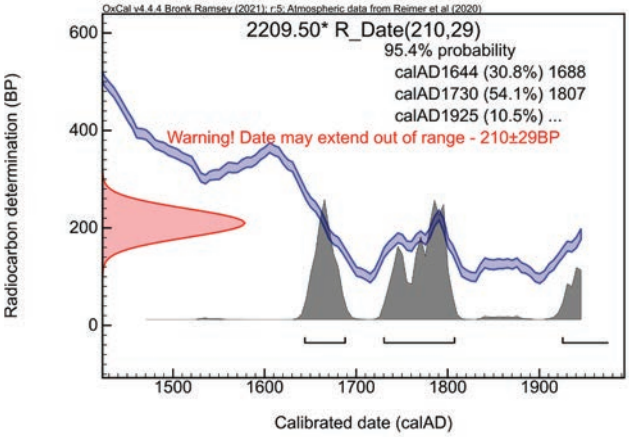


Figura 13. *Proba 9. Mortarul provine din S.12, zid lângă latura nordică a casei, apărut la săparea unui șanț pentru o conductă de scurgere a apei pluviale (date inițiale obținute prin metoda factorilor de corelație pentru sub-fracțiile Lumps / Fracția F1).*

Figure 13. *Sample 9. Mortar from Trench S.12 – wall near the north side of the house, exposed during the excavation of a trench for a rainwater drainage pipe; lime mininodule fraction. Initial data obtained using the correlation factor method for the Lumps subfractions / Fraction F1.*

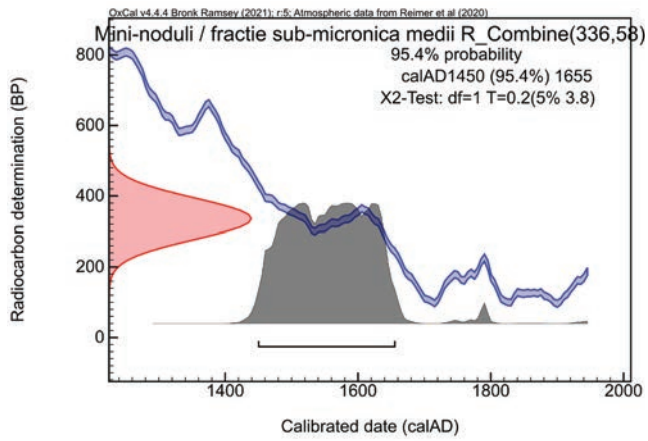


Figura 14. *Corelația valorilor mediate pentru fracția mini-noduli de var / fracție sub-micronică de calcit; testul de convergență este trecut; cele două serii de rezultate reprezintă practic aceleași evenimente.*

Figure 14. *Correlation of the averaged values for the lime mininodule fraction and the submicronic calcite fraction; the convergence test is passed, and the two-result series represent essentially the same events.*

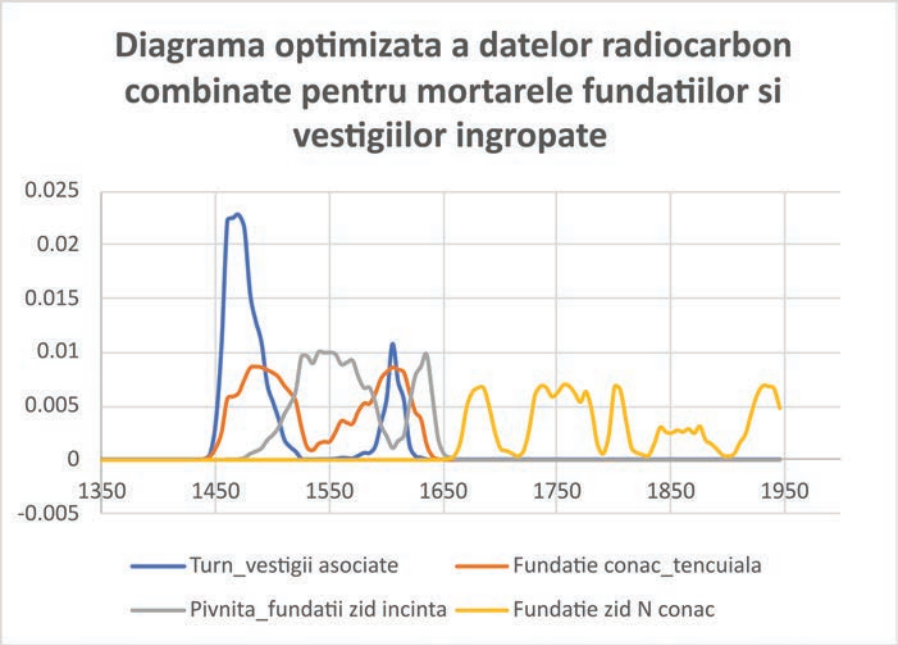


***Figura 15**. Diagramele optimizate suprapuse pentru datarea mortarelor din fundații, prin cele două seturi de fracții de calcit separate.*

***Figure 15.** Overlaid optimized diagrams for the dating of foundation mortars, based on the two separated calcite fraction datasets.*

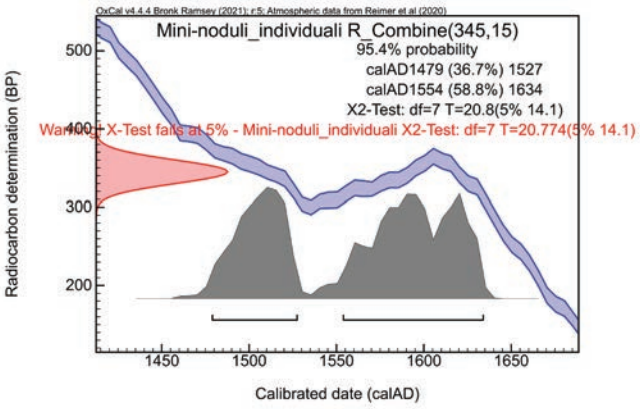


***Figura 16**. Corelația dintre datele radiocarbon individuale ale mini-nodulilor de var din probele extrase din fundații.*

***Figure 16.** Correlation among the individual radiocarbon dates of the lime mininodules from the samples extracted from the foundations.*

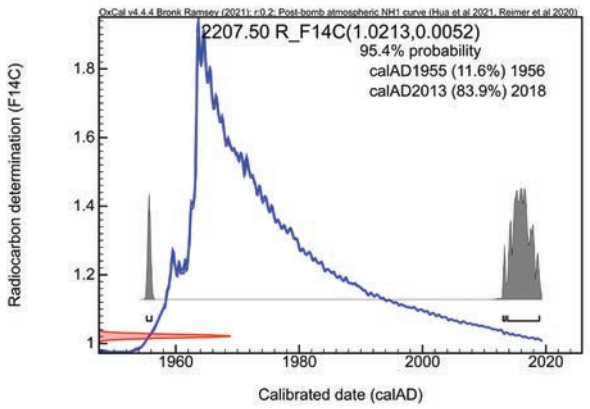


***Fig. 17**. Histograma obținută prin datare radiocarbon pentru proba 7: par de lemn aflat sub nivelul de călcare din interiorul turnului de poartă, în colțul de sud-vest al acestuia, din S.6.*

***Figure 17.** Histogram obtained through radiocarbon dating for Sample 7: wooden stake located below the walking level inside the gate tower, in its southwest corner, from Trench S.6.*

Conform datelor radiocarbon, cel mai probabil nu au fost construite toate în același timp sau în perioade de timp foarte apropiate. Această concluzie este susținută și de analiza PCA asupra datelor XRF pentru cărămizile asociate. În acest caz, s-au sesizat patru niveluri de corelație: fie realizate la momente diferite, fie cu rețete ușor diferite, fie din surse de lut diferite sau combinații, după cum vom prezenta mai jos. Aceste concluzii pot sprijini interpretarea arheometrică a datelor radiocarbon pentru probele de mortare din fundații pentru că acestea, cu excepția celei amintite mai sus (Proba 9: 2209.50, din S.12, Fig. 13), sunt în general cu circa 200 de ani mai vechi față de cronologia relativă. Nu este exclusă o eroare sistematică, dată, pe de o parte, de prelevarea probelor din fundații și de la mai puțin de 6 cm adâncime față de interfața cu solul pe orizontală[7], iar pe de altă parte, de limitările metodelor de separare/prelucrare care se pot aplica în laboratorul RoAMS[8].

[7] Hale *et alii* 2003, p. 130–137; Daugbjerg *et alii* 2021, p. 1121–1140.
[8] Cristea-Stan *et alii* 2023, art. nr. 805.

Singura probă modernă (Fig. 17) este fragmentul de lemn de par aflat sub nivelul de călcare din interiorul turnului de poartă, în colțul de sud–vest al acestuia, din S.6. Data radiocarbon post-1950 susține plasarea ultimei intervenții puse în evidență în timpul cercetărilor arheologice în a doua jumătate a secolului al XX-lea, celălalt sub-interval, plasat în jurul anului 2013, fiind exclus de către proprietarii actuali.

Analiza compoziţională prin metoda XRF a unor fragmente de cărămidă şi de ţesătură

Rezultate obținute pentru cărămizi; analiza statistică a datelor

Spectrele de raze X caracteristice au fost prelucrate utilizând programul dezvoltat de producătorul aparatului, Bruker Instrument Tools. Rezultatele obținute pentru probele 1-bis, 2-bis și 3-bis în urma investigațiilor prin metoda XRF, în procente masice per element determinat și prin conversie, în procente masice per oxid de element determinat, sunt prezentate în Anexa 1.

Interpretarea preliminară a rezultatelor și plasarea lor în context

S-au comparat rezultatele pentru mai multe fragmente aparținând fiecărei structuri, folosind opțiunea PCA a Programului Minitiab 17.0[9]. În acest scop, s-au folosit valorile obținute în toate punctele de măsurare pentru fiecare probă (Anexa 1).

Determinarea omogenității fiecărei probe în parte

Proba 1-bis (Fig. 18) prezintă neomogenități. Ele sunt centrate pe două tipuri de dispersie a rezultatelor: există o grupă care nu conține elementul aluminiu, în timp ce siliciul, potasiul, calciul și fierul sunt în procente mai mici față de a doua grupă în care aluminiul este prezent, iar elementele menționate mai înainte au valori mai mari. Primul grup s-a separat în cadranul stânga sus, fiind distinct de celălalt grup plasat în cadranul din dreapta sus. Există și puncte intermediare, distribuite în celelalte cadrane, între cele două grupuri. Microelementele niobiu și thoriu sunt prezente în aceleași proporții în ambele grupuri.

Proba 3-bis (Fig. 19) permite aceleași observații ca și în cazul precedent. Dispersia este și mai mare, iar, pe lângă niobiu și thoriu, cromul și ytriul sunt prezente în aceleași proporții. Aceste valori prezintă aceleași variabilități ca la proba 1-bis.

Proba 4-bis (Fig. 20) prezintă aceleași caracteristici ca și în precedentele două cazuri. Microelementele care nu dau variantă sunt, de această dată, pe lângă niobiu și thoriu, arsenul, ytriul, molibdenul și plumbul. Deși neomogenitatea duce la dispersie în cele patru cadrane, totuși se observă o grupare a punctelor foarte asemănătoare cu cea a probei 1-bis.

[9] Minitab 17.0 Free Edition Software.

Deci, toate cele trei probe prezintă o compoziție neomogenă, diferă între ele prin unele microelemente, însă observația principală este că toate trei prezintă o serie de zone în care aluminiul nu este prezent, siliciul, potasiul, calciul și fierul fiind în cantități mai mici și zone în care aluminiul este prezent, iar elementele menționate au valori mai mari. Pentru prima situație, suma totală a elementelor ca oxizi are o distribuție omogenă, suma valorilor mediate fiind de 16,54%, 17,28% și 17,16%. Pentru al doilea grup de zone distribuite în masa cărămizilor, dispersia este vizibilă, ea imprimând diferențierile între cele trei piese: 35,88%, 22,07% și 26,10%.

Asocieri spațio-temporale între diferitele faze de construcție analizate

Situația generală pentru cele trei probe se prezintă în felul următor:

Ele ocupă locuri distincte în cadrane; sunt diferite, însă proba 4-bis (fundație turn) și proba 1-bis (fundație casă) au o serie de similarități care le diferențiază ca grup de proba 3-bis (pivniță). Acest fapt poate fi exprimat prin calculul coeficienților de corelație cu ajutorul funcției Correl din Excel 2010. Astfel, fundațiile casei și turnul sunt corelate la 99,15%, pe când corelația lor cu pivnița este la 68,65% (casă – pivniță) și la 61,24% (turn – pivniță). Altfel spus, fundațiile casei, pe zona investigată, se corelează perfect cu fundațiile turnului, iar ambele sunt semi-corelate cu pivnița.

Graficul Score Plot (Fig. 21) reprezintă o imagine „mărită la microscop" a situației probelor de la Lecca-Micșunești. El arată variații temporale încadrate într-o perioadă relativ scurtă de timp pe același spațiu, definită prin datele radiocarbon.

Pentru celelalte patru tipuri de fragmente de cărămizi, rezultatele XRF, coroborate cu cele prezentate mai sus, oferă informații complementare asupra rețetelor de fabricație și surselor de lut utilizate. Aceste șapte probe sunt asociate cu mortarele și pot duce la o interpretare arheometrică încrucișată. Prezența a încă patru șiruri de date va împrăștia sau va grupa punctele din Figura 21.

În Graficul din Figura 22 este reprezentată diagrama Score Plot pentru toate elementele determinate în toate probele de cărămizi (rețete de fabricație), iar în graficul din Figura 23 sunt scoase elementele majoritare, iar ceea ce rămâne sugerează sursele de lut folosite de-a lungul timpului.

Analiza XRF a cărămizilor asociate cu construcțiile existente

Cele trei fragmente de cărămidă de la Ansamblul fostului conac Lecca-Micșunești prezintă neomogenități grupate pe două zone distincte distribuite statistic în masa materialului: o zonă în care lipsește aluminiul, iar siliciul, potasiul, calciul și fierul (elemente majoritare și minoritare ale compoziției materialului) au valori ale concentrațiilor mai mici și o a doua zonă în care aluminiul este prezent, iar elementele menționate sunt mai bine reprezentate. Grupa de neomogenități în care lipsește aluminiul prezintă

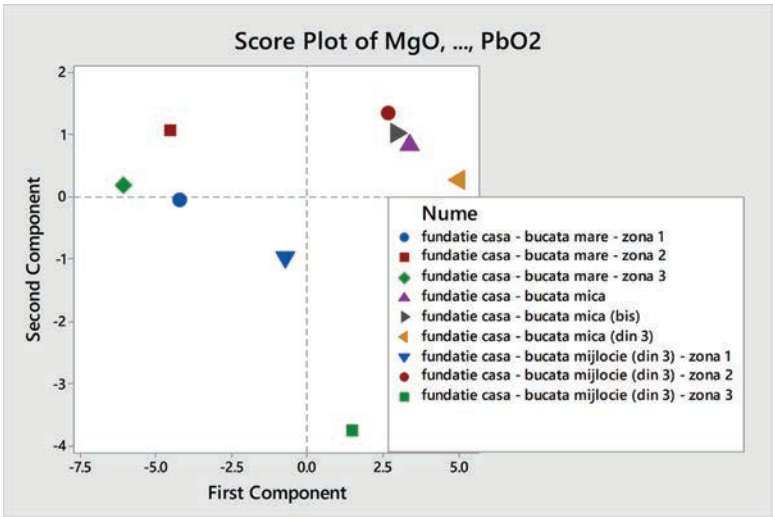


***Figura 18**. Score Plot pentru Proba 1-bis (fundație casă).*

***Figure 18.** Score Plot for Sample 1bis (house foundation).*

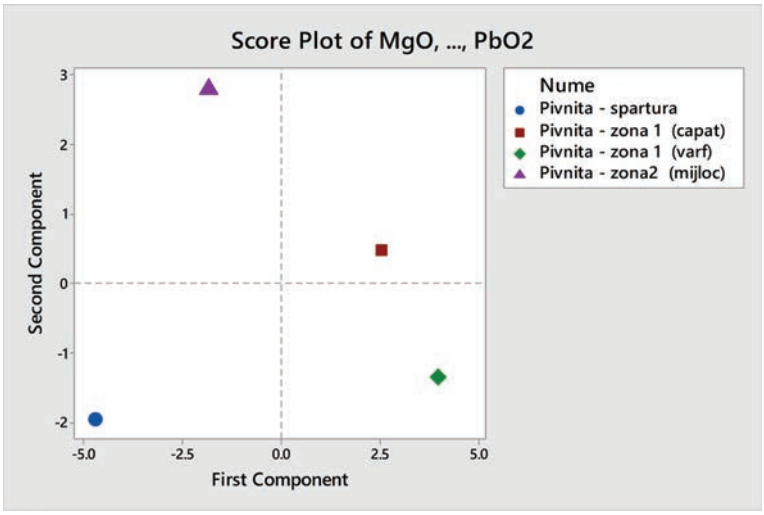


***Figura 19**. Score Plot pentru Proba 3-bis (pivniță).*

***Figure 19.** Score Plot for Sample 3bis (cellar).*

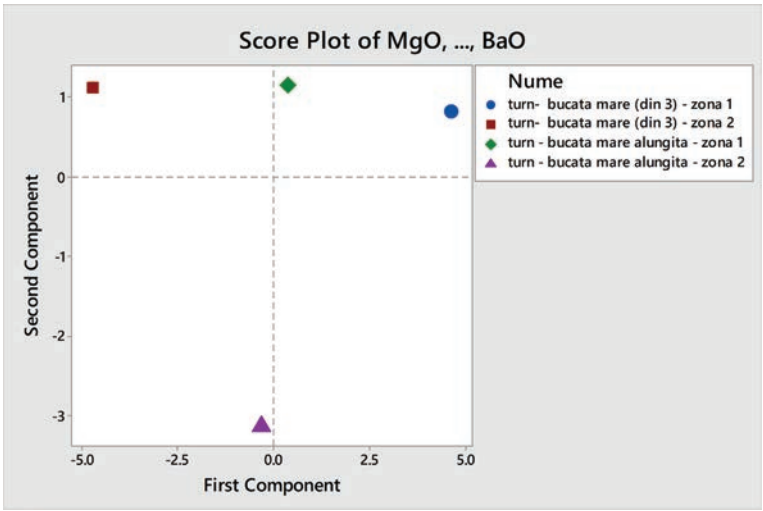


***Figura 20**. Score Plot pentru Proba 4-bis (turn de poartă).*

***Figure 20.** Score Plot for Sample 4bis (gate tower).*

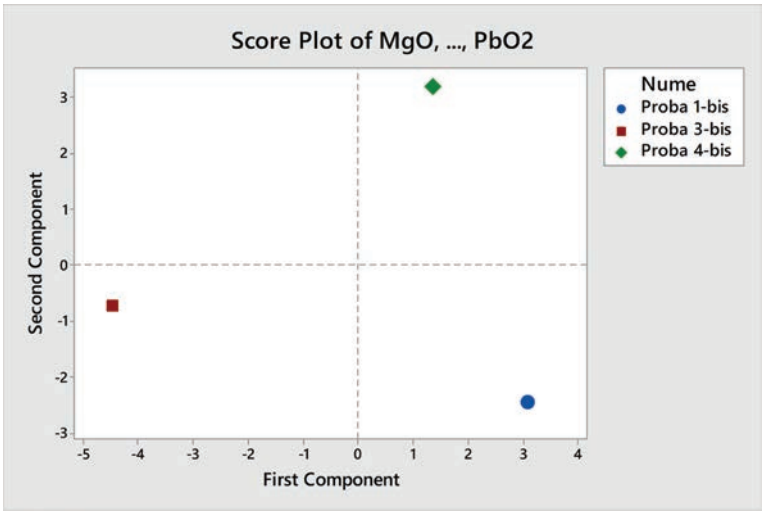


Figura 21. *Score Plot pentru cele trei fragmente de cărămidă.*

Figure 21. *Score Plot of the three brick fragments.*

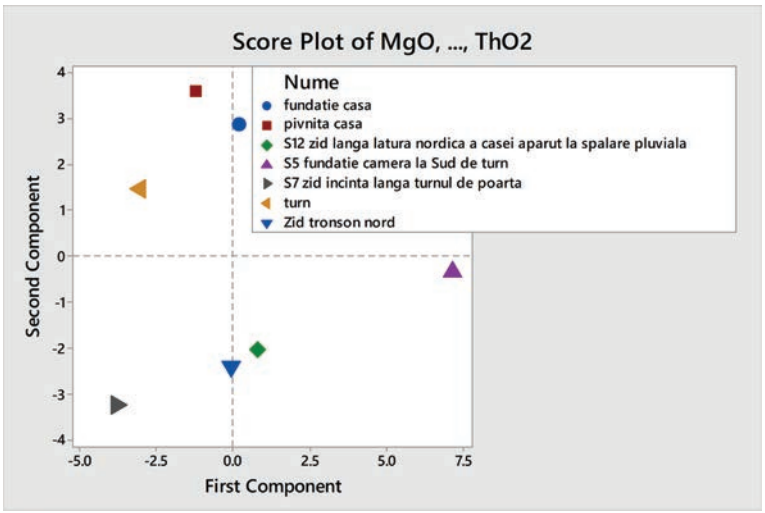


Figura 22. *Analiza statistică a datelor pentru toate elementele determinate în cele șapte probe prelevate la Ansamblul Lecca Micșunești în timpul cercetărilor arheologice din 2022.*

Figure 22. *Statistical analysis of the data for all determined elements in the seven samples collected at the Lecca Micșunești Ensemble during the 2022 archaeological surveys.*

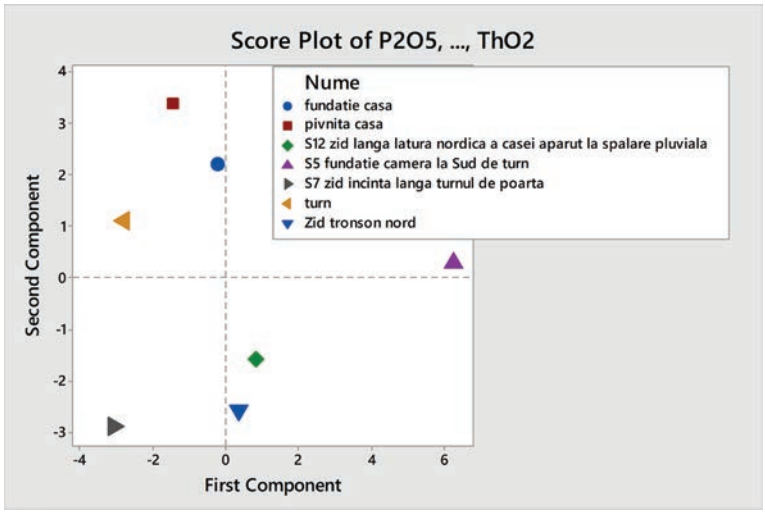


Figura 23. *Analiza PCA pentru cele șapte probe de la Ansamblul Lecca Micșunești; eliminarea magneziului și a elementelor majoritare.*

Figure 23. *PCA analysis for the seven samples from the Lecca Micșunești Ensemble, after removing magnesium and major elements.*



***Figura 24**. Fragment de tapiserie pe cadru din lemn, la etajul conacului (Foto: Corina Simion).*

***Figure 24.** Tapestry fragment on a wooden frame, located on the upper floor of the manor house (Photo: Corina Simion).*

o bună concordanță între cele trei probe, spre deosebire de cealaltă grupă, care are valori net diferite și care imprimă, de fapt, diferențele între probe. Suma procentului de oxizi ai elementelor determinabile prin metoda XRF este, în prima grupă, la jumătate față de valoarea corespunzătoare din a doua grupă. Cel mai probabil, prima grupă conține compuși organici sau anorganici și legături cu elemente/grupe de elemente ușoare, care nu pot fi măsurate la XRF.

Proba 1-bis (fundație casă) și proba 4-bis (fundație turn) sunt perfect corelate și amândouă sunt semi-corelate cu proba 3-bis (pivnița casei).

Ca imagine de ansamblu spațio-temporală, deși diferite, ele formează un grup distinct față de alte materiale analizate până acum în sud-vestul României și în zona Subcarpaților, provenind fie din Epoca romană, fie din Evul Mediu, dintr-o perioadă mai apropiată de momentul construirii conacului de la Lecca Micșunești[10].

Pentru aprofundarea subiectului, ar fi recomandabilă o analiză prin gamma spectrometrie, în comparație cu surse de materiale din zonă, posibil exploatate pe plan local[11].

Per ansamblu, asemănările și diferențele observate prin analiza XRF, pentru cele șapte probe (trei prezentate detaliat mai sus și patru doar amintite), sugerează o evoluție a structurii Ansamblului fostului conac Lecca Micșunești, evidențiată de săpăturile arheologice. Cu alte cuvinte, analiza a surprins destul de bine grupurile de tipuri de cărămizi. Alte comentarii vor fi incluse mai departe în *Analiza comparată a datelor radiocarbon și XRF pentru toate probele analizate.*

Datarea fragmentelor de țesătură prin analiza pigmenților, folosind tehnica XRF

Caroierea pe verticală și pe orizontală și separarea rezultatelor obținute prin metoda XRF *in situ* pe culori/nuanțe, la procesarea ulterioară în laborator, au dus la obținerea unor date omogene care nu sugerează intervenții târzii (Anexa 2).

Analiza paletei de culori prin prisma XRF[12], interpretările și datarea momentului pictării țesăturii s-au efectuat pe baza analizei pigmenților (Fig. 24).

Compoziția elementală a pigmenților indică faptul că aceștia sunt predominant anorganici și de origine minerală, mai degrabă decât coloranți organici. Cromul, atunci când este prezent ca pigment, ar sugera în mod normal o dată post-1790 pentru tapiserie, în timp ce pigmenții pe bază de titan utilizați în pictură indică în general o cronologie post-1920. Cu toate acestea, proporțiile stoichiometrice de Pb și Ti în ambele zone investigate sunt în concordanță cu titanatul de plumb, $PbTiO_3$, corespunzător mineralului natural macedonit, mai degrabă decât cu un pigment artificial. În acest caz, asocierea Pb-Ti reflectă o fază minerală și nu un pigment sintetic modern, astfel încât constrângerile cronologice obișnuite „după 1790” și „după 1920” nu pot fi aplicate.

[10] Cristea-Stan *et alii* 2023, art. nr. 805.

[11] Vezi, în acest sens, situația de la Ulpia Traiana (Ghizdăveț *et alii* 2025, art. nr. 5780).

[12] Eastaugh *et alii* 2004, p. 391; Maerz, Paul 1930; Gettens, Stout 1942, p. 93, 201, 206; “*LeadTin Yellow*” Wikipedia, *The Free Encyclopedia*, accessed April 25, 2025, https://en.wikipedia.org/wiki/Lead-tin_yellow; Feller 1986; Harley 1982; Cornell, Schwertmann 2003; Burke, Kieft 1971, p. 101–104; Radusinović, Markov 1971, p. 387–394; Wollaston 1804, p. 419–430; Wollaston 1805, p. 316–330; Tennant, Smithson 1804, p. 411–418; Gettens, Stout 1966.

Fierul apare la niveluri compatibile cu pigmenții de oxid de fier (Fe_2O_3/Fe_3O_4) pe bază de hematit și magnetit, în timp ce cromul sub formă minerală este cel mai plauzibil prezent sub formă de Cr_2O_3 de tip corindon. Abundențele mari de ruteniu, rodiu și paladiu, împreună cu nichel, cupru și zinc, sugerează cu tărie un reziduu complex derivat din prelucrarea minereurilor de platină, o tehnologie cunoscută abia după 1803. Staniul poate indica prezența stanatului de plumb, Pb_2SnO_4 („galben de plumb-staniu"), un pigment galben utilizat pe scară largă în Renaștere (secolele XV–XVI), dar abandonat în mare parte după mijlocul secolului al XVIII-lea. Concentrația totală a elementelor detectate depășește 99,8%, confirmând că acești coloranți sunt pigmenți minerali mai degrabă decât organici, ceea ce este avantajos pentru pretratarea și curățarea fibrelor înainte de datarea cu radiocarbon[13]. În general, paleta de pigmenți este dominată de fier, crom, cupru, staniu, zinc, nichel, titan și plumb; concentrațiile acestora scad semnificativ sau lipsesc de-a lungul marginii țesăturii, oferind informații suplimentare despre suprafața originală pe care s-au aplicat și ghidând strategia de selecție și curățare a probelor destinate analizei cu radiocarbon. În special, elementele rare ruteniu, rodiu și paladiu apar în concentrații mari, cu diferențe clare între zonele cu pigment negru și roșu.

Analiza XRF a fragmentului de tapiserie pune în evidență folosirea pigmenților minerali primari/utilizați după secolul al XVI-lea; propunerile de pigmenți asociați cu cromatica tapiseriei arată că, cel mai probabil, ea a fost realizată imediat după anul 1800. Data radiocarbon obținută pentru fibrele textile ale suportului pictural (Fig. 4) oferă un interval majoritar 1724–1813 calAD, cu o probabilitate de 50,5% care converge în concluzii cu analiza XRF. Fibra din planta textilă anuală fixează intervalul 1803–1813 AD drept cel mai probabil pentru cultivare, obținerea fibrelor și a suportului pictural. Rezultatele XRF sprijină ideea unei decontaminări simple pe bază de acizi și de baze și nu impun folosirea solvenților organici care ar putea rămâne asociați fibrelor și ar putea modifica data radiocarbon.

Analiza comparată a datelor radiocarbon și XRF pentru toate probele analizate

Din interpretarea arheometrică a histogramelor individuale obținute la datarea radiocarbon a mortarelor rezultă următoarele:

Fundația conacului, tencuiala de pe peretele respectiv și pivnița se potrivesc perfect (Fig. 6–8), fiind realizate în același timp.

Fundațiile turnului de poartă (Fig. 9), ale camerei aflate la sud de turn (Fig. 11), ale zidului de incintă, la nord de turn (Fig. 10) și imediat lângă latura sa nordică (Fig. 12) se încadrează și ele în aceeași etapă constructivă cu casa și pivnița. Zona în elevație a turnului (Fig. 1) pare mult mai târzie decât fundațiile.

Fundația zidului de lângă latura nordică a casei, apărut la săparea unui șanț pentru o conductă de scurgere a apei pluviale (în S.12), arată o lucrare mai recentă (Fig. 13). Este singura probă de mortar care se suprapune (intervalul 1730–1807, cu probabilitate de 54%) peste rezultatele obținute pentru zonele în elevație (Fig. 1–5).

Asocierile arheometrice sunt grafic exprimate în Fig. 15. Ele duc la patru grupe temporale cu posibile similitudini spațio-temporale care s-ar putea oglindi și în asemănările și deosebirile dintre cărămizile măsurate prin XRF. Rezultatele a trei probe asociate cu zidurile în elevație au fost prezentate mai pe larg în această lucrare. Pentru alte patru grupări de cărămizi, respectiv cele provenite din fundația zidului de incintă tronson nord (în S.4), din fundația camerei aflată la sud de turnul de poartă (în S.5), din fundația zidului de incintă lângă latura nordică a turnului de poartă (în S.7) și din fundația unui zid apărut la săparea unui șanț pentru o conductă de scurgere a apei pluviale, lângă latura nordică a casei (în S.12), datele XRF nu au fost prezentate.

Din interpretarea arheometrică a datelor XRF, în urma efectuării analizei PCA (Fig. 22–23) pentru cele șapte tipuri de cărămizi asociate probelor de mortare, dintre care cele de relevanță sunt prezentate în Anexa 1 și sunt comentate mai sus, rezultă:

Există o grupare a datelor pentru conac, turn și pivniță. Din Figura 22 se poate deduce că există o asociere după rețetă, iar din graficul Figura 23 rezultă că sursele de lut au fost foarte apropiate.

O a doua grupare distinctă o formează cărămizile extrase din fundațiile zidului de incintă lângă turnul de poartă, ale zidului tronson nordic și ale zidului de lângă latura nordică a casei, apărut la săparea unui șanț pentru o conductă de scurgere a apei pluviale. De această dată, analiza XRF sugerează un scenariu de posibilă refolosire a cărămizilor din zidul de incintă (urmare a unei demolări controlate, surprinsă și în cercetările arheologice) la construirea pe latura de nord, în apropierea colțului de nord-vest al casei a unei încăperi mici de plan rectangular (actualmente baie și toaletă), precum și a unor eventuale alte faze ale conacului astăzi dispărute, ori anexe neevidențiate în studiul nostru. Analiza PCA efectuată pe micro-elemente și elemente-urmă (Fig. 23) prezintă aceeași dispersie ca și pentru toate elementele (Fig. 22); surse de lut și rețete ușor diferite.

A treia grupă este reprezentată de un outlier, și anume fragmentele de cărămidă extrase din fundațiile unei camere surprinse în săpătură pe latura sudică a turnului. Nu corespund nici ca rețetă, nici ca sursă de lut cu grupele anterioare, însă este într-adevăr cea mai apropiată prin ordinea cadranelor din diagrame, în primul rând ca sursă de lut, de cărămizile fundației turnului de poartă cu care de altfel se și asociază cel mai bine prin cronologie absolută.

Pentru a evalua gradul de omogenitate al probelor de mortar au fost calculate medianele și abaterile standard pentru fiecare set de date radiocarbon. Mediana a fost utilizată ca indicator robust al valorii centrale, deoarece

[13] Bruhn *et alii* 2001, p. 229–237; Higham *et alii* 2006, p. 383–395.

nu este influențată de valori extreme. În schimb, abaterea standard reflectă dispersia internă a setului și permite aprecierea variabilității materialului analizat. În cazul în care o valoare izolată produce o creștere artificială a dispersiei, aceasta a fost evaluată separat pentru a determina dacă reprezintă o variație naturală sau un element atipic.

Dacă combinăm toți mini-nodulii de var datați prin funcția R_combine în OxCal, incluzându-l și pe cel extras din piciorul turnului de poartă, rezultatele mini-nodulilor de var individuali nu converg, așa cum am menționat la paragraful corespunzător din articol. Aparțin unor momente de aplicare diferite în zidărie sau au perioade de întărire a varului diferite în funcție de perioada în care acesta a fost aplicat/poziția efectivă din care au fost extrași (fundație sau zid în elevație)/cât de adânc au fost plasați inițial în zid.

Dacă scoatem mini-nodulul de var extras din piciorul turnului porții, respectiv proba 2231.1, diagrama devine ca în Figura 16. Situația este mult îmbunătățită din punctul de vedere al convergenței, dar datele tot nu converg către similaritate temporală în sensul menționat mai sus. Dacă scoatem și proba 2209.50, aparținând fundației îngropate de lângă latura nordică a casei, apărută la săparea unui șanț pentru o conductă de scurgere a apei pluviale, observăm că există o convergență slabă, dar care satisface criteriile programului OxCal. Cele mai bune convergențe sunt atinse pentru perechile definite în Figura 15; au factori df și T mici (df = 1 sau 2; T = 0).

Dacă considerăm valorile mediane pentru toate probele datate fiecare în parte, calculate automat în OxCal, Deviația Standard (± SD) pentru valorile asociate cu mini-nodulii de var este de ± 96,47 ani radiocarbon după eliminarea valorii pentru proba 2231.1. Ea devine ± 29,42 ani radiocarbon dacă scoatem și proba 2209.50. Față de statistica calculată pentru anii BP combinați, ± 15 ani BP (Fig. 16), anii radiocarbon calibrați oferă valoarea ± 29,42 ani radiocarbon. Această diferență la jumătate între valori explică convergența mai slabă față de perechile din Figura 15.

Dacă este să calculăm mediana medianelor pentru valorile pentru mini-noduli de var (cu excepția 2231.1), observăm că, spre deosebire de valorile ± SD (96,47 și respectiv 29,42 ani radiocarbon), acestea sunt foarte apropiate, și anume 1537,5 ani radiocarbon și 1533 ani radiocarbon.

Dacă luăm rezultatele probelor în elevație, deviația standard este de ± 72,46 ani radiocarbon, la o valoare a medianei de 1787 ani radiocarbon.

Diferența între mediana zonelor în elevație și cea a zonelor îngropate este de 254 ani radiocarbon; așadar, aproximativ 250 de ani diferență între rezultatele din cele două categorii.

Cât despre diferențele dintre fundațiile care converg, acestea sunt în limitele de maximum ± 30 de ani radiocarbon, rezultat compatibil cu afirmațiile din literatură, potrivit cărora fundațiile se întăresc în câțiva ani/câteva decenii, uneori chiar și până la sute de ani.

Mediana este anul calendaristic care împarte probabilitatea totală calibrată în două jumătăți egale (50% înainte, 50% după). Este un rezumat bazat pe distribuția quantilă a probabilității posterioare produsă prin calibrare. Este foarte utilă mai ales pentru post 1650 AD, când interpretarea și plasarea corectă a evenimentului trebuie judecate după mai multe intervale majoritare și minoritare și după mai multe criterii nu neapărat picul cel mai important. Permite o comparare directă în situații de acest gen în care evenimentul singular, de fapt, poate fi plasat și într-un interval minoritar, uneori periferic curbei de calibrare.

Modul (vârful cel mai înalt) se poate schimba dramatic în funcție de micile modificări ale vârstei radiocarbonului sau de incertitudine pe astfel de porțiuni ale curbei. În schimb, mediana se modifică mult mai greu pentru că integrează întreaga distribuție. Această stabilitate este motivul pentru care multe lucrări arheometrice preferă să raporteze mediana atunci când este necesară o singură dată reprezentativă sau o comparație.

Dacă se compară șiruri de date ca mai sus, valorile medianelor asigură o comparație consistentă între șiruri de valori, chiar dacă, pentru fiecare caz în parte, alegerea intervalului final împreună cu arheologul personalizează plasarea cea mai probabilă a evenimentului istoric, mai mult sau mai puțin apropiată de mediană.

Eliminarea valorii medianei 1763 (pentru proba 2209.50) reduce abaterea standard de la ± 96,47 la ± 29,42, ceea ce indică faptul că această valoare reprezintă un element atipic, diferit de restul probelor. În termeni arheologici, aceasta poate sugera fie o proveniență diferită, fie un proces tehnologic distinct.

Aceste valori statistice nu sunt doar indicatori matematici, ci oferă o imagine asupra gradului de omogenitate a semnăturii carbon-14, indiferent de natura materialului și, implicit, asupra coerenței proceselor tehnologice sau a provenienței probelor.

CONCLUZII

Datarea radiocarbon și analiza XRF asupra unor materiale arheologice aparținând Ansamblului fostului conac Lecca Micșunești au creat oportunitatea aplicării unor studii multidisciplinare și dezvoltării unor metode în cadrul laboratorului RoAMS. Materialele datate radiocarbon au fost: mortare, lemn, fibre textile.

Din punct de vedere arheometric, se pot desprinde următoarele concluzii: datarea separată a sub-fracțiilor de calcit izolate din probele de mortar din fundații a pus în evidență congruența, pentru aceeași probă, între valorile obținute pentru nodulii de var și fracția sub-micronică, care se consideră ca fiind formată la momentul întăririi varului în zidărie. Pe de altă parte, combinarea datelor radiocarbon pentru același tip de sub-fracție, dar pentru probe diferite, a arătat că ele ar putea proveni din faze de construcție diferite sau ar putea avea o semnătură izotopică carbon-14 diferită. Datele XRF pentru cărămizi se grupează

în trei-patru grupe spațio-temporale, punând în evidență asemănările și deosebirile dintre sursele de lut și rețetele de fabricație. Coroborate cu datele radiocarbon, analizele XRF susțin în linii mari grupările după datele radiocarbon și pun în evidență o posibilă refolosire a cărămizilor zidului de incintă pentru construcția unei faze noi a conacului (încăperea mică rectangulară de pe latura nordică a casei) și a unor eventuale alte construcții/anexe neidentificate încă.

Studiile anterioare prin cronologie relativă au stabilit drept cea mai probabilă perioadă de apariție a formei actuale a ansamblului ca fiind în jurul mijlocului secolului al XVIII-lea.

Rezultatele datării radiocarbon a probelor extrase din zonele în elevație converg către cronologia relativă și sunt susținute de interpretarea analizei XRF asupra pigmenților tapiseriei de la etajul conacului. Scara principală de acces, cu dată radiocarbon centrată pe perioada cuprinsă între începutul secolului al XVII-lea și începutul secolului al XIX-lea, susține și ea acest scenariu, intervalul menționat putând fi luat în considerare mai degrabă ca *terminus post quem* amendat prin „old wood effect" (vechimea și anul propriu-zis de sacrificare al copacului pot crea o vârstă radiocarbon aparentă mai veche, în funcție de poziția de pe trunchi de unde au fost luate fibrele de lemn în vederea datării radiocarbon). Pentru zonele în elevație, indiferent de natura materialului, mediana valorilor este de 1787 ani radiocarbon. Această dată corespunde în linii mari cu intervalul asociat realizării construcțiilor descoperite/cercetate în timpul sondajelor pe teren din 2022.

Pentru fundațiile îngropate, cu excepția celei apărute lângă latura nordică a casei, la săparea unui șanț pentru o conductă de scurgere a apei pluviale, rezultatele oferă o convergență în limitele acceptate de literatură. Ele pot fi socotite ca fiind realizate într-un interval de timp mai mic de ± 30 de ani. Pentru că acest interval deseori este asociat cu timpul necesar întăririi varului în zidărie, ele pot fi atribuite aceleiași faze de construcție în Ansamblu. Mediana valorilor este de 1533 ani radiocarbon.

Diferența între cele două șiruri de valori este de aproximativ 250 de ani. Această valoare se poate explica prin limitările condițiilor de prelevare și de datare radiocarbon. În general, analiza arheometrică a datelor radiocarbon sugerează că fundațiile preced cu câteva secole zonele actuale în elevație. O analiză mai atentă a datelor și o interpretare integrată a informațiilor în sensul menționat, în capitolul introductiv, vor putea să aducă noi lămuriri, să confirme sau să infirme această afirmație.

Din analiza comparată a datelor radiocarbon și XRF, se poate pune în evidență o altă contribuție a studiului, și anume: pot exista situații în care datele radiocarbon pentru mortare să fie foarte apropiate, dar cărămizile să prezinte diferențe (turnul de poartă și încăperea de pe latura lui sudică), dar sunt și situații în care mortarele să ofere date radiocarbon total diferite, iar cărămizile să prezinte asemănări foarte mari (zidul de incintă și fundația îngropată pe latura nordică a conacului). În primul caz, scenariul cel mai probabil ar fi folosirea în aceeași etapă de construcție a unor cărămizi din mai multe surse/ateliere de producție, iar în al doilea caz, refolosirea cărămizilor din zidul de incintă pentru o extindere/anexă total sau parțial dispărută – în legătură sau nu cu extensia actuală de pe latura nordică a conacului.

Ultima intervenție pe zona turnului de poartă marchează o fază târzie, în conexiune cu transformările din anii '50 ai secolului al XX-lea, care au avut loc la conacul Lecca Micșunești.

MULȚUMIRI

Datarea radiocarbon a fost realizată în cadrul proiectului NUCLEU, proiect PN 23210201 și PN 23210102, finanțat de Ministerul Cercetării, Inovării și Digitalizării. Experimentele au fost efectuate la acceleratorul Tandetron™ 1MV de la Institutul Național de Cercetare-Dezvoltare pentru Fizică și Inginerie Nucleară „Horia Hulubei" (IFIN-HH) și au fost susținute de Programul Guvernului României prin Programul Național pentru Instalații și Obiective Speciale de Interes Național (IOSIN).

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O ARHEOLOGIE A PATRU NOI MARTIRI AI BISERICII ROMANO-CATOLICE DIN ROMÂNIA ȘI AI BISERICII ROMÂNE UNITE CU ROMA, GRECO-CATOLICE

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Keywords: *archaeology of communist repression; memory; new martyrs; Roman Catholic Church in Romania; Romanian Church United with Rome, Greek Catholic; Șerban Vodă (Bellu) Cemetery*

Abstract: *This article presents the results of the exhumations carried out between 2010 and 2019 in the Șerban Vodă (Bellu) Cemetery in Bucharest, in both the Orthodox and Catholic sections. Conducted at the request of representatives of the Roman Catholic Church in Romania and the Romanian Church United with Rome, Greek Catholic, these investigations were part of the process of beatification/canonisation for four hierarchs who fell victim to communist repression: Monsignor Vladimir Ghika, Bishop Vasile Aftenie, Bishop Ioan Bălan and Cardinal Iuliu Hossu. Unlike forensic archaeological investigations, this study does not merely aim to identify the deceased, nor to provide new evidence to condemn communist ideology; instead, it highlights the role of objects associated with the investigated contexts. In the graves of Bishops Vasile Aftenie and Ioan Bălan, the remnants of clothing, footwear, collars, a pectoral cross, and a rosary preserve their memory long after their fragile, gradually decaying bodies can no longer express anything directly. In the cases of Monsignor Vladimir Ghika and Cardinal Hossu, the objects "speak" both of the deceased and of those who reinterred them in family plots. In these two contexts, objects serve as material manifestations of the gestures associated with the deposition of remains. They also restore the identity of the reinterred, an identity previously lost – in the case of Monsignor Vladimir Ghika – in the anonymity of the unmarked grave. Furthermore, the discovery of prayer notes (some containing curses) and coins from various periods of the communist and post-communist eras reflects popular Christian practices and a belief in the hierarchs' post-mortem intervention. This material repertoire extends beyond the items discovered during exhumation to include new objects – such as monuments, bone relics, and devotional reproductions – that perpetuate the connection with the martyrs and form part of a gift economy that strengthens relationships among the faithful. The remnants of clothing, coffin fragments, nails, grave soil, funerary monuments, and new post-canonisation objects act as extensions of the martyrs' bodies. Thus, the exhumations do not represent the final chapter of a tragic story, but rather mark the beginning of a new social life for the four martyrs.*

Cuvinte-cheie: *arheologia represiunii comuniste; memorie; noi martiri; Biserica Romano-Catolică din România; Biserica Română Unită cu Roma, Greco-Catolică; Cimitirul Șerban Vodă–Bellu*

Rezumat: *Articolul prezintă rezultatele exhumărilor efectuate între anii 2010 și 2019 în Cimitirul Șerban Vodă–Bellu din București, atât în sectorul ortodox, cât și în cel catolic. Desfășurate la solicitarea reprezentanților Bisericii Romano-Catolice din România și ai Bisericii Române Unite cu Roma, Greco-Catolice, aceste investigații au făcut parte din procesul de beatificare/canonizare a patru ierarhi care au căzut victimă represiunii comuniste: monseniorul Vladimir Ghika, episcopul Vasile Aftenie, episcopul Ioan Bălan și cardinalul Iuliu Hossu. Spre deosebire de cercetările arheologice judiciare, studiul de față nu își propune doar identificarea persoanelor decedate și nici furnizarea de noi dovezi pentru condamnarea ideologiei comuniste, ci evidențiază rolul obiectelor asociate contextelor investigate. În mormintele episcopilor Vasile Aftenie și Ioan Bălan, resturile de îmbrăcăminte, încălțăminte, colarele, crucea pectorală și rozariul le conservă memoria mult timp după ce trupurile lor fragile, măcinate treptat, nu mai pot exprima nimic în chip direct. În cazul mormintelor monseniorului Vladimir Ghika și al cardinalului Hossu, obiectele „vorbesc" atât despre cei decedați, cât și despre cei care i-au reînhumat în parcelele de familie. În aceste două contexte, obiectele sunt manifestări materiale ale gesturilor asociate depunerii osemintelor. De asemenea, ele restituie identitatea celor reînhumați – o identitate pierdută anterior, în cazul monseniorului Vladimir Ghika, în anonimatul mormântului nemarcat. Mai mult decât atât, descoperirea în diverse contexte din spațiul funerar a unor bilete cu rugăciuni (unele conținând blesteme) și a unor monede din diferite perioade ale epocii comuniste și postcomuniste reflectă practici ale creștinismului popular și, concomitent, credința în intervenția post-mortem a celor patru ierarhi. Acest repertoriu material nu se limitează la piesele descoperite în timpul exhumărilor, ci se extinde ulterior prin includerea unor noi obiecte – precum monumente, oseminte devenite relicve și reproduceri devoționale reprezentând chipul martirului – care perpetuează legătura cu martirii și fac parte dintr-o economie a darului ce instituie și consolidează relațiile dintre credincioși. Resturile de îmbrăcăminte, fragmentele de sicriu, cuiele, pământul de umplutură al gropilor, monumentul funerar și noile obiecte realizate după beatificare/canonizare funcționează ca extensii ale trupurilor celor patru martiri. Astfel, lucrările de exhumare nu reprezintă capitolul final al unei povești tragice, ci marchează începutul unei noi vieți sociale pentru cei patru martiri.*

INTRODUCERE

Articolul de față își propune să prezinte de o manieră sintetică rezultatele acțiunilor de exhumare a patru figuri marcante ale Bisericii Romano-Catolice din România și, mai ales, ale Bisericii Române Unite cu Roma, Greco-Catolice – monseniorul Vladimir Ghika, episcopul Vasile Aftenie, episcopul Ioan Bălan și cardinalul Iuliu Hossu –, efectuate între anii 2010 și 2019 în Cimitirul Șerban Vodă–Bellu din București, atât în sectorul ortodox, cât și în cel catolic (pentru biografia celor patru ierarhi: e.g., Bălțăceanu, Broșteanu 2019; Cosmovici 2011; Cosmovici 2019a; Cosmovici 2019b; Cosmovici 2019c; *Martiri* 2007). Pe lângă aprecierea parcursului lor intelectual și instituțional,

cei patru ierarhi erau iubiți pentru viața lor spirituală, activitatea pastorală și pentru modelul de atitudine oferit în contexte socio-politice extrem de dificile, un exemplu elocvent în acest sens fiind poziția oficială adoptată în 1944 de cardinalul Iuliu Hossu (pe atunci episcop) față de politica de exterminare a evreilor de către naziști și aliații lor, poziție în care susținea „salvarea evreilor ca primă prioritate a momentului" (Băltăceanu, Broșteanu 2019, p. 149).

Monseniorul Vladimir Ghika, episcopul Vasile Aftenie, episcopul Ioan Bălan și cardinalul Iuliu Hossu se numără printre numeroasele victime ale represiunii politice îndreptate de puterea comunistă, instaurată după 1945, împotriva confesiunilor creștine și a religiei în general. Represiunea antireligioasă a îmbrăcat multiple forme în România comunistă, precum modificarea treptată a legislației cu scopul de a întări controlul statului asupra cultelor; arestarea a numeroși clerici ortodocși, greco-catolici, catolici, luterani etc.; desființarea Bisericii Greco-Catolice; distrugerea mișcărilor spirituale creștin-ortodoxe, precum cele de la mănăstirea Vladimirești sau din jurul grupării Rugul Aprins; desființarea de mănăstiri și alungarea din monahism a unui număr mare de călugări și călugărițe; dărâmarea de biserici etc. (e.g., Tismăneanu *et alii* 2007, p. 258–288).

În cazul specific al Bisericilor Catolice și Greco-Catolice, chiar cu ocazia înființării Partidului Muncitoresc Român, la 21 februarie 1948, secretarul general al Partidului afirma că „În întreaga lume clerul catolic ascultă de ordinele Vaticanului, a cărui furibundă activitate reacționară este bine cunoscută [...]" (Gheorghiu-Dej, citat în Băltăceanu, Broșteanu 2019, p. 34), pretext pentru o serie întreagă de acte legislative în urma cărora a fost denunțat Concordatul dintre Statul Român și Vatican, au fost desființate școlile confesionale ale tuturor cultelor și naționalizate bunurile acestora, au fost întrerupte legăturile cu Vaticanul, au fost desființate mai multe eparhii și au fost pensionați forțat episcopii din fruntea lor (Băltăceanu, Broșteanu 2019, p. 35). Aplicând un model sovietic deja verificat în Ucraina, Securitatea[1] a demarat o operațiune de „lichidare prin unificare" a Bisericii Greco-Catolice, ce trebuia să creeze impresia „că represiunea împotriva greco-catolicilor emana, într-o formă sau alta, de la Biserica Ortodoxă" (Băltăceanu, Broșteanu 2019, p. 39). Având mai multe etape, „operațiunea de unificare" cu Biserica Ortodoxă a culminat cu ordinul emis în data de 27 octombrie 1948 de o comisie ce reunea mai multe ministere, privind arestarea tuturor episcopilor greco-catolici (pentru un istoric al procesului de lichidare, vezi, de exemplu, Băltăceanu, Broșteanu 2019, p. 31-43; Cosmovici 2019a, p. 42–56).

Vasile Aftenie, Ioan Bălan și Iuliu Hossu au fost arestați în noaptea de 28 spre 29 octombrie 1948 și duși la Ministerul de Interne. După câteva zile, episcopii au fost închiși cu toții la Dragoslavele, în reședința de vară a patriarhului Bisericii Ortodoxe, și, ulterior, în luna februarie, transferați la mănăstirea Căldărușani. Alături de altele, cele două mănăstiri fuseseră convertite în spații de detenție ca „parte din planul autorităților de a crea impresia că principalul factor implicat în represiune era Biserica Ortodoxă" (Băltăceanu, Broșteanu 2019, p. 162–163; Muraru 2008, p. 191–192).

Încă de la începutul detenției, autoritățile au încercat în chip repetat să-i convingă pe episcopi să „revină la ortodoxie", promițându-le eliberarea imediată și tentându-i cu conferirea unor poziții importante în ierarhia Bisericii Ortodoxe, însă fără niciun succes. Securitatea a decis să fabrice dosare penale și să însceneze procese episcopilor arestați, context în care, în primăvara anului 1949, Vasile Aftenie a fost transferat la Ministerul de Interne din București și anchetat dur timp de aproape un an. În urma unui atac vascular cerebral suferit după un interogatoriu, AVC care i-a provocat paralizarea unei mâini și a unui picior, episcopul a fost trimis la spitalul închisorii Văcărești, unde s-a stins din viață după 45 de zile (10 mai 1950), la vârsta de aproape 51 de ani. Chiar a doua zi după deces, sicriul episcopului Vasile Aftenie a fost dus la Cimitirul Bellu Catolic și înmormântat în secret, doar în prezența unui preot romano-catolic (Ioan Baltheiser) și a groparilor, „sub controlul a cinci ofițeri de Securitate" (Cosmovici 2019a, p. 15).

Ioan Bălan și Iuliu Hossu au fost transferați în 1950 la închisoarea politică din Sighet, unde au rămas până în 1955. Închisoarea din Sighet era o „unitate concentrațională cu specific aparte", în fapt un regim de exterminare în cadrul căruia deținuții politic erau ținuți în condiții insalubre, în frig, supravegheați continuu, izolați în celule de pedeapsă (numite „neagra") pentru orice abatere, supuși frecvent unor percheziții generale, înfometați sistematic (regimul alimentar nu depășea 1300 de calorii, uneori coborând chiar sub 700 de calorii), umiliți și lipsiți de orice fel de îngrijiri medicale. Ioan Bălan și Iuliu Hossu au supraviețuit, însă alți trei episcopi greco-catolici închiși împreună cu ei – Valeriu Traian Frențiu, Ioan Suciu și Tit Liviu Chinezu – și canonicul Augustin Maghiar au murit în timpul detenției, în singurătate, izolați de către gardieni (pentru regimul închisorii Sighet, vezi Muraru 2008, p. 461–474).

După perioada petrecută la Sighet, Ioan Bălan și Iuliu Hossu au fost obligați să trăiască pentru tot restul vieții lor în domiciliu obligatoriu, o scurtă perioadă împreună, la mănăstirile Curtea de Argeș și Ciorogârla, apoi separat, primul la Ciorogârla, iar cel de-al doilea, la mănăstirea Căldărușani. Atât în timpul detenției, cât și în domiciliu obligatoriu, până în ultima lor zi de viață, episcopii au fost supravegheați de Securitate pentru a-i face să cedeze și să treacă la ortodoxie, legitimând astfel planul politic de „unificare", precum și pentru a preîntâmpina orice fel de influență asupra Bisericii Greco-Catolice ce activa în clandestinitate (Băltăceanu, Broșteanu 2019). La moartea episcopului Ioan Bălan (4 august 1959), o primă slujbă a fost făcută la Ciorogârla (7 august 1959), la care au participat nu doar membrii familiei, ci și maicile de la mănăstire și localnici, în total în jur de 70–80 de persoane, după care

[1] Denumire uzuală pentru Direcția Generală a Securității Poporului, înființată în 1948, redenumită în 1951 Direcția Generală a Securității Statului; în 1956, instituția și-a schimbat din nou numele, devenind Departamentul Securității Statului (în cadrul Ministerului de Interne).

sicriul a fost dus la București și înmormântat în Cimitirul Bellu Catolic. În schimb, la moartea cardinalului Iuliu Hossu (28 mai 1970), „[î]n urma presiunilor venite de la Culte, familia a fost obligată să-l înmormânteze a doua zi, pe 29 mai, la cimitirul Bellu Catolic" (Bălțăceanu, Broșteanu 2019, p. 227), în ciuda faptului că Iuliu Hossu își exprimase dorința, „prin testamentul scris și cu limbă de moarte", de a fi înmormântat la Cluj (Prunduș 2008, p. 4).

Vladimir Ghika a fost arestat mai târziu decât episcopii greco-catolici. După instaurarea regimului comunist și declanșarea persecuțiilor antireligioase, monseniorul a refuzat să plece în exil. În toamna anului 1952, la vârsta de aproape 80 de ani, a fost arestat de Securitate și încarcerat în închisoarea Uranus din București, împreună cu alte 20 de persoane – preoți, călugărițe și laici (*Martiri* 2007, p. 293–294). Această închisoare era unul dintre centrele de anchetă din București, care, în același timp, funcționa și ca penitenciar de tranzit (Muraru 2008, p. 35). Timp de un an a fost anchetat și bătut până la sânge, apoi inclus într-un lot alături de alți șapte preoți, deferit Tribunalului Militar din București și condamnat la trei ani de temniță grea, sub falsa acuzație că ar fi făcut spionaj în favoarea Vaticanului. După pronunțarea sentinței a fost trimis la închisoarea Jilava pentru a-și executa pedeapsa. Aici, în ciuda vârstei foarte înaintate, a fost înfometat, lipsit de îmbrăcăminte și tratament medical, pălmuit, bătut, strangulat în chip repetat, supus unor condamnări la moarte și execuții simulate, ceea ce avea să-i aducă moartea după doar un an (16 mai 1954) (*Martiri* 2007, p. 294–295). Corpul monseniorului Vladimir Ghika a fost depus într-o groapă săpată în cimitirul fără cruci din interiorul închisorii Jilava.

CONTEXTUL CERCETĂRII

Lucrările de exhumare ce fac obiectul acestui articol au fost efectuate la solicitarea reprezentanților Bisericii Romano-Catolice din România şi ai Bisericii Române Unite cu Roma, Greco-Catolice, ca parte a procesului de beatificare/canonizare a celor patru slujitori, considerați a fi martiri pentru Hristos. Cinstirea persoanelor care au dus o viață sfântă, precum și cinstirea martirilor – pentru care dragostea față de Dumnezeu a fost mai puternică decât frica de suferință și de moarte – au o lungă tradiție în Bisericile Ortodoxă, Romano-Catolică și Greco-Catolică. Această tradiție își are originea în primele secole ale creștinismului și continuă până în zilele noastre, în întreaga lume, transcendând granițele timpului, spațiului, precum și contextele istorico-politice.

Primul a fost beatificat monseniorul Vladimir Ghika, în data de 31 august 2013, la București, în cadrul unei slujbe oficiate de delegatul Papei Francisc, cardinalul Angelo Amato. Ulterior, episcopii Vasile Aftenie și Ioan Bălan, precum și cardinalul Iuliu Hossu, alături de alți patru episcopi greco-catolici decedați în închisorile comuniste (Valeriu Traian Frențiu, Ioan Suciu, Tit Liviu Chinezu și Alexandru Rusu), au fost beatificați în data de 2 iunie 2019, pe Câmpia Libertății de la Blaj, în cadrul unei slujbe oficiate chiar de Papa Francisc. Fiecare dintre cei menționați a fost proclamat „Fericit", treaptă anterioară canonizării, și a fost recunoscut oficial ca martir.

În cazul specific al exhumărilor prezentate în lucrarea de față, deși existau documente de arhivă și mărturii despre locurile în care fuseseră îngropați, informațiile erau contradictorii sau neclare, inducând un ridicat grad de incertitudine. Spre exemplu, mormântul în care se presupunea că ar fi fost osemintele monseniorului Vladimir Ghika a fost deschis înainte de începerea cercetării arheologice (deși am cerut de fiecare dată să nu se intervină la morminte în absența arheologilor și antropologilor), iar pământul „sondat" cu o bară subțire de metal, rezultatul comunicat nouă fiind acela că nu s-a dat de sicriu sau de oase, ci doar de o placă separatoare; dar, după cum au scos la iveală săpăturile arheologice, osemintele erau, de fapt, acolo. În mod similar, îndoiala a însoțit și exhumarea episcopului Ioan Bălan: mormântul indicat de inscripția de pe cruce ca aparținându-i nu corespundea cu mormântul atribuit lui în actele oficiale ale Cimitirului Bellu Catolic, mormântul său fiind situat în aceeași parcelă, dar în altă parte; în cazul în care cercetarea primului mormânt nu ar fi dus la vreun rezultat, urma să-l cercetăm și pe cel de-al doilea, ceea ce însă nu a mai fost necesar. Drept urmare, scopul principal al solicitării a fost acela de a verifica mormintele atribuite celor trei personalități, a identifica și recupera corpurile acestora și a documenta și colecta orice element material asociat.

Întreaga muncă de cercetare a fost una voluntară, cele patru exhumări nefigurând în vreun program de cercetare instituțional. Metoda de săpătură a trebuit adaptată la condițiile existente; faptul că mormintele erau înconjurate de alte morminte, precum și rugămintea adresată nouă de a nu afecta pe cât posibil structura monumentelor funerare au limitat drastic spațiul avut la dispoziție. Un alt factor limitativ a fost timpul – fiecare dintre cele trei exhumări a trebuit făcută în decursul unei singure zile; în cazul exhumării episcopului Vasile Aftenie, timpul ne-a ajuns la limită, cercetarea fiind încheiată chiar înainte de lăsarea serii și exact în momentul începerii unei furtuni; de asemenea, în cazul exhumării episcopului Ioan Bălan, la solicitarea comanditarilor, a trebuit să săpăm mai repede decât am fi dorit. La săpăturile arheologice au fost prezenți în permanență reprezentanți oficiali ai celor două confesiuni creștine, dar și un jurist care să asigure legalitatea demersului. Fiecare etapă a acțiunii a respectat condițiile necesare finalizării dosarelor de beatificare/canonizare cerute de Vatican: de la întocmirea detaliată a procesului verbal, la învelirea osemintelor în materialele oficiale, aduse special în acest scop, și până la păstrarea acestora în spații speciale, sigilate. Dat fiind faptul că osemintele și obiectele nu au putut rămâne în custodia antropologilor și arheologilor, a fost necesară documentarea lor într-un regim improvizat și într-un timp mult mai scurt decât ar fi fost necesar – în condițiile în care

fiecare dintre cercetătorii implicați avea de îndeplinit alte sarcini la instituțiile în care lucra.

Spre deosebire de investigațiile arheologice judiciare (e.g., Diana 2015; Petrov 2023), acțiunile de exhumare inițiate de reprezentanți ai unor confesiuni creștine, cum este și cazul celor patru prelați din textul de față, nu au avut drept scop obținerea de „probe", ci identificarea, documentarea sistematică și recuperarea a tot ceea ce poate fi asociat cu corpul celui decedat, în contextul unei apropiate beatificări/canonizări sau ca urmare a unei decizii de beatificare/canonizare deja luate. Implicarea arheologilor în astfel de acțiuni nu constituie un element de noutate; spre exemplu, în anul 1998, la lucrările Comisiei de exhumare a Matronei Dimitrievna Nikonova, ce murise de moarte bună în anul 1952 și fusese înmormântată în cimitirul Danilovsk din Moscova, pe lângă reprezentanții Bisericii Ortodoxe Ruse, au participat un specialist în domeniul expertizei medico-judiciare, un antropolog și un arheolog (*Viața* 2007, p. 44); un an mai târziu, în data de 2 mai 1999, „Matronușka" a fost canonizată. Cu toate acestea, inclusiv în cazul acestei categorii de exhumări, inițiatorii au apelat la arheologie ca la o simplă tehnică de documentare menită să asigure obiectivitatea identificării persoanelor în cauză.

În articolul de față nu ne-am propus nici să producem noi probe în vederea condamnării ideologiei comuniste, nici să contribuim doar la identificarea persoanelor exhumate, ci să aducem în prim-plan rolul obiectelor asociate contextelor cercetate.

GESTURI: MORMÂNTUL MONSENIORULUI VLADIMIR GHIKA

În anul 1968, la patru ani după decretul de amnistie generală şi eliberare din închisori a deţinuţilor politici, urmași ai monseniorului au reușit să dezgroape osemintele din cimitirul fără cruci al închisorii Jilava şi să le reînhumeze în parcela familiei Ghika din Cimitirul Bellu Ortodox, denumită astăzi „Figura 19". Potrivit mărturiei lui Grigore Ghyka jr., în mormântul principesei Natalia Ghika, în care fuseseră incluse și osemintele monseniorului, a fost îngropat în anii 1980 și un prieten al familiei, Paul Penescu. Alte modificări nu au mai avut loc până în anul 1999, când, cu ocazia vizitei Papei Ioan Paul al II-lea în România, în memoria monseniorului Vladimir Ghika, la căpătâiul mormântului a fost ridicată o cruce monumentală în stil brâncovenesc, inscripționată cu numele său și anii între care a trăit (Fig. 1). La data cercetării arheologice din 2013, mormântul avea dimensiunile de 2,20 × 1,19/1,20 m şi o placă de 2 × 1 m. Pe placă era scris cu majuscule: „AICI ODIHNEȘTE PRINCIPESSA NATALIA GHIKA / NĂSCUTĂ LA JAȘI / ÎN NOEMVRIE 1837 / ÎNCETATĂ DIN VIAȚĂ LA BUCUREȘCI / ÎN OCTOMVRIE 1895 / RUGAȚI-VE PENTRU DÂNSA / MONSEIGNEUR VLADIMIR I. GHYKA / 25 DEC. 1873 – 17 MAI 1954".

În ziua de 23 aprilie 2013, cu ajutorul lucrătorilor, a fost scoasă placa mormântului monseniorului Vladimir Ghika. Pentru o mai bună contextualizare a eventualelor obiecte, încă de la început suprafața mormântului monseniorului Vladimir Ghika a fost împărțită în două carouri egale. Pământul de sub placă era umed, foarte afânat și inegal distribuit, fiind mai redus cantitativ în jumătatea dinspre apus a mormântului (convențional numită caroul 2). În acest strat se aflau fragmente de cărămidă, cioburi, pietricele și fragmente de gresie. La scurtă vreme după începerea săpăturii, în caroul nr. 2, a început să se întrevadă prezența unui obiect de mari dimensiuni: o bucată plată de lemn, cu aspect de capac (la -0,20 m) și cuie (la -0,25 m); sub bucata de lemn se găseau oase umane și fragmente de lemn. Imediat mai apoi s-a putut vedea deja conturul obiectului (Fig. 2), mai precis, o cutie putrezită de lemn, de formă rectangulară (0,73 × 0,43/0,44 m la partea superioară; adâncimi: -0,25 m în centrul cutiei și -0,26/-0,27/-0,29/-0,30 m în colțurile cutiei). După degajarea completă a cutiei s-a observat că partea inferioară a acesteia avea dimensiuni mai reduse (0,58 × 0,30 m; fundul cutiei se afla la -0,39/-0,42 m). Pe parcursul curățării cutiei au fost găsite numeroase cuie, dintre care unele în poziția originară (Fig. 3). Cutia stătea pe o placă de ciment degradat, ce acoperea întreaga suprafață a mormântului (la -0,41/-0,47 m). În partea superioară a interiorului cutiei, în zona centrală, se aflau resturi de țesătură (-0,25 m). De asemenea, cutia conținea o serie de oase umane (descoperite la o adâncime cuprinsă între -0,21 și -0,31 m), sub care se afla un înveliș textil de culoare neagră (-0,36 m) (Fig. 4). Aproape de fundul cutiei s-au găsit mai multe obiecte de mici dimensiuni: fragmente de la o iconiță de sidef pe care sunt redați Mântuitorul pe Cruce şi alţi sfinţi (Fig. 5) (-0,36/-0,40 m), două obiecte de lemn (-0,40 m) și doi nasturi (-0,43 m) (Fig. 6 și 7).

Obiectele descoperite cu ocazia deschiderii mormântului monseniorului Vladimir Ghika nu „vorbesc" atât despre el, cât despre cei care l-au reînhumat în parcela familiei. Obiectele evocă gesturile implicate în manipularea lor și semnificațiile asociate. Obiectele propriu-zise și maniera lor de depunere fac referire la gestul de a înveli cu grijă osemintele (probabil într-o reverendă, date fiind culoarea neagră a țesăturii și cei doi nasturi), de a le depune ordonat în cutia de lemn, spre a fi ocrotite, și de a depune obiecte delicate, fragile, menite să redea identitatea persoanei reînhumate, identitate anterior pierdută în anonimatul mormintelor nemarcate de la Jilava. Dacă în timpul vieții, monseniorul Vladimir Ghika a mărturisit credința sa în Hristos prin fapte și prin atitudine, după plecarea sa din această lume iconița este chemată să afirme în numele monseniorului dragostea pentru Hristos și purtarea până la capăt a crucii. Toate aceste gesturi de învelire, depunere și acoperire exprimă dragostea, respectul și grija pentru monseniorul Vladimir Ghika, sentimente manifestate *post-mortem*, dar cu nimic diferite de gesturile față de o persoană însuflețită. Aceste gesturi se prelungesc, se repetă, dar în sens invers, în migala cercetătorilor care



Figura 1. *Cimitirul Bellu Ortodox din București: crucea monumentală ridicată în memoria monseniorului Vladimir Ghika – detaliu (dacă nu se menționează altfel, toate fotografiile au fost făcute de R.-A.D.). / Bellu Orthodox Cemetery in Bucharest: the monumental cross erected in memory of Monsignor Vladimir Ghika – detail (unless otherwise stated, all photographs were taken by R.-A.D.).*



Figura 2. *Mormântul monseniorului Vladimir Ghika: cutia cu oseminte* in situ. */ The grave of Monsignor Vladimir Ghika: the ossuary* in situ.



Figura 3. *Mormântul monseniorului Vladimir Ghika: cuie de la cutia cu oseminte. / The grave of Monsignor Vladimir Ghika: nails from the ossuary.*



Figura 4. *Mormântul monseniorului Vladimir Ghika: țesătura în care erau învelite osemintele. / The grave of Monsignor Vladimir Ghika: the cloth in which the bones were wrapped.*







Figura 5. *Mormântul monseniorului Vladimir Ghika: fragmente dintr-o iconiță. / The grave of Monsignor Vladimir Ghika: fragments of a small icon.*





Figura 6. *Mormântul monseniorului Vladimir Ghika: obiecte de lemn. / The grave of Monsignor Vladimir Ghika: wooden objects.*



Figura 7. *Mormântul monseniorului Vladimir Ghika: butoni. / The grave of Monsignor Vladimir Ghika: buttons.*

au efectuat exhumarea și în gesturile pline de evlavie ale reprezentanților Bisericii Romano-Catolice care au preluat osemintele și obiectele. În prezența iconiței sunt conținute, poate, și gesturile de închinare ale celui care a depus-o, gesturi pe care le vom regăsi, ca un ecou, la fiecare dintre credincioșii care se vor închina în fața raclei cu moaștele monseniorului Vladimir Ghika.

INTERVENȚII DIN „LUMEA CEALALTĂ”: MORMÂNTUL EPISCOPULUI VASILE AFTENIE

La doi-trei ani după înmormântarea episcopului Vasile Aftenie în Cimitirul Bellu Catolic, pe crucea de lemn neinscripționată pusă de administrația cimitirului, ce fusese adusă de aceeași firmă care a fabricat și sicriul, două credincioase au adăugat inițialele A. V., de unde s-a născut și expresia „la mormântul Ave” (Băltăceanu, Broșteanu 2019, p. 174; Cosmovici 2019a, p. 22). Ulterior, a fost adăugată „o mică cruce metalică, obișnuită pentru mormintele preoților, pe care scria AVE, adică inițialele pentru «Aftenie Vasile Episcop»” (Cosmovici 2019a, p. 22). Monumentul funerar existent la data cercetării arheologice din 2010 (Fig. 8) a fost comandat de un nepot de-al episcopului în 1981 (Cosmovici 2019a, p. 22–23). Inițialele numelui episcopului („V.A.”) și anul morții („1950”) au fost inscripționate pe soclul superior, în timp ce pe soclul inferior a fost aplicată fotografia episcopului, sub care a fost înscripţionat textul – „Episcop / Vasile Aftenie / 1899–1950”. După cum indică datele din arhiva cimitirului, Vasile Aftenie nu a fost înmormântat în parcela preoților din Cimitirul Bellu Catolic, ci într-un mormânt ce a purtat codul „X, b, 12”, în care, în 1917 și, respectiv, 1924, fuseseră înmormântate alte două persoane – probabil două surori cu numele Bruteanu; după anul 1950, în mormântul „X, b, 12” nu au mai fost efectuate noi înhumări. În ziua de 11 mai 2010, când s-a desfășurat acțiunea de exhumare (vezi și Dragoman *et alii* 2012; 2017), mormântul avea aceleași dimensiuni și aspect ca și celelalte morminte din jur, și era mărginit la suprafață de o bordură din ciment, cu o fundație de 25 cm și înălțime de 10 cm, placată la exterior cu marmură albă.

De jos în sus, depunerile de pământ care conțineau și suprapuneau corpul episcopului Vasile Aftenie erau următoarele:

– O depunere de pământ galben-brun, cu lentile de sol cenușiu și conținut apreciabil de argilă galbenă, ce reprezintă pământul de umplutură al mormintelor din 1917 și 1924 – cele ale (probabil) surorilor Bruteanu – denumit „stratul III”. În acest din urmă „strat” a fost inserat sicriul (Fig. 9), din care s-au păstrat numeroase fragmente de lemn și câteva cuie răspândite atât deasupra, cât și sub schelet. Pe lângă osemintele episcopului, în sicriu s-au mai păstrat: o pereche de bocanci militari (fără șireturi) produși de Fabrica Crișana (Fig. 10), dintre care bocancul drept avea urme de reparare – două plachiuri metalice; numeroase fragmente textile de culoare albastru-închis și fragmente de la o cămașă (Fig. 11); doi nasturi, dintre care unul de tip „capsă”, iar altul de plastic, cu inscripția „Extra Modern” (Fig. 12) și un colar de culoare albă (Fig. 13). „Stratul III” mai conținea și oase ale persoanelor înmormântate anterior, obiecte asociate, probabil, cu mormintele acestora (un fragment de lumânare și un fragment de candelă), fragmente din sicriu ce nu pot fi atribuite cu certitudine vreunui mormânt, precum și o monedă de 1 leu emisă la o dată ulterioară morții episcopului, și anume în 1966 (Fig. 14 și 15). Alături de toate aceste obiecte, în „stratul III” se mai găseau și resturi mărunte de la materiale de construcții – bucăți de cărămidă și de ciment, două bucăți de calcar.

– „Stratul III” este suprapus de o depunere cenușie, argiloasă, cu o grosime de 0,55-0,60 m – denumită „stratul II”, în care am găsit o serie de monede emise atât în perioada comunistă, cât și în perioada postcomunistă, între 1966 și 1991 (inclusiv o monedă germană de 10 pfenigi) (Fig. 16), și un flacon de sticlă cu capac de plastic, ce conținea fire de păr și o cerere de dezlegare de blesteme (Fig. 17).

– La limita între „stratul II” și stratul de deasupra, gros de 5–10 cm, cu pământ brun-deschis, pentru flori, și denumit „stratul I”, am găsit bucăți de ceară topită. „Stratul I” conținea, printre altele, câteva monede emise în perioada postcomunistă, în 1999 și 2001 (Fig. 18), și un ambalaj de dulciuri produse la Toronto, având ca dată de expirare luna decembrie a anului 1993.

Tot în categoria obiectelor asociate cu mormântul episcopului Vasile Aftenie intră și candelele aprinse de credincioși, așa cum am putut vedea cu o zi înainte de începerea lucrărilor de exhumare. Deși ca dimensiuni și ca formă, mormântul episcopului se integra perfect între mormintele din jur, numeroasele candele roșii depuse



Figura 8. *Cimitirul Bellu Catolic din București: mormântul episcopului Vasile Aftenie. / Bellu Catholic Cemetery in Bucharest: the grave of Bishop Vasile Aftenie.*



Figura 9. *Osemintele episcopului Vasile Aftenie* in situ*. / The remains of Bishop Vasile Aftenie* in situ*.*



Figura 10. *Bocancii cu care a fost înmormântat episcopul Vasile Aftenie (foto: Tiberiu Vasilescu). / The boots in which Bishop Vasile Aftenie was buried (photo: Tiberiu Vasilescu).*

pe întreaga margine a mormântului îl făceau să iasă în evidență.

Depunerea flaconului cu cererea de dezlegare de blesteme, lunga durată a depunerii de monede, din perioada comunistă până în anii 2000, precum și numeroasele candele aprinse la mormânt sunt expresia credinței oamenilor că episcopul Vasile Aftenie poate intermedia între ei și Dumnezeu. Mai mult decât atât, harul din osemintele episcopului radiază în materialitatea înconjurătoare: oamenii vin și ating mormântul pentru a se împărtăși de acest har, iar pământul care a ajuns să conțină toate aceste obiecte este considerat a fi unul sfințit, după cum am putut vedea chiar în timpul lucrărilor de exhumare, când, în ciuda interdicției de a se intra în perimetrul demarcat, un domn s-a apropiat vijelios și, totodată, rugător, de mormânt, pentru a lua puțin



Figura 11. *Mormântul episcopului Vasile Aftenie: fragmente de la piese de vestimentație (foto: Tiberiu Vasilescu). / The grave of Bishop Vasile Aftenie: fragments of clothing (photo: Tiberiu Vasilescu).*



Figura 12. *Mormântul episcopului Vasile Aftenie: nasturi (foto: Tiberiu Vasilescu). / The grave of Bishop Vasile Aftenie: buttons (photo: Tiberiu Vasilescu).*



Figura 13. *Mormântul episcopului Vasile Aftenie: colarul (foto: Tiberiu Vasilescu). / The grave of Bishop Vasile Aftenie: clerical collar (photo: Tiberiu Vasilescu).*

pământ sfințit pentru acasă. De altfel, pământul aflat în relație cu sicriul și cu osemintele episcopului Vasile Aftenie a fost strâns separat în saci, formând categorii distincte. Crucea-monument funerar, obiectele aparținând episcopului (îmbrăcăminte, încălțăminte) și pământul din groapa mormântului au devenit prelungiri ale corpului său. Majoritatea obiectelor descoperite nu se referă nici la viața din această lume a episcopului și nici la condițiile în care a murit, ci dau mărturie despre intervențiile sale de dincolo de mormânt.

MODESTIE: MORMÂNTUL EPISCOPULUI IOAN BĂLAN

Spre deosebire de episcopul Vasile Aftenie, episcopul Ioan Bălan a fost înmormântat într-o parcelă dedicată preoților din Cimitirul Bellu Catolic, denumită astăzi „Grupa IX” (Fig. 19). Nici în cazul acestui mormânt nu au mai avut loc înhumări ulterioare. În anul 2013, când a fost efectuată exhumarea, mormântul avea dimensiunile de 1,90 × 0,90 m, o bordură de ciment lată de 10–11 cm și un spațiu interior de 1,70 × 0,69 m, umplut cu pământ. Mormântul era marcat cu o cruce de fier pe care era scris „Episcop Dr. Ioan Bălan 1880–1959”, la baza căreia se mai afla o placă de marmură inscripționată cu un text similar (Fig. 20).

În ziua de 8 octombrie 2013 au fost exhumate osemintele episcopului. Pământul de flori și cel de umplutură



Figura 14. *Mormântul episcopului Vasile Aftenie: fragment de candelă (foto: Tiberiu Vasilescu). / The grave of Bishop Vasile Aftenie: fragment of a votive lamp (photo: Tiberiu Vasilescu).*





Figura 15. *Mormântul episcopului Vasile Aftenie: monedă (foto: Tiberiu Vasilescu). / The grave of Bishop Vasile Aftenie: coin (photo: Tiberiu Vasilescu).*

conțineau diverse materiale: două fragmente de lumânare și multă ceară; 16 monede din perioada postcomunistă (din 1992 până în 2010); nasturi de metal, cuie, fragmente de metal și o sârmă; fragmente ceramice, un fragment mic de faianță și fragmente de sticlă; șiret de culoare verde, ață verde, pietre; precum și cărămizi de susținere a bordurii mormântului. La adâncimea de -1,36 m s-au descoperit două cuie de la sicriu, pantofii celui înmormântat și un fragment din sicriu; apoi conturul a devenit tot mai clar (Fig. 21). La curățarea sicriului s-au găsit și alte cuie. Sicriul avea o lungime de 1,91 m și o lățime variabilă de 0,40 m la picioare, 0,53 m la mijloc și 0,68 m la cap (la o adâncime cuprinsă între 1,32–1,55 m). În asociere cu scheletul se găseau mai multe obiecte: colarul cu nit de prindere din metal și urme de culoare roșie în partea dinspre haină (Fig. 22); fragmente de țesătură (Fig. 23); o cruce pectorală corodată, cu inscripție pe față și emblemă pe verso (Fig. 24); o cruciuliță de la rozariu cu Mântuitorul pe Cruce, ținută în mâna dreaptă (Fig. 25) (toate la o adâncime cuprinsă între -1,49 m și -1,60 m). Groapa avea adâncimi variabile de -1,59 m (la picioare), -1,62 m (la mijloc) și -1,66 m (la cap).

Colarul, crucea pectorală și rozariul dau mărturie toate că mormântul aparține într-adevăr unui reprezentant al clerului. Modestia acestor obiecte face ca prezența lor să fie, poate, considerată de la sine înțeleasă în mormântul unui episcop, iar rolul lor minimalizat și trecut sub tăcere. Or, prezența crucii pectorale în inventarul funerar confirmă relatarea cuprinsă în lucrarea de dimensiuni reduse a lui Anton Moisin, potrivit căreia, la moartea episcopului, părintele Zudor i-a pus „o Cruce de email de la *Papa Leon XIII*" (Moisin 2001, p. 26, sublinierea în original). Deși este un obiect foarte modest (având doar 32 de pagini) – aspect evidențiat inclusiv de absența ultimului capitol din considerente financiare (Moisin, 2001, p. 28) –, această broșură reprezintă singurul document care atestă existența crucii pectorale în mormânt. În modestia lor tăcută, obiectele au contribuit major la finalizarea nesperat de bine a lucrărilor de exhumare: prezența crucii pectorale în mormânt și în paginile micii broșuri a adus cu sine liniștea certitudinii. Ele sunt cele care, prin rezistența lor materială, fiecare în funcție de materialul din care a fost confecționat, continuă să păstreze memoria socială a celui decedat, mult timp după ce trupul fragil, măcinat treptat, nu mai poate exprima nimic în chip direct.

Mai mult decât atât, prezența crucii pectorale merită subliniată și din alt motiv. Ea nu i-a aparținut episcopului Ioan Bălan, ci a fost adăugată în contextul decesului acestuia. Astfel, analog cu situația întâlnită în cazul monseniorului Vladimir Ghika, împreună cu veșmintele (colarul) și rozariul, crucea pectorală înapoiază în moarte identitatea și prestigiul unui om, pe care autoritățile politice comuniste încercaseră să i le șteargă în timpul vieții. Aceste modeste obiecte sunt cele care se opun despuierii lui Ioan Bălan de ce și-a dorit toată viața să fie – un slujitor al lui Hristos și al Bisericii Greco-Catolice –, construind împreună o memorie exemplară.



Figura 16. *Mormântul episcopului Vasile Aftenie: monede (foto: Tiberiu Vasilescu). / The grave of Bishop Vasile Aftenie: coins (photo: Tiberiu Vasilescu).*

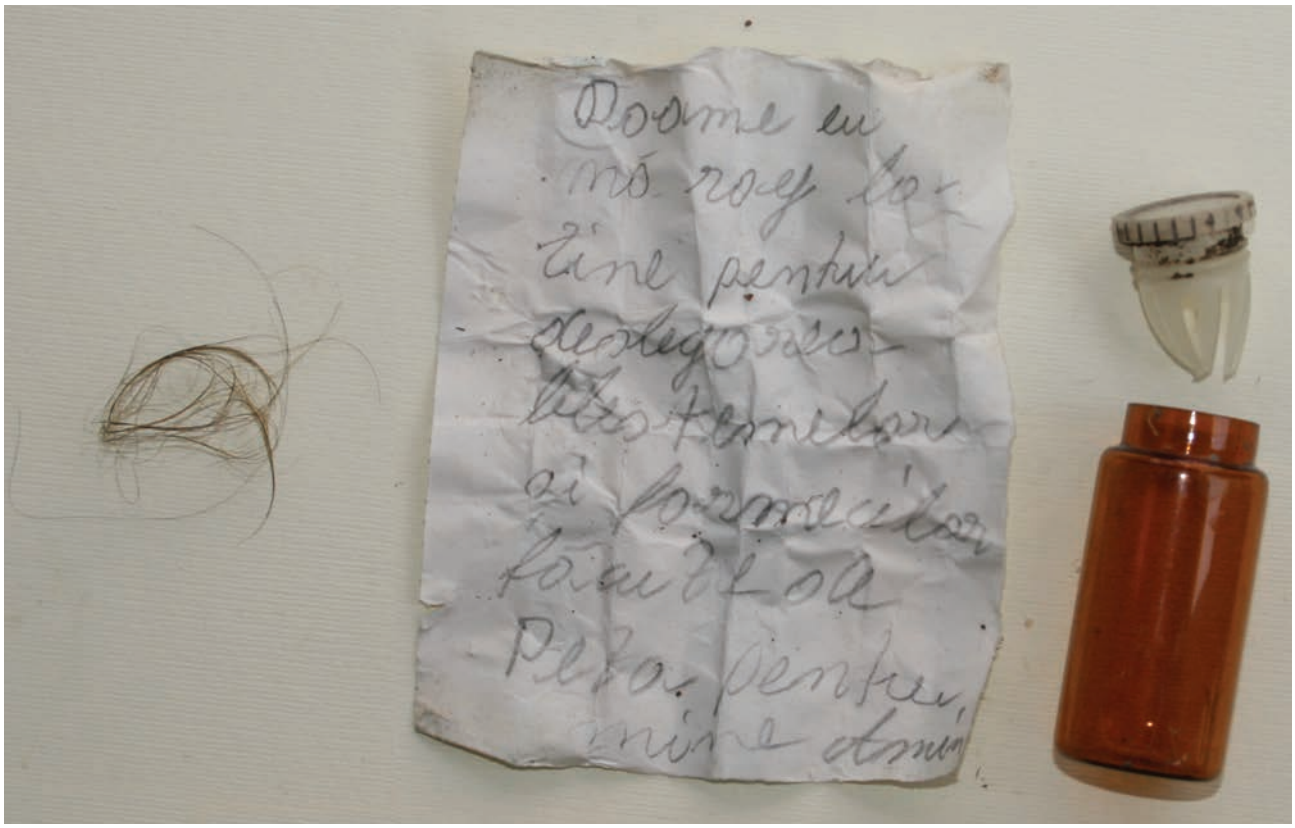


Figura 17. *Mormântul episcopului Vasile Aftenie: recipient conținând câteva fire de păr și o „rugăciune" (foto: Tiberiu Vasilescu). / The grave of Bishop Vasile Aftenie: phial containing some strands of hair and a "prayer" (photo: Tiberiu Vasilescu).*



Figura 18. *Mormântul episcopului Vasile Aftenie: monede (foto: Tiberiu Vasilescu). / The grave of Bishop Vasile Aftenie: coins (photo: Tiberiu Vasilescu).*

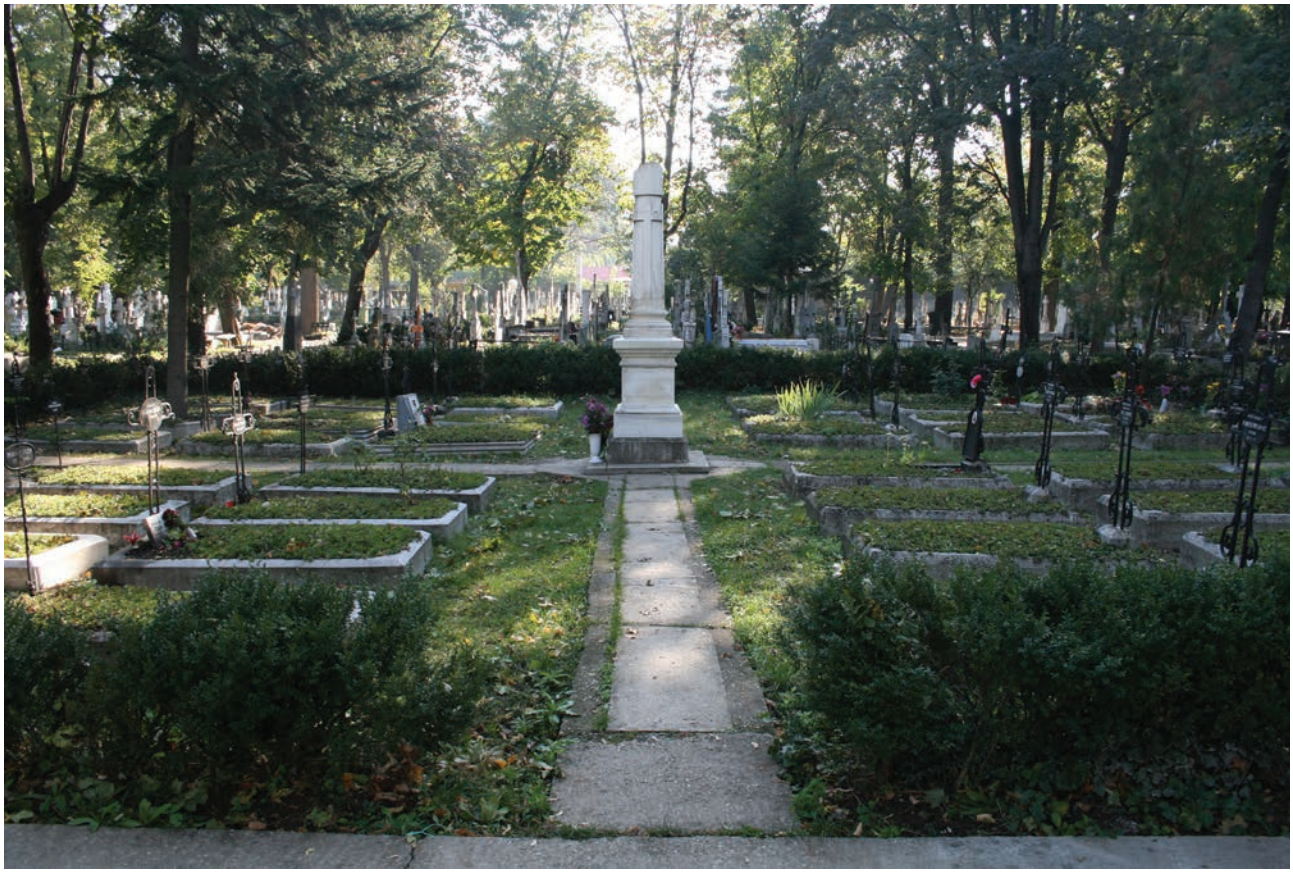


Figura 19. *Cimitirul Bellu Catolic din București: parcela în care a fost înmormântat episcopul Ioan Bălan. / Bellu Catholic Cemetery in Bucharest: the plot where Bishop Ioan Bălan was buried.*

„CONTAMINARE": MORMÂNTUL CARDINALULUI IULIU HOSSU

În cazul cardinalul Iuliu Hossu, cercetările arheologice s-au desfășurat în perimetrul parcelei P3, locul e, 3–4, situată în imediata apropiere a capelei din Cimitirul Bellu Catolic, unde se afla, în fapt, un cavou cu două locașuri aparținând familiei Hossu. Conform datelor inscripționate pe plăcile mormintelor, în unul dintre locașuri fuseseră efectuate cinci înmormântări – Dr. Vasile Hossu (1887–1965), Dr. Ștefan Traian Hossu (1891–1978), Olivia Ileana Hossu (1906–1992), Georgeta Hossu (1932–1995) și Vasile Aurel Hossu (1929–2013) –, în timp ce al doilea locaș fusese dedicat resturilor pământești ale cardinalului Iuliu Hossu. Tot cardinalului i-a mai fost dedicat un monument funerar purtând inscripția: „Dr Iuliu Hossu / cardinal / Episcop de



Figura 20. *Mormântul episcopului Ioan Bălan. / The grave of Bishop Ioan Bălan.*



Figura 21. *Osemintele episcopului Ioan Bălan in situ. / The remains of Bishop Ioan Bălan in situ.*

Cluj-Gherla / 1885–1970". Pe trei laturi, parcela se învecinează cu alte morminte, în timp ce în fața cavoului se află drumul care o desparte de capelă. Dimensiunea parcelei era de 3,02 x 2,04 m, în timp ce cavoul propriu-zis avea o lungime de 1,94 m și o lățime de 1,02 m.

În spatele acestei parcele, în imediata apropiere, se află un alt șir de morminte, dintre care unul a aparținut tot cardinalului Iuliu Hossu (parcela P3, locul k, 1–2) (Fig. 26). Este vorba de un mormânt concesionat pe numele unuia dintre nepoții săi, Liviu Hossu, și în care cardinalul a fost înmormântat, așa cum am mai spus, chiar a doua zi după deces (pentru un istoric al acțiunilor de înhumare, exhumare și reînhumare, vezi Prunduș 2008). După doisprezece ani, în ziua de 7 decembrie 1982, trupul său a fost exhumat. Cu această ocazie, s-a constatat că în cavou se infiltrase apa, iar sicriul era cu totul putred, dezintegrându-se la prima atingere. În ciuda condițiilor, membrii comisiei de exhumare (părintele Anton Ghiuzan, preotul cimitirului, Sigfried Paulici, administratorul cimitirului, părintele Grigore Pop și doi muncitori – Marin și



Figura 22. *Mormântul episcopului Ioan Bălan: colar. / The grave of Bishop Ioan Bălan: clerical collar.*



Figura 23. *Mormântul episcopului Ioan Bălan: fragment de țesătură* in situ. */ The grave of Bishop Ioan Bălan: fragment of fabric* in situ.



Figura 24. *Mormântul episcopului Ioan Bălan: cruce pectorală. / The grave of Bishop Ioan Bălan: pectoral cross.*

Constantin Creangă) nu au amânat mutarea. Ei au introdus osemintele și obiectele asociate (printre care o cruce pectorală din argint aurit și un inel episcopal din aur) într-un sac de plastic pe care l-au închis provizoriu într-o nișă din cărămidă tencuită dintr-un nou mormânt/cavou (i.e. cel de astăzi), ce fusese concesionat pe numele unui alt nepot al cardinalului, Vasile Aurel Hossu (Cosmovici 2019d). După această mutare, s-a hotărât de comun acord cu membrii familiei ca osemintele să fie scoase din nișă, așezate într-un sicriu și depuse astfel în cavoul cel nou. În ceea ce privește crucea pectorală și inelul episcopal, acestea au devenit obiect de litigiu: rudele cardinalului și-ar fi dorit ca cele două obiecte să fie ridicate cu ocazia așezării osemintelor în noul sicriu „pentru a fi păstrate în mod corespunzător în familie", ca obiecte-memorie[2]; în schimb, Arhiepiscopia le considera proprietate a Diecezei de Cluj-Gherla, motiv pentru care a refuzat dreptul familiei de a ridica obiectele, punct de vedere împărtășit și de administrația cimitirului.

[2] În cazul episcopului Ioan Bălan, după moartea acestuia, crucea pectorală și inelul său episcopal au intrat în posesia familiei (Cosmovici 2019b, p. 20).

Lucrurile au luat însă o turnură neașteptată: la patru luni după exhumare, Securitatea a decis ca, în ziua de 16 aprilie 1983, nișa din noul cavou să fie din beton armat cu scopul de „a proteja provizoriu osemintele” (Prunduș 2008, p. 7), însă, în unele surse scrise, decizia a fost interpretată mai degrabă drept rezultat al temerii Securității „ca obiectele din aur (crucea și inelul) să nu devină obiecte de cult” (Cosmovici 2019d). După efectuarea cercetării arheologice din 2019, la cererea expresă a familiei, jumătate din oseminte au fost redepuse în cavou, într-o lădiță de lemn sigilată, iar cealaltă jumătate a fost dată în grija Eparhiei greco-catolice de Cluj-Gherla (Cosmovici 2019c, p. 26).

La data începerii acțiunii de exhumare (7 martie 2019), mai multe obiecte se aflau depuse la mormântul cardinalului Iuliu Hossu, unele, precum candelele, coroanele și ghivecele cu flori, indicând cinstirea memoriei sale, în timp ce altele, cum este cazul bilețelelor cu rugăciuni, ilustrând venerarea sa ca sfânt (Fig. 27). Bilețelele, în număr mare, fuseseră fie prinse în panglicile coroanelor ce ornamentau monumentul funerar, fie introduse sub placa mormântului. După înregistrarea și înlăturarea tuturor obiectelor, au început investigațiile propriu-zise.

După înlăturarea plăcii mormântului s-a putut observa că, spre deosebire de toate celelalte cazuri studiate, spațiul cavoului era gol, fără pământ, doar într-o extremitate existând o „cutie” de beton cu dimensiuni de 0,82 × 0,45 m și o înălțime de 0,80 m, situată la adâncimea de 1,98 m (Fig. 28). Cu alte cuvinte, nu am avut de-a face cu o exhumare propriu-zisă, motiv pentru care lucrările au avansat mult mai repede. Pentru a afla ce conținea respectiva „cutie”, s-a pornit la demontarea acesteia cu ajutorul unui picamer, însă lucrările de demontare au fost extrem de anevoioase, „cutia” fiind realizată din beton armat. La amenajarea „cutiei” s-a folosit o cantitate apreciabilă de material, dovadă faptul că grosimea stratului



Figura 25. *Mormântul episcopului Ioan Bălan: crucifix de rozariu. / The grave of Bishop Ioan Bălan: rosary crucifix.*



Figura 26. *Cimitirul Bellu Catolic din București: mormântul în care a fost înhumat cardinalul Iuliu Hossu în 1970. / Bellu Catholic Cemetery in Bucharest: the grave where Cardinal Iuliu Hossu was buried in 1970.*



Figura 27. *Biletele cu cereri depuse la mormântul cardinalului Iuliu Hossu. / Prayer notes left at the grave of Cardinal Iuliu Hossu.*



Figura 28. *„Cutia" de beton din interiorul mormântului cardinalului Iuliu Hossu. / The concrete "box" inside the grave of Cardinal Iuliu Hossu.*



Figura 29. *Mormântul cardinalului Iuliu Hossu: demontarea „cutiei" de beton. / The grave of Cardinal Iuliu Hossu: dismantling the concrete "box".*

de ciment era de 20 cm în partea de sus a „cutiei" și de 10 cm în partea frontală (Fig. 29). Conținutul „cutiei", analizat a doua zi în detaliu, atât din punct de vedere arheologic, cât și antropologic, a confirmat datele oferite de martorii acțiunii de „reînhumare" din 1982, precum folosirea unui sac de plastic în loc de sicriu și depunerea obiectelor personale ale cardinalului (Fig. 30 și 31). Mai mult decât atât, analizate *in situ*, „cutia" și conținutul ei sunt elocvente pentru reconstituirea succesiunii gesturilor ce au compus actul „reînhumării": recuperarea osemintelor; gruparea și învelirea lor într-una dintre piesele de vestimentație; punerea obiectelor personale ale cardinalului (inelul episcopal, crucea pectorală, proteza dentară) într-unul dintre pantofi; includerea osemintelor, a încălțămintei (implicit și a obiectelor din pantof) și a pieselor de vestimentație (șosete, cataramă, cămașă etc.) într-un sac gros de plastic în care au fost făcute o serie întreagă de perforații ca să permită conținutului „să respire"; închiderea sacului în nișă; închiderea cavoului. Modul de tratare și de depunere a osemintelor și obiectelor indică grijă, atenție, respect și protecție. Această imagine arheologică contrastează profund cu imaginea prezentă în sursele scrise, unde acțiunea de exhumare și „reînhumare" a cardinalului Iuliu Hossu ar fi avut loc „în derută și spaimă" sau „în grabă" (Prunduș 2008, p. 5; Cosmovici 2019c, p. 25)[3].

La fel de relevant în ceea ce privește materialitatea este și actul betonării nișei, de construire a „cutiei" de beton. În timpul cercetărilor, în fața efortului depus la demontarea stratului de beton, unii dintre participanți au văzut „cutia" drept rezultatul unei continue acțiuni de reprimare, o prelungire a închisorii chiar și dincolo de moarte, în spațiul familiei – de unde și asocierea simbolică făcută de respectivii participanți între fierul beton, pe de o parte, și zidurile și gratiile închisorilor politice, pe de altă parte.

Dintr-o perspectivă arheologică, actul betonării ar putea avea o cu totul altă semnificație. Relevante nu sunt doar inelul și crucea, ci întregul corp al cardinalului. De altfel, dat fiind contactul cu corpul uman, inelul și crucea pot fi considerate prelungiri materiale ale corpului fizic. Autoritățile nu au dorit nici distrugerea osemintelor, nici confiscarea obiectelor, dovadă că toate au rămas în parcela familiei. În schimb, au apelat la betonare pentru a izola ermetic osemintele și obiectele, împiedicând orice contact direct cu acestea. Nu este vorba de construcția unei „închisori" în spațiul funerar, ci de o dublă izolare: în „cutia" de beton și în cavoul tot de beton. Din această perspectivă, actul betonării evocă mai degrabă maniera în care au fost tratate cadavrele contaminate radioactiv ale pompierilor care au participat la stingerea incendiilor după explozia de la centrala nucleară de la Cernobîl, R.S.S. Ucraineană, în 1986. Spre exemplu, cadavrul lui Vasili Ignatenko a fost băgat într-un sac de plastic pe care l-au legat; sacul a fost pus într-un sicriu de lemn ce a fost înfășurat la rândul său într-un alt sac de plastic; sicriul de lemn a fost apoi pus într-un sicriu de zinc pe care l-au sudat; în groapă, peste sicriul de zinc a fost pusă o placă de beton, iar apoi pământ (Aleksievici 2015, p. 32–33). Dacă acceptăm această analogie, atunci actul izolării prin betonare a osemintelor cardinalului Iuliu Hossu a avut menirea de a împiedica un eventual proces de „contaminare" a credincioșilor. Prin izolarea elementelor materiale care ar fi putut produce contaminarea (oseminte, obiecte) s-ar fi obținut neutralizarea posibilelor efecte în lumea celor vii. Această interpretare arheologică pare să confirme informația din unele surse scrise, conform căreia autoritățile nu au dorit ca inelul episcopal și crucea pectorală să ajungă în posesia familiei Hossu de teama transformării lor în obiecte de cult (Cosmovici 2019d). După cum indică însă bilețelele cu rugăciuni, straturile de beton nu i-au împiedicat pe

[3] Pentru corectitudine, menționăm faptul că, în cele două surse citate, caracterizarea exhumării cardinalului Iuliu Hossu în 1982 diferă totuși. Potrivit ieromonahului S.A. Prunduș, „Comisia în derută și spaimă [...] a procurat un sac de nailon și a pus în el ce mai rămăsese din oasele care au mai putut fi adunate [...]". În schimb, potrivit lui E. Cosmovici, „Osemintele au fost culese atunci cu grijă și depuse în grabă într-un sac gros de plastic [...]".





Figura 30. *Mormântul cardinalului Iuliu Hossu: conținutul „cutiei" de beton. / The grave of Cardinal Iuliu Hossu: the contents of the concrete "box".*

credincioși să cinstească locul de înmormântare al cardinalului Iuliu Hossu drept spațiu de întâlnire cu puterea/harul acestuia. Paradoxal, în cele din urmă, în ciuda intenției și efortului Securității, betonul nu a condus la izolarea dorită, ci, din contră, la protejarea și consolidarea memoriei materiale a unui martir pentru Hristos.

CREȘTINISM POPULAR ÎN SPAȚIILE FUNERARE CERCETATE

În ceea ce priveşte parcelele din Cimitirul Bellu Catolic în care au fost înmormântați preoți/călugări sau călugărițe, o serie de urme materiale indică practici păgâne, dar cu aspect creștin (Fig. 32). Pe monumentul ridicat în mijlocul parcelei în care a fost înmormântat episcopul Ioan Bălan au fost scrise cu markerul sau cu creionul rugăciuni de cerere și numele celor care au nevoie de ajutor: „Niculina pentru […] Ajuto[…] Doamne ajută-mă, Amin!"; „Eu roaba Ta, Niculina păcătoasa Te rog […] să dai sănătate, putere, și spor în viață și [...]"; „Valentin și Maria-Milică pentru împăcare"; „Luminița pentru îndepărtare de Valentin". Maniera de adresare este similară cu cea a acatistelor: numele persoanelor, urmate de expresia „și tot neamu[l] ei". Diferența notabilă constă în faptul că acatistele se scriu pe hârtie și se citesc în biserică de către preot. Mai mult decât atât, uneori, așa-zisele rugăciuni adăugate pe monument nu au nimic creștinesc în ele, ci, din contră, sună a blesteme: „I ai pe Anton și Gabriel care m-au păgubit să le plătești Doamne cum știi Tu și cum vrei Tu". De asemenea, în pământul de umplutură din mormântul episcopului Vasile Aftenie am descoperit și un flacon de sticlă cu capac de plastic, în interiorul căruia fuseseră introduse fire de păr și un bilet cu o cerere de dezlegare de blestem – „Doamne eu mă rog la tine pentru deslegarea blestemelor și farmecilor făcute de Peza pentru mine. Amin".

Probabil, practica depunerii monedelor în spațiul mormântului aparține, de asemenea, creștinismului popular. În cazul particular al mormântului episcopului Vasile Aftenie, anii de emitere a monedelor (1966, 1982, 1992, 1999, 2001) sugerează că această practică a persistat din perioada comunistă până în perioada postcomunistă. Monedele descoperite în mormântul episcopului Ioan Bălan acoperă intervalul 1992–2010.

În general, pe unele morminte, cum este cel al episcopului Ioan Bălan, au fost puse numeroase cereri scrise pe hârtie, practică ce îi nemulţumea pe credincioşii care aveau grijă de mormânt. Din toate aceste practici reiese limpede că aceste spaţii funerare au căpătat în decursul timpului o încărcătură magică.

O NOUĂ MATERIALITATE

Repertoriul material asociat cu monseniorul Vladimir Ghika, episcopul Vasile Aftenie, episcopul Ioan Bălan și cardinalul Iuliu Hossu nu se limitează doar la obiectele descoperite în timpul exhumărilor, ci continuă și după aceea, îmbogățindu-se cu noi obiecte. De exemplu, după finalizarea lucrărilor de exhumare a osemintelor episcopului Vasile Aftenie, la căpătâiul fostului mormânt a fost ridicat un monument memorial, ce iese în evidență de la distanță (Fig. 33). Pe placa comemorativă a fost inscripționat textul: „MARTIRILOR / BISERICII ROMÂNE UNITE / GRECO-CATOLICE / EPISCOPULUI / VASILE AFTENIE / CREDINCIOȘI LUI HRISTOS / ȘI BISERICII / UNA SFÂNTĂ CATOLICĂ / ȘI APOSTOLICĂ / AU SCRIS CU SÂNGE / LIBER-



Figura 31. *Mormântul cardinalului Iuliu Hossu: obiecte din sac (foto: Cristian Oeffner Oprea).* ***1.*** *Pantofi;* ***2.*** *conținutul unuia dintre pantofi;* ***3.*** *șosete;* ***4.*** *cataramă (5,01g);* ***5.*** *nasturi;* ***6.*** *cămașă;* ***7.*** *inel episcopal de aur (13,48g);* ***8.*** *cruce pectorală din argint aurit (60g). / The grave of Cardinal Iuliu Hossu: items from the bag (photo: Cristian Oeffner Oprea).* ***1.*** *Shoes;* ***2.*** *the contents of one of the shoes;* ***3.*** *socks;* ***4.*** *buckle (5.01g);* ***5.*** *buttons;* ***6.*** *shirt;* ***7.*** *gold episcopal ring (13.48g);* ***8.*** *gilt silver pectoral cross (60g).*

TATEA SUFLETEASCĂ / A NEAMULUI ROMÂNESC / ORICINE ESTE NĂSCUT DIN DUMNEZEU / BIRUIEȘTE LUMEA / ȘI ACEASTA ESTE BIRUINȚA CARE A BIRUIT LUMEA: CREDINȚA NOASTRĂ (1 IOAN 5 4)".

Un alt exemplu elocvent în acest sens este cazul monseniorului Vladimir Ghika. În ziua de 31 august 2013, monseniorul a fost oficial beatificat de Biserica Romano-Catolică, devenind Fericitul Vladimir, „preot martir". În țară au început a se face pelerinaje cu sfintele sale moaște (Fig. 34), cum este cel realizat în anul 2014 în Eparhia greco-catolică de Cluj-Gherla, care a străbătut mai multe orașe: Cluj-Napoca, Sângeorz-Băi, Maieru, Bistrița, Beclean, Dej și Gherla (Fig. 35)[4]. În octombrie 2019, un fragment de os a fost așezat în altarul bazilicii Sacré-Coeur din Paris,

[4] *Cf*. http://www.bru.ro/cluj-gherla/anunt-pelerinaj-cu-moastele-fericitului-vladimir-ghika-in-eparhia-de-cluj-gherla/ (accesat: 27 aprilie 2026).

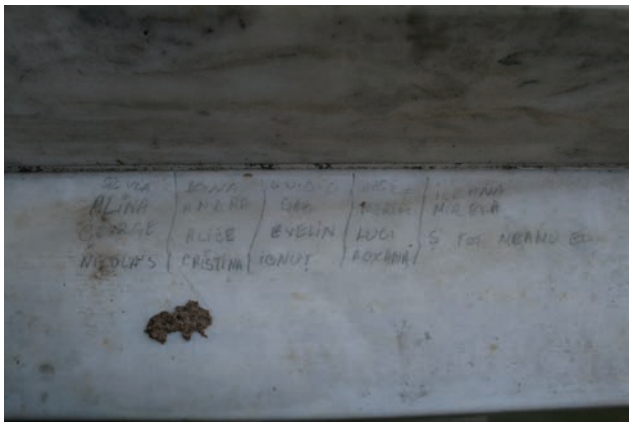


între capitala Franței și preotul martir existând o legătură foarte veche – Vladimir Ghika fusese hirotonit preot în Dieceza de Paris.

> „Așezarea relicvei Fericitului Vladimir Ghika în altarul bazilicii Sacré-Coeur din Paris a avut loc cu ocazia împlinirii unui secol de la consacrarea acestui lăcaș de cult. Ceremonia a fost celebrată de monseniorul Michel Aupetit, arhiepiscopul Parisului. La liturghie a participat și preotul român Dominic Schubert, nepot al episcopului Joseph Schubert din București, hirotonit în clandestinitate în timpul prigoanei comuniste." (Pădurean 2019)

De asemenea, camera din închisoarea Jilava în care a murit a devenit loc de pelerinaj, fiind considerată un spațiu impregnat de harul monseniorului, prin care trec nu doar credincioși romano-catolici și greco-catolici, ci și credincioși creștin-ortodocși – unul dintre noi (R.-A. D.) a vizitat această cameră împreună cu un grup de tineri din asociațiile de

Figura 32. *Cimitirul Bellu Catolic din București: monument construit în parcela în care a fost îngropat episcopul Ioan Bălan, folosit ca suport pentru rugăciuni scrise. / Bellu Catholic Cemetery in Bucharest: monument erected on the plot where Bishop Ioan Bălan was buried, used as a support for written prayers.*









studenți creștin-ortodocși din Iași și Gherla, însoțiți de monahi și un fost deținut politic trecut prin Jilava; în cameră erau portretul monseniorului și candele aprinse. Încă din momentul anunțării hotărârii Vaticanului, au luat naștere noi obiecte, precum reproduceri cu chipul monseniorului, cu sau fără o părticică din pânza în care fuseseră învelite la exhumare osemintele (Fig. 36), acatiste închinate „Fericitului Mucenic Vladimir Ghika" (Fig. 37), precum și obiecte uzuale, cum sunt semnele de carte, pe care sunt redate cuvinte ale monseniorului, însoțite de imagini cu statuia ridicată în memoria sa, cu chipul său sau cu flori (Fig. 38). Reproducerile cu chipul Fericitului Vladimir, în interiorul cărora au fost incluse părticele din pânza folosită la exhumare pentru învelirea osemintelor, constituie încă un exemplu, similar cu cel al episcopului Vasile Aftenie, al faptului că harul prezent în oseminte impregnează și materialitatea înconjurătoare. Astfel, în contact cu osemintele martirului, pânza folosită la învelire devine ea însăși un obiect special. Tocmai de aceea, reproducerile nu sunt simple copii fotografice, ci obiecte ce au căpătat o putere aparte. Astfel de reproduceri au primit toți cei care au participat la ceremonia de beatificare a monseniorului Vladimir Ghika. Unii dintre participanți au cerut chiar un exemplar sau două în plus pentru a le putea dărui altora. Alături de aceste exemplare, circulă și reproduceri simple – ele sunt cumpărate și dăruite în interiorul comunității romano- sau greco-catolice. Altfel spus, corpul martirului nu se limitează la forma fizică, ci se prelungește în obiectele asociate. Obiectele devin astfel prilej de întâlnire directă între martir și credincios.

Toate aceste noi obiecte contribuie la întărirea identității confesionale a comunității de închinători. Faptul că circulă, că fac parte dintr-o economie a darului, duce la crearea de noi legături sau la consolidarea celor deja existente între credincioși. De altfel, noile obiecte, ca și comunitatea romano- sau greco-catolică căreia îi aparțin, au propriul specific, diferențiindu-se din punct de vedere stilistic de cele care circulă, de exemplu, în mediile creștin-ortodoxe, chiar dacă rolurile pe care le joacă par a fi identice. Cu toate acestea, ar fi pripit să se creadă că rolul consolidator al noilor obiecte este și unul obligatoriu separator. Circulația lor nu se limitează exclusiv la comunitatea în care au fost confecționate, ci sunt dăruite între cunoscuți și prieteni de confesiuni creștine diferite. În acest caz, obiectele creează sau mențin legături dincolo de apartenența confesională a persoanelor implicate în actul dăruirii și primirii. Circulația acestor obiecte contrazice o simplistă lectură politică a beatificării ierarhilor catolici și greco-catolici, potrivit căreia corpurile exhumate ar fi fost convertite în „locuri ale memoriei" cu un rol esențial în (re)construirea legitimității și autorității ecleziale. În orice caz, deși depășesc scopul textului de față, rolurile acestei noi materialități în cadrul diverselor grupuri de credincioși catolici și greco-catolici, precum și analiza sa comparativă cu materialitatea cinstirii noilor martiri creștin-ortodocși reprezintă un subiect ce merită studiat în detaliu în viitor.



Figura 33. *Cimitirul Bellu Catolic din București: monumentul ridicat pe locul fostului mormânt al episcopului Vasile Aftenie. / Bellu Catholic Cemetery in Bucharest: the monument erected on the site of the former grave of Bishop Vasile Aftenie.*

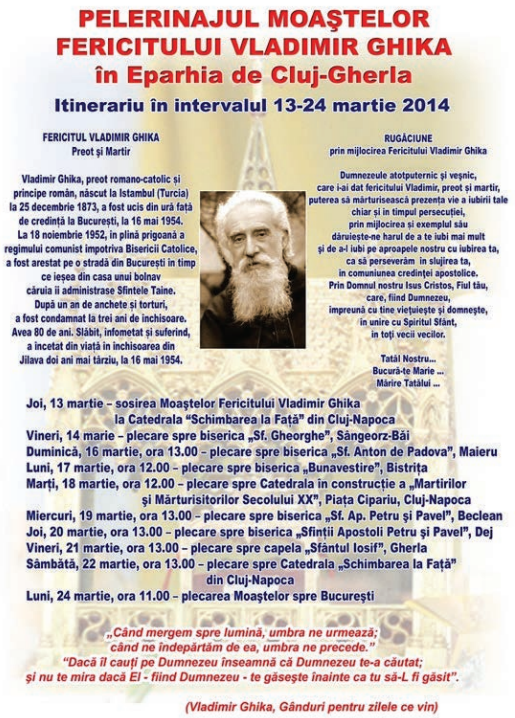


Figura 34. *Afiș referitor la pelerinajul moaștelor Fericitului Vladimir în eparhia greco-catolică Cluj-Gherla, martie 2014. / Poster regarding the pilgrimage of the relics of Blessed Vladimir in the Greek Catholic Diocese of Cluj-Gherla, March 2014.*



Figura 35. *Raclă cu moaște ale Fericitului Vladimir în Catedrala greco-catolică „Sfântul Vasile cel Mare" din București (sursa: https://episcopiabucuresti.ro/sfanta-liturghie-pentru-ziua-fericitului-vladimir-ghika/; accesat: 27 aprilie 2026). / Reliquary containing relics of Blessed Vladimir in the Greek Catholic Cathedral of "St. Basil the Great" in Bucharest (source: https://episcopiabucuresti.ro/sfanta-liturghie-pentru-ziua-fericitului-vladimir-ghika/; accessed: April 27, 2026).*

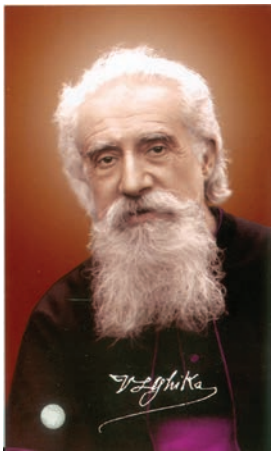


Figura 36. *Reproducere cu chipul Fericitului Vladimir în care a fost inclus un fragment din pânza în care au fost învelite osemintele cu ocazia exhumării. / Reproduction featuring the image of Blessed Vladimir, incorporating a fragment of the cloth in which the bones were wrapped at the time of exhumation.*

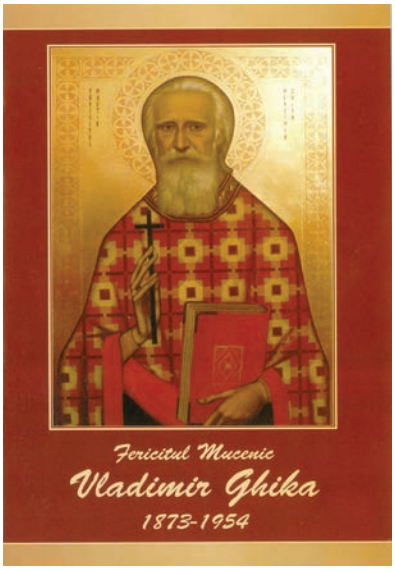


Figura 37. *Acatist dedicat Fericitului Vladimir. / Akathist dedicated to Blessed Vladimir.*



Figura 38. *Semne de carte cu citate din Fericitul Vladimir. / Bookmarks featuring quotes from Blessed Vladimir.*

În încheiere, putem spune că lucrările de exhumare ale monseniorului Vladimir Ghika, episcopului Vasile Aftenie, episcopului Ioan Bălan și cardinalului Iuliu Hossu nu reprezintă ultimul episod al unei istorii tragice, ci, de fapt, se constituie în începutul unei noi vieți sociale pentru cei patru martiri. Alungați din lume în anii 1950, printr-o moarte prin chinuri sau prin izolare, în anii 2000 ei s-au întors printre noi cu slavă.

EPILOG

Acțiunile puterii politice comuniste de a șterge memoria celor patru ierarhi au fost marcate de „o stângăcie inevitabilă" (Levinas 2000, p. 11), care a lăsat urme, dincolo de intențiile autorilor. Încercarea de a șterge aceste urme, atunci când au fost conștientizate, nu a făcut decât să producă, fără voie, noi urme. Practica înhumării deținuților politic decedați în gropi fără cruce sau, din contră, în cimitire deja existente, printre morții „de moartă bună", respectând chiar ritualul creștin, a produs temporar o uniformizare a sorții, o ștergere a diferenței, o dizolvare în anonimat, prin transformarea fiecăreia într-un element al șirurilor funerare ordonate, paralele, grupate în parcele separate de alei. Toate aceste acțiuni de anihilare au lăsat însă amprente care au indicat în cele din urmă drumul spre cei dispăruți. Prin obiectele religioase descoperite și prin unele dintre observațiile făcute pe oase, cercetările arheologice și antropologice au confirmat identitatea celor patru slujitori ai lui Hristos, contribuind astfel la completarea dosarelor de

beatificare și la revenirea lor printre cei vii. Mai important însă decât simpla identificare este faptul că săpăturile arheologice au dus la revelarea unor aspecte necunoscute sau ignorate cu privire la acțiunile oamenilor (martiri sau credincioși) și ale obiectelor în contextele cercetate. Tocmai de aceea, considerăm că obiectele și intervențiile post-înhumare nu trebuie căutași de puțin trecute cu vederea, așa cum se poate întâmpla dacă cercetătorii aplică un demers legist, exclusiv interesat de contextul morții.

De asemenea, cercetările arheologice au scos la lumină inclusiv o serie de urme materiale ce evocă amintirea unor persoane, altele decât cei patru martiri. Cele mai evidente exemple sunt osemintele persoanelor înmormântate anterior pe locul în care a fost îngropat episcopul Vasile Aftenie sau gesturile și intențiile celor care au depus obiecte la (re)înhumarea monseniorului Vladimir Ghika sau a episcopului Ioan Bălan. Despre aceste persoane, noi nu putem afirma ca Hamlet despre Yorick că le-am fi cunoscut (Borges 2014, p. 42). Cu toate acestea, ele sunt prezente în urmele descoperite. Urmându-l pe J. L. Borges (2014, p. 42–43), putem spune că a scrie despre aceste urme, chiar în puține și modeste cuvinte, este ca și cum respectivele persoane pe care urmele le evocă ar lua ființă din nou. Din această perspectivă, demersul arheologic, materialitatea și textul se constituie împreună într-o formă de întrupare. Urmele materiale și cuvintele care le transformă în personaje principale ale narațiunii arheologice plămădesc o nouă prezență. În plus, diversele urme materiale creează legături între oameni care nu s-au cunoscut direct niciodată, constituind o nouă formă de comuniune. Altfel spus, privite împreună, amintirile conținute în urmele materiale cercetate (obiecte, oseminte, pământ) dau mărturie nu doar despre destinul tragic și biografia *post-mortem* a celor patru noi martiri, ci și, sau mai ales, despre dăinuire.

MULȚUMIRI

La exhumarea episcopului Vasile Aftenie au participat Radu-Alexandru Dragoman, Alexandra Ion, Sorin Oanță-Marghitu, Nona Palincaș, Andrei-Dorian Soficaru și Tiberiu Vasilescu; la exhumarea monseniorului Vladimir Ghika și a episcopului Ioan Bălan – Mihai Constantinescu, Radu-Alexandru Dragoman și Andrei-Dorian Soficaru; la „exhumarea" cardinalului Iuliu Hossu – Mihai Constantinescu și Radu-Alexandru Dragoman. Le mulțumim tuturor colegilor alături de care am lucrat. În plus, ținem să mulțumim lui Tiberiu Vasilescu și lui Cristian Oeffner Oprea pentru fotografierea obiectelor descoperite în mormântul episcopului Vasile Aftenie și, respectiv, în mormântul cardinalului Iuliu Hossu. De asemenea, ne exprimăm recunoștința pentru sprijinul acordat cu ocazia documentării mormintelor și a obiectelor descoperite, precum și pentru informații bibliografice, domnului Emanuel Cosmovici (toate cele patru cazuri cercetate); PS Mihai Frățilă, episcopul Episcopiei greco-catolice „Vasile cel Mare" de București (cazul episcopului Vasile Aftenie); și soților Mircea și Liliana Dunca (cazul monseniorului Vladimir Ghika). Nu în ultimul rând, mulțumim celor doi evaluatori anonimi pentru observațiile făcute asupra textului.

Primele rapoarte, antropologic și arheologic, despre exhumarea episcopului Vasile Aftenie au fost publicate în 2012, în limba română, în lucrarea editată de PS Mihai Frățilă, *Episcopul greco-catolic Vasile Aftenie (1899–1950), 60 de ani de la trecerea în eternitate. Rapoartele asupra deshumării osemintelor sale* (Soficaru, Ion 2012; Dragoman *et alii* 2012). Mai târziu, cele două rapoarte au fost reunite într-un alt text, revizuit și adăugit, în limba engleză, publicat în revista *Caiete A.R.A.* 8, 2017 (Dragoman *et alii* 2017). O comunicare privind primele trei exhumări a fost susținută de Radu-Alexandru Dragoman și Sorin Oanță-Marghitu în anul 2016, la Institutul de Antropologie „Francisc Reiner" al Academiei Române, București.

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CERCETĂRI ARHEOLOGICE PREVENTIVE ÎN SITUL DE LA MOȘNIȚA NOUĂ – *HOTARUL SATULUI* (2018)

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Keywords: *Moșnița Nouă, Vinča culture, anthropomorphic, preventive research, settlement*
Abstract: *In December 2018, preventive archaeological excavations were conducted on the Buga property in Moșnița Nouă, near Timișoara, Romania, before the construction of a private residence. This investigation, carried out by the West University of Timișoara, revealed 23 archaeological features, including pits and possible dwellings, from the Neolithic Vinča culture. Key finds included pottery fragments, animal bones, and an anthropomorphic vessel. The site of Moșnița Nouă has a rich archaeological background, with earlier discoveries dating from the Neolithic to medieval times. Systematic research in the area started in 2006, when researchers mapped over 92 sites, documenting various historical periods from the Neolithic to the modern era. Complex stratigraphy was documented in the Buga excavation area, where layers of arable soil, disturbed by human activity, overlaid distinct archaeological deposits. Among the most significant features uncovered was Complex 5, a probable dwelling containing an anthropomorphic vessel, clay discs, and other artifacts. This excavation contributes valuable insights into the historical occupation and land use in the Moșnița Nouă area, adding depth to the region's documented archaeological timeline.*

Cuvinte-cheie: *Moșnița Nouă, cultura Vinča, antropomorf, cercetare preventivă, așezare*
Rezumat: *În decembrie 2018 au fost realizate cercetări arheologice preventive pe un teren aflat în proprietatea familiei Buga din Moșnița Nouă, lângă Timișoara, România, înaintea începerii unor lucrări rezidențiale. Investigațiile conduse de Universitatea de Vest din Timișoara au dus la identificarea a 23 de complexe arheologice, gropi și posibile locuințe adâncite, încadrate în Neolitic, cultura Vinča. Au fost identificate fragmente ceramice, fragmente osteologice animale și un vas antropomorf. Zona Moșnița Nouă este bogată din punct de vedere arheologic, cu descoperiri datând din neolitic și perioada medievală. Cercetările arheologice sistematice au început în această zonă în anul 2006, când au fost cartate 92 de situri, din neolitic și până în perioada modernă. În zona Buga a fost documentată o stratigrafie complexă, în care straturi de sol arabil, perturbate de activitatea umană, acopereau depozite arheologice distincte. Printre cele mai semnificative vestigii descoperite se numără Complexul 5, o probabilă locuință în care s-au descoperit un vas antropomorf, discuri din lut și alte artefacte. Această cercetare aduce informații valoroase despre ocuparea istorică și utilizarea terenului în zona Moșnița Nouă, îmbogățind cronologia arheologică documentată a regiunii.*

CONSIDERAȚII GENERALE

În luna decembrie 2018, în urma cercetărilor arheologice preventive efectuate pe proprietatea Viorel Buga, s-a cercetat terenul (amprenta unei case) unde se dorea construirea unei locuințe private. Lucrările au fost realizate de un colectiv din partea Universității de Vest Timișoara. Diagnosticul arheologic intruziv din anul 2017, realizat prin intermediul unei secțiuni (S1), a condus la identificarea a două complexe arheologice, pentru ca lucrările de decapare a zonei din anul următor să ducă la identificarea a încă 23 de complexe arheologice.

CADRUL FIZICO-GEOGRAFIC ȘI ISTORICUL CERCETĂRILOR ARHEOLOGICE

Comuna Moșnița Nouă este una dintre aglomerările suburbane din jurul municipiului Timișoara, fiind situată la est de acesta, pe drumul județean DJ592 care leagă Timișoara de Buziaș. Ea are în compoziție cinci sate: Albina, Moșnița Nouă (reședința), Moșnița Veche, Rudicica și Urseni. Această localitate s-a înălțat în mijlocul unei câmpii acoperite, până acum 200–500 de ani, de mlaștinile întinse provocate de desele inundații ale râurilor Timiș și Bega. Litologic, zona Moșnița Nouă se caracterizează printr-o succesiune de straturi de vârstă, grosime și compoziție granulometrică diferită, în funcție de formele de mezo și microrelief. Astfel, litologic, grindurile sunt alcătuite din depozite cu textură în general grosieră.

Consultând literatura de specialitate mai veche, a fost posibilă identificarea în hotarul localității Moșnița Veche a șase puncte de interes arheologic, acestea constând în descoperiri atribuite neoliticului târziu, prezența mai multor movile în hotarul localității sau menționarea unor descoperiri izolate, constând în două fragmente de spadă încadrate în epoca bronzului. O problematică individualizată în cadrul cercetării din zona Moșnița Veche o reprezintă problema „satului bătrân" sau a vechii vetre a satului.

Cercetările sistematice de natură arheologică desfășurate în hotarul comunei Moșnița Nouă au început încă din anul 2006, când colectivul de cercetători din cadrul Universității de Vest din Timișoara, prin proiectul eGISpat, documentează și cartografiază obiectivul care în cadrul

Listei Monumentelor Istorice Timiș figura sub toponimul „Satul bătrân", fiind considerată vechea vatră a localității Moșnița Veche[1]. În anul 2010, investigațiile de aici prind contur, acestea materializându-se printr-o cercetare sistematică a unui areal de 2 700 ha, vizând terenul aflat la nord de DJ 592, având ca rezultat descoperirea a 92 de noi obiective arheologice, de o mare varietate cronologică, care acoperă un interval de timp cuprins între perioada neolitică și epoca modernă[2].

Între punctele arheologice documentate în teren s-a numărat și obiectivul Moșnița Veche 17 (M.V. 17), acesta fiind identificat în data de 15.03.2010 de către L. Măruia, L. Bolcu, A. Stavilă și Al. Berzovan. De la suprafața terenului au fost recoltate la acea vreme o serie de materiale încadrate în epoca bronzului, secolele II–IV și epoca medievală dezvoltată (sec. XIV–XVI), ceea ce a făcut ca așezarea să fie declarată ca fiind una multistratificată[3].

Cercetări arheologice invazive au mai fost realizate în apropierea perimetrului cercetat de noi, în situl Moșnița Veche 16, aflat la sud de perimetrul menționat, prin practicarea a două secțiuni. Și acele cercetări au fost determinate tot de investiții imobiliare, fiind identificate complexe și materiale arheologice care acoperă o perioadă importantă de timp, începând din eneolitic (grupul cultural Foeni), continuând cu prima epocă a fierului, perioada de început a celei de-a doua epoci a fierului (celți), secolele II–IV și Evul Mediu dezvoltat[4]. O situație complexă a fost întâlnită și în cadrul sitului Moșnița Veche 17, aici fiind cercetate complexe încadrate în epoca bronzului, descoperiri atribuite sarmaților și altele datate în Evul Mediu.

Prima ridicare topografică a Banatului (Pl. II/1), suprapusă peste arealul avut în vederea diagnosticării arheologice, ne indică realitățile terenului înainte de acțiunile de sistematizare habsburgice. Conform materialului cartografic, observăm că perimetrul cercetat se află în nord-vestul localității Moschnitza. Terenul, atunci ca și acum, a făcut parte din terenurile agricole și pajiștea comunei. Totodată, în proximitatea perimetrului se aflau terenuri a căror întrebuințare se leagă de cea a pădurilor.

Din punct de vedere morfologic, terenul se prezintă ca fiind unul plat, fără diferențe de nivel importante. Hidrografic se observă că localitatea Moșnița era împărțită la acea vreme de cursul unui meandru activ, ca rezultat al despletirii cursului Begăi. De asemenea, localitatea *Das Alte Dorf* a fost, de asemenea, afectată de prezența unor astfel de meandrări. Între cele două localități se afla o rețea de drumuri. Din punct de vedere arheologic, nu a fost posibilă identificarea de obiective arheologice în cadrul hărții.

Suprapunerea celei de-a doua ridicări topografice, efectuate în timpul ocupației habsburgice (Pl. II/2) (*Franziszeische Landesaufnahme*, 1819–1869) pe arealul vizat de diagnosticul arheologic, înfățișează aspecte importante în vederea reconstituirii ambientului secolului al XIX-lea în această zonă. După realizarea sistematizărilor habsburgice, observăm transformarea întregului areal, o schimbare vizibilă constând în apariția parcelelor și redarea terenului spre agricultură, dar, totodată, și pentru realizarea unei mai eficiente fiscalizări. Detaliile hărții ne permit observarea unor zone mai înălțate, sub forma unor grinduri în zonă, mărginite spre nord de o zonă mai joasă. În ceea ce privește hidrografia, observăm dispariția meandrelor, cel mai probabil acestea fiind asanate.

CONSIDERAȚII DE ORDIN METODOLOGIC

Principalul obiectiv al campaniei de pe proprietatea Buga a fost identificarea și cercetarea tuturor complexelor de pe zona amprentei viitoarei case. Metodologia adoptată, pentru a îndeplini acest obiectiv (determinată în mare parte de condițiile din teren), a constat în curățarea și săparea manuală a unei unități de săpătură (S 1), orientate NE–SE (Pl. I). Suprafața totală care a fost cercetată a însumat 183,52 m².

STRATIGRAFIA SITULUI

Stratigrafia generală a zonei cercetate este prezentată în continuare (într-o ordine inversă a depunerilor sedimentare), pornindu-se de la stratul superior către bază. Cu anumite excepții, generate de perturbările datorate permanenței intervențiilor antropice și de configurația geo-morfologică specifică zonei, stratigrafia generală a secțiunilor este următoarea (Pl. IV–V):

1. Strat arabil, caracterizat printr-un sol de culoare cafenie, omogen și ușor afânat, situat de la nivelul actual de călcare (0) până la cota de -0,20 m;

2. Strat de culoare brun-roșcată, afânat, de la cota de -0,20 m până la -0,40 m;

3. Nivel negru, compact, amestecat cu fragmente ceramice, osteologice animale, chirpici de la cota de -0,40 m până la cota de -0,60 m;

4. Nivel de culoare galben deschis, omogen, compact, cu conținut mare de carbonați, fără constituenți antropici, situat între -0,60 m și -1,80 m (adâncimea maximă în cadrul săpăturilor efectuate).

SCURTĂ DESCRIERE A DESCOPERIRILOR

Cele 23 de complexe arheologice identificate pe proprietatea Buga pot fi datate în epoca neolitică, cultura Vinča/A3. Din această perioadă datează 19 gropi, un șanț și trei posibile locuințe, în care au fost găsite fragmente de vase din pastă semi-grosieră și semi-fină, fragmente de oase de animale, obiecte din piatră și discuri de lut. Cel mai important complex este locuința denumită Cx 5, în care a fost descoperit un vas cu reprezentare antropomorfă.

[1] Măruia *et alii* 2011, p. 318–337.
[2] Măruia *et alii* 2012.
[3] Măruia *et alii* 2011, p. 614–678.
[4] Floca *et alli* 2016, p. 58–91.

Cx 1 – groapă (Pl. VI)

Groapă situată în jumătatea de NE a secțiunii S 1. Complexul a fost identificat la -0,54 m și se adâncește până la -0,86 m față de nivelul de călcare. Are o formă aproximativ ovală, cu dimensiunile de 1,34 × 1,14 m. Umplutura este de culoare negricioasă, amestecată cu pigmenți de cărbune, chirpici, fragmente ceramice, resturi osteologice animale și pelicule de pământ galben. În umplutură a fost descoperit un văscior miniatural (Pl. XXIII/1).

Cx 2 – locuință (?) (Pl. VII–VIII)

Posibilă locuință situată pe latura de E a secțiunii S 1, intră sub profilul magistral. A fost identificată la -0,53 m și se adâncește până la -0,94 m față de nivelul de călcare. Are o formă aproximativ circulară, cu un diametru de 2,80 × 1,38 m. Umplutura este de culoare negricioasă, compactă, amestecată cu pigmenți de chirpici și cărbune, fragmente ceramice, resturi osteologice animale și obiecte de piatră (Pl. XXIII/2).

Cx 3 – locuință (?) (Pl. IX–X)

Posibilă locuință situată în colțul de NE al secțiunii S 1, intră în malul de S și de E. A fost identificată la -0,58 m și se adâncește până la -1,18 m față de nivelul de călcare. Are o formă rectangulară, cu colțurile rotunjite, cu dimensiunile de 2,36 × 2,40 m. Umplutura este de culoare negricioasă, compactă, amestecată cu pigmenți de chirpici și cărbune, fragmente ceramice (Pl. XXIV/1), resturi osteologice animale.

Cx 4 – groapă (Pl. XI)

Groapă situată în jumătatea de S a secțiunii S 1, la V față de Cx 3. A fost identificată la -0,57 m și se adâncește până la -1,15 m față de nivelul de călcare. Are o formă aproximativ circulară, cu un diametru de 1,82 m. Umplutura este de culoare negricioasă și este amestecată cu fragmente ceramice (Pl. XXIV/2) și pigmenți de chirpici și cărbune.

Cx 5 – locuință (?) (Pl. XII–XV)

Posibilă locuință, situată în apropiere de profilul de N al secțiunii S 1, tăiată de groapa Cx 14. La suprafață se pot observa numeroase fragmente ceramice, chirpici și pigmenți de cărbune. Complexul a fost identificat la -0,70 m și se adâncește până la -1,70 m față de nivelul de călcare. Are o formă rectangulară cu colțurile rotunjite, cu L = 4,60 m și l = 2,70 m. Nivelul de fragmente de chirpici căzuți în umplutură ar putea proveni de la pereții locuinței, iar nivelul foarte subțire de lut galben de la bază poate fi podeaua ei. Umplutura constă într-un amestec de sol negricios, numeroase fragmente ceramice, chirpici, pigmenți de cărbune, resturi osteologice animale, un fragment de vas cu o reprezentare antropomorfă aplicată, un disc perforat de lut (Pl. XXIV/3), două boluri, un vas de provizii (Pl. XXV) și opt picioare de cupă (Pl. XXVI/1).

Cx 6 – groapă (Pl. XVI)

Groapă situată în apropiere de profilul de V al secțiunii S 1, tăiată la N de Cx 15. A fost identificată la -0,57 m și se adâncește până la -1,66 m față de nivelul de călcare. Are o formă aproximativ circulară, cu un diametru de 1,06 m. Umplutura este de culoare cenușie, compactă, amestecată cu numeroase fragmente de chirpici, pigmenți de cărbune și pelicule de pământ galben.

Cx 7 – groapă (Pl. XVII)

Groapa este situată în S 1, la SV față de Cx 6. A fost identificată la -0,71 m și se adâncește până la -1,15 m față de nivelul de călcare. Are o formă circulară, cu un diametru de 1,08 m. Umplutura este de culoare cenușie, amestecată cu fragmente de chirpici și pigmenți de cărbune.

Cx 8 – groapă (Pl. XVIII)

Groapă situată în apropiere de colțul de SV al secțiunii S 1 și la SE față de Cx 7, tăiată de o groapă la V (Cx 16) și de o alta în centru (Cx 17). A fost identificată la -0,72 m și se adâncește până la -1,40 m față de nivelul de călcare. Are o formă ovală, cu diametrul de 1,28 × 1 m. Umplutura este de culoare cenușie, amestecată cu numeroase pelicule de pământ galben; nu conține inventar arheologic.

Cx 9 – groapă (Pl. XII, XIV)

Groapă situată în S 1, la SE față de Cx 5. A fost identificată la -0,76 m și se adâncește până la -0,96 m față de nivelul de călcare. Are o formă circulară, cu un diametru de 0,58 m. Umplutura este de culoare cenușie, friabilă, amestecată cu pelicule de pământ galben; nu conține material arheologic.

Cx 10 – groapă (Pl. XIX/1)

Groapă situată în S 1, la SE față de Cx 9 și la SV față de Cx 1. A fost identificată la -0,56 m și se adâncește până la -0,94 m față de nivelul de călcare. Are o formă circulară, cu un diametru de 0,68 m. Umplutura este de culoare cenușie-negricioasă, amestecată cu pelicule de pământ galben; nu conține material arheologic.

Cx 11 – groapă (Pl. XIX/2)

Groapă situată în S 1, la S față de Cx 10. A fost identificată la -0,62 m și se adâncește până la -0,72 m față de nivelul de călcare. Are o formă circulară, cu un diametru de 0,60 m. Umplutura este de culoare cenușie-negricioasă, amestecată cu pelicule de pământ galben; nu conține material arheologic.

Cx 12 – groapă (Pl. XIX/2)

Groapă situată în S 1, la S față de Cx 10. A fost identificată la -0,60 m și se adâncește până la -1,00 m față de nivelul de călcare. Are o formă circulară, cu un diametru de 0,52 m. Umplutura este de culoare cenușie-negricioasă, amestecată cu pelicule de pământ galben, pigmenți de chirpici și cărbune.

Cx 13 – groapă (Pl. XX/1)

Groapă situată în S 1, la S față de Cx 11 și Cx 12. A fost identificată la -0,60 m și se adâncește până la -0,76 m față

de nivelul de călcare. Are o formă aproximativ circulară, cu un diametru de 0,96 m. Umplutura este de culoare cenușie, amestecată cu numeroase pelicule de pământ galben și arsură, pigmenți de chirpici și cărbune.

Cx 14 – groapă (Pl. XII–XV)

Groapă amplasată în apropiere de profilul de N al secțiunii S 1, care taie locuința Cx 5. A fost identificată la -0,70 m și se adâncește până la -1,66 m față de nivelul de călcare. Are o formă aproximativ circulară, cu un diametru mai mare decât al celorlalte gropi, de 2,36 m. Umplutura este de culoare cenușie-negricioasă, amestecată cu numeroase fragmente ceramice (Pl. XXVI/2), chirpici, pigmenți de cărbune, resturi osteologice animale și pelicule de pământ galben.

Cx 15 – groapă (Pl. XX/2)

Groapa este amplasată la SE față de Cx 8, în apropiere de profilul de S al S 1. A fost identificată la -0,70 m și se adâncește până la -1,30 m față de nivelul de călcare. Are o formă aproximativ circulară, cu un diametru de 0,68 m. Umplutura este de culoare cenușie, compactă, amestecată cu pelicule de pământ galben și pigmenți de chirpici și cărbune.

Cx 16 – groapă (Pl. XVIII)

Groapă situată în S 1, la SE față de Cx 7. Taie o altă groapă (Cx 8). A fost identificată la -0,72 m și se adâncește până la -0,92 m față de nivelul de călcare. Are o formă aproximativ circulară, cu un diametru de 0,52 m. Umplutura este de culoare cenușie, amestecată cu numeroase fragmente de chirpici și pigmenți de cărbune.

Cx 17 – groapă (Pl. XVIII)

Groapă situată în S 1, la SE față de Cx 16, care secționează o altă groapă (Cx 8). A fost identificată la -0,72 m și se adâncește până la -1,30 m față de nivelul de călcare. Are o formă aproximativ circulară, cu un diametru de 0,36 m. Umplutura este de culoare cenușie închis, amestecată cu numeroase fragmente de chirpici și pigmenți de cărbune.

Cx 18 – groapă (Pl. XVI)

Groapă situată în apropiere de profilul de V al secțiunii S 1 și la NV față de Cx 6. A fost identificată la -0,78 m și se adâncește până la -1,14 m față de nivelul de călcare. Are o formă aproximativ ovală, cu diametrul mare de 0,60 m și cel mic de 0,74 m. Umplutura este de culoare cenușie-negricioasă, amestecată cu pelicule de pământ galben și pigmenți de cărbune și chirpici.

Cx 19 – groapă (Pl. XXI/1)

Groapă situată în apropiere de profilul de S al S 1 și la NE față de Cx 18. A fost identificată la -0,72 m și se adâncește până la -0,86 m față de nivelul de călcare. Are o formă aproximativ ovală, cu diametrul mare de 0,84 m și cel mic de 0,66 m. Umplutura este de culoare cenușie-negricioasă, amestecată cu pelicule de pământ galben și pigmenți de cărbune și chirpici.

Cx 20 – groapă (Pl. XXI/2)

Groapă care intră în malul de V al secțiunii S 1 și este situată la N față de Cx 18. A fost identificată la -0,70 m și se adâncește până la -1,04 m față de nivelul de călcare. Are o formă aproximativ circulară, cu un diametru de 0,68 m. Umplutura este de culoare cenușie-negricioasă, amestecată cu pelicule de pământ galben și pigmenți de cărbune și chirpici.

Cx 21 – șanț (Pl. XXII/1)

Șanț care intră în malul de V al secțiunii S 1 și taie o altă groapă (Cx 22). A fost identificat la -0,74 m și se adâncește până la -1,10 m față de nivelul de călcare. Are o lungime de 1,32 m și o lățime de 0,20 m. Umplutura este de culoare cenușie-negricioasă, amestecată cu pelicule de pământ galben și pigmenți de cărbune și chirpici.

Cx 22 – groapă (Pl. XXII/1)

Groapă în apropiere de colțul de V al secțiunii S 1, tăiată de Cx 21. A fost identificată la -0,74 m și se adâncește până la -0,84 m față de nivelul de călcare. Are o formă aproximativ circulară, cu un diametru de 0,20 m. Umplutura este de culoare cenușie-negricioasă, amestecată cu pelicule de pământ galben și pigmenți de cărbune și chirpici.

Cx 23 – groapă (Pl. XXII/2)

Groapă situată în S 1, la SV față de Cx 14. A fost identificată la -0,82 m și se adâncește până la -1,00 m față de nivelul de călcare. Are o formă circulară, cu un diametru de 0,44 m. Umplutura este de culoare cenușie-negricioasă, amestecată cu pelicule de pământ galben și pigmenți de cărbune și chirpici.

CONCLUZII

În urma săpăturilor arheologice preventive efectuate în decembrie 2018 pe proprietatea Buga, s-a cercetat o amprentă de casă care a relevat mai multe complexe arheologice datate în epoca neolitică, cultura Vinča, confirmând existența unei locuiri neolitice importante în zonă. Săpăturile, realizate sub egida Universității de Vest din Timișoara, au dus la identificarea a 23 de complexe arheologice.

Deși materialul este foarte fragmentar, se pot distinge unele forme specifice culturii Vinča, cum ar fi amforele, vasele de provizii, paharele sau castroanele. De asemenea, au putut fi identificate o fusaiolă și un vas cu picioare[5]. Decorurile prezente pe fragmentele ceramice de la Moșnița își găsesc analogii cu alte vase descoperite în medii vinčiene timpurii, cum ar fi benzile cu puncte în interior la Alba

[5] Ștefan *et alii* 2015.

Iulia – *Lumea Nouă*[6], Cerișor – *Poiana în pisc*[7], Peștera Cauce[8] sau Șoimuș – *La Avicola (Ferma 2)*[9]. Benzi cu șiruri de crestături în interior au fost observate la Tărtăria[10] și la Șoimuș – *La Avicola (Ferma 2)*[11].

Interesantă este și reprezentarea antropomorfă în relief, pe un vas de mari dimensiuni, realizată dintr-o nervură de lut pe corpul vasului, peste care s-au aplicat ulterior o serie de alveole. Deși fragmentul este mic, se pot observa brațele îndreptate în jos și capul de formă aproximativ triunghiulară, cu reprezentarea destul de acurată a ochilor și a gurii. Cele mai bune analogii le găsim la Șoimuș – *La Avicola (Ferma 2)*[12].

Datele radiocarbon pentru contextele vinčiene timpurii obținute în situri precum Limba, Tărtăria, Miercurea Sibiului – *Petriș*, Șoimuș – *La Avicola (Ferma 2)*, dar și altele, converg către ultima treime a mileniului VI BC[13]. Aceste informații au fost confirmate și completate printr-un proiect interesant, relativ recent, care a adunat și a modelat toate datele radiocarbon obținute în aria Vinča[14], rafinând într-un mod eficient și coerent cronologia absolută a acestei spectaculoase culturi neolitice.

Această cercetare a avut ca rezultat descoperiri valoroase, cum ar fi vasele cu reprezentări antropomorfe și, de asemenea, a evidențiat interacțiunile dintre mediul geografic și activitățile umane din trecut.

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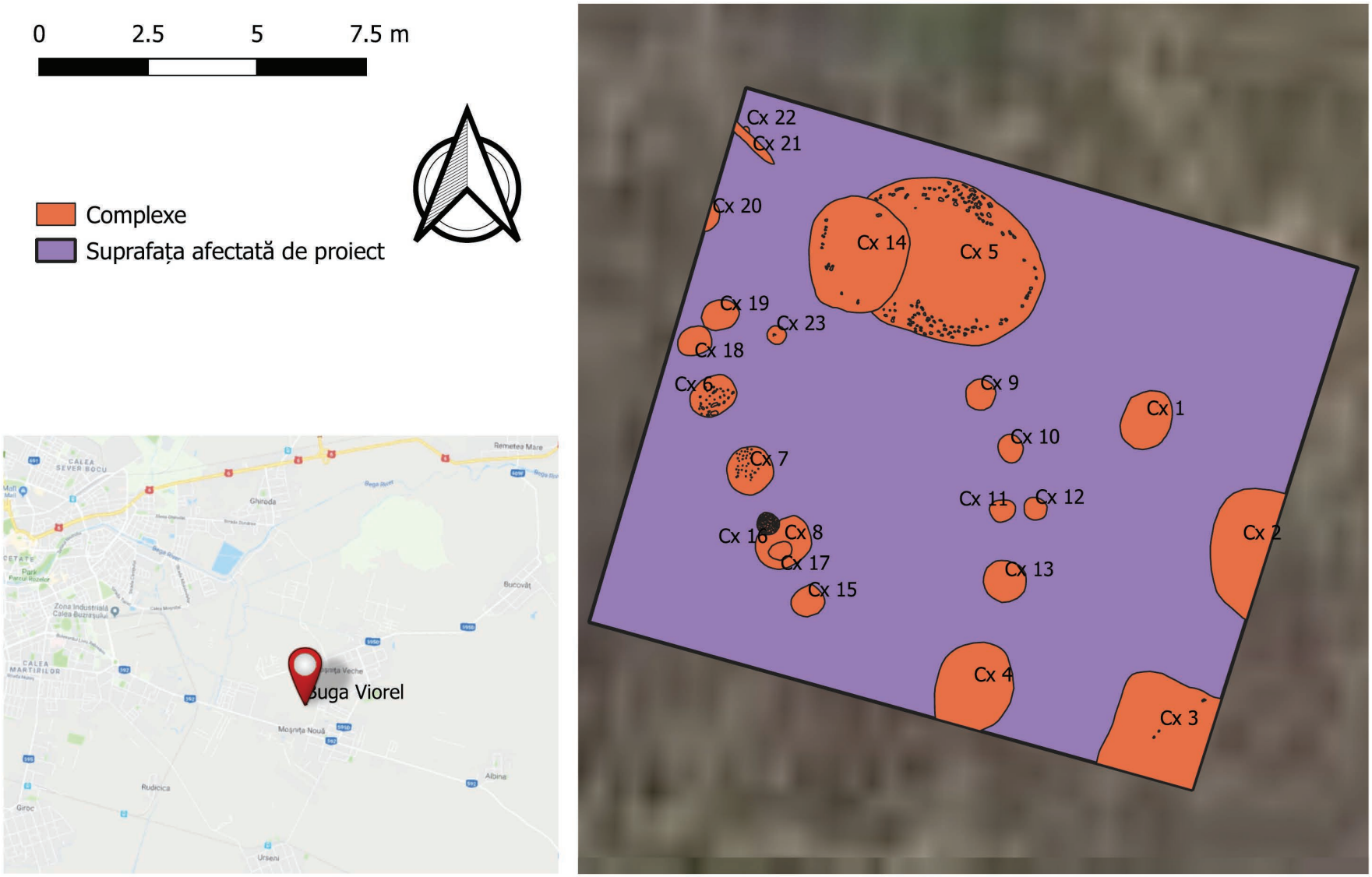
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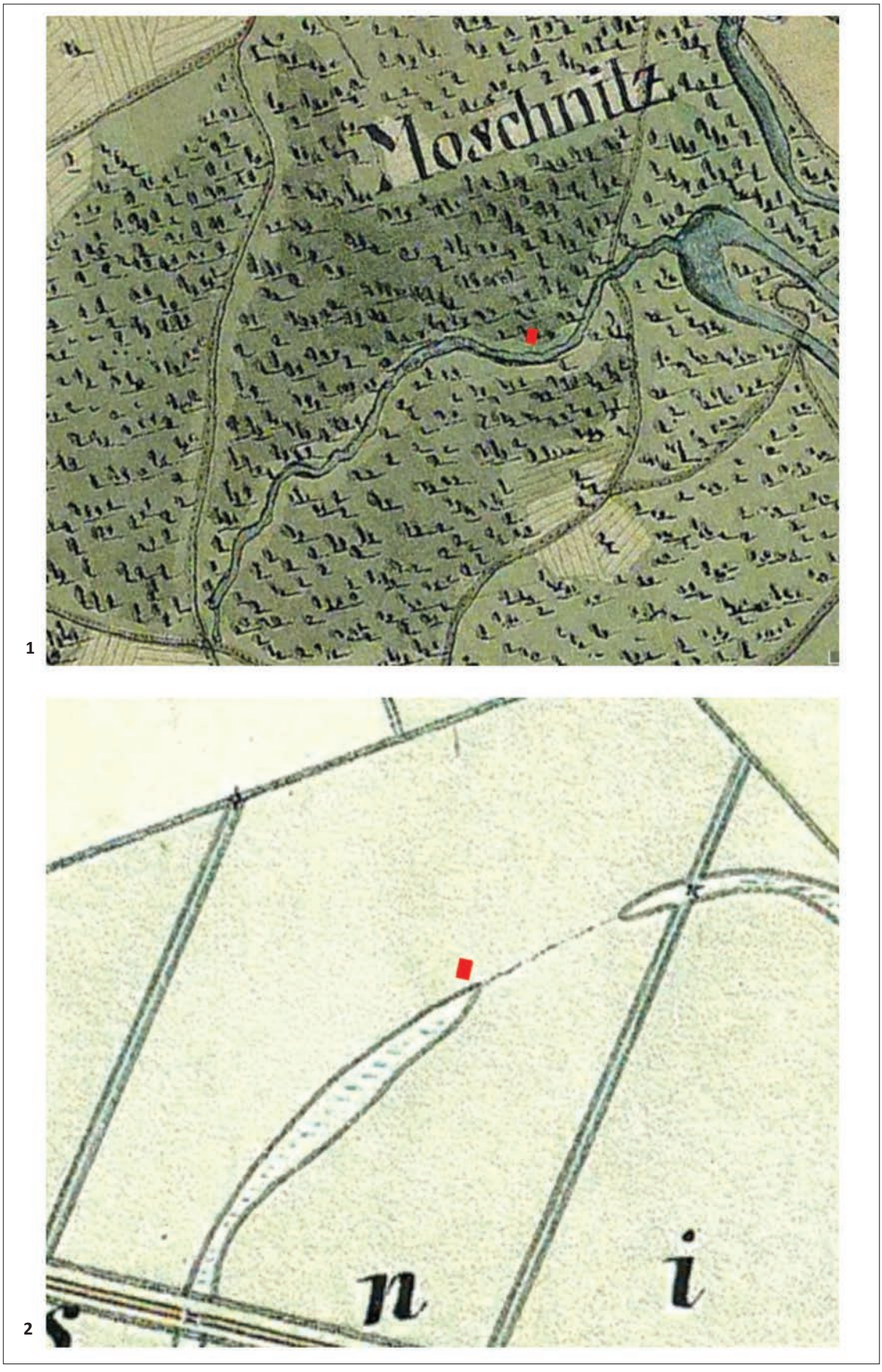
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[6] Suciu 2009, p. 60, fig. 64.
[7] Suciu 2009, p. 67, fig. 79.
[8] Suciu 2009, p. 69, fig. 82.
[9] Ștefan *et alii* 2013, p. 66, pl. XII/1.
[10] Luca 2016, p. 115, fig. 82/4.
[11] Ștefan *et alii* 2013, p. 65, pl. XI/3, p. 66, pl. XII/2, 4.
[12] Ștefan *et alii* 2013, pl. III–IV.
[13] Luca 2016, p. 249–151; Ștefan 2017, p. 8, fig. 1; Lazarovici, Lazarovici 2006, p. 205, fig. IIIa.87.
[14] Whittle *et alii* 2016.



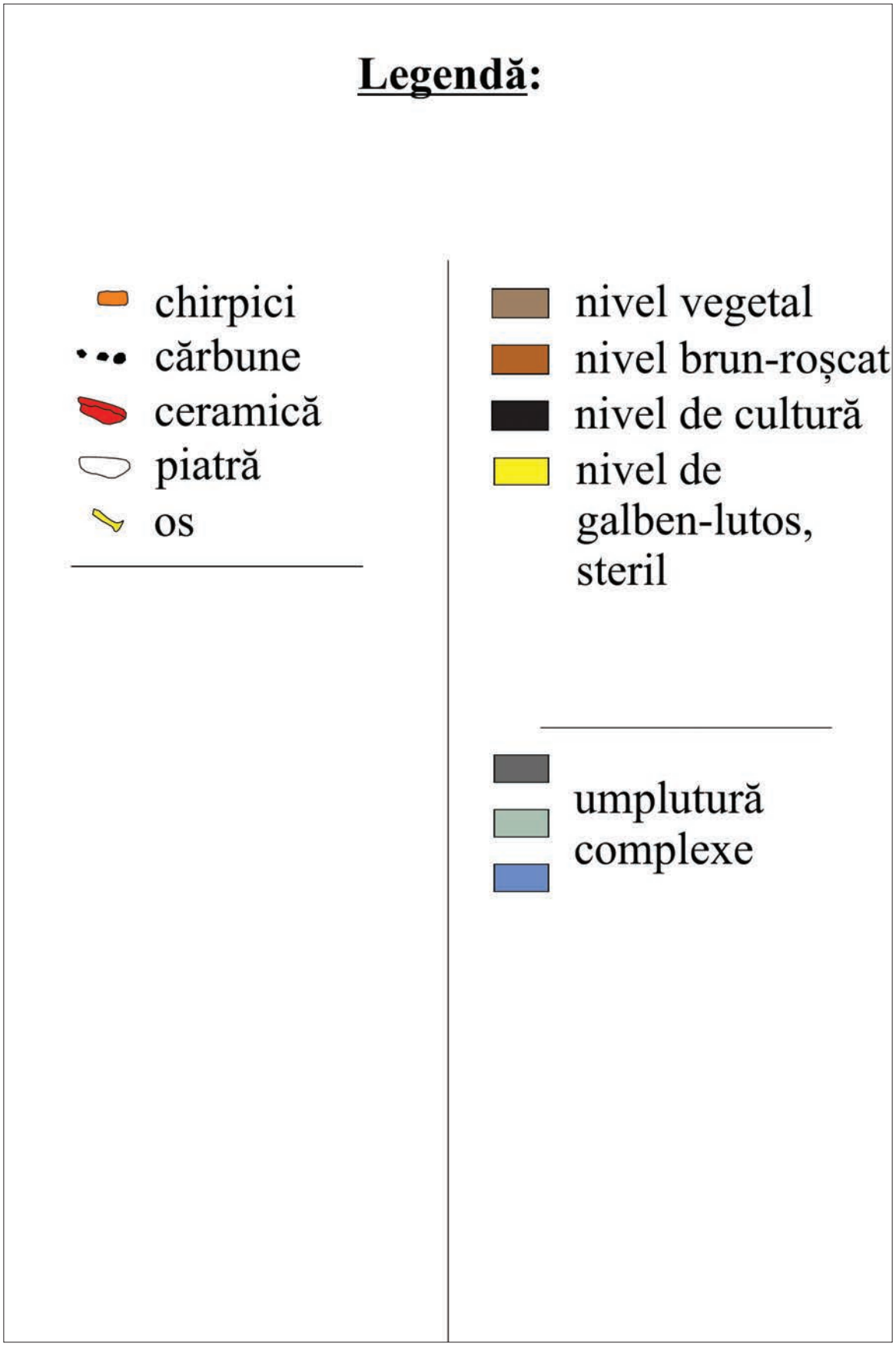
Planșa I. *Planul general al secțiunii.*

Plate I. *General plan of the trench.*



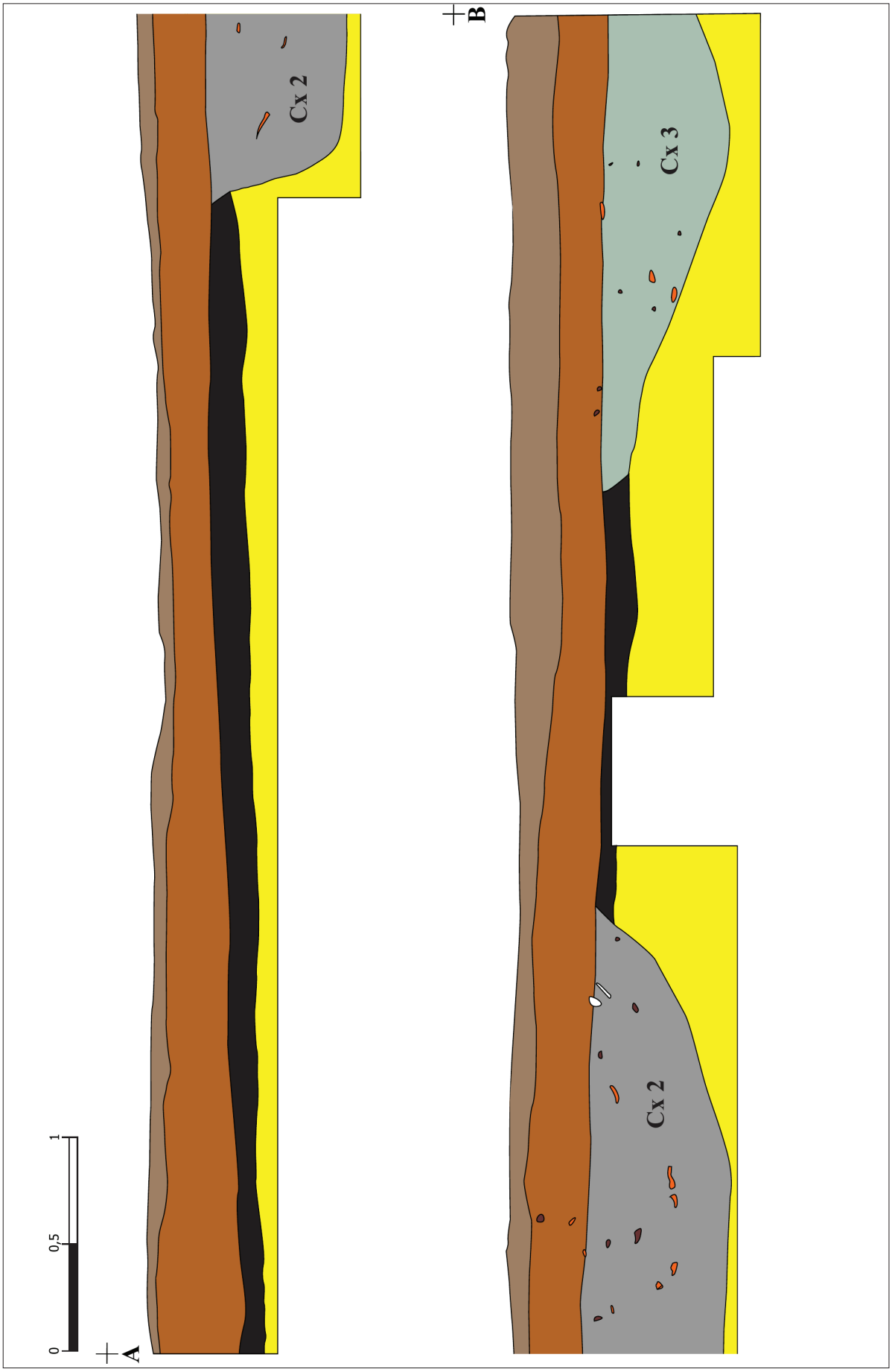
Planșa II. *Localizarea secțiunii din proiect pe hărțile vechi.* ***1.*** *Prima ridicare topografică (1763–1787);* ***2.*** *A doua ridicare topografică (1806–1869).*

Plate II. *Location of the project trench on historical maps.* ***1.*** *First topographic map (1763–1787);* ***2.*** *Second topographic map (1806–1869).*



Planșa III. *Legendă.*

Plate III. *Legend.*



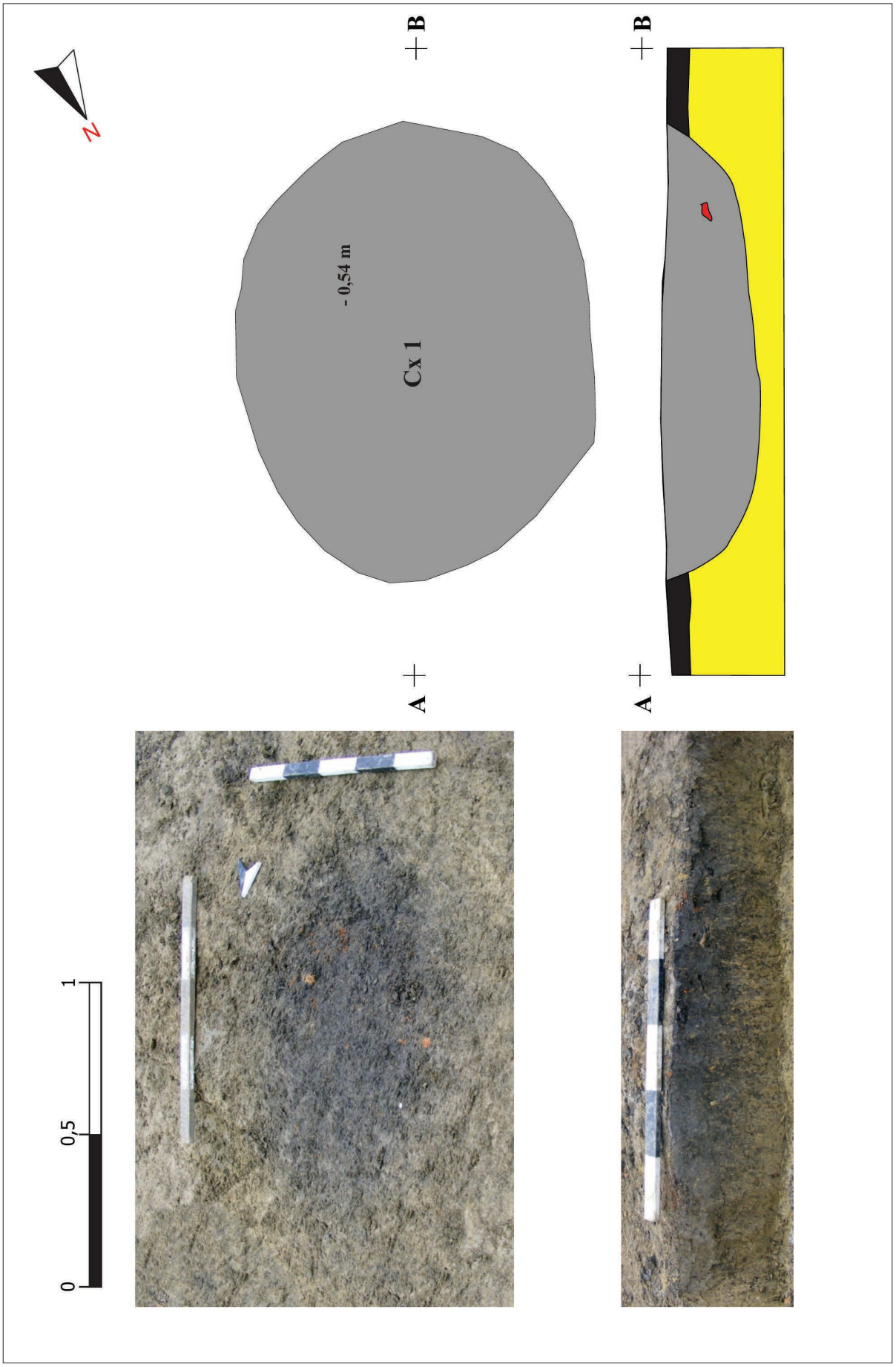
Planșa IV. *S1, profilul magistral de est.*

Plate IV. *S1, eastern main profile.*



Planșa V. *S1, profilul magistral.*

Plate V. *S1, main profile.*



Planșa VI. *Cx 1, grund și profil.*

Plate VI. *Cx 1, plan and profile.*



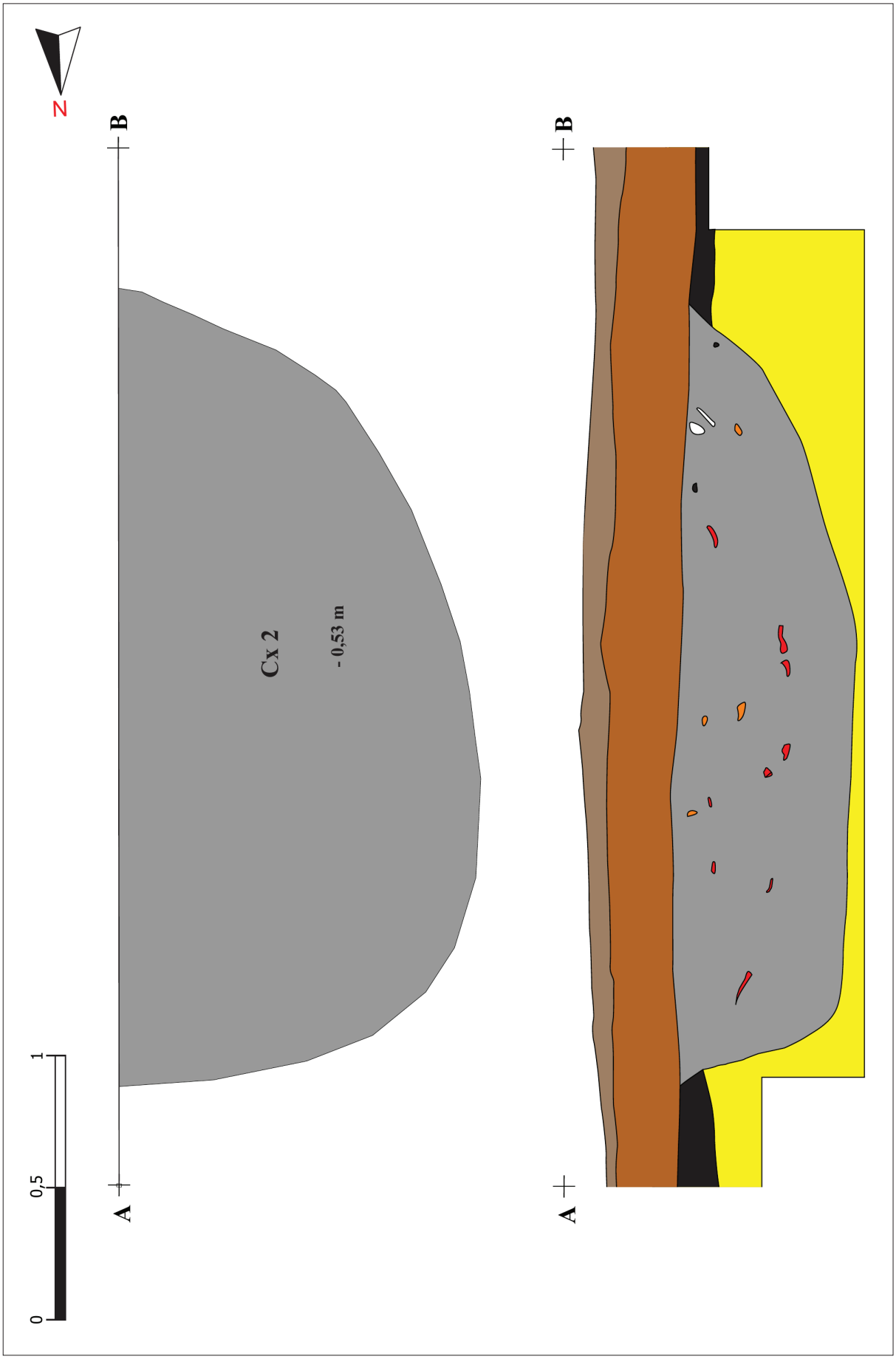
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Planșa VII. *Cx 2.* ***1.*** *Plan;* ***2.*** *Profil.*

Plate VII. *Cx 2.* ***1.*** *Plan;* ***2.*** *Profile.*



Planșa VIII. *Cx 2, grund și profil.*

Plate VIII. *Cx 2, plan and profile.*



1



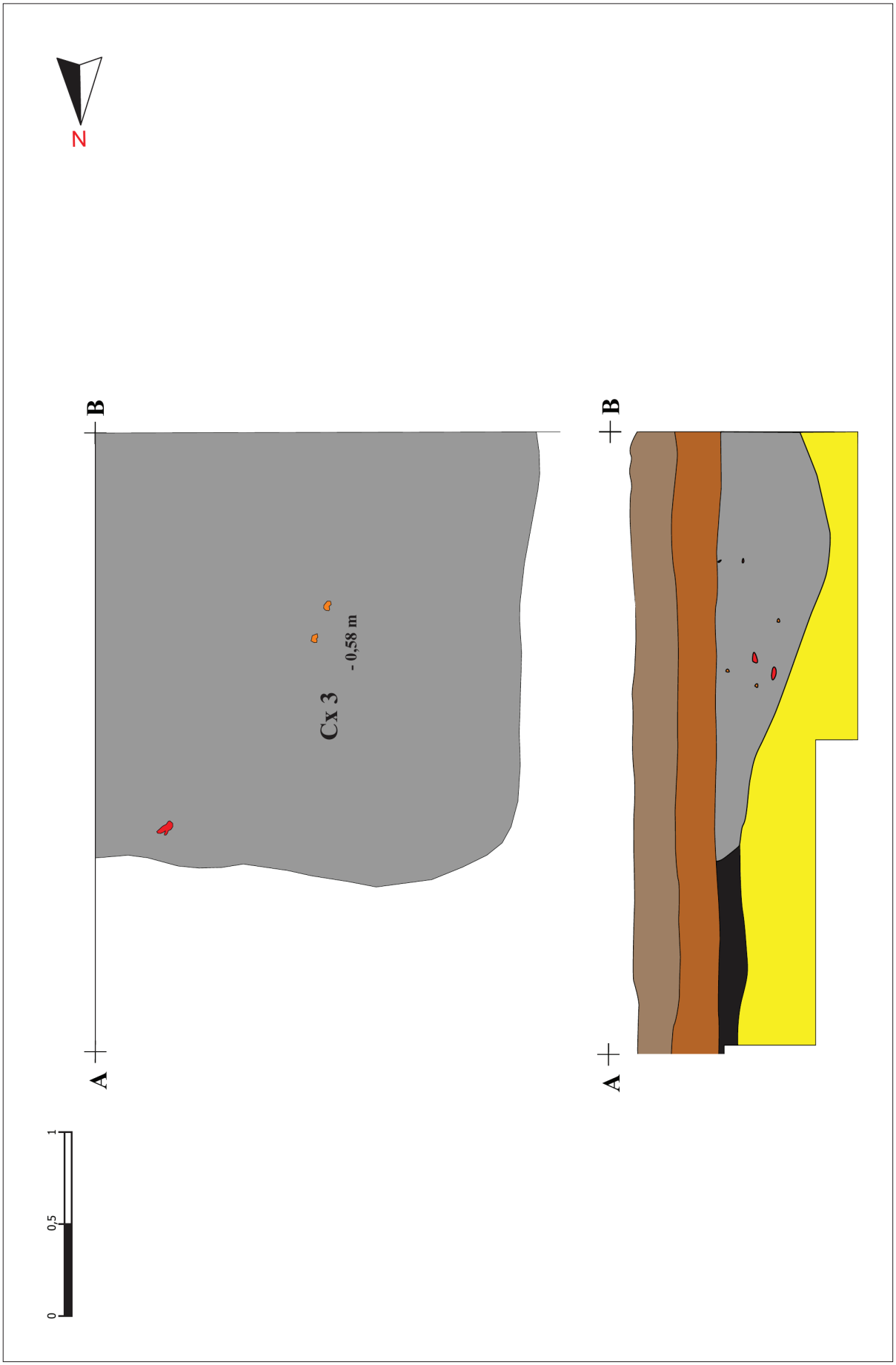
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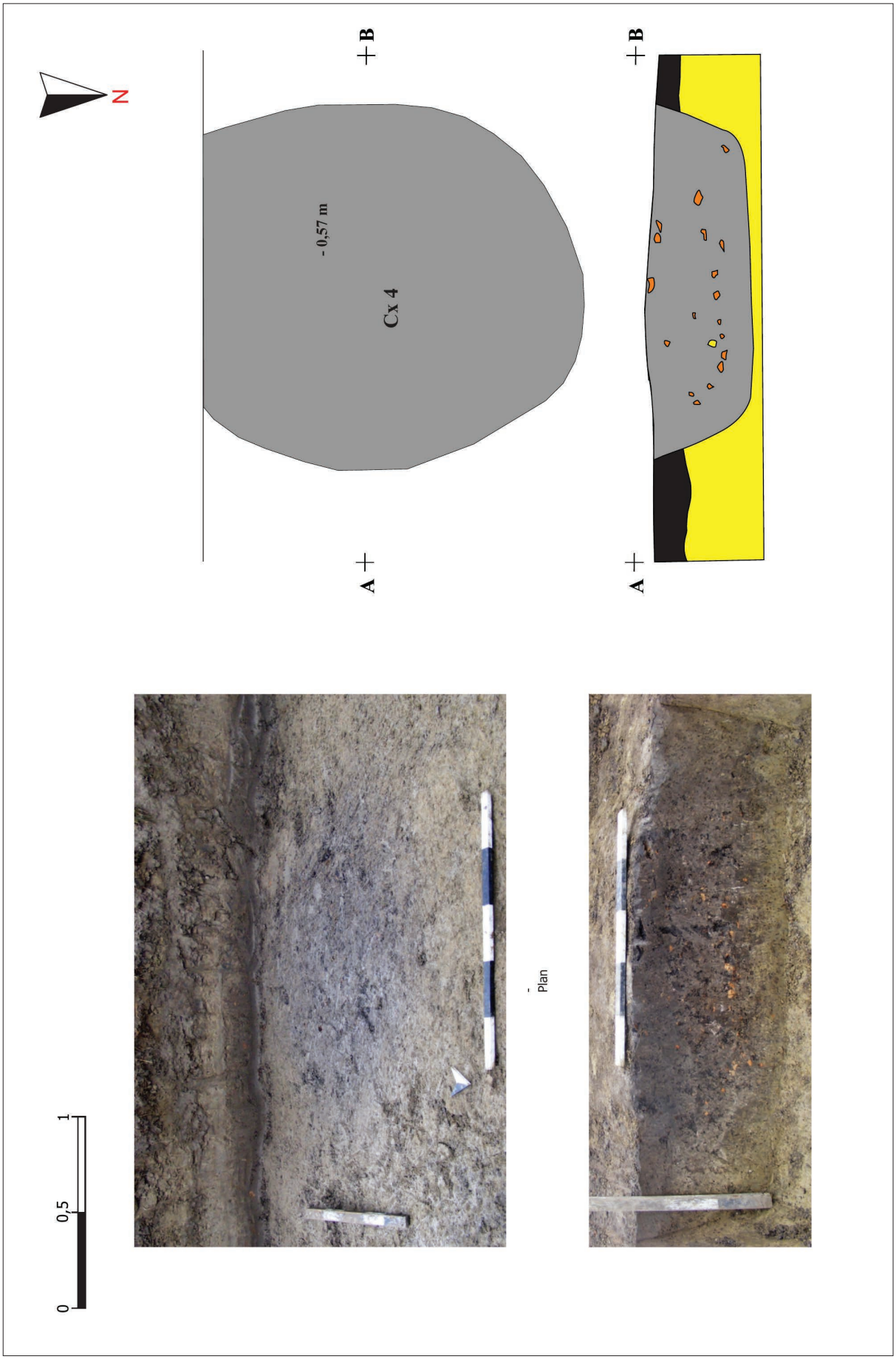
Planșa IX. *Cx 3, plan și profiluri.* ***1.*** *Plan;* ***2.*** *Profilul de est;* ***3.*** *Profilul de sud.*

Plate IX. *Cx 3, plan and profiles.* ***1.*** *Plan;* ***2.*** *Profilul de est;* ***3.*** *Profilul de sud.*



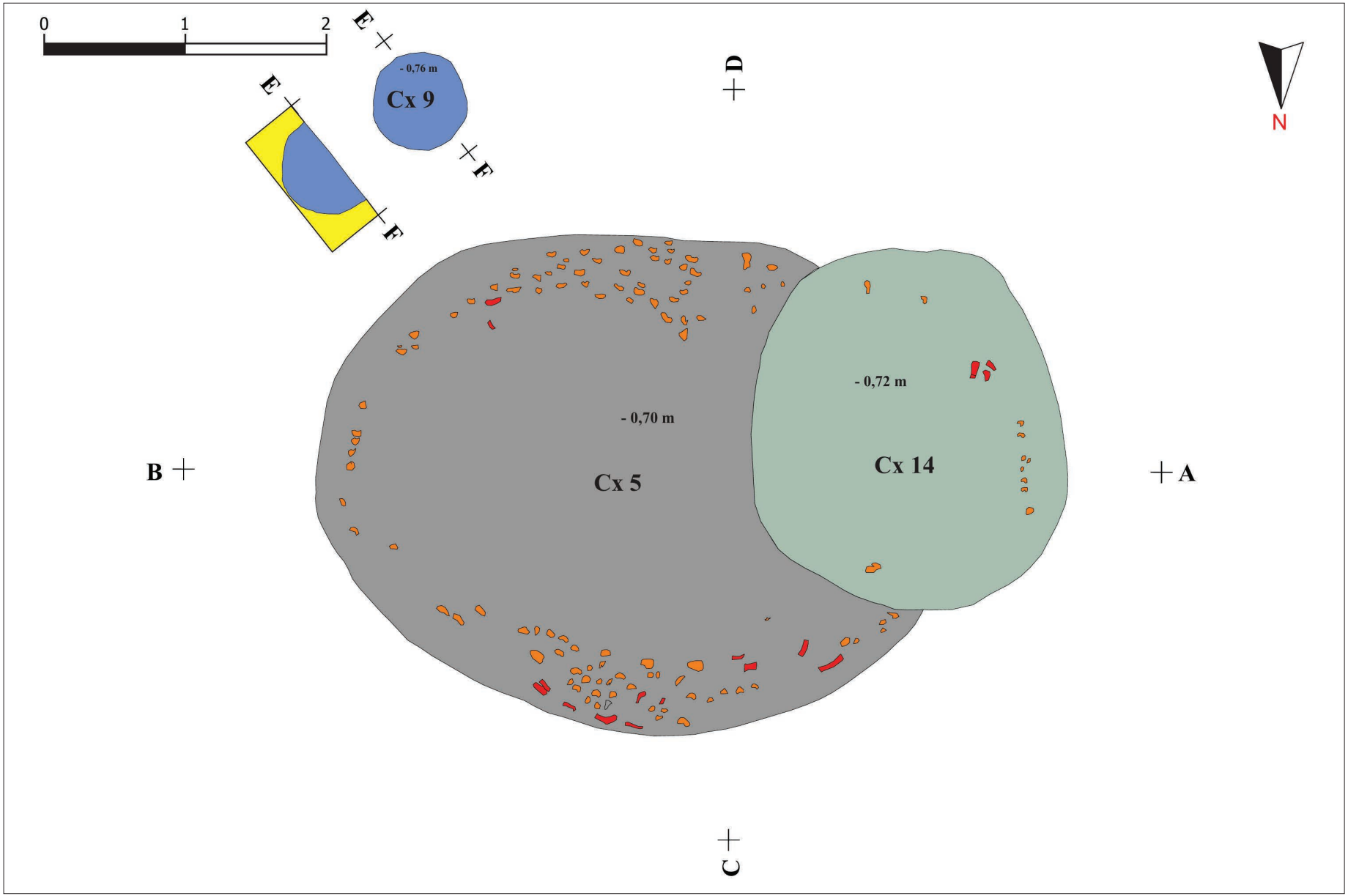
Planșa X. *Cx 3, grund și profil.*

Plate X. *Cx 3, plan and profile.*



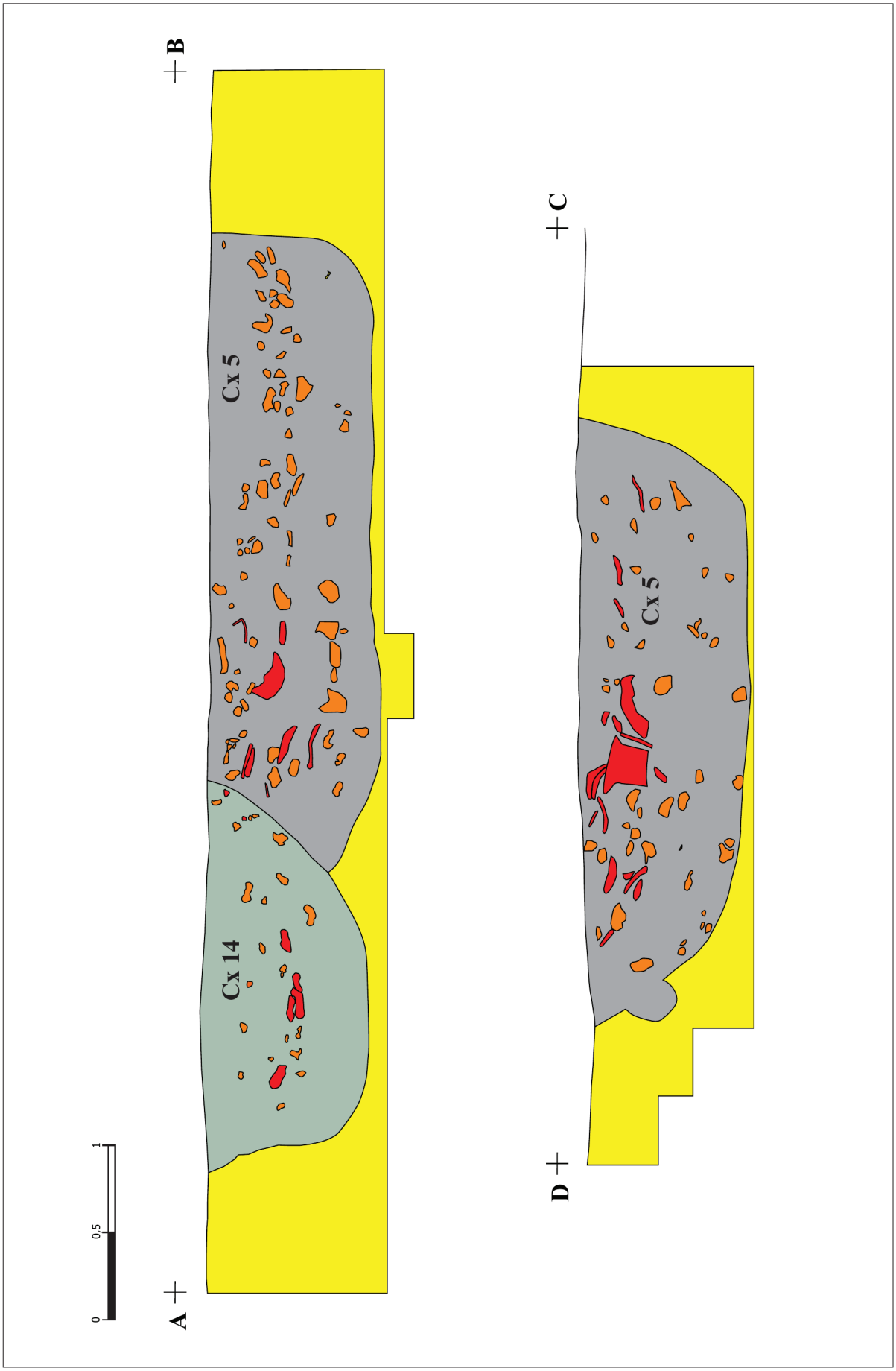
Planșa XI. *Cx 4, grund și profil.*

Plate XI. *Cx 4, plan and profile.*



Planșa XII. *Cx 5, 9, 14, grund și profil.*

Plate XII. *Cx 5, 9, 14, plan and profile.*



Planșa XIII. *Cx 5, 14, profiluri.*

Plate XIII. *Cx 5, 14, profiles.*



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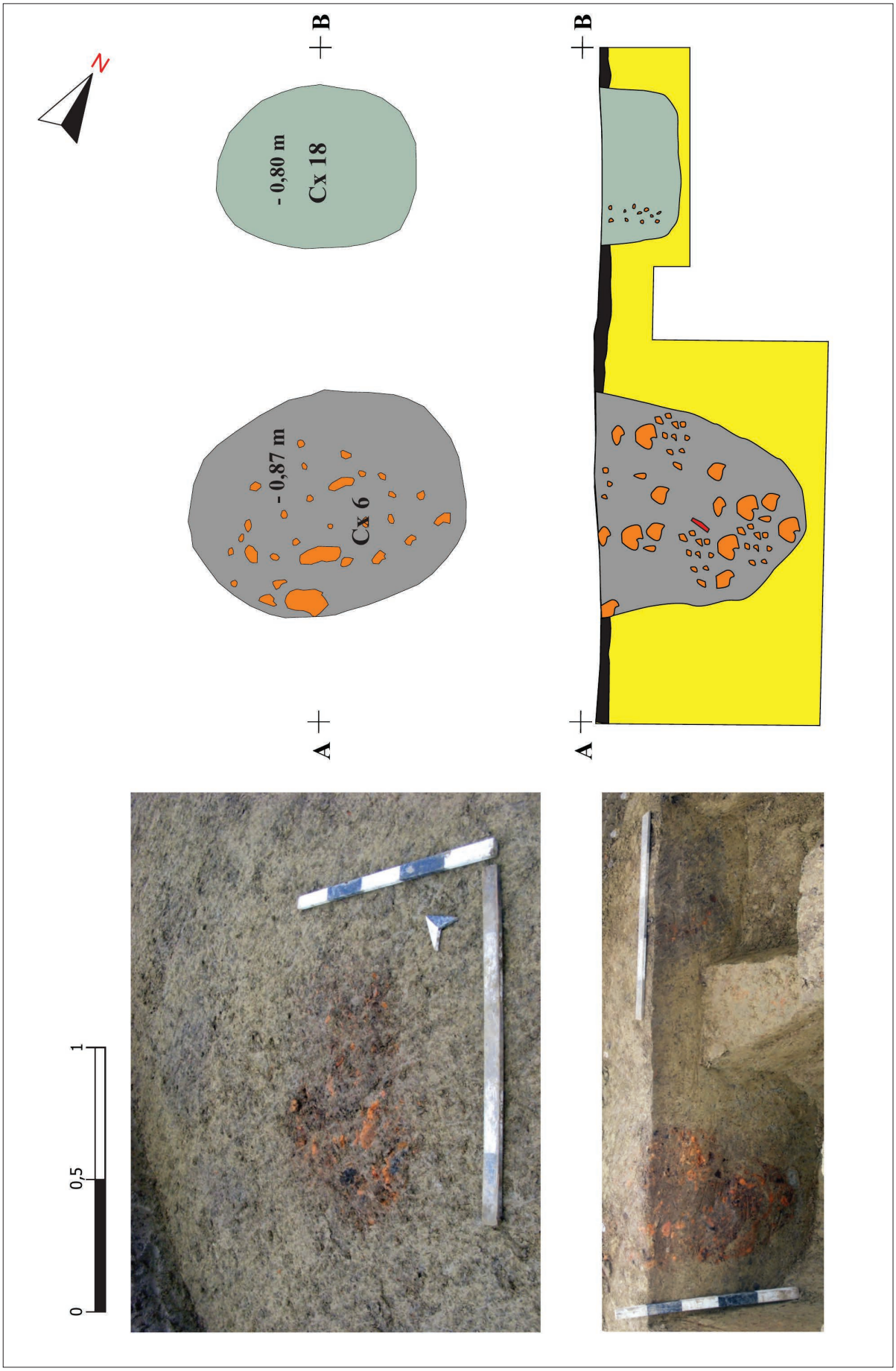
Planșa XIV. *Cx 5, 9, 14, plan și profil.* ***1.*** *Plan, Cx 5, 9, 14, vedere dinspre nord;* ***2.*** *Plan, Cx 5, 9, detaliu;* ***3.*** *Profil, Cx 9.*

Plate XIV. *Cx 5, 9, 14, plan and profile.* ***1.*** *Plan, Cx 5, 9, 14, view from the north;* ***2.*** *Plan of Cx 5, 9, detail;* ***3.*** *Profile of Cx 9.*



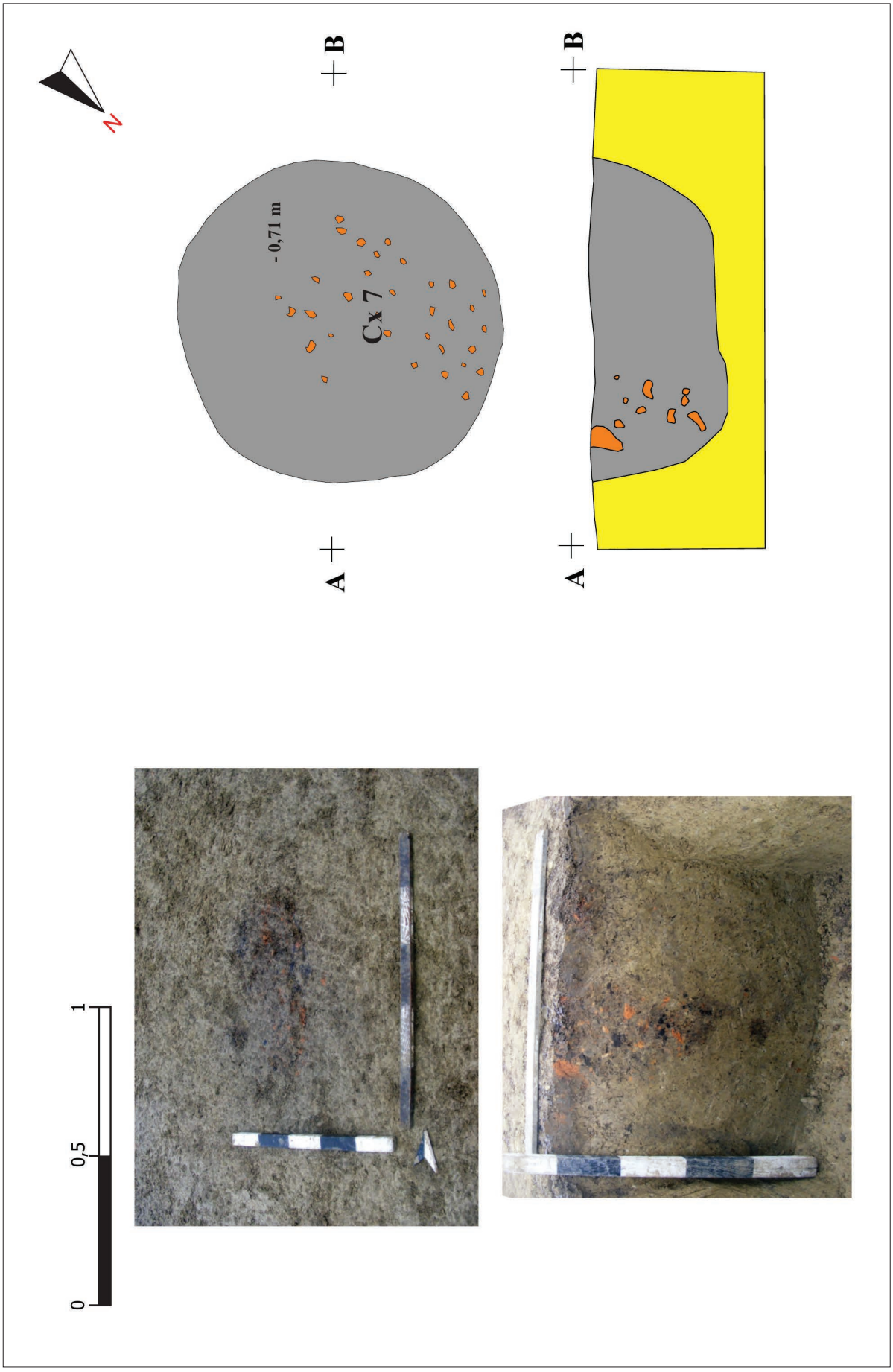
Planșa XV. *Cx 5, 14, profilul median de nord.*

Plate XV. *Cx 5, 14, northern median profile.*



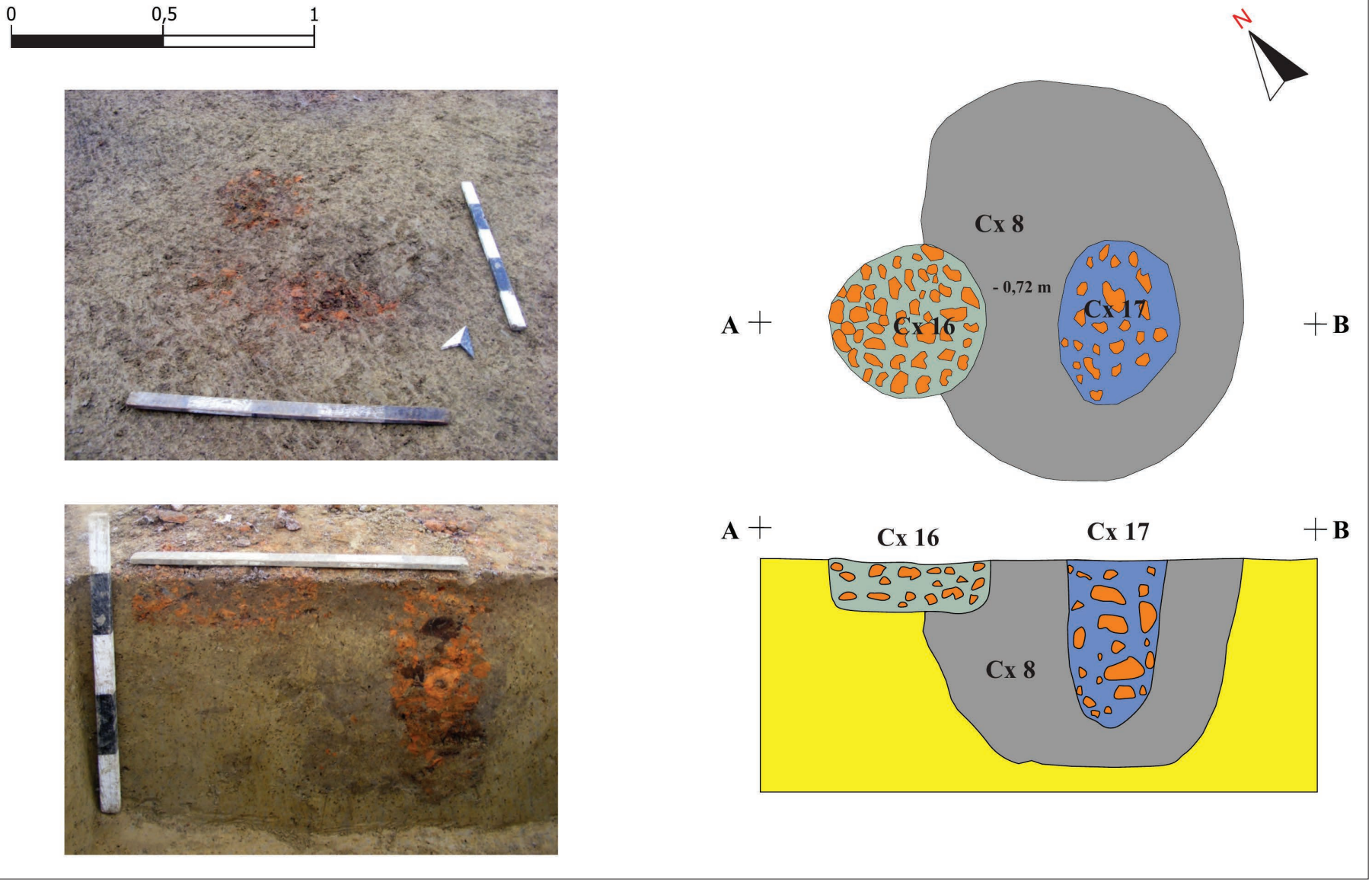
Planșa XVI. *Cx 6, 18, grund și profil.*

Plate XVI. *Cx 6, 18, plan and profile.*



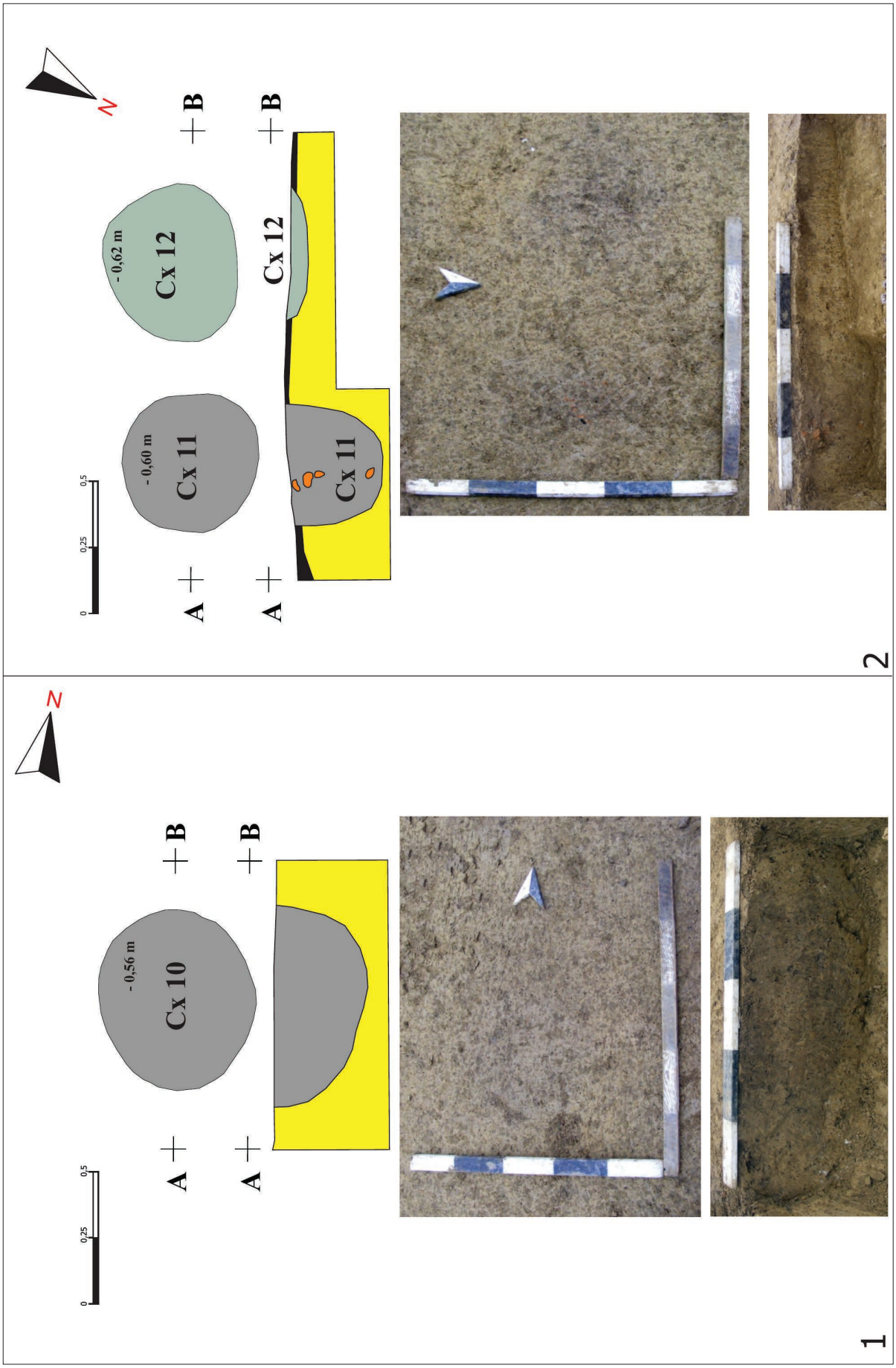
Planșa XVII. *Cx 7, grund și profil.*

Plate XVII. *Cx 7, plan and profile.*



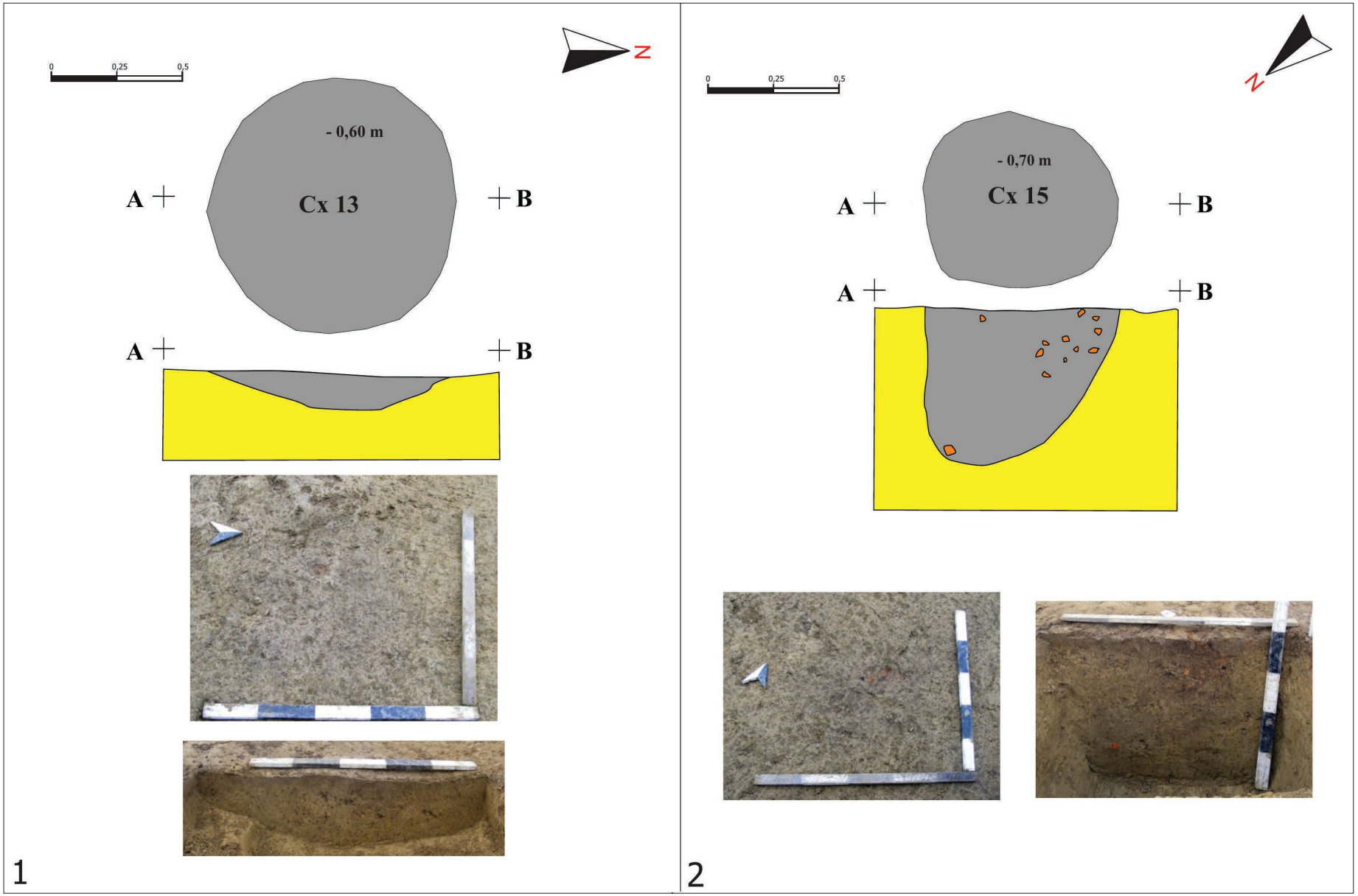
Planșa XVIII. *Cx 8, 16, 17, grund și profil.*

Plate XVIII. *Cx 8, 16, 17, plan and profile.*



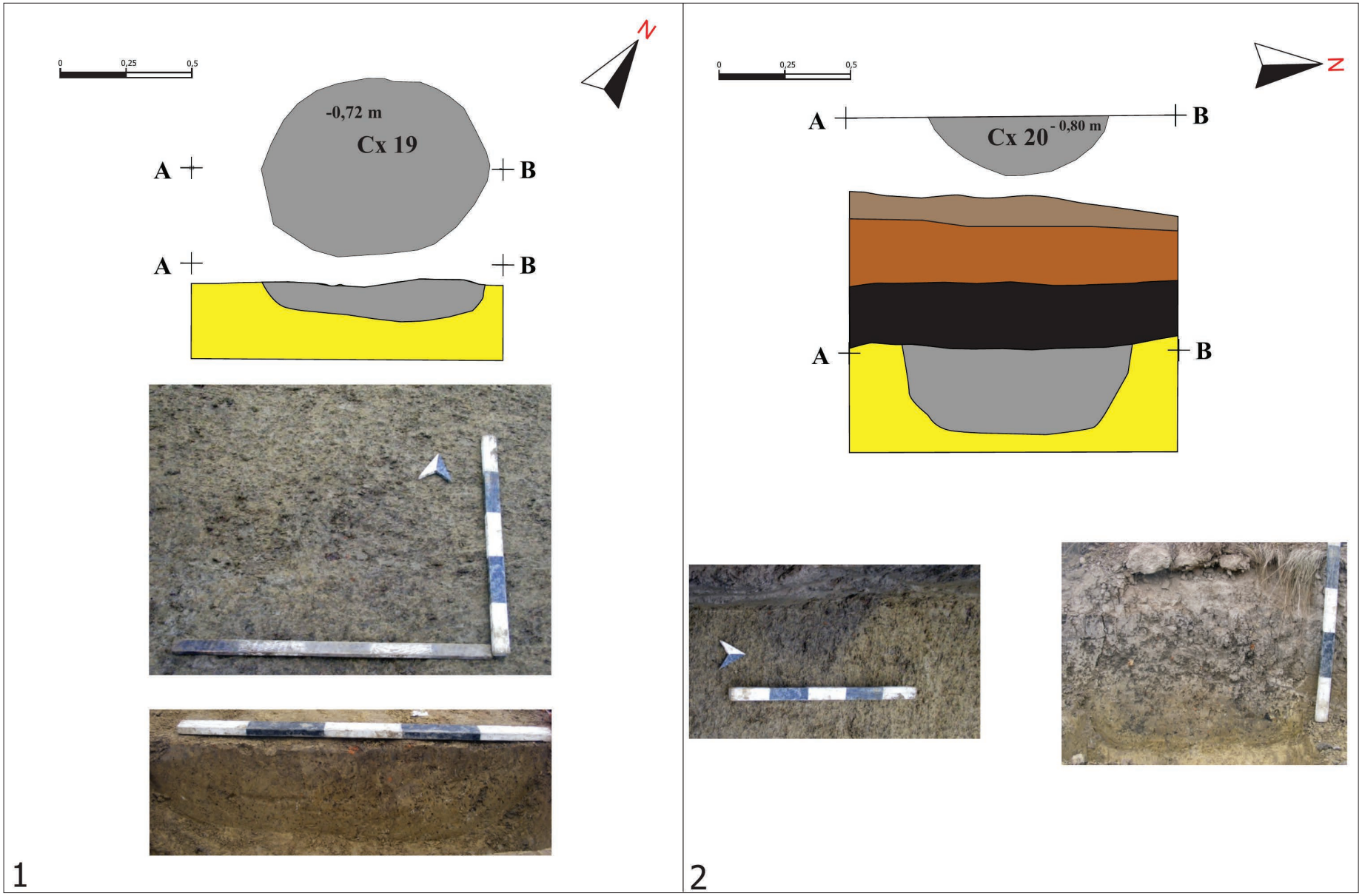
***Planșa XIX. 1.** Cx 10; **2.** Cx 11, 12, grund și profil.*

***Plate XIX. 1.** Cx 10; **2.** Cx 11, 12, plan and profile.*



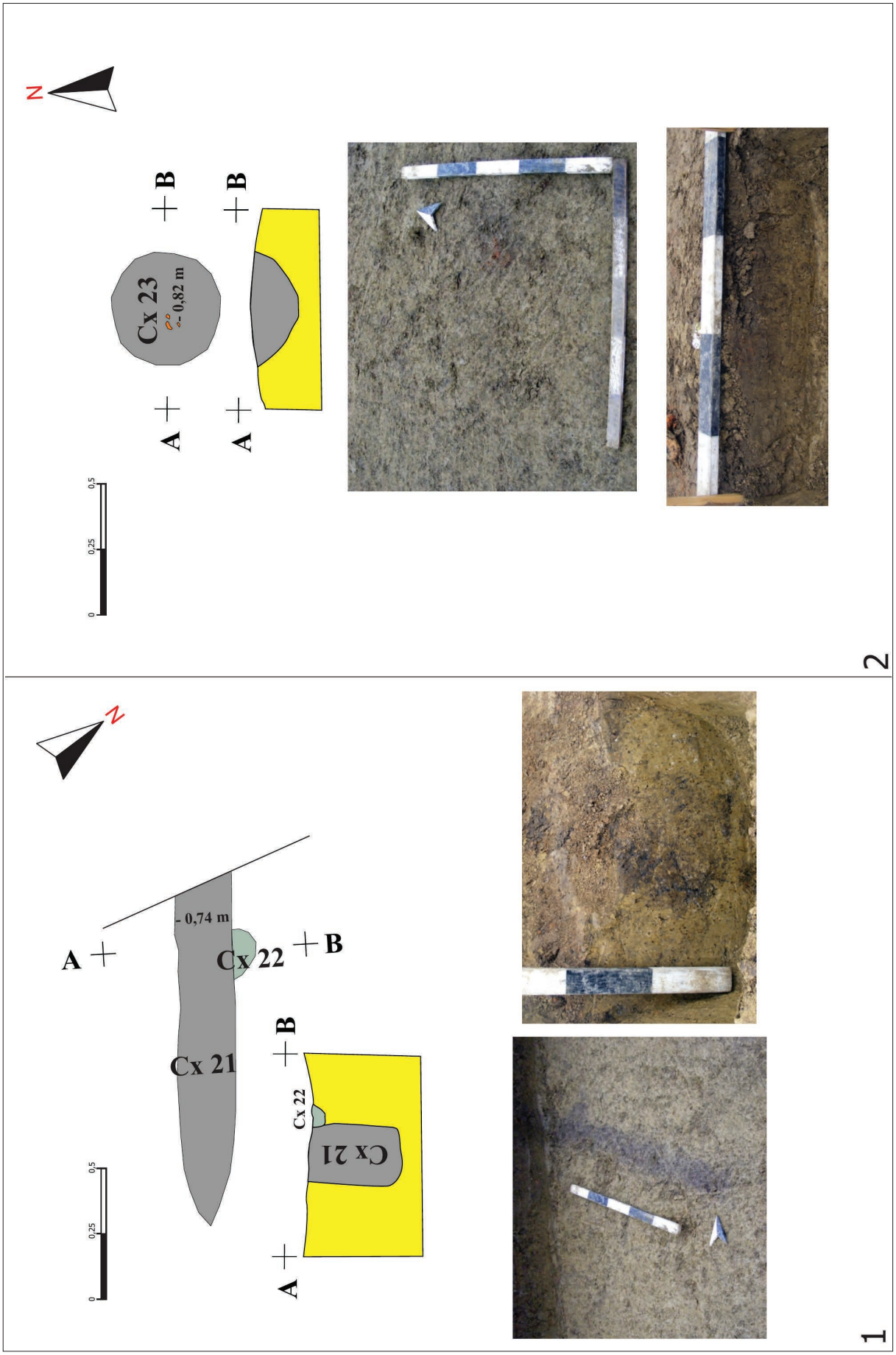
Planșa XX. 1. *Cx 13;* ***2.*** *Cx 15, grund și profil.*

Plate XX. 1. *Cx 13;* ***2.*** *Cx 15, plan and profile.*



Planșa XXI. 1. *Cx 19;* ***2.*** *Cx 20, grund și profil.*

Plate XXI. 1. *Cx 19;* ***2.*** *Cx 20, plan and profile.*



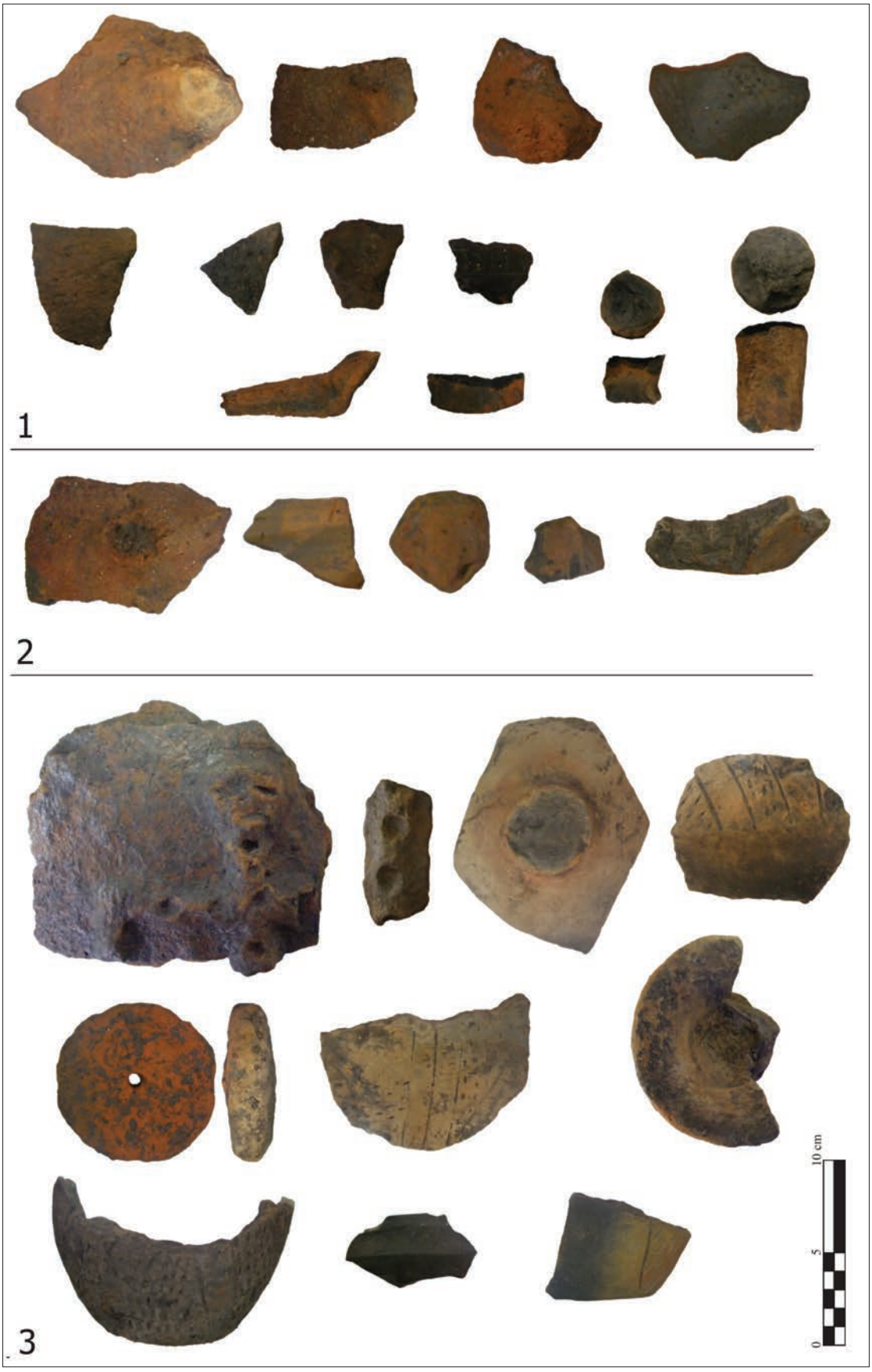
***Planșa XXII. 1.** Cx 21, 22; **2.** Cx 23, grund și profil.*

***Plate XXII. 1.** Cx 21, 22; **2.** Cx 23, plan and profile.*



Planșa XXIII. *Fragmente ceramice din:* ***1.*** *Cx 1;* ***2.*** *Cx 2.*

Plate XXIII. *Pottery fragments from:* ***1.*** *Cx 1;* ***2.*** *Cx 2.*



Planșa XXIV. *Fragmente ceramice din:* ***1.*** *Cx 3;* ***2.*** *Cx 4;* ***3.*** *Cx 5.*

Plate XXIV. *Pottery fragments from:* ***1.*** *Cx 3;* ***2.*** *Cx 4;* ***3.*** *Cx 5.*



Planșa XXV. *Fragmente ceramice din: Cx 5.*

Plate XXV. *Pottery fragments from: Cx 5.*



Planșa XXVI. *Fragmente ceramice din:* ***1.*** *Cx 5;* ***2.*** *Cx 14.*

Plate XXVI. *Pottery fragments from:* ***1.*** *Cx 5;* ***2.*** *Cx 14.*

CERCETĂRI ARHEOLOGICE LA BUCUREȘTI, MILITARI – *CÂMPUL BOJA*. CAMPANIA 2015

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Keywords: *archaeological site, research, dwellings, pits, graves*

Abstract: *The Militari – Câmpul Boja archaeological site is located on the territory of the Municipality of Bucharest, in its western part, south of Lacul Morii, the old course of the Dâmbovița River. Depending on the research history, the archaeological site was divided into four sectors: sector A – in the central-western part; sector B – in the northern part; sector C – in the eastern part and sector D – in the western part. This article refers to the results of the preventive archaeological research from 2015, carried out in sector D, from the western part of the archaeological site. In the course of these investigations, archaeological features from the Bronze Age, 3rd century AD, 5th–6th centuries and 19th century were identified and investigated.*

Cuvinte-cheie: *sit arheologic, cercetări, locuințe, gropi, morminte*

Rezumat: *Situl arheologic de la Militari – Câmpul Boja este amplasat pe teritoriul Municipiului București, în partea de vest a acestuia, la sud de Lacul Morii, vechiul curs al râului Dâmbovița. În funcție de istoricul cercetărilor, situl arheologic a fost împărțit în patru sectoare: sectorul A – în partea central-vestică; sectorul B – în partea de nord; sectorul C – în partea de est și sectorul D – în partea de vest. Articolul de față se referă la rezultatele cercetărilor arheologice preventive din anul 2015, efectuate în sectorul D, din partea vestică a sitului arheologic. În cursul acestor cercetări au fost identificate și cercetate complexe arheologice din epoca bronzului, secolul al III-lea p.Chr., secolele V–VI și secolul al XIX-lea.*

Situl arheologic Militari – *Câmpul Boja* este amplasat în partea de vest a Municipiului București, în sectorul 6, cartier Militari, pe terasa înaltă de la sud de Lacul Morii, pe cursul râului Dâmbovița, la sud de Lacul Dâmbovița, de ambele părți ale străzii Câmpul Boja (Pl. I). Suprafața sa este de aproximativ 120 000 mp, din care au fost cercetate, până în prezent, suprafețe totale incluzând aproximativ 25%.

Vestigiile arheologice se observă la suprafață, de-a lungul terasei înalte a Dâmboviței, între Canalul Roșu și cotul pe care terasa îl face în aval către punctul *Ciurel*. Altitudinea maximă este de 92,37 m, cea minimă de 89,66 m, față de albia râului care se află la numai 81,23/82,35 m.

În funcție de istoricul cercetărilor, situl arheologic a fost împărțit în patru sectoare: sectorul A – în partea central-vestică; sectorul B – în partea de nord; sectorul C – în partea de est și sectorul D – în partea de vest.

Primele informații despre acest sit au fost furnizate în anul 1922 de Constantin S. Nicolăescu-Plopșor[1], completate apoi, în anul 1929, de Dinu V. Rosetti[2]. Cercetările în acest sit arheologic au fost întreprinse în trei etape[3]. Primele săpături arheologice au fost inițiate în anul 1958, de Vlad Zirra și Margareta Tudor[4]. De-a lungul timpului au fost publicate o serie de articole în reviste de specialitate[5] și a fost inițiată seria de monografii arheologice București Militari – *Câmpul Boja*[6].

Până în anul 2015 au fost descoperite 213 complexe arheologice. Dintre acestea, un număr de 156 de complexe arheologice au fost cercetate în campaniile desfășurate în anii 1996–2015.

În acest articol sunt prezentate rezultatele cercetării arheologice preventive efectuate în anul 2015, în cadrul sitului arheologic București Militari – *Câmpul Boja*, str. Boja, nr. 73. Zona cercetată arheologic se află în sectorul D, la vest de râpa care exista în perioada primelor cercetări din anul 1958.

Pentru o bună cercetare a suprafeței, au fost trasate opt secțiuni, denumite convențional de la S1 la S8, orientate N–S, dispuse perpendicular pe Lacul Morii (Pl. IV/a). Secțiunile de la S1 la S6 au avut dimensiuni de 16,00 × 2,00 m, S7 de 16,00 × 5,00 m, respectiv S8 de 17,00 × 5,00 m. Ulterior, ele au fost ușor prelungite pentru cercetarea complexelor identificate. Toate secțiunile au fost împărțite în carouri de 2 m, numerotarea făcându-se de la sud la nord.

[1] Nicolăescu-Plopșor 1922, p. 54.

[2] Rosetti 1929, p. 7.

[3] Responsabili de șantier: Vlad Zirra (1958, 1960–1961); Mioara Turcu (Zgîbea) (1978–1979, 1981–1985) și Mircea Negru (1994, 1996–1999, 2001–2005, 2007–2008, 2012, 2015).

[4] Zirra 1958, p. 1.

[5] Negru 1997; 1999; 2000; 2002; 2003; 2004; 2005; 2005b; 2012–2013; Negru, Schuster 2009; Negru *et alii* 2009a; Poll, Negru 2000; Schuster, Negru 1999; 2007; 2008a; 2008b; 2008c; Schuster *et alii* 2012; Turcu 1981; 1992; Zgîbea 1963; Zirra, Cazimir 1963.

[6] Negru *et alii* 2000; Schuster, Negru 2006; Negru 2007; Negru *et alii* 2007; Negru *et alii* 2009b.

Suprafețele cercetate preventiv totalizează efectiv 392,12 mp, respectiv 62,43% din suprafața totală a terenului pentru care s-a solicitat efectuarea cercetărilor arheologice preventive.

CONSIDERAȚII STRATIGRAFICE

Stratigrafia generală a zonei cercetate se prezintă în felul următor (Pl. II, III):

1. Nivel vegetal (orizont organic al solului actual), brun deschis, omogen, compact. Conține frecvente urme antropice (sticle de plastic, țigle, material textil etc.) și rădăcini. Situat de la nivelul actual de călcare (0) până la cota de -0,30 m.

2. Nivel de depunere, rezultat în urma lucrărilor de construire a canalului din apropiere, format din lut galben amestecat cu un sol cenușiu-negricios și care se întinde pe toată suprafața proprietății, fiind mai gros în partea de sud-est (~40 cm) și mai subțire în partea de nord-vest (~10 cm). Antrenate în acest nivel întâlnim fragmente ceramice din epoca bronzului și fragmente de cărămizi moderne. Nivelul este situat între cotele -0,30 m și -0,70 m.

3. Nivel vegetal anterior intervențiilor de la mijlocul secolului XX, pentru construirea unui canal, de culoare cenușiu deschis, omogen, compact, cu o grosime care variază între 20 și 40 cm. Conține fragmente ceramice din epoca bronzului, din perioada mileniului I p.Chr., precum și cărămizi și țigle din perioada modernă și contemporană. Nivelul reprezintă, cel mai probabil, vegetalul anterior, de dinainte de nivelarea survenită în urma construirii canalului. Este situat între cota -0,70 m și cota -1 m.

4. Nivel de cultură, de culoare cenușiu închis, omogen, compact, cu o grosime care variază între 10–20 cm. Conține fragmente ceramice și chirpici din epoca bronzului, dar și fragmente ceramice din perioada mileniului I p.Chr. Din acest nivel, situat între cotele -1 m și -1,20 m, apar complexele.

5. Nivel steril de culoare galbenă, omogen, compact, lipsit de urme arheologice în care se adâncesc o parte dintre complexele arheologice. Este situat între cotele -1,20 m și -2,10 m.

6. Nivel steril de culoare galben deschis, cu conținut mare de carbonați, lipsit de urme antropice. Situat între -2,10 m și -2,70 m (adâncimea maximă a săpăturii).

STRUCTURI ARHEOLOGICE

În cursul cercetărilor arheologice preventive au fost identificate și cercetate 12 complexe arheologice din epoca bronzului, secolele III–IV, V–VI și secolul al XIX-lea (Pl. IV/a).

Epoca bronzului

Complexele 6A și 6B (Pl. VI/a). Din epoca bronzului datează mai multe gropi. Două dintre ele, amplasate în partea de sud a secțiunii S2, în dreptul carourilor 6–7, au formă circulară în plan și se întretaie. Acestea sunt Cpl 6A spre sud-est, respectiv Cpl 6B spre nord-vest, care au fost identificate la -1,70 m și se adâncesc până la -2 m.

Materialul arheologic descoperit constă în câteva fragmente ceramice lucrate cu mâna, unul fiind decorat cu măturica.

Complexul 7 (Pl. VIII/b). O altă groapă, circulară în plan, este amplasată în secțiunea S1, în dreptul carourilor 5–6. Ea a fost identificată la -1,50 m și se adâncește până la -1,56 m față de nivelul de călcare. Groapa are un diametru de 0,44 m. Umplutura este compactă, de culoare cenușiu închisă.

Singura descoperire din interiorul acestei gropi este reprezentată de trei fragmente ceramice, modelate cu mâna, din pastă nisipoasă. Arderea a fost incompletă, la interior fragmentele au culoare negricioasă, iar la exterior cărămizie.

În urma analizei materialului arheologic, aceste complexe arheologice pot fi încadrate în epoca bronzului.

AȘEZAREA DE TIP MILITARI – CHILIA (SECOLUL AL III-LEA P.CHR.)

În cadrul acestei așezări au fost cercetate o locuință adâncită și o groapă.

Locuința adâncită (Cpl 5) (Pl. V/b) este amplasată în capătul de sud al S1 și S2, precum și în martorul dintre ele, în dreptul caroului 8. Ea continuă și sub profilul de sud al șanțurilor amintite.

Locuința a fost identificată la -1,15 m și are o adâncime maximă pe profil de 1,55 m față de nivelul de călcare. Aceasta are o formă rectangulară în plan, cu lungimea de 4 m și lățimea surprinsă de 2,4 m. În colțul de sud-vest, locuința a fost afectată de șanțul modern de irigații. Sub acest complex au mai fost descoperite două gropi notate Cpl 5A și Cpl 5B.

Complexul 5A este o groapă circulară, de mici dimensiuni, cu diametrul de 0,46 m, situată pe latura de nord-est a Cpl 5. Ea a fost identificată la -1,50 m și continuă până la adâncimea de 1,82 m față de nivelul actual de călcare. Umplutura sa constă într-un pământ de culoare cenușiu-negricioasă, amestecat cu pigmenți de chirpici și cărbune. În cadrul complexului a fost găsit un singur fragment ceramic lucrat cu mâna. Cel mai probabil, complexul identificat a fost o groapă de stâlp pentru locuința adâncită.

Complexul 5B este o groapă circulară de mari dimensiuni, cu diametrul de 1,8 m, care se continuă și sub profilul de sud al secțiunii S1. Groapa a fost identificată la -1,54 m și se adâncește până la maximum -2,54 m, față de nivelul actual de călcare. Umplutura complexului cuprinde pământ compact, de culoare cenușiu-închisă, amestecat cu lentile de pământ galben și pigmenți de cărbune.

Materialul arheologic (Pl. XIII–XVI, XX–XXI). Materialul arheologic descoperit este compus din fragmente ceramice,

lucrate cu mâna și la roată, oase de animal, o lamă de silex, precum și bucăți mari de chirpici.

În cadrul ceramicii modelate cu mâna, au fost identificate: oale și baze plate de vase.

În cadrul ceramicii modelate la roată, au fost identificate: oale, străchini, căni, ulcioare, vase de dimensiuni mijlocii-mari și baze de vase.

Cronologia. În urma analizei materialului ceramic descoperit în acest ansamblu, complexul arheologic poate fi datat în secolul al III-lea p.Chr.

AȘEZAREA DE TIP IPOTEȘTI – CÂNDEȘTI (SECOLELE V–VI)

Complexul 1 (Pl. IV/a; IX). Locuința semi-adâncită este amplasată în mijlocul S6, în dreptul carourilor 3–5, în martorul dintre secțiunile S5 și S6, respectiv sub profilul de vest al secțiunii. Ea a fost identificată de la adâncimea de 0,78 m față de nivelul de călcare. În cursul cercetărilor a fost observată o zonă de formă aproximativ ovală, cu o prelungire în colțul de sud-est, în jurul vetrei.

Probabil că locuința avea o formă rectangulară sau poligonală, dar, din cauza intervențiilor moderne și a faptului că avea o serie de praguri interne, nu există certitudinea acestei forme inițiale. Dimensiunile zonei surprinse în jurul cuptorului sunt: lungime 1,60 m, lățime 1,20 m. Vatra cuptorului este ovală, cu dimensiunile de 0,98 × 0,62 m. Pe vatră au fost descoperite cenușă întărită și un fragment ceramic. Grosimea crustei vetrei variază între 2 și 4 cm, iar cea a pământului ars este de 10 cm. Adâncimea maximă a locuinței, surprinsă pe profil, este 0,86 m de la nivelul actual de călcare.

Materialul arheologic a fost extrem de puțin. Dintre descoperiri, putem menționa câteva fragmente ceramice lucrate la roată și câteva bucăți de chirpici.

Complexul 2 (Pl. V/a). Locuință semiadâncită amplasată în capătul de sud al secțiunilor S5 și S6, precum și în martorul dintre ele, în dreptul caroului 8, care continuă și sub profilele de sud ale secțiunilor amintite.

Locuința a fost identificată de la adâncimea de 0,90 m față de nivelul de călcare. Limitele exacte au fost greu de stabilit, datorită unor umpluturi similare cu solul înconjurător. Totuși, judecând după amplasarea materialului arheologic și după complexele din aceeași perioadă descoperite, putem presupune că avea o formă rectangulară.

Dimensiunile identificate în cele două secțiuni sunt: lungime 3,60 m, lățime 2,40 m. Vatra este situată pe latura de nord a complexului, având formă ovală, cu diametrul mare de 1 m și cel mic de 0,64 m. Starea de conservare este destul de precară, din ea păstrându-se doar depunerea de pământ ars, cu o grosime în secțiune de 14 cm.

Materialul arheologic este compus din fragmente de chirpici de dimensiuni mari, descoperite în zona vetrei, și câteva fragmente ceramice.

Cronologia. În urma analizei materialului arheologic, acest complex arheologic a fost datat în secolele V–VI.

Complexul 3 (Pl. VIII/a) este o groapă de formă rotundă în plan, amplasată în capătul de nord al secțiunii S6 și sub martorul dintre S6 și S5, în dreptul caroului 1. Groapa a fost identificată la -0,60 m, are diametrul de 0,46 m și o adâncime maximă de 1,34 m față de nivelul actual de călcare. Umplutura este formată din pământ de culoare cenușiu închis, amestecat cu pelicule de pământ galben și pigmenți de chirpici și cărbune.

Cronologia. În urma analizei materialului arheologic, acest complex arheologic a fost datat în secolele V–VI.

Complexul 8 (Pl. VI/b; XI) este o locuință semi-adâncită, de formă rectangulară, amplasată în secțiunea S8, în dreptul carourilor 3–4, precum și parțial sub profilul dintre S8 și S5.

Locuința a fost identificată de la -0,85 m și până la adâncimea maximă de 1,25 m față de nivelul actual de călcare. Lungimea surprinsă este 3,4 m, iar lățimea 2,20 m. În interiorul său, scobit în colțul de nord-est, este amplasat un cuptor în formă de potcoavă, cu un diametru maxim de 0,86 m. Grosimea pământului ars este de 4–5 cm.

În interiorul cuptorului au fost descoperite numeroase fragmente de vălătuci, pietre și fragmente ceramice lucrate la roată. În fața cuptorului a fost amenajată o treaptă, deasupra căreia a fost surprinsă o peliculă de cenușă în formă de semicerc, care provenea, probabil, din pereții cuptorului.

Materialul arheologic (Pl. XVII; XXII). Materialul arheologic este format din fragmente de vase ceramice, lucrate cu mâna și la roată, oase de animale și două greutăți de lut conice.

Cronologia. Pe baza materialului descoperit, acest complex poate fi datat în secolele V–VI.

Complexul 11 (Pl. VII/b; XII) este o locuință adâncită, amplasată în colțul de sud-vest al S7, precum și în martorul dintre S7 și S3, în dreptul carourilor 7–8, continuând și sub profilul de sud al secțiunii, în afara proprietății. Aceasta a fost identificată la -0,80 m și continuă până la adâncimea de 1,54 m față de nivelul de călcare. Locuința are o formă rectangulară, cu dimensiunile păstrate de 3 × 2,60 m, având, ca și în cazul Complexului 10, un bloc de lut cruțat în colțul de nord-est, în care a fost scobit un cuptor, cu diametrul de 0,60 m, elevația păstrată de 0,30 m și grosimea pământului ars de 4 cm.

În fața cuptorului a fost păstrată o treaptă. În interior, au fost găsite două rânduri de vălătuci. Pe latura de nord-vest a blocului de lut cruțat a fost identificată o grămadă de vălătuci, dispuși cu atenție, cel mai probabil pentru eventualele refolosiri. Umplutura este de culoare cenușiu închis, amestecată cu pigmenți de cărbune și chirpici.

Materialul arheologic. În complex au fost descoperite numeroase fragmente ceramice, lucrate cu mâna și la roată, precum și mai multe fragmente de vălătuci. În fața cuptorului a fost descoperit o bază de vas lucrată cu mâna.

Ceramica modelată cu mâna cuprinde fragmente de vase din pastă compactă, arsă complet, de culoare cărămizie, precum și din pastă grosieră cu nisip și pietricele de 2–5 mm, care au la exterior o culoare cărămiziu-castanie.

Ceramica modelată la roată cuprinde fragmente de vase din pastă semifină, aspră, de culoare cenușie. Un fragment de toartă torsionată ridică o serie de probleme cronologice, fiind specific perioadei romane și post-romane.

Cronologia. În urma analizei preliminare a materialului arheologic, acest complex arheologic se datează în secolul al VI-lea p.Chr.

Complexul 12 (Pl. VIII/d) este o groapă rotundă în plan, amplasată în secțiunea S8, în dreptul carourilor 1–2. Identificată de la -0,94 m, ea se adâncește până la -1,58 m față de nivelul de călcare. Diametrul gropii este de 1,16 m. Umplutura constă în pământ de culoare cenușiu închis, amestecat cu pelicule de pământ galben și pigmenți de cărbune.

Cronologia. Pe baza materialului arheologic descoperit, complexul arheologic poate fi datat în secolele V–VI.

SECOLUL AL XIX-LEA

Complexul 4 (Pl. VII/a; X/c). Mormânt de inhumație, dublu, amplasat în partea de sud a S4 și în martorul dintre secțiunile S4 și S6, în dreptul caroului 7. Complexul a fost identificat de la adâncimea de 1,15 m față de nivelul de călcare. Groapa este aproximativ ovală, cu dimensiunile de 1,70 × 1,00 m și este orientată E–V. Umplutura gropii constă în pământ cenușiu închis, amestecată cu pelicule de pământ galben.

În groapă au fost așezați doi indivizi adulți, notați M1 (în partea de sud) și M2 (în partea de nord), ambele schelete descoperite în conexiune anatomică.

Scheletul notat M1 a fost descoperit în decubit dorsal, înclinat spre sud și cu capul întors ușor spre nord-est. Mâna dreaptă este flexată din cot în unghi de 45° și așezată pe abdomen. Mâna stângă este flexată din cot în unghi de 45° și așezată în apropierea bazinului lui M2. Picioarele sunt întinse. În zona falangelor de la mâna dreaptă a fost descoperită o monedă perforată din bronz, de mici dimensiuni. În spatele craniului, la demontare, a fost descoperit un ac de păr din bronz (Pl. XXII). Starea de conservare a oaselor este mediocră.

Scheletul notat M2 a fost găsit tot în decubit dorsal, numai că bazinul este înclinat vizibil către sud și capul este pe spate, cu fața în sus. Mâna dreaptă este flexată din cot în unghi de 45° și așezată pe abdomen. Mâna stângă este flexată total și așezată pe piept. Piciorul drept este întins, iar cel stâng este flexat spre nord. În zona M2 nu au fost descoperite obiecte de inventar. Multe dintre oasele scheletului M2 lipsesc, iar starea de conservare a celor rămase este proastă.

Cronologia. În urma analizei materialului arheologic, acest complex se datează în secolul al XIX-lea, argumentul în acest sens fiind moneda descoperită, care a fost emisă în perioada domniei sultanului Mahmud al II-lea (1808–1839)[7].

[7] Mulțumim dr. Dan Pârvulescu pentru identificarea acestei monede.

MATERIALE ARHEOLOGICE DESCOPERITE

Epoca bronzului

Sunt reprezentate toate categoriile de ceramică (fină, intermediară, grosieră), într-un procentaj mai mare fiind prezentă cea grosieră.

Ceramica fină (categoria A) este lucrată dintr-un lut fin, cu nisip foarte fin ca degresant, iar cea intermediară (categoria B) din lut relativ bine frământat, cu cioburi pisate și nisip în compoziție, uneori și cu pietricele cu bob mic. A treia categorie de ceramică este cea grosieră (categoria C) sau de uz comun, lucrată din pastă cu cioburi, pietricele și nisip cu bob mare.

Arderea. Vasele sunt în general bine arse, atât în mediu oxidant, cât și reducător, cu variații care țin de forma vaselor și de pasta folosită. Vasele de factură grosieră, lucrate din pastă superficial frământată, sunt în general de culoare cărămizie și nuanțe de brun. Ceramica intermediară prezintă un spectru variat, cu nuanțe plecând de la brun-cărămiziu la cenușiu închis. Vasele lucrate din pastă fină, bine frământată, sunt în general de culoare cenușie. Într-o mică măsură întâlnim și fragmente de vase arse în mediu oxidant, cu nuanțe de brun și cărămiziu deschis. Arderea secundară a lăsat urme vizibile pe o mare parte a fragmentelor ceramice recoltate de pe acest segment al terenului.

Decorul. Decorul ceramicii de epoca bronzului descoperită în campania 2015 la Militari – *Câmpul Boja* este foarte puțin variat. În funcție de tehnica de realizare, poate fi împărțit în mai multe categorii: elemente de decor aplicate (butoni, apucători, brâuri alveolate, tortițe); elemente de decor realizate prin incizii (alveole, crestături, incizii realizate prin împunsături succesive); striuri realizate cu măturica, specifice vaselor de provizii de dimensiuni mari.

Formele ceramice. În cadrul materialului recoltat au putut fi recunoscute câteva forme de vase, des întâlnite și în alte așezări ale culturii Tei: vase de provizii, cești cu corp globular sau bitronconic, castroane cu corp bombat sau tronconice, căni cu corpul rotunjit și strâchini din pastă intermediară sau grosieră.

Cultura Militari – Chilia

Ceramica modelată cu mâna

CM-MC1. Pastă grosieră, friabilă, poroasă. Degresanții nu sunt vizibili. Ardere incompletă, culoare cărămiziu deschis la exterior, negricioasă la interior.

CM-MC2. Pastă grosieră, compactă, slip la exterior. Ardere incompletă.

CM-MC3. Pastă semifină compactă. Ardere neuniformă.

Ceramica modelată la roată

CR-MC1. Ceramică din pastă fină, culoare cărămiziu-deschis, compactă.

CR-MC2. Ceramică din pastă fină, culoare cenușiu deschis, lustruită la exterior.

CR-MC3. Ceramică zgrunțuroasă, friabilă, de culoare cenușie, conține pietricele și fragmente de calcar pisat.

Cultura Ipotești – Cândești

CM-IC1. Pastă grosieră, compactă, slip la exterior. Ardere incompletă.

CM-IP3. Pastă grosieră compactă, având ca degresanți nisip și rare pietricele. Ardere incompletă.

CR-IC1.1. Ceramică din pastă fină, culoare cărămiziu-deschis.

CR-IC2.1. Ceramică din pastă fină, culoare cenușiu-gălbuie.

CR-IC3. Ceramică zgrunțuroasă din pastă de culoare cărămizie sau cenușie, care conține nisip și pietricele.

CONCLUZII

Materialele din epoca bronzului, descoperite cu ocazia cercetării preventive descrise, constau în relativ puține fragmente ceramice specifice epocii, care nu au putut fi atribuite unor complexe, materialul fiind adus sau purtat din alte zone. Excepție face Complexul 6 (A–B), unde materialul, exclusiv ceramic, a putut fi încadrat în epoca bronzului, conform pastei din care a fost lucrat. Starea de conservare precară nu a permis recunoașterea vreunei forme de vas.

Analizând la nivel general categoriile de forme de vase și decorul acestora, le putem atribui din punct de vedere cronologic perioadei târzii a epocii bronzului. Analogii pentru aceste materiale pot fi găsite în diverse stațiuni din București și Ilfov, la Giulești – *Sârbi*[8], Lunca Bârzești[9], Militari – *Câmpul Boja*[10].

Cpl 5 este un bordei cu o formă obișnuită în cadrul așezării de tip Militari – Chilia de la Militari – *Câmpul Boja*. Locuința semi-adâncită are o formă aproximativ rectangulară. Podeaua nu prezintă urme speciale de amenajare, iar instalația de foc lipsește. În interiorul locuinței a fost identificată o groapă de provizii, de formă aproximativ cilindrică. O locuință similară, care avea în interiorul său o groapă de provizii, este Bordeiul nr. 30, descoperit la București Militari – *Câmpul Boja*, în secțiunile S53 – S54, datată în secolul al III-lea p.Chr.

Materialele arheologice descoperite în cadrul acestui complex au analogii în cadrul descoperirilor anterioare din acest sit. Astfel, un fragment de oală cu buza orizontală (15) este asemănător unui fragment descoperit în groapa nr. 53, complex datat în limitele secolului al III-lea p.Chr[11].

Un fragment de la o cană cu gât cilindric și buza ușor evazată (18) are analogii în inventarul bordeiului B11/1961, datat la mijlocul și în al treilea sfert al secolului al III-lea p.Chr[12].

O strachină cu buza verticală, decorată cu caneluri la exterior (26), are analogii în inventarul bordeiului B34, datat în secolul al III-lea p.Chr[13].

Complexele numerotate Cpl 1–3, 8–12 aparțin culturii Ipotești – Cândești. Locuințele cercetate au forme rectangulare sau poligonale (Cpl 1, 2, 8, 10, 11). Ele sunt semi-adâncite în nivelul de cultură din epoca bronzului și în nivelurile sterile arheologic. În interiorul acestora au fost identificate și cercetate instalații de foc, respectiv vetre ovale și cuptoare în formă de potcoavă, scobite într-un bloc de lut cruțat. Menționăm faptul că, în timp ce în Cpl 1 și 2 există vetre de foc, în Cpl 8, 10, 11 există cuptoare scobite într-un bloc de lut cruțat.

Acestei perioade îi aparțin și o serie de gropi rotunde în plan (Cpl 3, 9, 12), cu puțin material arheologic în inventarul lor. Un recipient ceramic specific secolelor V–VII este vasul ovoidal înalt, cu buza aproape verticală. Un fragment de la un astfel de vas a fost descoperit în Cpl 8/2015 (nr. inv. 58). El are analogii în cercetările anterioare din acest sit, în cadrul bordeielor B5/1960 (V–VII)[14], B13/1961 (sec VI–VII)[15], B7/1984 (V–VII)[16], B21/1999 (V–VI)[17].

În alte cazuri, vase modelate la roată din pastă zgrunțuroasă cenușiu-negricioasă (30, 32) imită forme de vase modelate cu mâna descoperite anterior în bordeiele B28/2003 (secolele V–VI)[18], B7/1984 (secolele VI–VII)[19].

Complexele identificate se încadrează în cronologia largă a culturii Ipotești – Cândești (secolele V–VII), dar ele pot fi datate restrâns în secolele V–VI. Un argument în acest sens îl constituie prezența vaselor modelate la roată din pastă fină de culoare cenușie, respectiv din pastă zgrunțuroasă de culoare cenușie, specifică perioadei anterioare a culturii Militari – Chilia din secolele II–IV p.Chr.

Cele două morminte descoperite aparțin secolului al XIX-lea, fiind contemporane satului Boja, identificat cartografic în această arie. Ele au ca inventar o monedă emisă în perioada domniei lui Mahmud al II-lea și un ac de păr, datate în prima jumătate a secolului al XIX.

Astfel, rezultatele cercetării din campania 2015 confirmă complexitatea și importanța sitului Militari – *Câmpul Boja*, demonstrând o locuire intensă și continuă de-a lungul mai multor epoci istorice. Descoperirile contribuie semnificativ la înțelegerea dinamicii locuirii în zona de vest a Bucureștiului și îmbogățesc corpus-ul material al culturii Militari – Chilia.

[8] Leahu 1963, p. 179–219.
[9] Sandu 1992.
[10] Negru *et alii* 2000, p. 25–46.
[11] Negru 2007, pl. 61/5.
[12] Negru *et alii* 2000, p. 61, pl. 62/2.
[13] Negru 2007, p. 22–23, pl. 41/2.
[14] Negru *et alii* 2009b, pl. 15/4, 17/3.
[15] Negru *et alii* 2009b, pl. 24/4.
[16] Negru *et alii* 2009b, pl. 30/1.
[17] Negru *et alii* 2009b, pl. 36/1–8.
[18] Negru *et alii* 2009b, pl. 39/4–5.
[19] Negru *et alii* 2009b, pl. 26/2.

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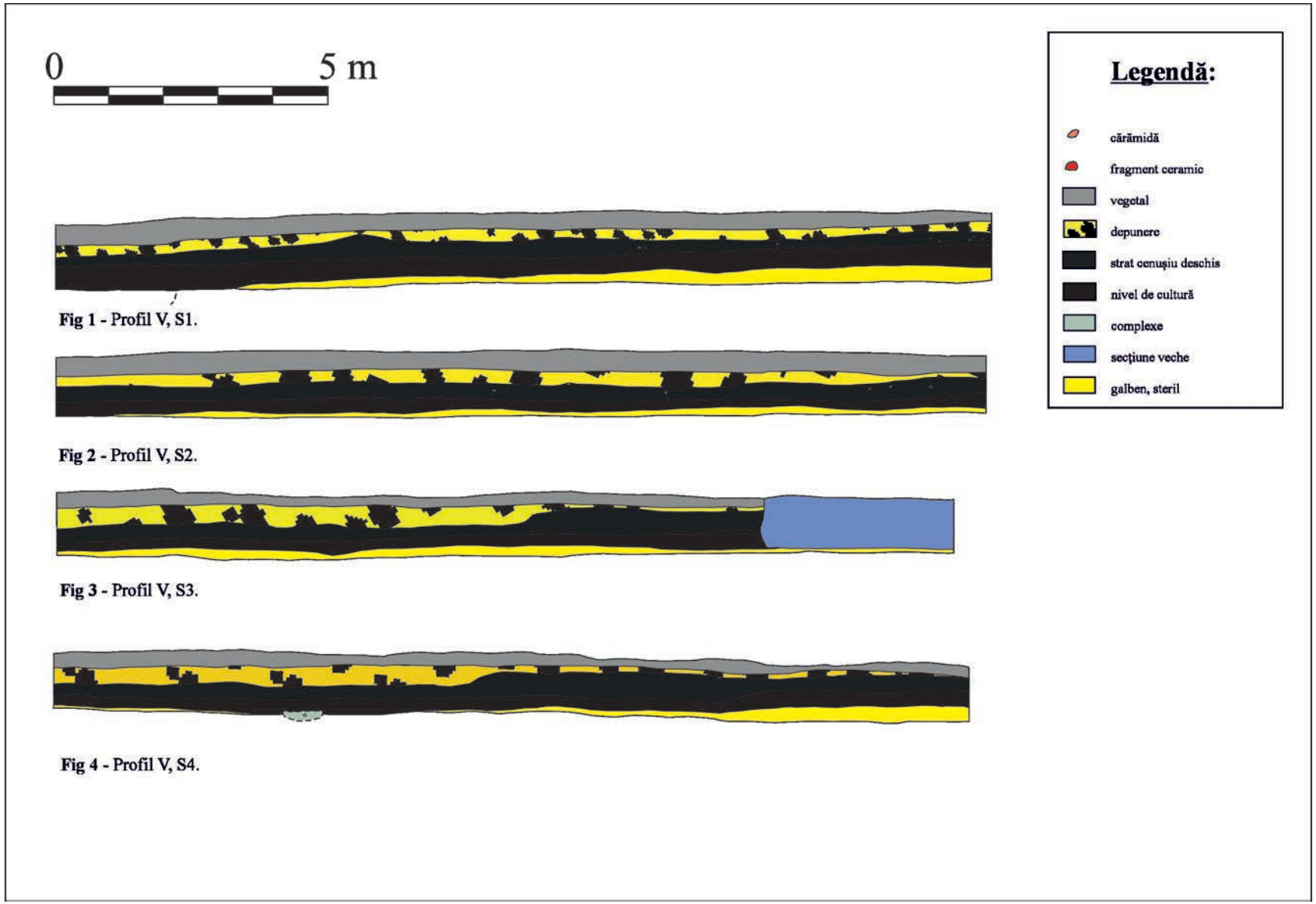
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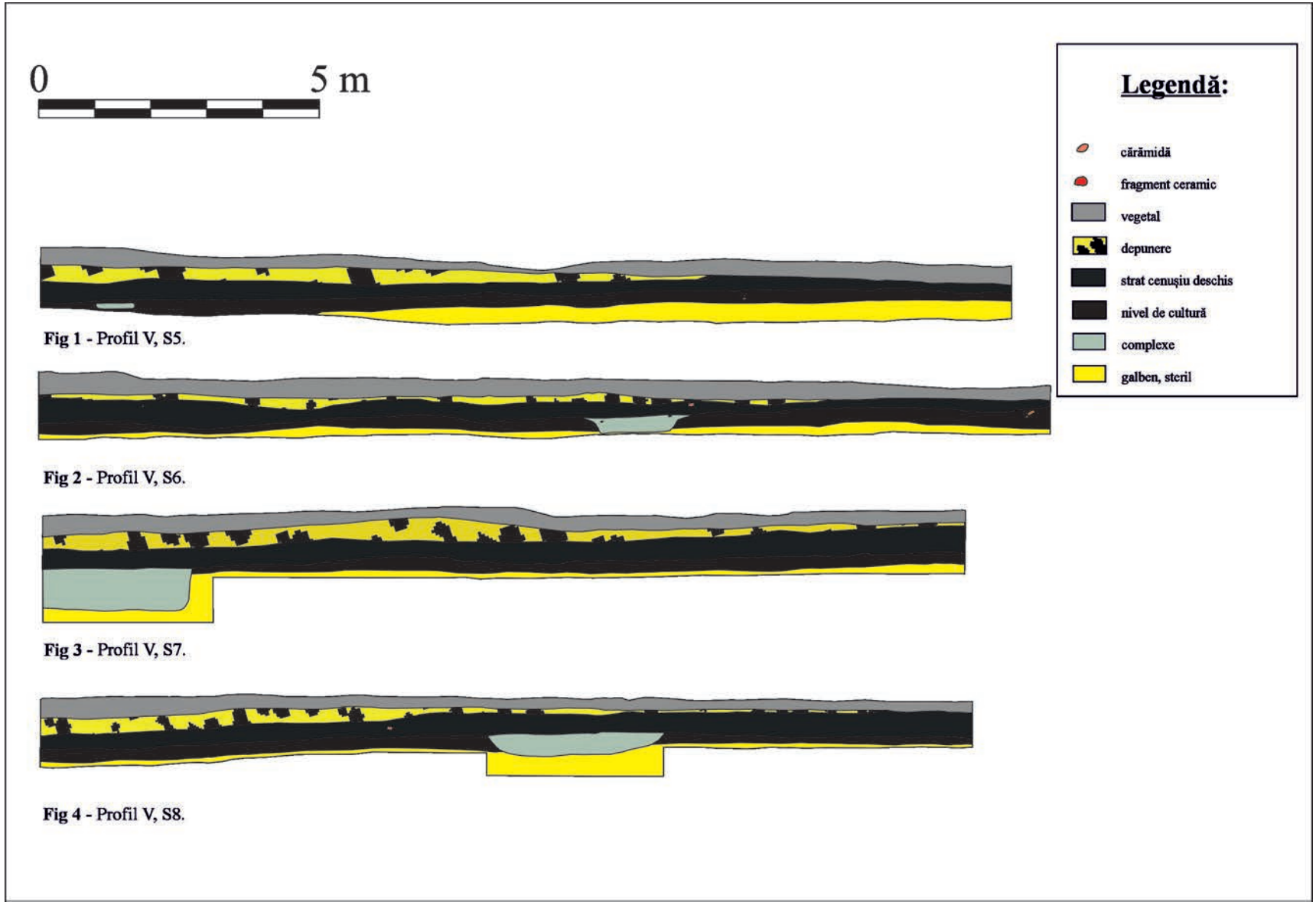
Planșa I. *Localizarea sitului și a proprietății:* ***a.*** *Situl arheologic localizat pe harta INMI (surse: INMI, MMB);* ***b.*** *Localizarea proprietății pe ortofotoplan.*

Plate I. *Location of the site and the property:* ***a.*** *The archaeological site located on the INMI map (sources: INMI, MMB);* ***b.*** *Location of the property on the orthophotomap.*



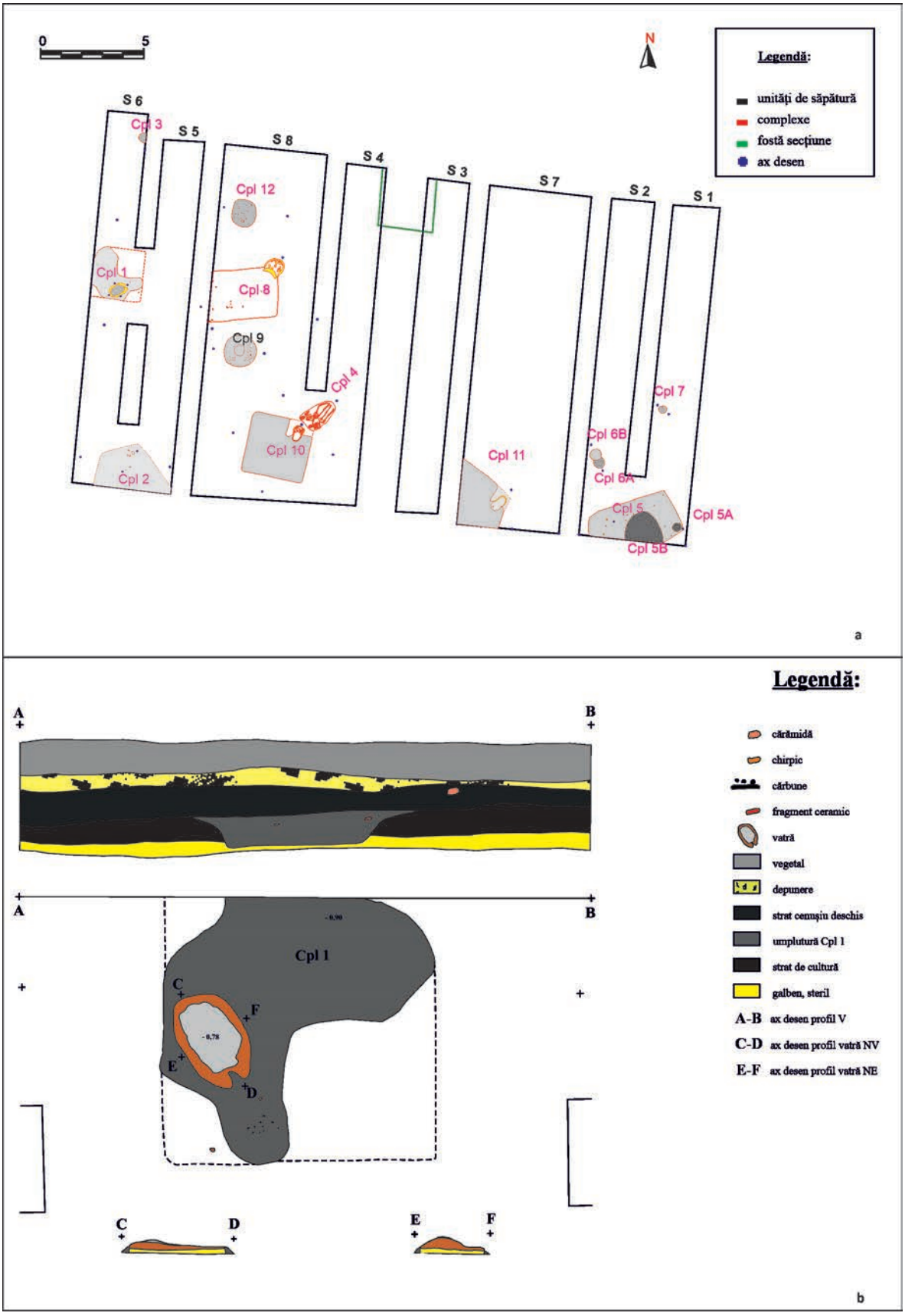
Planșa II. *Profile generale S1, S2, S3, S4:* ***1.*** *Profil V, S1;* ***2.*** *Profil V, S2;* ***3.*** *Profil V, S3; 4. Profil V, S4.*

Plate II. *General profiles S1, S2, S3, S4:* ***1.*** *W profile, S1;* ***2.*** *W profile, S2;* ***3.*** *W profile, S3;* ***4.*** *W profile, S4.*



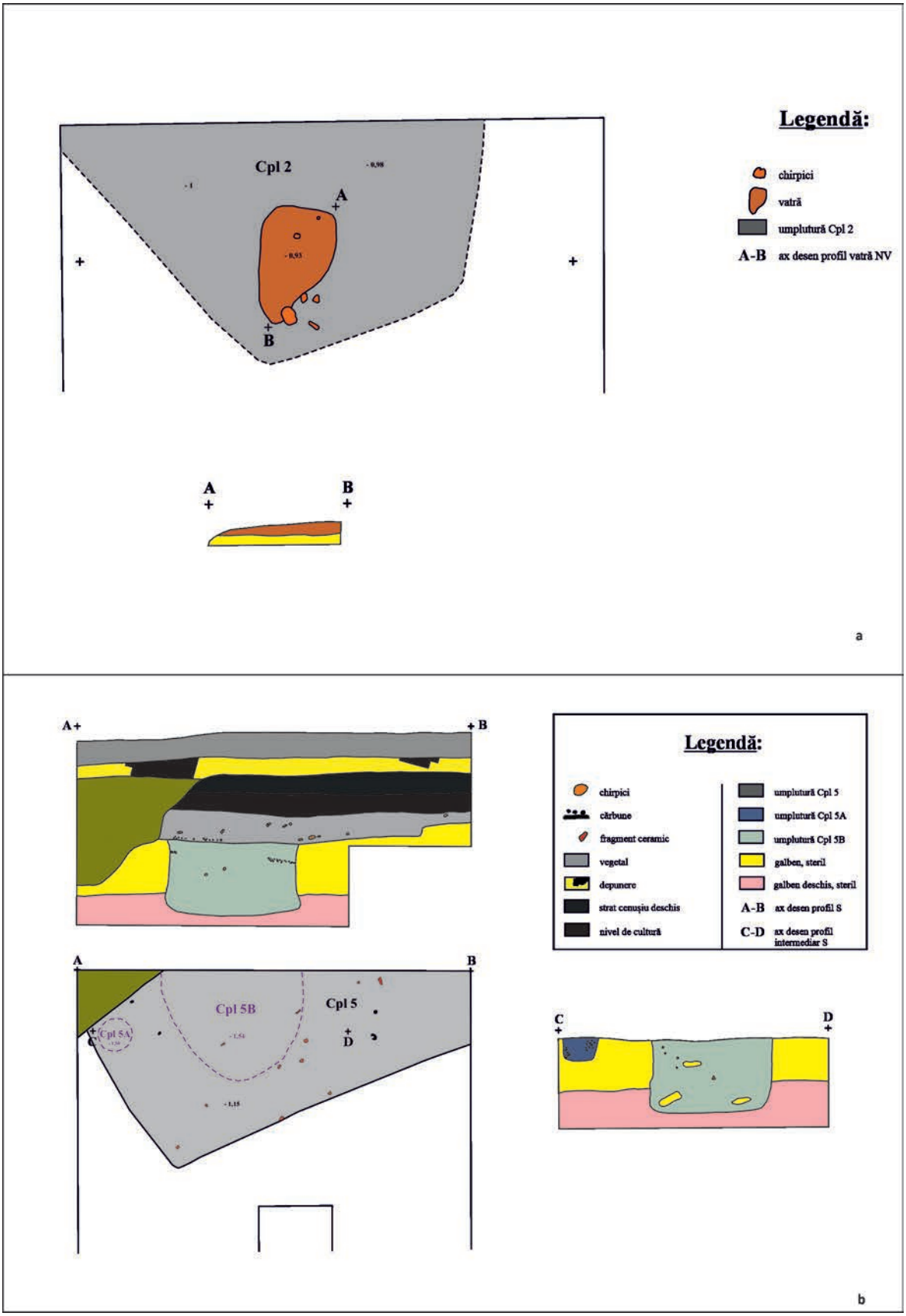
Planșa III. *Profile generale S5, S6, S7, S8:* ***1.*** *Profil V, S5;* ***2.*** *Profil V, S6;* ***3.*** *Profil V, S7; 4. Profil V, S8.*

Plate III. *General profiles S5, S6, S7, S8:* ***1.*** *W profile, S5;* ***2.*** *W profile, S6;* ***3.*** *W profile, S7;* ***4.*** *W profile, S8.*



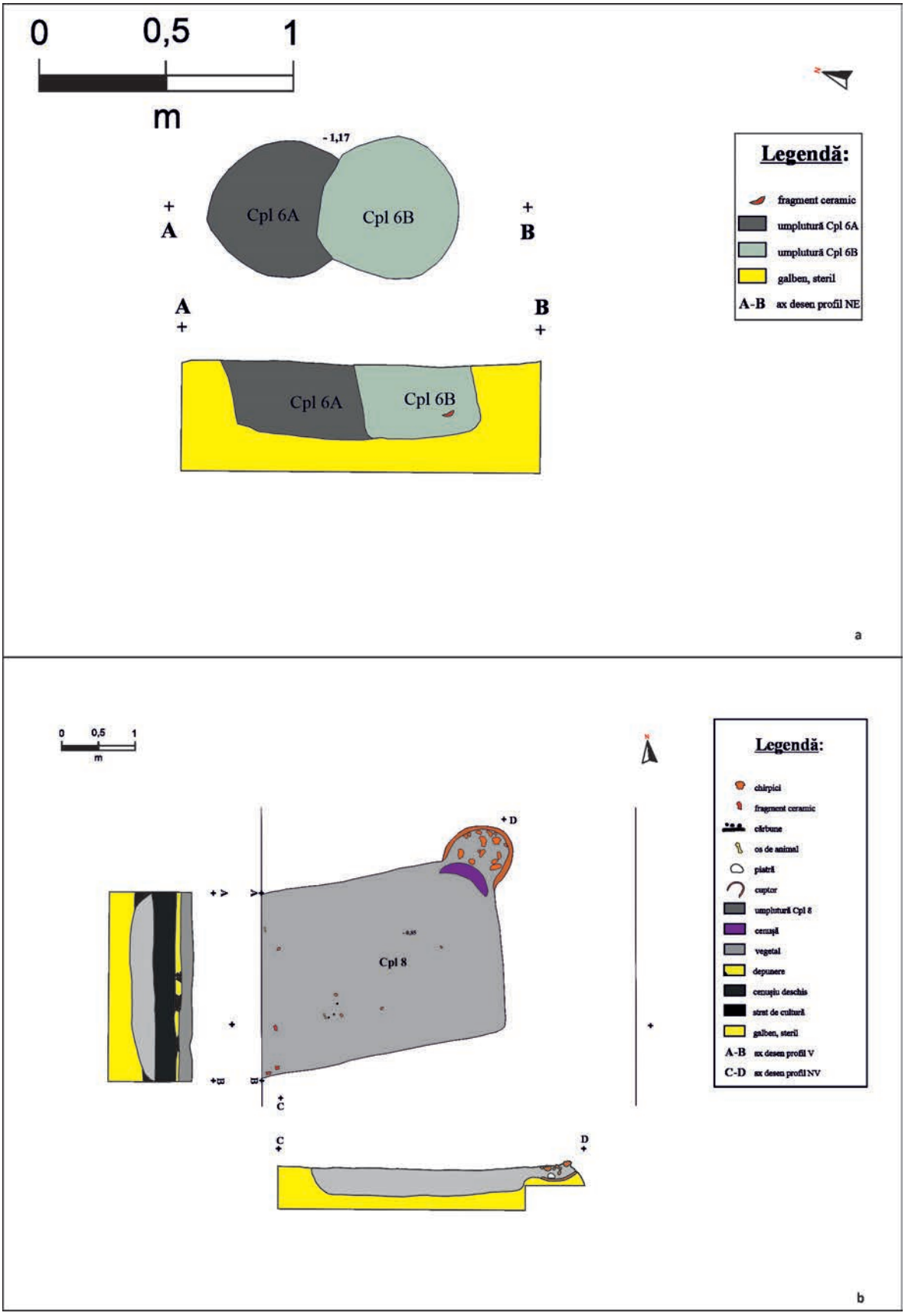
Planșa IV. a. *Planul general;* ***b.*** *Cpl. 1, plan și profile.*

Plate IV. a. *General plan;* ***b.*** *Cpl. 1, plan and profiles.*



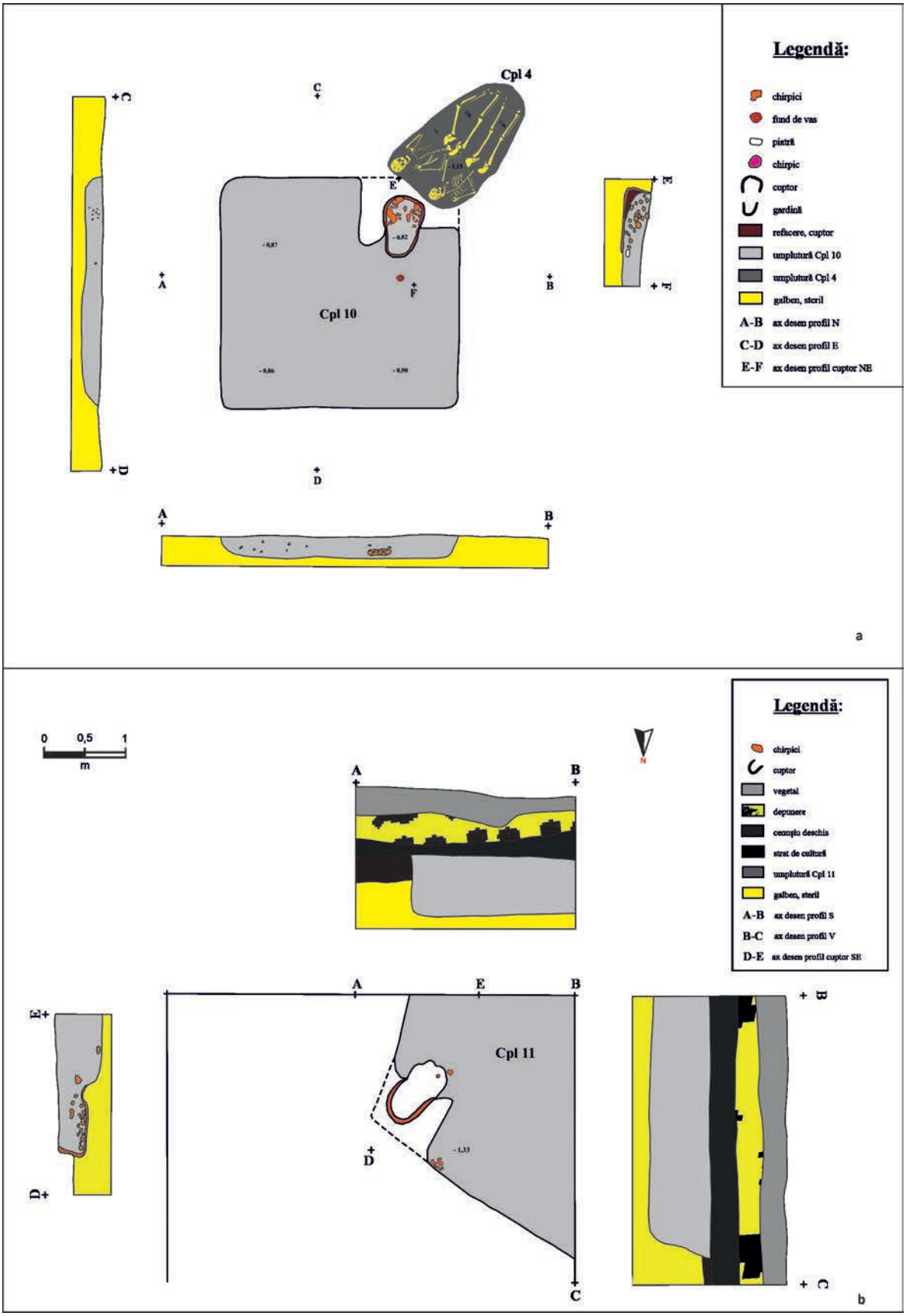
Planșa V. a. *Cpl. 2, plan și profil;* ***b.*** *Cpl. 5, 5A și 5B, plan și profil.*

Plate V. *București-MIM 13, 1999, p. 19–25. Cpl. 2, plan and profile;* ***b.*** *Cpl. 5, 5A and 5B, plan and profile.*



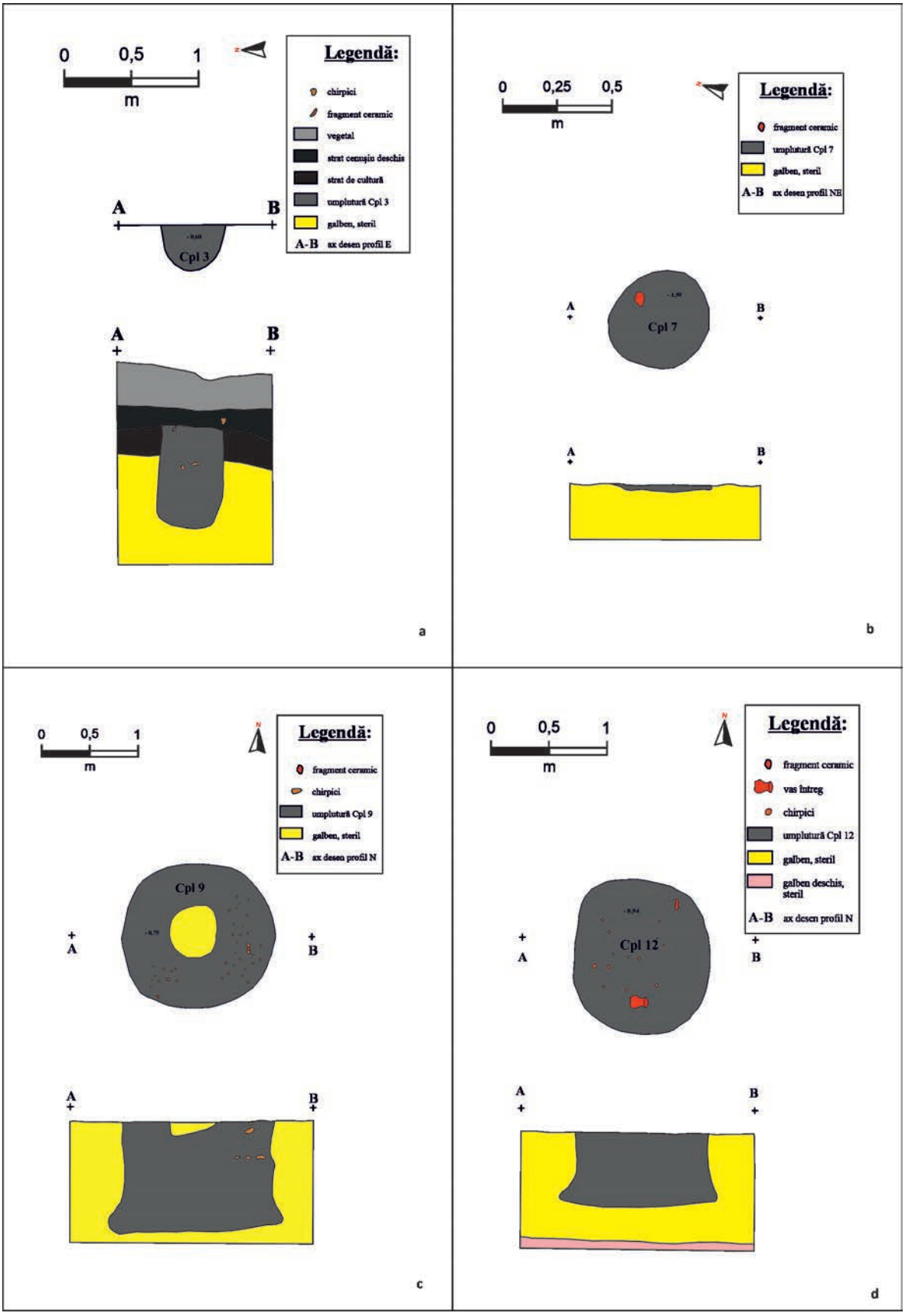
Planșa VI. a. *Cpl. 6A-B, plan și profil;* ***b.*** *Cpl. 8, plan și profile.*

Plate VI. a. *Cpl. 6A-B, plan and profile;* ***b.*** *Cpl. 8, plan and profiles.*



Planșa VII. a. *Cpl. 4, 10, plan și profile;* ***b.*** *Cpl. 11, plan și profile.*

Plate VII. a. *Cpl. 4, 10, plan and profiles;* ***b.*** *Cpl. 11, plan and profiles.*



Planșa VIII. a. *Cpl. 3, plan și profil;* ***b.*** *Cpl. 7, plan și profil;* ***c.*** *Cpl. 9, plan și profil;* ***d.*** *Cpl. 12, plan și profil.*

Plate VIII. a. *Cpl. 3, plan and profile;* ***b.*** *Cpl. 7, plan and profile;* ***c.*** *Cpl. 9, plan and profile;* ***d.*** *Cpl. 12, plan and profile.*



Planșa IX. a. *Cpl. 1, plan;* ***b.*** *Cpl. 1, profil.*

Plate IX. a. *Cpl. 1, plan;* ***b.*** *Cpl. 1, profile.*



Planșa X. a. *Cpl. 10, plan;* ***b.*** *Cpl. 10, profil cuptor;* ***c.*** *Cpl. 4, plan.*

Plate X. a. *Cpl. 10, plan;* ***b.*** *Cpl. 10, oven profile;* ***c.*** *Cpl. 4, plan.*



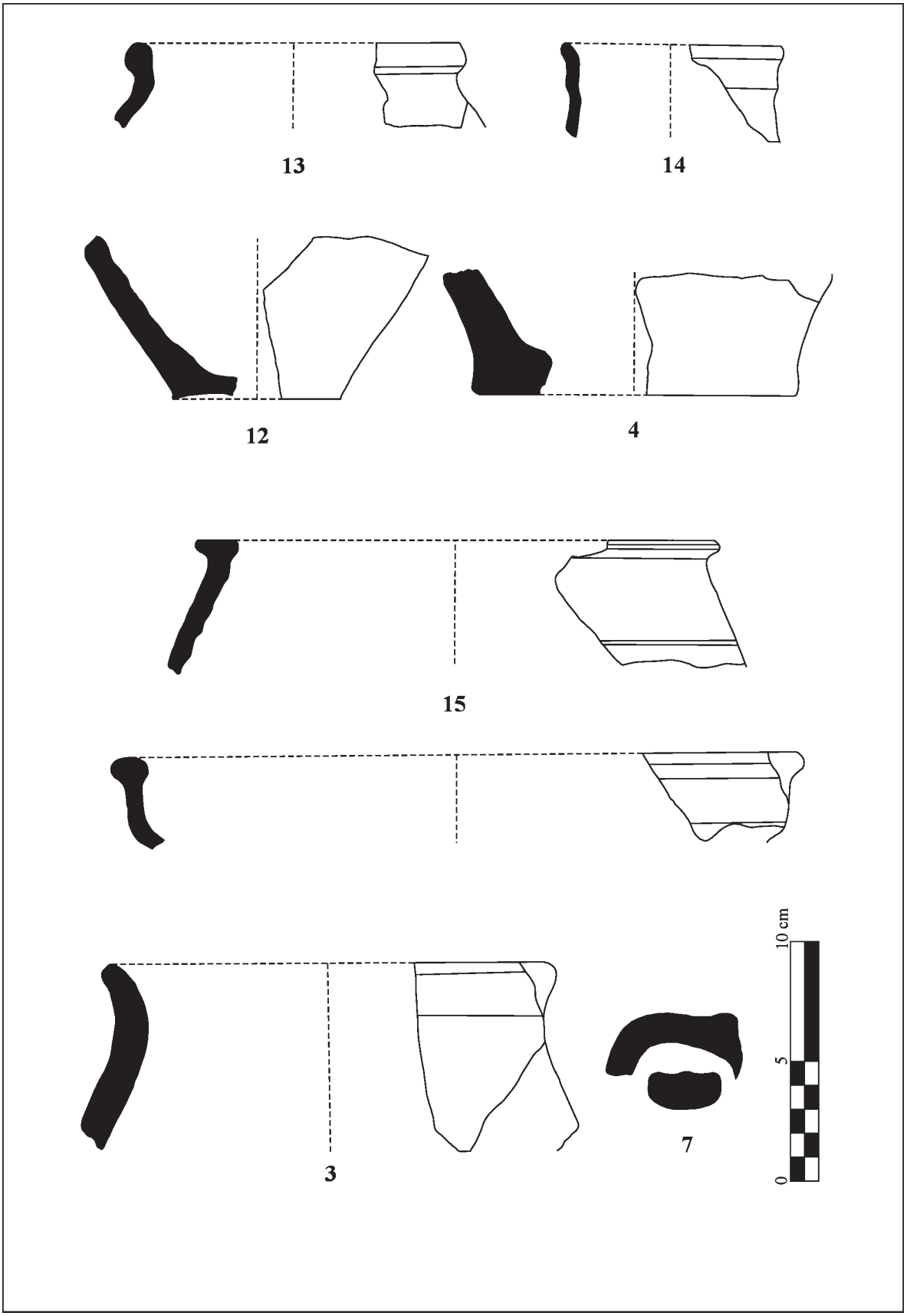
Planșa XI. a. *Cpl. 8, plan;* ***b.*** *Cpl. 8, profil.*

Plate XI. a. *Cpl. 8, plan;* ***b.*** *Cpl. 8, profile.*



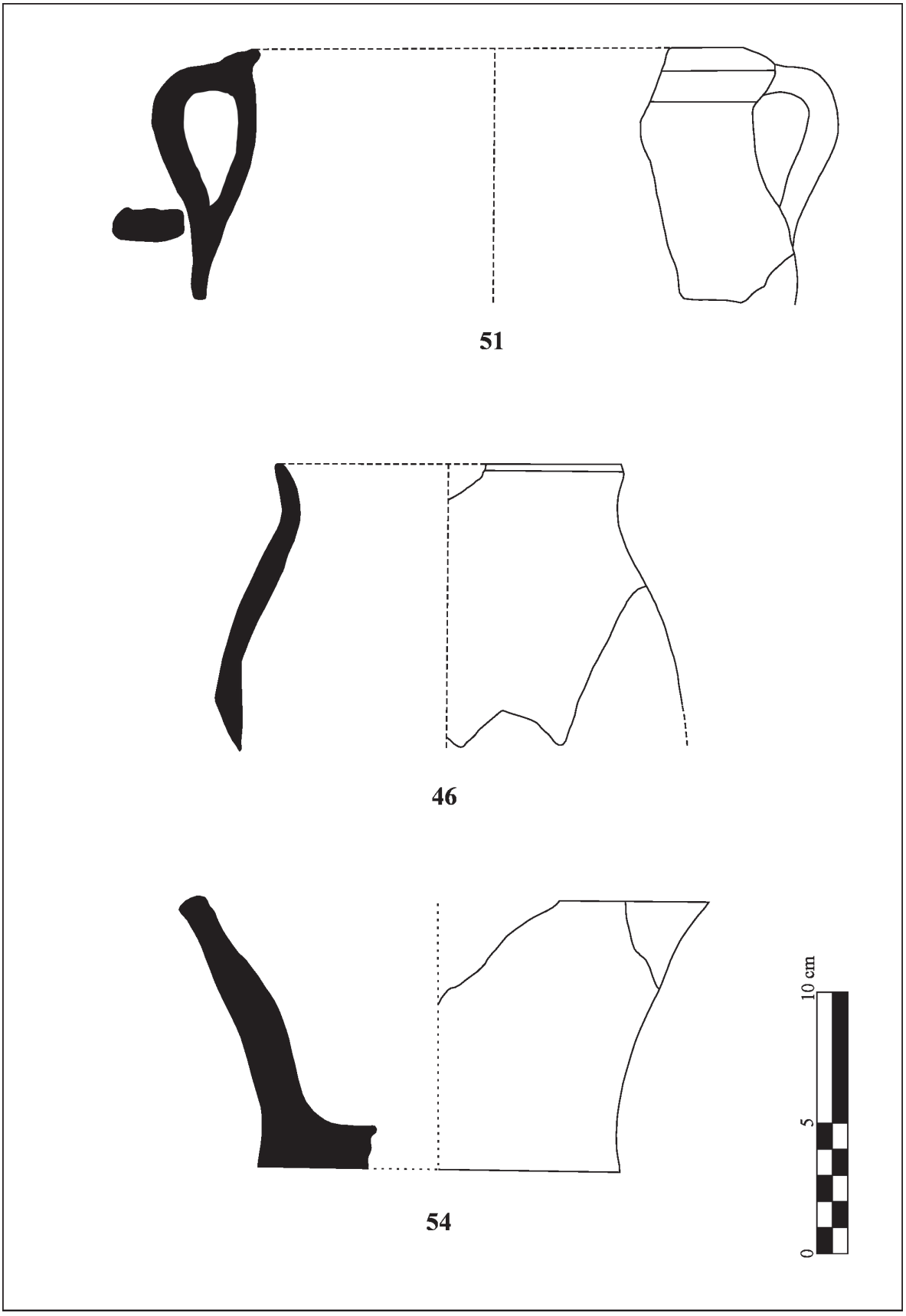
Planșa XII. a. *Cpl. 11, plan;* ***b.*** *Cpl. 11, profil cuptor.*

Plate XII. a. *Cpl. 11, plan;* ***b.*** *Cpl. 11, oven profile.*



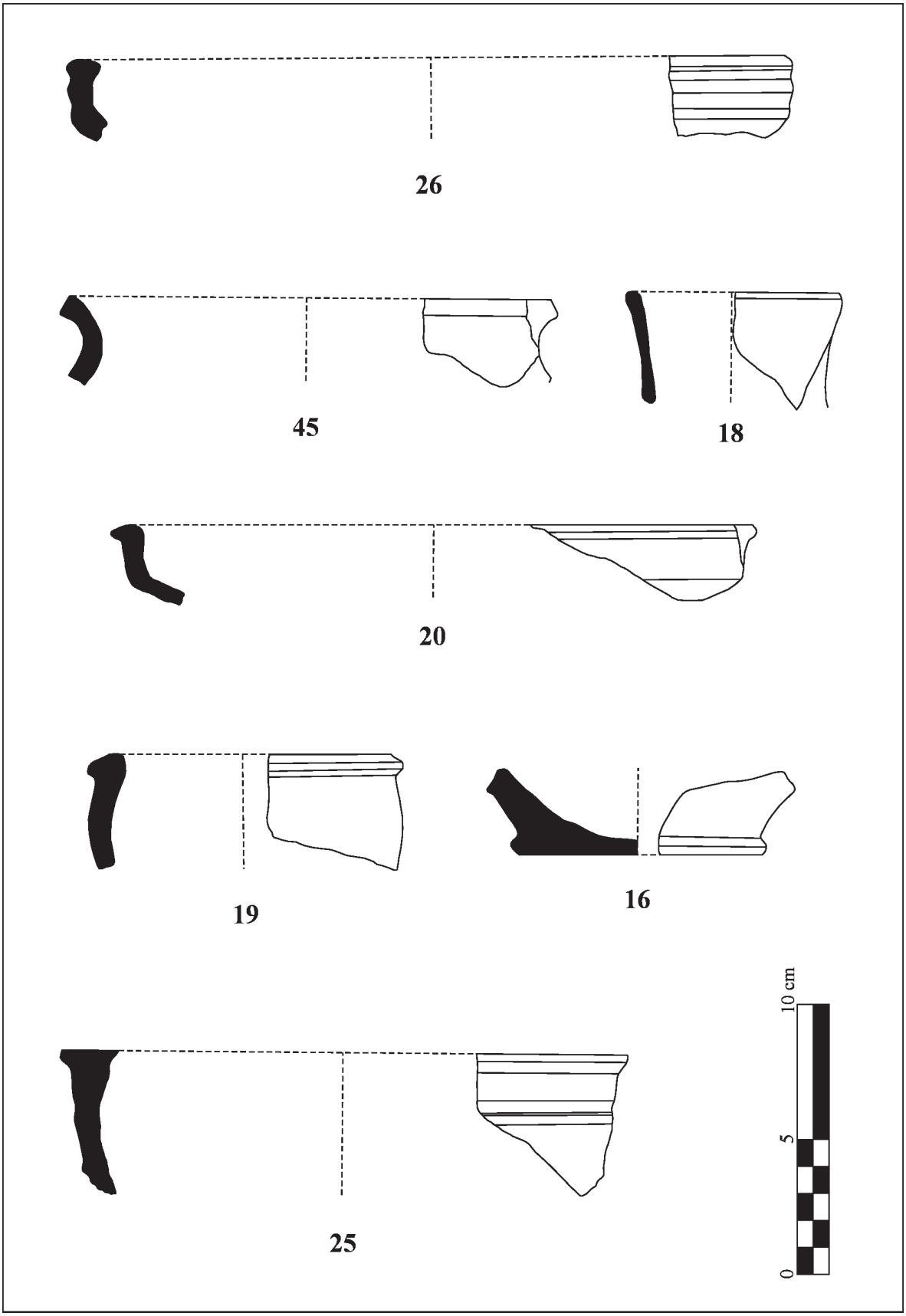
Planșa XIII. *Fragmente ceramice din Cpl. 5.*

Plate XIII. *Ceramic fragments from Cpl. 5.*



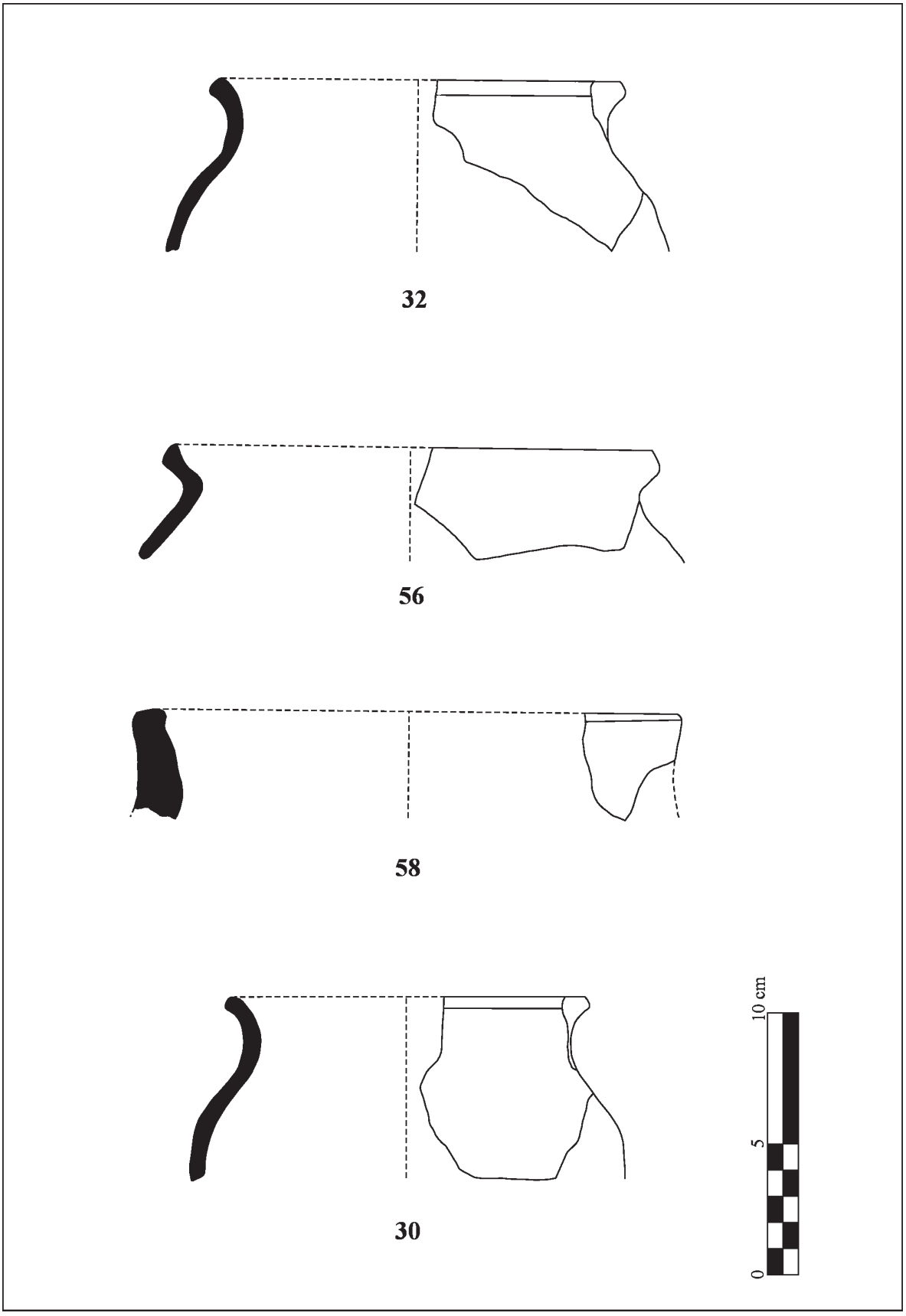
Planșa XIV. *Fragmente ceramice din Cpl. 5.*

Plate XIV. *Ceramic fragments from Cpl. 5.*



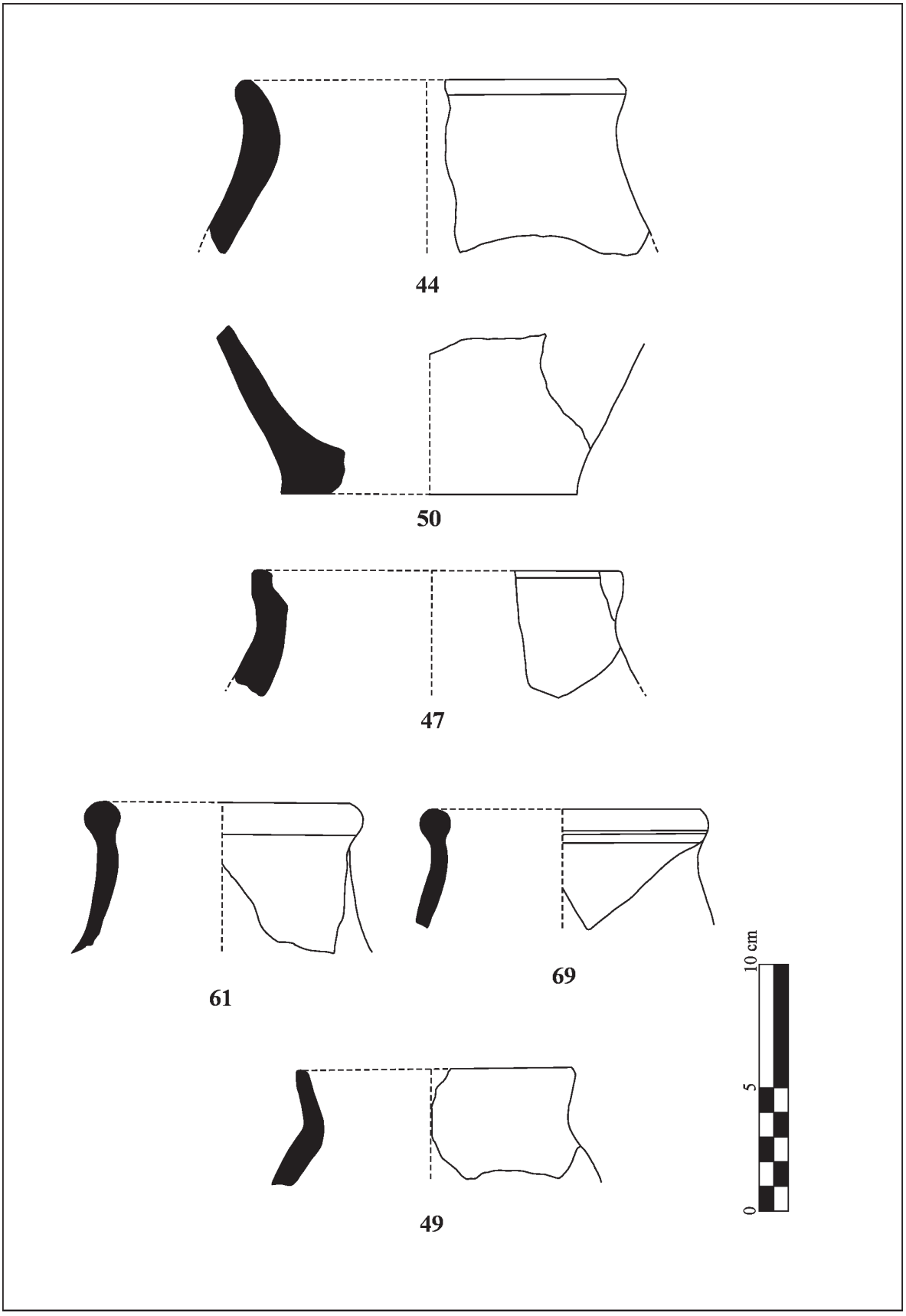
Planșa XV. *Fragmente ceramice din Cpl. 5.*

Plate XV. *Ceramic fragments from Cpl. 5.*



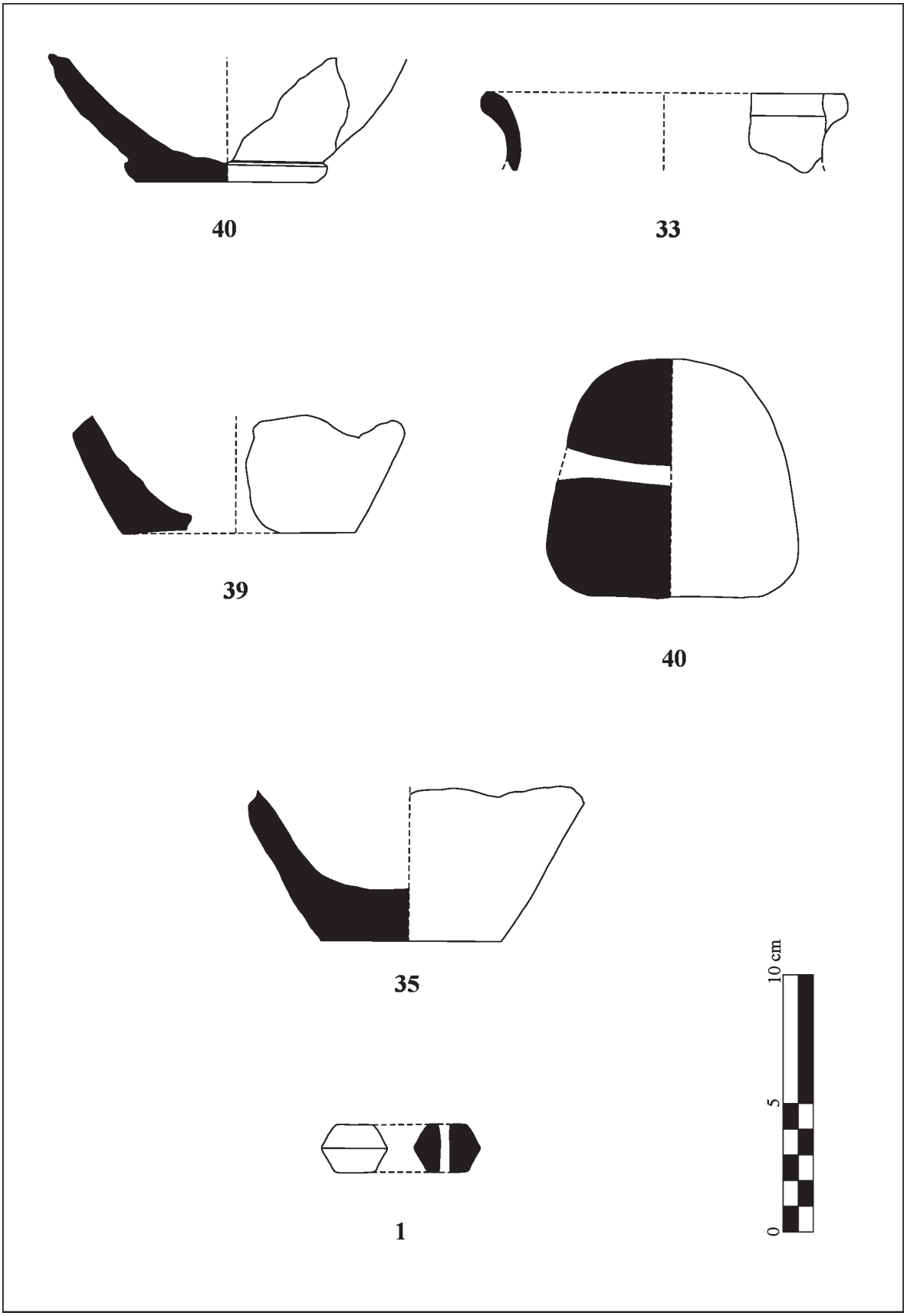
Planșa XVI. *Fragmente ceramice din Cpl. 5.*

Plate XVI. *Ceramic fragments from Cpl. 5.*



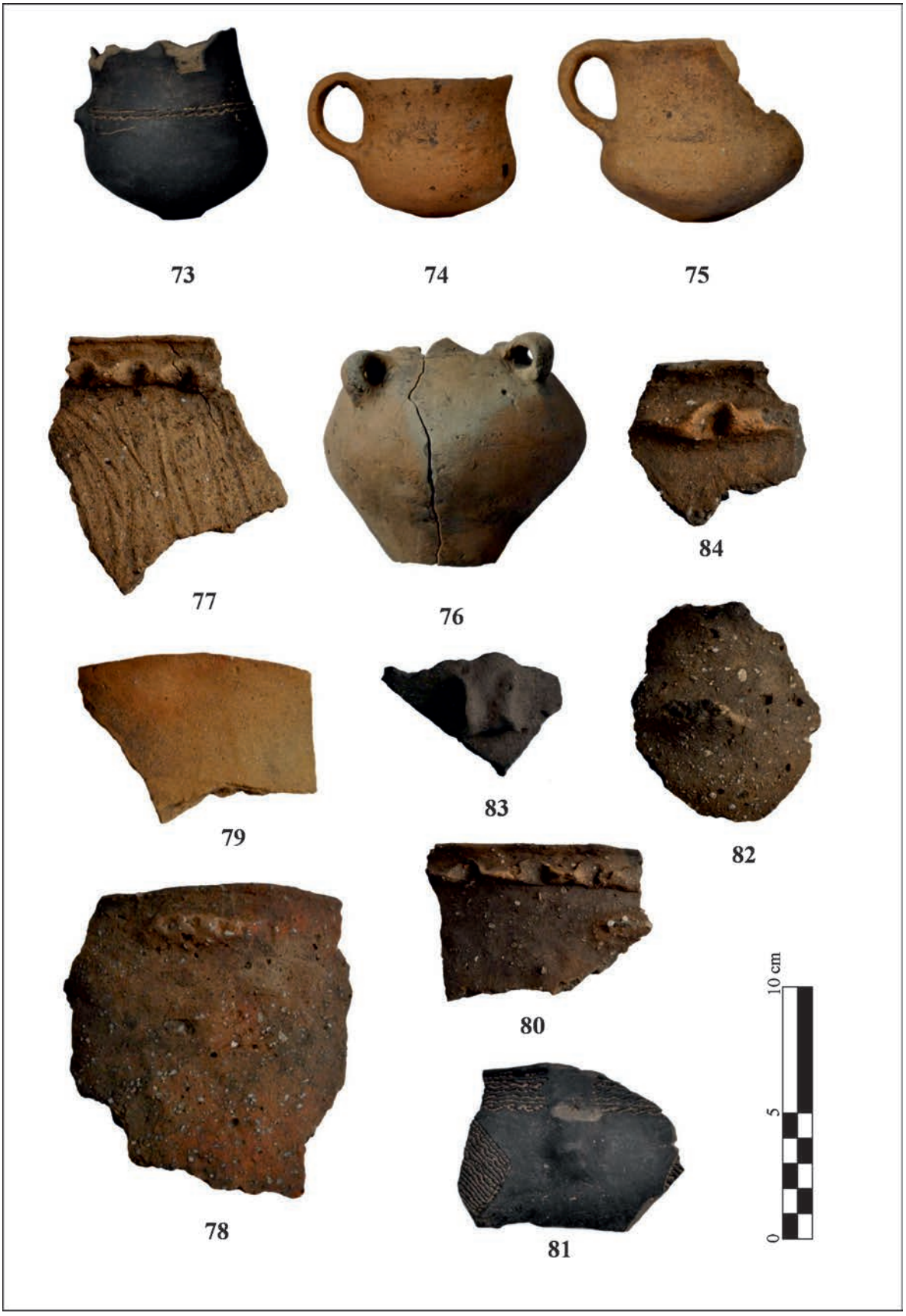
Planșa XVII. *Fragmente ceramice din Cpl. 8.*

Plate XVII. *Ceramic fragments from Cpl. 8.*



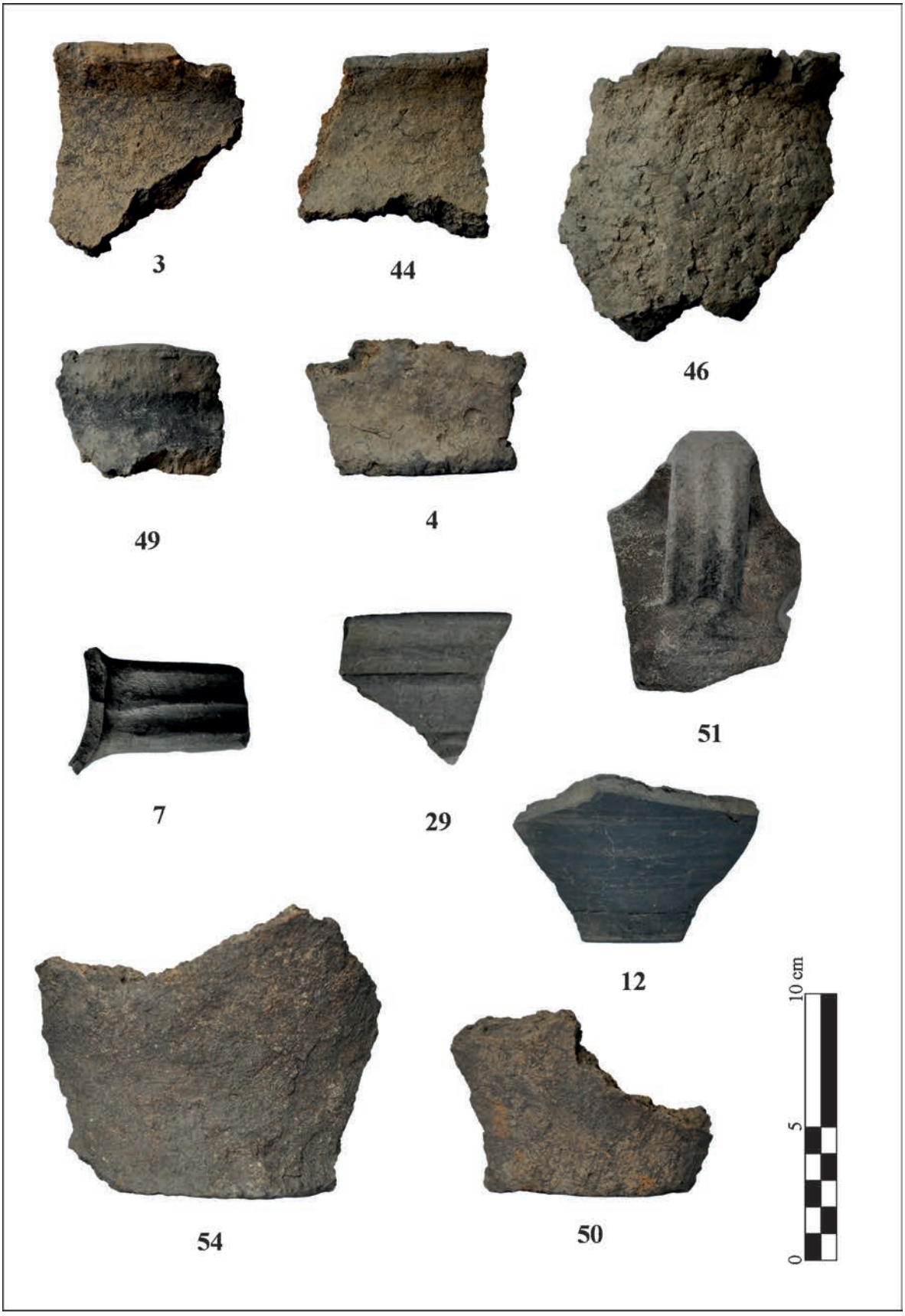
Planșa XVIII. *Fragmente ceramice și o greutate de lut din Cpl. 8 (40, 33, 39, 37), fragment ceramic din Cpl. 10 (35) și o fusaiolă din S8 (1).*

Plate XVIII. *Ceramic fragments and a clay weight from Cpl. 8 (40, 33, 39, 37), ceramic fragment from Cpl. 10 (35) and a spindle whorl from S8 (1).*



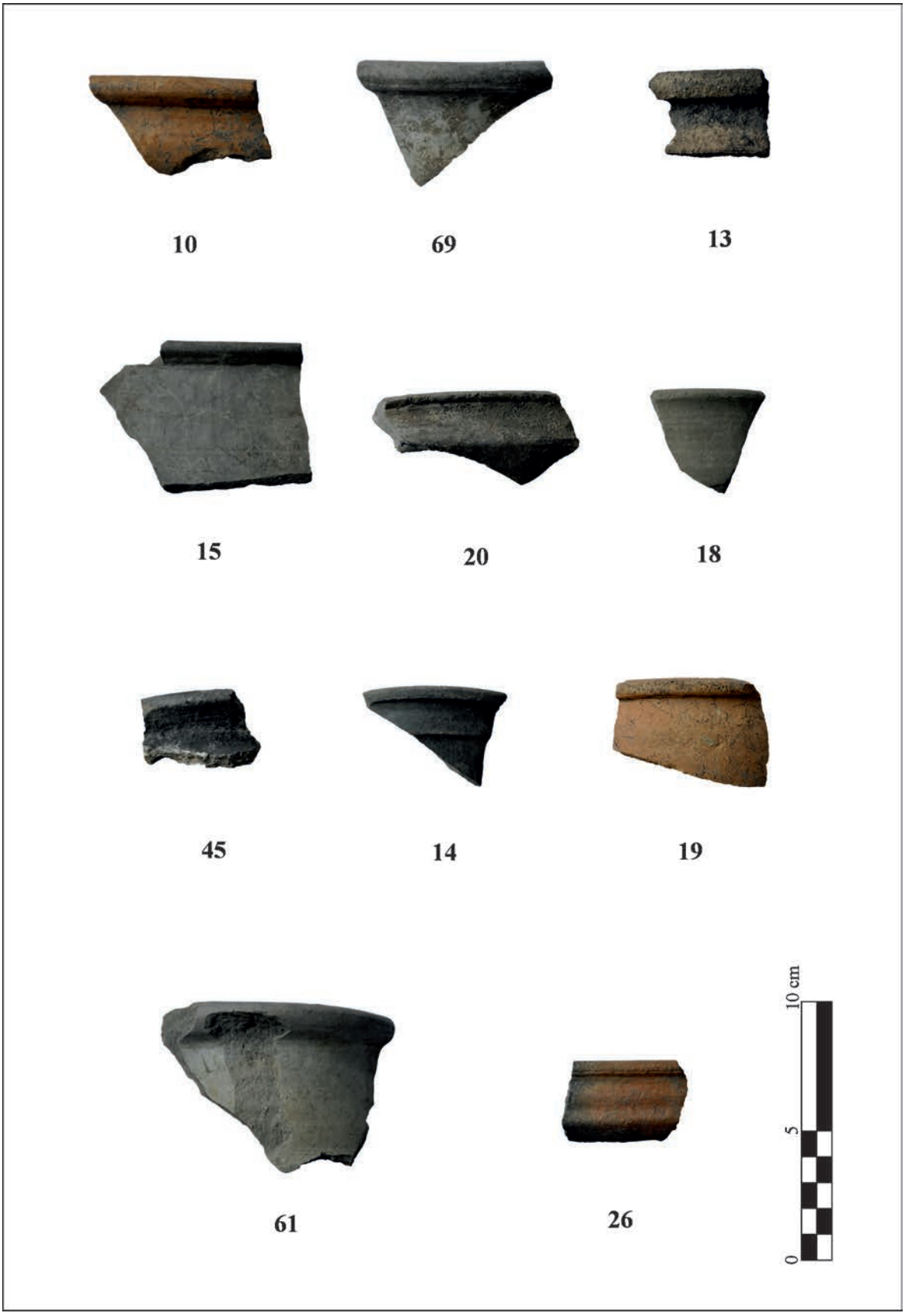
Planșa XIX. *Fragmente ceramice din epoca bronzului, descoperite în stratul de cultură.*

Plate XIX. *Bronze Age ceramic fragments, discovered in the cultural layer.*



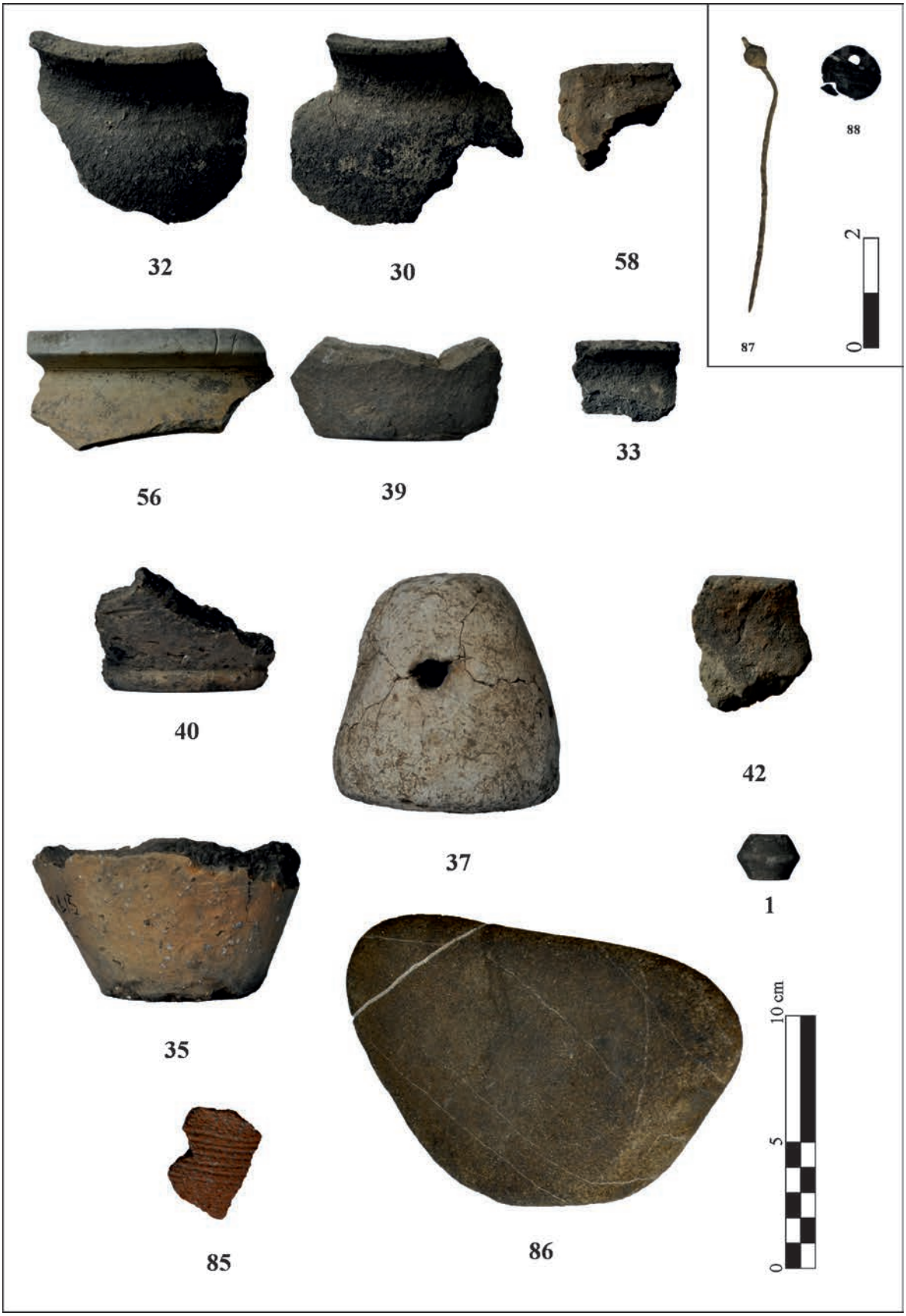
Planșa XX. *Fragmente ceramice din Cpl. 5.*

Plate XX. *Ceramic fragments from Cpl. 5.*



Planșa XXI. *Fragmente ceramice din Cpl. 5.*

Plate XXI. *Ceramic fragments from Cpl. 5.*



Planșa XXII. *Material arheologic din Cpl. 8 (30, 32, 33, 37, 39, 40, 42, 56, 58), Cpl. 10 (35, 85, 86), S8 (1) și Cpl 4 (87, 88).*

Plate XXII. *Archaeological material from Cpl. 8 (30, 32, 33, 37, 39, 40, 42, 56, 58), Cpl. 10 (35, 85, 86), S8 (1) and Cpl 4 (87, 88).*

CERCETĂRI ARHEOLOGICE PREVENTIVE ÎN SATUL MACEDONIA, ORAȘUL CIACOVA, PUNCTUL BISERICA „SFÂNTA CUVIOASA PARASCHEVA” (CAMPANIA 2020)

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Keywords: *Macedonia, Ciacova, church, 2nd to 4th centuries, 17th to 18th centuries*
Abstract: *In autumn 2020, following an inspection by the Timiș County Culture Directorate, archaeological features were discovered in the courtyard of the Church of “Saint Cuvioasa Parascheva” in Macedonia, related to a project for connecting the altar to the water supply. Among the findings was a tomb with a broken vault. As a result of the archaeological materials and structures identified, further construction work was halted, leading to a contract for an archaeological assessment conducted by the West University of Timișoara. The research conducted in December 2020 revealed eight archaeological features, including a significant tomb (CX 1) containing four individuals, one of whom was buried with a richly ornamented bronze hairpin. Additionally, complexes from the 2nd–4th centuries and 17th–18th centuries were found, providing valuable insights into human activities in the area during these periods. The stratigraphic analysis indicated distinct sediment layers that reflect human interventions and changes in land use, possibly linked to historical events such as Ottoman occupation and Habsburg influence. Despite limited previous archaeological study in the region, the findings contribute significantly to the understanding of the historical and archaeological landscape of Macedonia and Ciacova. The discoveries, including pottery, glass fragments, and burial artifacts, suggest a continuity of habitation and cultural practices. The archaeological intervention was crucial not only for preserving cultural heritage but also for enhancing knowledge about the regional history of Macedonia and Ciacova, paving the way for future research to explore the evolution of communities and their interactions with the environment.*

Cuvinte-cheie: *Macedonia, Ciacova, biserică, sec. II–IV, sec. XVII–XVIII*
Rezumat: *În toamna anului 2020, în urma unei inspecții efectuate de Direcția Județeană pentru Cultură Timiș, în cadrul unui proiect de racordare a altarului la rețeaua de apă, au fost descoperite vestigii arheologice în curtea Bisericii „Sfânta Cuvioasa Parascheva” din satul Macedonia. Printre descoperiri se numără un mormânt cu bolta spartă. Ca urmare a materialelor și structurilor arheologice identificate, lucrările de construcție au fost sistate, ceea ce a condus la încheierea unui contract pentru o evaluare arheologică realizată de Universitatea de Vest din Timișoara. Cercetările desfășurate în decembrie 2020 au scos la iveală opt complexe arheologice, printre care un mormânt (CX 1) ce conținea patru indivizi, unul dintre aceștia fiind înmormântat cu un ac de păr din bronz bogat ornamentat. De asemenea, au fost descoperite complexe datând din secolele II–IV și din secolele XVII–XVIII, oferind informații valoroase despre activitățile umane din zonă în aceste perioade. Analiza stratigrafică a evidențiat straturi distincte care reflectă intervențiile umane și schimbările în utilizarea terenului, posibil legate de evenimente istorice precum ocupația otomană și influența habsburgică. Descoperirile contribuie semnificativ la înțelegerea peisajului istoric și arheologic al localităților Macedonia și Ciacova. Obiectele descoperite – ceramică, fragmente de sticlă și artefacte funerare – sugerează o continuitate a locuirii și a practicilor culturale. Intervenția arheologică a fost esențială nu doar pentru conservarea patrimoniului cultural, ci și pentru aprofundarea cunoașterii istoriei regionale a Macedoniei și Ciacovei, deschizând calea unor cercetări viitoare menite să exploreze evoluția comunităților și relația acestora cu mediul înconjurător.*

CONSIDERAȚII GENERALE

În toamna anului 2020, în urma unei inspecții efectuate de către Direcția de Cultură a Județului Timiș, în localitatea Macedonia (Pl. I–II), au fost identificate șanțurile unei lucrări efectuate în curtea Bisericii „Sfânta Cuvioasa Parascheva”, care aveau ca scop branșarea altarului la rețeaua de apă. În aceste șanțuri a fost identificat un cavou cu bolta spartă (Pl. II–III). Ca urmare a sesizării făcute de DJC Timiș în data de 17.11.2020, prin care a fost constatată prezența construcțiilor și a materialului arheologic în zona afectată de acest proiect, lucrările au fost stopate. Ulterior, a fost încheiat un contract între Primăria orașului Ciacova și Universitatea de Vest din Timișoara, în vederea efectuării evaluării arheologice de teren în curtea bisericii, în decembrie 2020, în urma căreia au fost descoperite opt complexe arheologice.

CADRUL FIZICO-GEOGRAFIC ȘI ISTORICUL CERCETĂRILOR ARHEOLOGICE

Localitatea Macedonia, aflată în județul Timiș, este poziționată la aproximativ 40 de kilometri sud-vest de Timișoara și la 58 de kilometri nord-vest de Vârșeț (Serbia). Localitatea este parte componentă a orașului Ciacova și este situată în inima Câmpiei Timișului, o componentă a Câmpiei Banatului, care, la rândul ei, face parte din Câmpia

de Vest. Timișul traversează zona de nord-vest a localității. La sud se află pădurea Macedonia, care a fost folosită mult timp ca domeniu de vânătoare. În ceea ce privește altitudinea, Macedonia este situată la aproximativ 82 de metri deasupra nivelului mării[1] (Pl. I).

Prima atestare documentară a localității datează din secolul al XIV-lea, fiind amintită înscrierea parohiei Macedonia în lista de dijme papale în anii 1333–1335, în Banat, din ordinul papei Ioan al XXII-lea[2]. Localitatea este atestată ca fiind în posesia familiei Danciu (regăsită în documente ca *Doncs, Dancs, Donsh, Dansh*). Despre nobilii *Dancs*, probabil vasali ai familiei Chaak de Ciacova, literatura amintește că sunt proprietari a numeroase feude, inclusiv în Regatul Maghiar. Informații despre ei apar în contextul războiului maghiaro-otoman, mai precis sursele menționează respingerea unui contingent otoman în 1386[3].

Odată cu ocupația otomană, Macedonia intră într-un con de umbră, datele fiind aproape inexistente în literatură. După episodul otoman, localitatea se află în posesia unei familii nobiliare extrem de influente în Imperiul Habsburgic (Pl. IV–V), cea a baronilor de Rodna, familia Nikolics. Aceștia construiesc biserica ortodoxă din sat (1813, distrusă în 1904 și restaurată în același an[4]) și un conac de vânătoare, pe care Mihaly Nikolics îl împodobește cu o colecție impresionantă de trofee[5].

Din punct de vedere arheologic, zona localității Macedonia este în mare parte necercetată. Primele informații despre o așezare neolitică le avem de la Sabin Luca[6], preluate apoi de Repertoriul Arheologic Național[7].

O informație referitoare la posibile descoperiri arheologice ne parvine din cercetările lui Nicolae Gudea și Iancu Moțu[8]. Conform autorilor studiului, în zonele adiacente Macedoniei au fost descoperite artefacte care datează din perioada provinciei romane Dacia, fapt care nu exclude potențiale descoperiri în interiorul localității. Alte campanii de cercetări sistematice au fost întreprinse în 1999–2000 și 2006–2007[9], 2013–2014[10], 2015[11], 2018[12].

CONSIDERAȚII DE ORDIN METODOLOGIC

Principalele obiective ale campaniei din curtea bisericii din Macedonia au fost identificarea posibilelor complexe afectate de lucrarea de branșament și curățarea interiorului cavoului descoperit în timpul lucrării (CX 1). Metodologia adoptată pentru a îndeplini acest obiectiv (determinată în mare parte de condițiile din teren) a constat în curățarea și excavarea manuală a celor trei unități de săpătură (S 1–3), pentru a putea identifica posibile complexe (Pl. II). Suprafața totală cercetată în curtea bisericii a însumat 14,27 m^2.

STRATIGRAFIA SITULUI

Stratigrafia zonelor cercetate este distinctă, așa că vom prezenta situația fiecărui sector în parte. Ele sunt enumerate în continuare (într-o ordine inversă a depunerilor sedimentare), pornindu-se de la stratul superior către bază. Cu anumite excepții, generate de perturbările datorate permanentelor intervenții antropice, dar și de configurația geo-morfologică specifică zonei, stratigrafia sectoarelor cercetate este următoarea (Pl. VI, VIII).

1. Vegetal, humus de culoare cenușie, situat de la nivelul actual de călcare (0) până la cota de -0,18 m;

2. Depunere brun-roșcată, pigmentată cu cărămidă și ocazional cărbune, de la cota de -0,18 m până la -0,70 m;

3. Nivel de cultură, negricios, compact, amestecat pe alocuri cu fragmente ceramice și oase; în acest strat se conturează complexele arheologice; -0,70 m până la cota de -1 m;

4. Nivel de culoare maronie, omogen, compact, cu conținut mare de carbonați, fără constituenți antropici. Acesta este situat între -1 m și -1,20 m (adâncimea maximă în cadrul cercetărilor efectuate).

SCURTĂ DESCRIERE A DESCOPERIRILOR

Dintre cele opt complexe arheologice identificate în curtea bisericii din Macedonia, unul este datat în secolele II–IV p. Chr. (CX 4); un altul este datat în secolele XVII–XVIII (CX 5) și șase în secolele XIX–XX (CX 1–3, 6, 8). Cel mai important complex este cavoul denumit CX 1, în care au fost descoperiți patru defuncți. Unicul obiect de inventar găsit în cavou aparținea unuia dintre defuncți (probabil de sex feminin) și este un ac de păr din bronz bogat ornamentat. De o importanță deosebită sunt și descoperirile datate în secolele II–IV, respectiv XVII–XVIII, deoarece pentru aceste perioade istorice nu au fost semnalate descoperiri în zona localității Macedonia.

Secolele II–IV

CX 4 – groapă (Pl. VI–VIII)

Groapă situată în S 3, la NV față de CX 1, intră în malul de NE al secțiunii. S-a conturat la -1,10 m, adâncimea până la care a fost cercetată fiind de 1,22 m față de nivelul de călcare actual. Are formă circulară în plan, cu diametrul de 1,40 m și este alveolată în secțiune. Umplutura se compune dintr-un strat crem, friabil, amestecat cu pelicule de

[1] Ielenicz, Pătru 2005, p. 244.
[2] Boldea 2010, p. 124.
[3] Traia 2006, p. 36.
[4] Traia 2006, p. 90.
[5] Ene *et alii* 2021, p. 6.
[6] Luca 2006.
[7] https://ran.cimec.ro/sel.asp?lang=EN&descript=macedonia-oras-ciacova-timis-asezarea-neolitica-de-la-macedonia-cod-sit-ran-156400.01: „așezare neolitică la vestul satului, pe malul digului".
[8] Gudea, Moțu 1983, p. 158–159.
[9] Rădulescu 1999–2001; Rădulescu *et alii* 2006–2007.
[10] Flutur 2014a; 2014b.
[11] Micle *et alii* 2016.
[12] Ene *et alii* 2018.

sediment cenușiu și cărbune. Inventarul arheologic constă din fragmente ceramice (Pl. XI/1).

Secolele XVII–XVIII

CX 5 – groapă (Pl. VI–VIII)

Groapă situată în S3, la NV față de CX 4, intră în malurile de NV și NE ale secțiunii. S-a conturat la -1,10 m, adâncimea până la care a fost cercetată este de -1,22 m față de nivelul de călcare actual. Are formă circulară în plan, cu diametrul de 0,86 m, și este alveolată în secțiune. Umplutura se compune dintr-un strat cenușiu negricios, friabil, amestecat cu pigmenți de cărbune. Inventarul arheologic constă din fragmente ceramice și un picior de pahar de sticlă (Pl. XI/2).

Secolele XIX–XX

CX 1 – cavou (Pl. VI–VIII)

Cavou, situat în S1, intră în malul de NE al secțiunii, este orientat E–V și a fost parțial afectat în partea de vest, în timpul lucrărilor de introducere a conductelor de alimentare cu apă. Complexul a fost identificat la -0,60 m și se adâncește până la -1,90 m față de nivelul actual de călcare. Construcția se prezintă sub forma unei amenajări boltite și este realizată din cărămizi, cu dimensiunile de 0,30 × 0,20 × 0,10 m. Are un zid comun cu cavoul nr. 2. În zona afectată, pereții ambelor amenajări funerare sunt compuși din șapte asize de cărămidă legată cu mortar. Din boltă se mai păstrează, doar în partea nordică, trei asize. Dimensiunile exterioare ale bolții sunt de aproximativ 1,92 m. Dimensiunile interioare ale construcției sunt de 1,60 m lățime, 2,20 m lungime, 1,24 m înălțime. În interior au fost depuși patru defuncți, așezați în sicrie, din care s-au păstrat fragmente de material lemnos (Pl. IX). De la capul unuia dintre defuncți a fost recuperat un ac de bronz, pe care se păstrează material textil (Pl. XI/3)[13].

CX 2 – cavou (Pl. VI–VIII)

Cavou, situat în S1, lipit de CX 1 cu care are un zid comun, este orientat E–V. Construcția nu a fost afectată de lucrările de branșament, astfel că nu a putut fi cercetată decât în exterior. Complexul a fost identificat la -0,64 m. Date fiind condițiile cercetării, nu am putut stabili adâncimea maximă a complexului. Bolta, cu o dimensiune identificată de 1,22 m, este realizată din cărămidă legată cu mortar; din cauza stratului gros de mortar de zidărie nu a fost posibilă estimarea numărului total de cărămizi din boltă, fiind identificate doar 12. Dimensiunile cărămizilor sunt de 0,30 × 0,20 × 0,10 m.

CX 3 – cavou (Pl. VI–VIII)

Cavou, situat în S2, intră în malul de NV și SE al secțiunii, este orientat E–V; a fost parțial afectat în partea de vest în timpul lucrărilor de introducere a conductelor de alimentare cu apă. Complexul a fost identificat la -0,60 m și se adâncește până la -1,90 m față de nivelul actual de călcare. Construcția se prezintă sub forma unei amenajări boltite și este realizată din cărămidă cu dimensiunile de 0,30 × 0,20 × 0,10 m. Dimensiunile exterioare surprinse ale bolții sunt de aproximativ 1,70 m. Dimensiunile interioare ale construcției sunt de 1,50 m lățime, 2,13 m lungime, 1,20 m înălțime. Din cauza unei surpări din vechime, nu a fost posibilă identificarea vreunuia dintre defuncți.

CX 6 – groapă de amenajare (Pl. VI–VIII)

Groapă de amenajare pentru CX 1 și 2, care ocupă o mare parte din S1. S-a conturat la -0,10 m, și adâncimea până la care a fost cercetată este de -0,70 m față de nivelul de călcare actual. Are formă probabil rectangulară în plan, cu dimensiunile identificate de 3,82 × 1,80 m și dreaptă în secțiune. Umplutura se compune dintr-un strat cenușiu închis, friabil, amestecat cu lut galben, cărămidă fragmentară și urme de mortar. Nu are inventar arheologic.

CX 7 – cavou (Pl. VI)

Existența acestui cavou, situat în afara secțiunilor trasate, este mai mult presupusă pe baza orientării cavoului nr. 3, existenței pietrei tombale și a unei găuri de surpare identificate în teren, prin care s-a putut observa ceea ce credem că este interiorul cavoului. Nu avem nicio informație cu privire la dimensiunile reale ale acestuia, însă putem să îl datăm, datorită inscripției de pe piatra tombală, în jurul anului 1860 (Pl. X). Inscripția este[14]:

Text în alfabet chirilic:	**Text în limba română:**
ЗА	PENTRU
ПОГИНУЛОГ РАБА/РОДА	ROBUL LUI
БОЖИЈЕГ ЕКАТЕРИНУ	DUMNEZEU ECATERINA
СОЛАР, ПОЖИВЕЛА	SOLAR, CARE A TRĂIT
65 ЛЕТА, ПРЕДСТАВИ	65 DE ANI, SE RIDICĂ
СЕ 25 СЕПТЕМБРА	LA 25 SEPTEMBRIE
1814	1814

CX 8 – mormânt (Pl. VI–VIII)

Mormânt de inhumație, situat în partea de nord a secțiunii S2, în al cărui mal intră, deasupra complexului CX 3. Complexul a fost identificat la -0,40 m și se adâncește până la -0,49 m. Groapa mormântului are formă rectangulară cu colțurile rotunjite în plan, iar în secțiune este alveolată. Dimensiunile identificate ale gropii sunt de 0,80 × 0,20 m. În groapă a fost așezat un individ adult, pe direcția NE–SV. Din schelet au fost surprinse numai câteva oase, restul aflându-se în mal. Este vorba de un femur, o tibie și un peroneu. Judecând după poziția oaselor, putem afirma că scheletul nu mai este în conexiune anatomică. Mormântul este lipsit de inventar funerar.

[13] M-Kiss 2021.

[14] Mulțumim pentru traducere doamnei conf. univ. Mața Țaran Andreici, Universitatea de Vest din Timișoara, catedra de limba sârbă din cadrul Facultății de Litere, Istorie, Filosofie și Teologie.

CONCLUZII

În urma evaluării arheologice desfășurate în curtea Bisericii „Cuvioasa Parascheva" din localitatea Macedonia, județul Timiș, s-au obținut rezultate semnificative, care aduc o contribuție importantă la cunoașterea istorică și arheologică a zonei. Identificarea și studierea a opt complexe arheologice, dintre care un cavou cu patru defuncți și alte structuri datate secolele II–IV și XVII–XVIII, oferă indicii valoroase despre ocupațiile umane din diferite perioade istorice. Descoperirile de ceramică, fragmente de sticlă și un ac de păr din bronz, printre altele, sugerează o continuitate a locuirii și a activităților culturale în această regiune, de-a lungul timpului.

Stratigrafia locului a relevat straturi distincte de sedimente, indicând intervenții umane și variații în utilizarea terenului, care pot fi corelate cu evenimente istorice locale, cum ar fi ocupația otomană și influența habsburgică. Este de notat că, deși zona nu a beneficiat de studii arheologice extinse, cercetarea efectuată a reușit să dezvăluie date importante despre istoria medievală și modernă a localității, acestea contribuind la o mai bună înțelegere a interacțiunilor socio-economice și culturale din perioada respectivă.

În concluzie, intervenția arheologică a fost esențială nu doar pentru salvarea patrimoniului cultural, ci și pentru îmbogățirea cunoștințelor despre istoria regională a Macedoniei și a orașului Ciacova. Studiile ulterioare, bazate pe aceste descoperiri, vor putea să ofere o viziune mai largă asupra evoluției zonei, a comunităților care au locuit-o și a modului în care acestea s-au adaptat și au modificat mediul înconjurător.

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Planșa I. *Localitatea Macedonia – plasare geografică în raport cu Ciacova și Timișoara.*

Plate 1. *The village of Macedonia – geographical location in relation to Ciacova and Timișoara.*



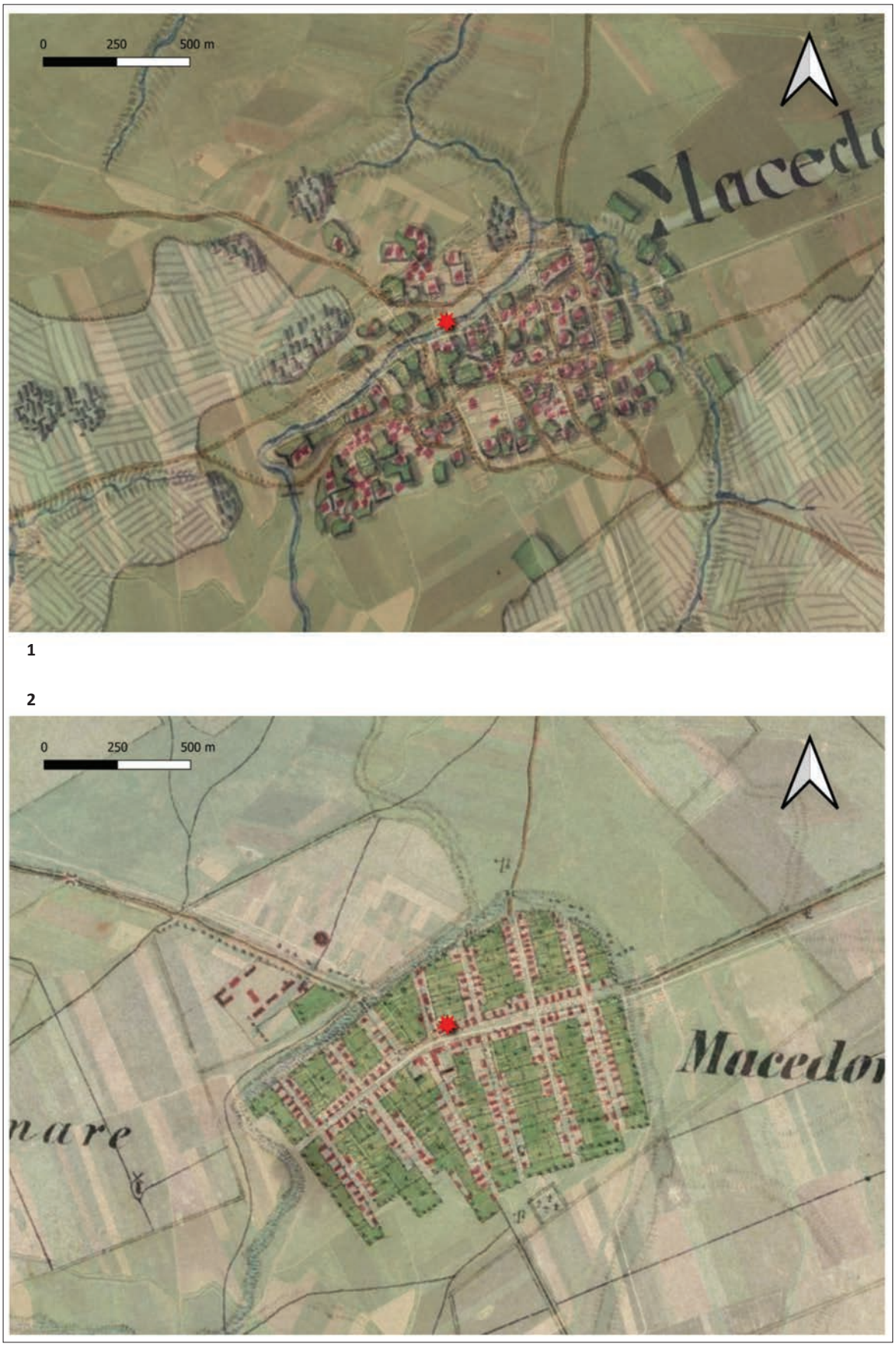
Planșa II. *Planul săpăturilor.*

Plate II. *Excavation plan.*



Planșa III. *Fotografii efectuate înaintea cercetării.*

Plate III. *Photographs taken before the research.*



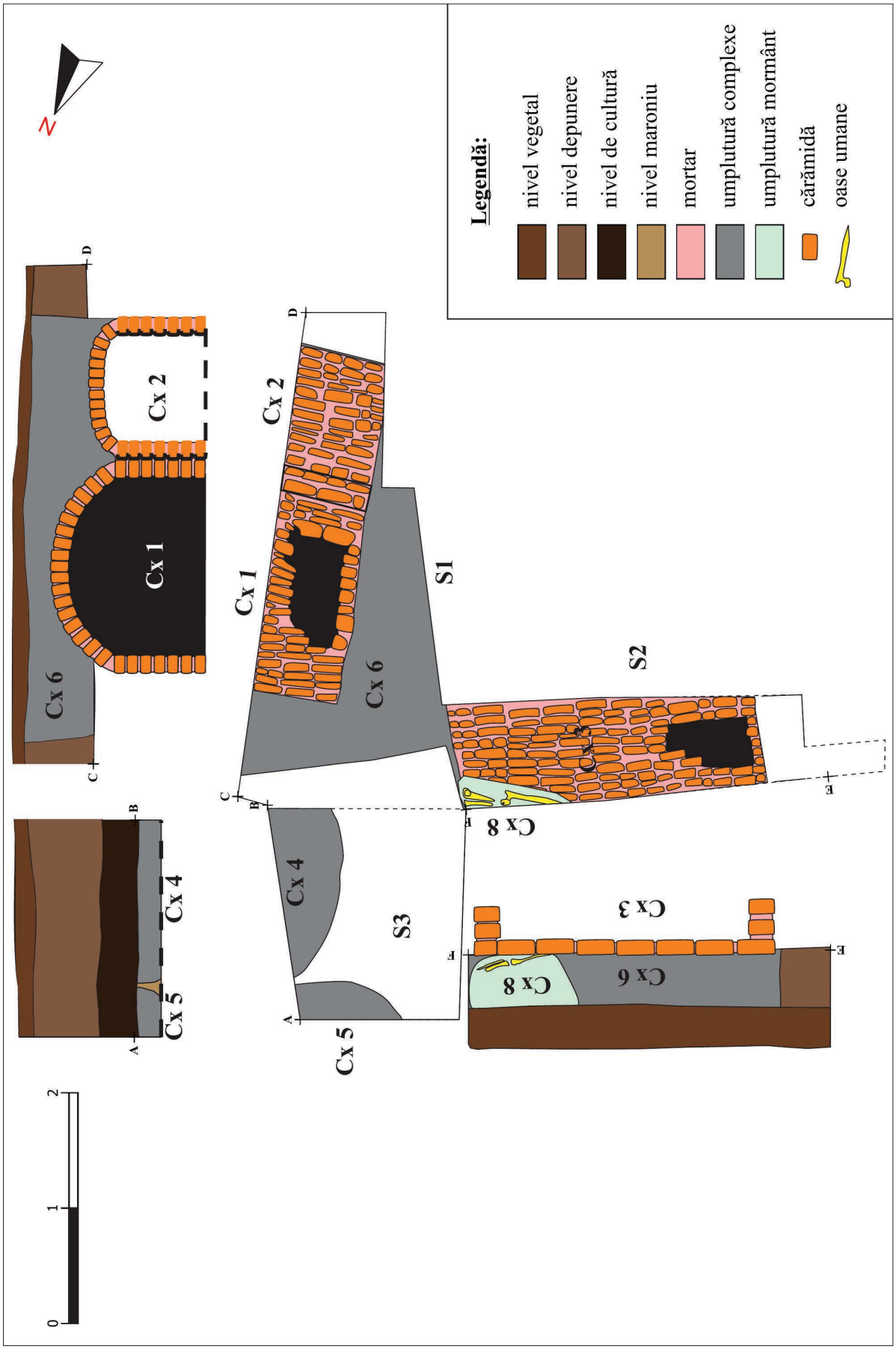
Planșa IV. *Localizarea săpăturii pe hărțile istorice.* ***1.*** *Prima ridicare topografică (1763–1787);* ***2.*** *A doua ridicare topografică (1806–1869).*

Plate IV. *Location of the excavation on historical maps.* ***1****. First topographic map (1763–1787);* ***2.*** *Second topographic map (1806–1869).*



Planșa V. *Localizarea săpăturii pe hărțile istorice.* ***1.*** *A treia ridicare topografică (1869–1887);* ***2.*** *Hartă militară austriacă (1910).*

Plate V. *Location of the excavation on historical maps.* ***1.*** *Third topographic map (1869–1887);* ***2.*** *Austrian military map (1910)*



Planșa VI. *CX 1, 2, 3, 4, 5, 6, 8, plan și profiluri.*

Plate VI. *CX 1, 2, 3, 4, 5, 6, 8, plan and profiles.*



Planșa VII. *S1, S2, S3 – fotografie aeriană.*

Plate VII. *S1, S2, S3 – aerial photograph.*



Planșa VIII. *S 1, 2, 3, profiluri magistrale.* ***1.*** *Profilul magistral de E al S1-S3;* ***2.*** *Profilul de NV al S2;* ***3.*** *Profilul de SE al S2.*

Plate VIII. *S 1, 2, 3, main profiles.* ***1.*** *Main East esction of S1-S3;* ***2.*** *Northwestern section of S2;* ***3.*** *Southeasternsection of S2.*

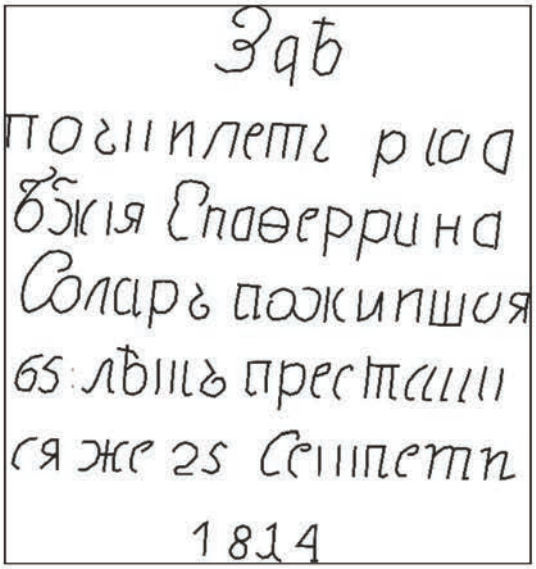


Planșa IX. *CX 1, interior cavou.*

Plate IX. *CX 1, vault interior.*



1



2

3

Text chirilică:
ЗА ПОГИНУЛОГ РАБА/РОДА БОЖИЈЕГ ЕКАТЕРИНУ СОЛАР, ПОЖИВЕЛА 65 ЛЕТА, ПРЕДСТАВИ СЕ 25 СЕПТЕМБРА 1814

4

Text în lb. română:
PENTRU ROBUL LUI DUMNEZEU ECATERINA SOLAR, CARE A TRĂIT 65 DE ANI, SE RIDICĂ LA 25 SEPTEMBRIE 1814

Planșa X. *Piatra tombală.* ***1.*** *Fotografie;* ***2.*** *Inscripție;* ***3.*** *Text chirilic;* ***4.*** *Text în română.*

Plate X. *Tombstone.* ***1.*** *Photo; 2. Inscription; 3. Text in Cyrillic.* ***4.*** *Text in Romanian.*



Planșa XI. *1. Fragmente ceramice descoperite în CX 4; 2. Fragment ceramic și picior de pahar din sticlă descoperite în CX 5; 3. Ac de bronz, cu material textil recuperat din interiorul criptei CX 1.*

Plate XI. *1. Ceramic fragments discovered in CX 4; 2. Ceramic fragment and glass goblet foot discovered in CX 5; 3. Bronze hairpin with textile material recovered from the interior of the crypt CX 1.*

CERCETĂRI ARHEOLOGICE PREVENTIVE ÎN CIACOVA, PUNCTUL *ATELIER BRONZ* (2018)

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Keywords: *Ciacova, preventive archaeology, modern, artifacts, copper, bronze, market, manufacture, production*
Abstract: *As part of the rehabilitation of the water distribution network in Ciacova, conducted from October 2017 to November 2018, preventive archaeological investigations were coordinated by the West University of Timișoara. These investigations aimed to preserve cultural heritage and focused on various sectors of the city. Ciacova has a history of archaeological investigations, starting in 2000 and followed by campaigns in 2006, 2013–2015, targeting medieval and Ottoman structures. The 2017–2018 campaign, led by Silviu Ene, included 23 archaeological sections. Excavations on Tudor Vladimirescu Street (S1T) revealed an area likely used as a 19th-century commercial platform. The archaeological material discovered comprises tools, copper and iron objects, ceramic pipes, and glazed ceramic fragments, indicating an active marketplace referenced in historical documents. Notably, a substantial quantity of copper processing waste suggests* in situ *artisanal production. Additionally, artifacts made of bone, glass, lead, and slag were found, providing insights into the economic and commercial dynamics of the area. These findings enhance the understanding of Ciacova's historical and economic evolution, once again confirming its role as an important commercial and production center.*

Cuvinte-cheie: *Ciacova, arheologie preventivă, modern, artefacte, cupru, bronz, târg, manufactură, producție*
Rezumat: *În cadrul lucrărilor de reabilitare a rețelei de distribuție a apei din orașul Ciacova, desfășurate între octombrie 2017 și noiembrie 2018, au fost efectuate cercetări arheologice preventive de către Universitatea de Vest din Timișoara. Acestea au avut ca scop identificarea patrimoniului cultural și s-au concentrat pe diverse sectoare ale orașului. Ciacova are un istoric al cercetărilor arheologice, începând din anul 2000, cu campanii în 2006, 2013–2015, orientate către structuri medievale și otomane. Campania din anii 2017–2018, coordonată de Silviu Ene, a inclus 23 de secțiuni arheologice. Săpăturile de pe strada Tudor Vladimirescu (S1T) au evidențiat o zonă utilizată, probabil, ca platformă comercială în secolul al XIX-lea. Materialul arheologic descoperit cuprinde unelte, obiecte din cupru și fier, pipe ceramice și fragmente ceramice smălțuite, indicând existența unei piețe comerciale active, menționată în documente istorice. O cantitate semnificativă de deșeuri de prelucrare a cuprului sugerează producția artizanală* in situ. *Totodată, au fost descoperite artefacte din os, sticlă, plumb și zgură, oferind informații despre dinamica economică și comercială a zonei. Aceste descoperiri contribuie la înțelegerea evoluției istorice și economice a Ciacovei, confirmând, încă o dată, rolul său de centru comercial și de producție important.*

CONSIDERAȚII GENERALE

Lucrările de reabilitare a rețelei de distribuție a apei din orașul Ciacova, începute în luna octombrie 2017, au presupus supravegherea arheologică, efectuată de un colectiv al Universității de Vest din Timișoara, desfășurate în luna aprilie a anului 2018, pe străzile: A. Mocioni, A. Iancu, Bistrița, Cloșca, Gh. Doja, T. Vladimirescu, din orașul Ciacova.

CADRUL FIZICO-GEOGRAFIC ȘI ISTORICUL CERCETĂRILOR ARHEOLOGICE

Localitatea Ciacova este situată la 28 de kilometri sud-vest de Timișoara. Orașul este plasat în Câmpia Timișului, unitate geografică cu o suprafață de aproximativ 17 100 km^2, subunitate a Câmpiei Banatului, care la rândul ei este subordonată Câmpiei de Vest (Ielenicz, Pătru 2005, p. 243–244). Pe lângă localitate trece Timișul Mort, astăzi un braț inactiv al râului Timiș, care în vechime alimenta așezarea și umplea șanțurile cetății. Din punct de vedere hidrografic, în regiunea discutată se evidențiază grupa râurilor sud-vestice, numite și bănățene – cele mai apropiate sisteme hidrografice în zona săpăturii noastre fiind Bega și Timiș. Fauna din părțile Ciacovei este specifică zonei central-europene, fiind condiționată de modificările altitudinale ale climei și vegetației, iar flora este alcătuită din specii mediteraneene și submediteraneene de plante (Rusu 2007, p. 60–62).

Prima campanie de cercetări arheologice pe teritoriul orașului Ciacova a avut loc în luna iulie a anului 2000 și a fost coordonată de către Alexandru Rădulescu. La E de donjon, a fost deschisă secțiunea S.1, cu dimensiunile de 35 × 1,50 m. Principala descoperire a fost șanțul de apărare al cetății, surprins în lungime (Rădulescu 1999–2001). A doua campanie de cercetări arheologice sistematice a fost demarată în luna iulie a anului 2006, sub forma unui șantier-școală al Universității de Vest din Timișoara și a avut același coordonator științific. Secțiunea S.2 a avut dimensiunile de 24 × 1,50 m și a fost trasată la N de bazinul de înot, până aproape de gardul care mărginește fostul strand (Pl. II). Obiectivul principal al acestei campanii a fost reprezentat de identificarea zidului cetății,

însă, deși unitatea de cercetare a fost orientată perpendicular pe cea precedentă, a fost identificat tot șanțul de apărare al cetății (care se adâncește conform raportului până la -3,00 m) (Rădulescu *et alii* 2006–2007, p. 321).

Cea de-a treia campanie de cercetări arheologice și, totodată, prima campanie de cercetări arheologice preventive, coordonată de Alexandru Flutur, a avut loc între lunile decembrie 2013 și februarie 2014. Lucrările au fost demarate în urma începerii proiectului de modernizare a rețelei de alimentare cu apă potabilă și canalizare. Principala descoperire în această campanie a fost o stradă medievală, podită cu bârne masive de lemn, datată în epoca otomană (Flutur 2014a, p. 6–16; 2014b). Următoarea campanie de cercetări, tot preventivă, a fost coordonată de către Dorel Micle și a fost desfășurată în punctul *Piața Cetății* în lunile iunie–august ale anului 2015 (Pl. II). Lucrările au fost demarate cu ocazia aceluiași proiect de modernizare a rețelei de utilități, zonele afectate aflându-se pe toate cele patru laturi ale pieței; au fost descoperite mai multe fragmente de stradele din lemn (Micle *et alii* 2016, p. 158–159).

Cea de-a cincea campanie arheologică derulată la Ciacova până în acest moment a fost desfășurată în mai multe puncte din oraș, cu ocazia reînceperii proiectului de modernizare a rețelei de alimentare cu apă potabilă a orașului. Cercetările s-au întins pe o perioadă de aproape un an, între octombrie 2017 și noiembrie 2018, fiind coordonate de către Silviu Ene. În perioada mai sus amintită, au fost realizate 23 de secțiuni arheologice (Ene *et alii* 2018a; 2018b; 2018c), printre care și S1T, unitatea de săpătură la care facem referire în studiul de față.

CONSIDERAȚII DE ORDIN METODOLOGIC

Principalele obiective ale campaniei desfășurate pe strada Tudor Vladimirescu, în urma lucrărilor de supraveghere arheologică, au fost identificarea posibilelor complexe afectate de proiectul municipalității și recuperarea informațiilor de ordin istoric. Pentru realizarea acestor obiective, metodologia adoptată, determinată în mare parte de condițiile din teren, a constat în decaparea mecanică a suprafeței S1T (22,54 × 3,20 m) de pe strada Tudor Vladimirescu și excavarea manuală a stratului de cultură pentru identificarea potențialelor complexe arheologice (Pl. I, III, VI). Suprafața totală cercetată a însumat 72,12 m^2.

STRATIGRAFIA SITULUI

Stratigrafia zonelor cercetate este distinctă, așa că vom prezenta situația stratigrafică a fiecărui sector în parte. Ele sunt enumerate în continuare (într-o ordine inversă a depunerilor sedimentare), pornind de la stratul superior către bază. Cu anumite excepții generate de perturbările datorate permanentelor intervenții antropice, dar și de configurația geo-morfologică specifică zonei, stratigrafia generală a sectoarelor cercetate este următoarea (Pl. III–V):

1. strat arabil, caracterizat printr-un sol de culoare cenușie, omogen și ușor afânat, amestecat cu material contemporan, situat de la nivelul actual de călcare (0) până la cota de -0,52;

2. depunere modernă, de culoare galbenă, lutos amestecat cu cărămizi fragmentare, de la cota de -0,52 m până la -0,65 m;

3. nivel de lutuieli succesive, amestecate cu nuiele, care conține resturi de prelucrare de bronz, fragmente ceramice, zgură, pipe. Acesta este situat între -0,65 m și -1,31 m (adâncimea maximă în cadrul săpăturilor efectuate în acest sector).

SCURTĂ DESCRIERE A DESCOPERIRILOR

Zona meșteșugărească a fost identificată pe str. Tudor Vladimirescu, în S1T. Aceasta constă într-o platformă, care se întinde pe tot cuprinsul secțiunii, deasupra căreia s-au găsit mai multe pelicule de cenușă. Platforma constă într-un amestec de lut galben închis, amestecat cu nuiele. Ea a fost ocupată o perioadă mai lungă de timp, putând fi observate mai multe straturi de lutuială.

Din această zonă au fost recoltate câteva mii de obiecte de bronz în curs de prelucrare (cuie, accesorii de pipă etc.), resturi de prelucrare a obiectelor de bronz și fragmente de zgură. În afară de acestea, au fost descoperite unelte de fier și aproximativ 20 de pipe, ștanțate, databile în secolul XIX (Pl. VIII). Nu a putut fi stabilită o limită clară a platformei.

Literatura disponibilă vorbește despre activitățile comerciale desfășurate în zonă la începutul secolului al XIX-lea, arealul în cauză fiind probabil folosit ca o zonă de târg. Având în vedere potențialul caracter de zonă adiacentă a pieței centrale din oraș despre care presupunem că nu și-a modificat planimetria, precum și argumentele aduse în acest sens de arhitectul T. O. Gheorghiu, considerăm că zona descoperită de noi reprezintă un perimetru complementar al pieței centrale, utilizat ocazional, în care obiectele erau produse și comercializate la fața locului.

Wilhelm Merschdorf vorbește în monografia Ciacovei despre statutul de târg al localității și prerogativele care-i revin unei asemenea așezări, dar și despre activitatea, în anul 1828, a trei meșteri arămari (Merschdorf 2017, p. 145). Astfel de activități comerciale erau o tradiție în Ciacova, ele fiind organizate săptămânal în zilele de marți, vineri și duminică în piața centrală din oraș și pe străzile Nicolae Bălcescu și Dositei Obradovici, ambele aflate în proximitatea locului nostru de interes. Negustorii, meșterii sau țăranii care soseau la astfel de târguri plăteau o taxă, punctele de plată fiind dispuse la toate intrările în localitate (Merschdorf 2017, p. 154).

Conform tot lui Merschdorf, „târgul mare" al Ciacovei se desfășura pe partea de vest a străzii Largi (germ. *Breite Gasse*), actuala stradă Tudor Vladimirescu. În zilele bune de târg, vânzătorii se întindeau pe direcția nordică a străzii

(Merschdorf 2017, p. 154–155). În aceeași zonă a străzii *Breite Gasse*, este consemnată și o zonă destinată comercianților și meșteșugarilor, unde erau ridicate barăci din lemn cu acoperiș, construcțiile fiind deschise în față. În această zonă erau vândute „mărunțișuri de tot felul, majoritatea fără valoare", fabricate de categorii diverse de meșteșugari: dogari, tâmplari, sticlari, blănari, fierari etc., ocupații care pot fi corelate, în mare, cu categoriile de obiecte descoperite de noi. Descrierea tipurilor de construcții existente explică, cel puțin parțial, lipsa unor structuri solide în zonă și existența platformei de lut bătut și nuiele, care servea, probabil, ca podea în interiorul barăcilor.

Pe harta *Josephinische Landesaufnahme* (Ridicarea topografică Iosefină sau prima ridicare topografică a Imperiului Habsburgic, 1769–1772), în proximitatea cercetării noastre se află un spațiu deschis, numit de către arhitectul T. O. Gheorghiu „lenticular", aflat la sud-vest de piața centrală din oraș, areal despre care afirmă că și-a păstrat planimetria din perioada medievală (Gheorghiu 2018, p. 50–54). Spațiul în cauză este, probabil, același descris de Merschdorf ca fiind unul destinat comerțului cu obiecte mărunte, probabil unele create pe loc, având în vedere descoperirile arheologice efectuate (Pl. II).

Cx 1T – șanț de utilități (Pl. I, III, VI)

Șanț pentru țeava de apă, care apare din malul de NV și străbate median suprafața S1T; intră în malul de SE. Apare de la nivelul ierbii și se adâncește până la -0,80 m față de nivelul de călcare. Șanțul are o lungime surprinsă de 22,54 m și o lățime de 0,58 m și o țeavă cu un diametru de 0,20 m. Umplutura este de culoare gri, afânată, amestecată cu material contemporan (plastic, sticlă).

Lotul de material descoperit se compune din câteva mii de obiecte din cele mai diverse categorii: fragmente ceramice, os și corn prelucrat sau în curs de prelucrare, piese de fier, o cantitate impresionantă de piese de cupru, obiecte prelucrate din piatră (Pl. XI/3) ori fragmente de sticlă și porțelan (Pl. XI/4, 6).

Printre cele mai interesante și grăitoare descoperiri se numără pipele (Pl. VIII) de ceramică, 20 de fragmente, majoritatea descoperite în stratul de cultură, câteva piese fiind identificate încă din faza de supraveghere a lucrărilor. Pipele, datate în secolul al XIX-lea și încadrate în tipul Central-European, sunt piese minimal discutate de istoriografia română, cele mai multe fiind exceptate de la publicare din cauza lipsei de interes în ceea ce privește această categorie de artefacte, catalogate, de cele mai multe ori simplist, drept „modern-contemporane". Întrucât pentru această varietate de piese nu există în momentul curent o tipologie clară, în momentul publicării acestora, am optat pentru organizarea lor în funcție de atelierele de producție, rezultând următoarele categorii: pipe produse în ateliere neidentificate, pipe produse în atelierul familiei Partsch, pipe produse în atelierul familiei Ress, pipe produse în atelierul familiei Hönig, pipe produse în atelierul de la Kis-azar și pipe produse în atelierul de la Baja (Iliuță *et alii* 2024).

Fragmentele ceramice identificate, diverse în ceea ce privește forma și tipologia, se încadrează în general în aceeași perioadă istorică cu pipele anterior menționate. În cadrul unei scurte analize a materialului ceramic, au fost identificate mai multe forme de vas, conform tipologiilor deja cunoscute: vase pentru gătit (oale, tigăi cu trei picioare, tigăi cu mâner), ulcioare, vase pentru depozitarea lichidelor, dar și strachini ori farfurii. Majoritatea fragmentelor fac parte din categoria vaselor pentru servit și sunt, în cele mai multe dintre cazuri, smălțuite. Alte tipuri de decor includ linii ori motive executate cu vopsea albă, roșie sau albastră (Pl. VII).

De departe cea mai numeroasă categorie de material descoperită în secțiunea S1T este reprezentată de resturi de prelucrare a cuprului – majoritatea bucăți de tablă subțire de cupru. Printre descoperiri se remarcă și câteva obiecte interesante, precum o apărătoare de broască pentru ușă, atent lucrată, decorată cu motive vegetale și prevăzută cu un orificiu pentru cheie și trei orificii circulare pentru prindere; un ornament decorat cu motive asemănătoare și prevăzut cu lanț de prindere; diverse fragmente de întăriturii pentru pipe, unele decorate; nasturi și butoni, cuie de diverse forme, dar și bucăți de sârmă. Numeroasele resturi de cupru au condus, încă de pe șantierul arheologic, la presupunerea că zona investigată ar face parte dintr-un areal adiacent pieței centrale din Ciacova, unde potențialii cumpărători puteau comanda diverse obiecte de mici dimensiuni, care se fabricau, cel mai probabil, pe loc. Majoritatea fragmentelor descoperite sunt de mici dimensiuni (sub 10 cm lungime) și reprezintă resturi de tăiere prin ghilotinare (Pl. X).

În ceea ce privește restul artefactelor metalice, menționăm că au fost descoperite unelte din fier (dălți, punctatoare, fragmente de ciocane, roți dințate pentru ornamentare etc.) ori piese de feronerie de construcție (Pl. IX).

Celelalte categorii de materiale, mult mai slab reprezentate, sunt alcătuite din obiecte întregi, în curs de prelucrare ori fragmentare fabricate din os – câțiva nasturi (Pl. XI/6) și plăsele ori piese în curs de fabricare, corn – o piesă în curs de prelucrare (Pl. XI/2), sticlă – două recipiente și câteva piese fragmentare (Pl. XI/5), plumb – categorie reprezentată de resturi topite, probabil element utilizat în producția pieselor metalice și numeroase fragmente de zgură.

CONCLUZII

Investigațiile arheologice desfășurate pe traseul lucrărilor de reabilitare a rețelei de distribuție a apei din orașul Ciacova au oferit o bună oportunitate pentru documentarea unor aspecte semnificative ale istoriei locale. Supravegherea arheologică premergătoare

cercetării a permis identificarea unei posibile zone de târg, unde se desfășurau și activități meșteșugărești, întărind ipoteza conform căreia strada Tudor Vladimirescu a funcționat ca un spațiu destinat activităților comerciale și manufacturiere. Stratigrafia zonei a evidențiat o succesiune de depuneri sedimentare, reflectând atât utilizarea îndelungată a zonei, cât și modificările urbanistice recente. Descoperirile arheologice includ un lot diversificat de artefacte, cu precădere resturi de prelucrare a cuprului, unelte din fier, fragmente ceramice, pipe și diverse obiecte de uz cotidian, indicând posibila existență a unor ateliere în această parte a orașului.

Corelarea datelor arheologice cu informațiile documentare relevă continuitatea tradițiilor comerciale ale orașului Ciacova, reflectată în menționările târgului local și ale activităților meșteșugărești aferente. Analiza materialului arheologic descoperit indică prezența unor ateliere specializate, în particular în domeniul prelucrării cuprului. În absența unor structuri arhitecturale solide, descoperirea unei platforme din lut bătut și nuiele sprijină ipoteza existenței unor barăci temporare, utilizate de comercianți și meșteșugari. Această observație este în concordanță cu descrierile istorice ale zonei, care indică funcția sa de spațiu destinat schimburilor comerciale și, credem noi, a producției meșteșugărești.

Rezultatele cercetării contribuie la o mai bună înțelegere a dinamicii economice și sociale a orașului Ciacova, oferind totodată o bază pentru viitoare investigații privind evoluția urbană și structurile economice ale comunității. Importanța acestor descoperiri subliniază necesitatea integrării cercetării arheologice în planificarea intervențiilor de infrastructură, în vederea protejării și valorificării patrimoniului istoric local.

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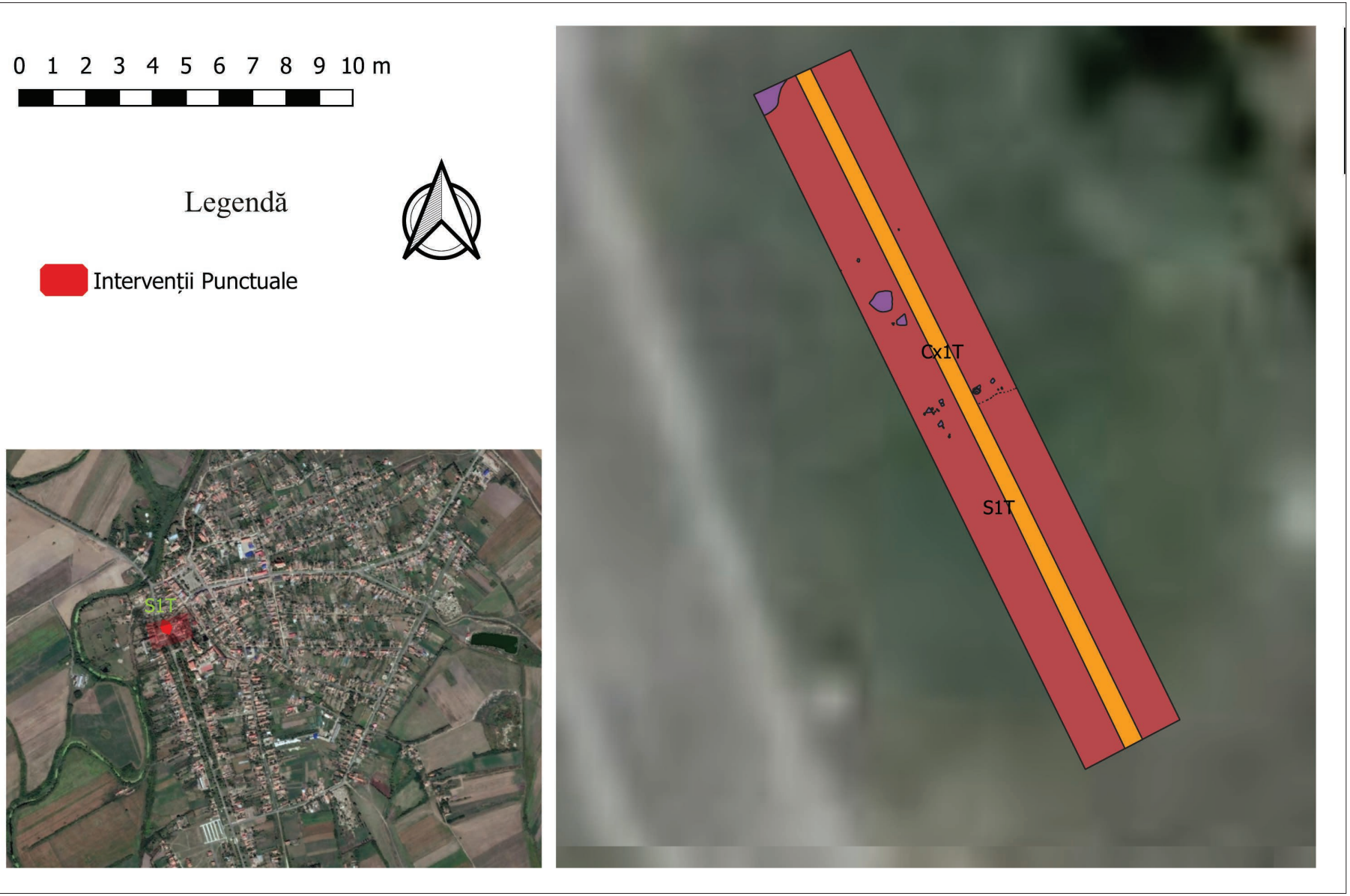
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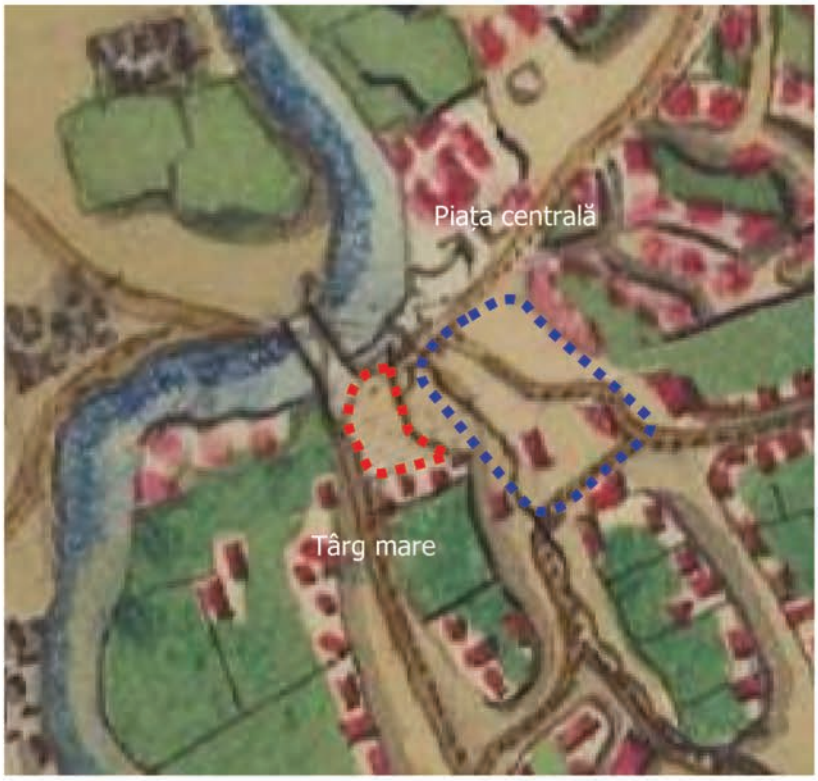
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Planșa I. *Locația și planul general al secțiunii S1T.*

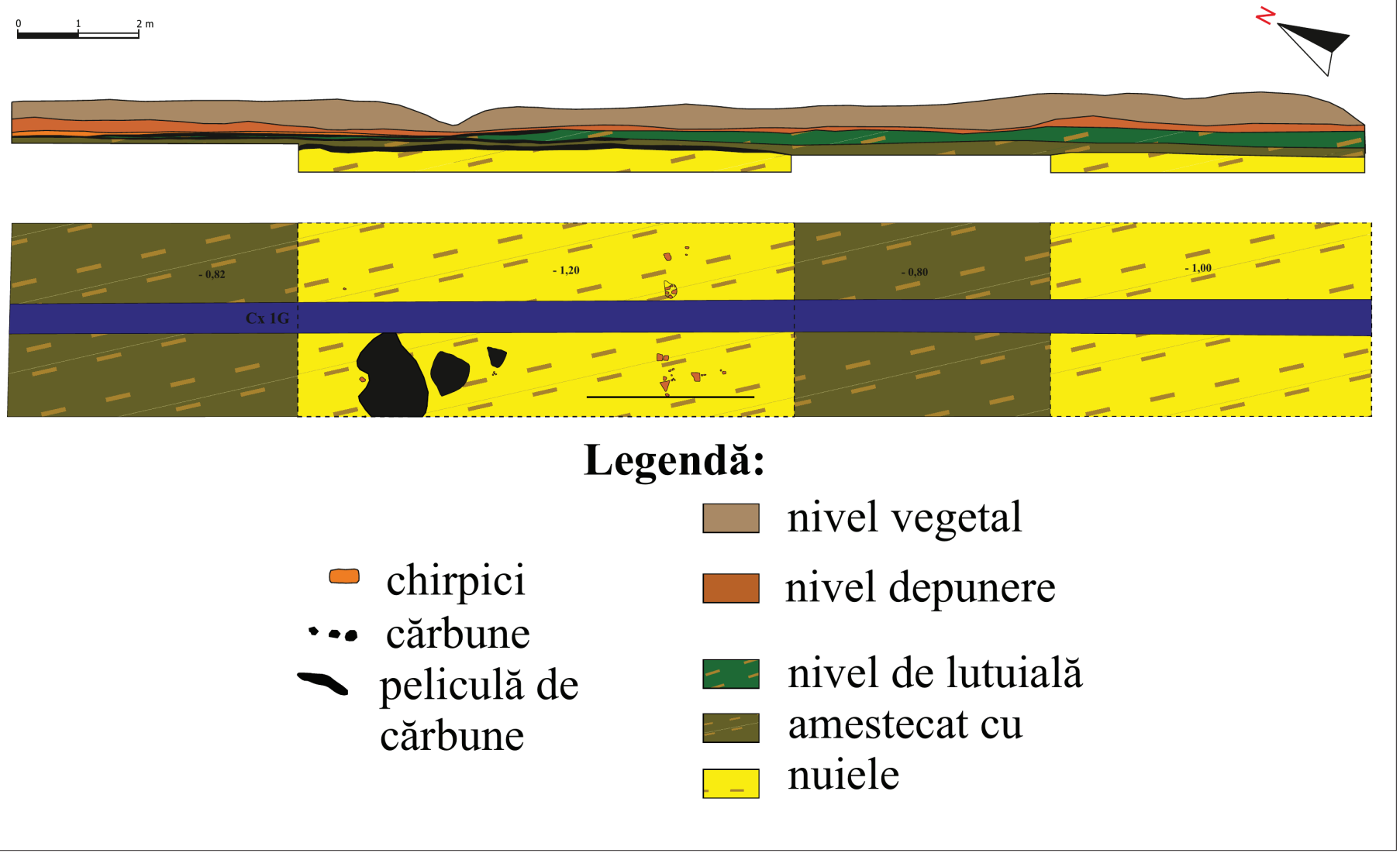
Plate I. *Location and general plan of section S1T.*





Planșa II. *Piața centrală (...) și presupusul „Târg mare" (...) de pe strada Tudor Vladimirescu.*

Plate II. *Central square (...) and the presumed "Great Market" (...) on Tudor Vladimirescu Street.*



Planșa III. *S1T, plan și profilul de NE.*

Plate III. *S1T, plan and NE profile.*





Planșa IV. *S1T, profilul de NE.*

Plate IV. *S1T, NE profile.*



***Planșa V.** S1T, profilul de SV.*

***Plate V.** S1T, SW profile.*



1



2

Planșa VI. *S1T:* ***1.*** *Vedere generală dinspre SE, carourile 1–7;* ***2.*** *Vedere generală dinspre NV, carourile 1–7.*

Plate VI. *S1T,* ***1.*** *General view from the SE, squares 1–7,* ***2.*** *General view from the NW, squares 1–7.*



Planșa VII. *S1T, fragmente ceramice din strat.*

Plate VII. *S1T, ceramic fragments from the layer.*



Planșa VIII. *S1T, pipe din strat.*

Plate VIII. *S1T, pipes from the layer.*



***Planșa IX**. S1T, obiecte fier din strat.*

***Plate IX**. S1T, iron objects from the layer.*



Planșa X. *S1T, obiecte bronz din strat.*

Plate X. *S1T, bronze objects from the layer.*



Planșa XI. *S1T, zgură (1), corn prelucrat (2), cute (3), porțelan (4), ob. sticlă (5), nasture (6), din strat.*

Plate XI. *S1T, slag (1), antler objects (2), whetstones (3), porcelain (4), glass objects (5), button (6), from the layer.*

ABREVIERI / ABRÉVIATIONS / ABBREVIATIONS

AAC – Acta Archaeologica Carpatica, Kraków
ACMI – Anuarul Comisiunii Monumentelor Istorice, București
ActaArchHung – Acta Archaeologica Academiae Scientiarum Hungaricae, Budapest
Acta Classica Univ. Scient. Debrecen – Acta Classica Universitatis Scientiarum Debreceniensis, Debrecen, Ungaria
ActaMN – Acta Musei Napocensis, Cluj
ActaMP – Acta Musei Porolissensis, Zalău
ActaPraehistA – Acta praehistorica et archaeologica
AIGR - Anuarul Institutului Geologic al României, București
AIIAC – Anuarul Institutului de Istorie „George Barițiu", Cluj
AJA – American Journal of Archaeology, Boston
AJPA – American Journal of Physical Anthropology
Alba Regia – Alba Regia. Annales Musei Stephani regis, Székesferhérvár
Anatolia Antiqua – Anatolia Antiqua. Revue internationale d'archéologie anatolienne. Institut Français d'Etudes anatoliennes d'Istanbul
Anatolica – Anatolica. The Netherlands Institute for the Near East in Leiden
AnB – Analele Banatului, Muzeul Banatului, Timișoara
AncNearEastSt – Ancient Near Eastern Studies, Leuven, Belgia
Angustia – Angustia. Arheologie, Etnografie, Sfântu Gheorghe
Anmed – Anmed. Anadolu Akdenizi Arkeoloji Haberleri, Antalya, Turcia
AnSt – Anatolian Studies. British Institute of Ankara
AnUCraiova – Analele Universității din Craiova, Craiova (seria Istorie)
AnUVT – Annales d'Université "Valahia" Târgoviște, Section d'Archéologie et d'Histoire
Apulum – Acta Musei Apulensis. Muzeul Naţional al Unirii, Alba Iulia
ArchBulg – Archaeologia Bulgarica, Sofia
ArchÉrt – Archaeológiai Értesítő, Budapest
ArchHung – Archaeologia Hungarica, Acta Archaeologica Musei Nationalis Hungarici, Budapest
ArchKorr – Archäologisches Korrespondenzblatt, Mainz
ArchMűh – Archeometriai Műhely
ArchRozhledy – Archeologické Rozhledy, Praha
Argesis – Argesis. Muzeul Județean Argeș. Pitești
Arheologia Medievală. Complexul Muzeal Bistriţa-Năsăud, Bistriţa
ArheologijaSSSR – Arheologija SSSR. Svod Archeologičeskih Istočnikov, Moscova
Arheološki vestnik – The Research Center of the Slovenian Academy of Sciences and Arts
ArhMold – Arheologia Moldovei, Iași
AS – Archeologica Slovaca, Bratislava
AST – Eski Eserler ve Müzeler Genel Müdürlüğü, I. Araştırma Sonuçları Toplantısı, Istanbul / General Directorate of Ancient Monuments and Museums
AȘUI – Analele ştiințifice ale Universității Alexandru Ioan Cuza, Iaşi
BA – Biblioteca de Arheologie, București
BaBesch – Bulletin antieke beschaving. Annual Papers on Classical Archaeology
BAI – Bibliotheca Archaeologica Iassiensis, Iași
Baltic-Pontic Studies – Adam Mickiewicz University, Poznań, Institute of Archaeology, Institute of Eastern Studies, Poland
Banatica – Banatica. Muzeul Banatului Montan, Reșița
BarBrSer – British Archaeological Reports. British Series, Oxford
BARIntSer – British Archaeological Reports. International Series, Oxford
BCMI – Buletinul Comisiunii Monumentelor Istorice
Be-Ja – Bulgarian e-Journal of Archaeology
BerRGK – Bericht der Römisch-Germanischen Kommission des Deutschen Archäologischen Instituts, Frankfurt am Main
BIAA Monograph – British Institute of Archaeology at Ankara
BiblEphemNap – Bibliotheca Ephemeris Napocensis, Cluj-Napoca
BiblMemAnt – Bibliotheca Memoriae Antiquitatis, Piatra-Neamț
BiblThrac – Bibliotheca Thracologica, București

BMC – *Coins of the Roman Empire in the British Museum*, Londra; II, *Vespasian to Domitian*, 1930; IV, *Antoninus Pius to Commodus*, 1968; V, *Pertinax to Elagabalus*, 1950 (H. Mattingly)
BMI – Buletinul Monumentelor Istorice, București
BMJT – Buletinul Muzeului Județean Teleorman, Alexandria
BMTAG – Buletinul Muzeului Județean „Teohari Antonescu", Giurgiu
BSA – British School at Athens, Athens
BSNR – Buletinul Societății Numismatice Române, București
BSPF – Bulletin de la Societé Préhistorique Française, Paris
BSSC – Buletinul Societății de Științe din Cluj
București-MIM – București. Materiale de Istorie și Muzeografie. Muzeul Municipiului București
BYZAS – German Archaeological Institute of Istanbul
CA – Cercetări Arheologice. Muzeul Național de Istorie a României, București
CAB – Cercetări arheologice în București. Muzeul Municipiului București
Caiete ARA – Caietele ARA, Revistă de Arhitectură. Restaurare și Arheologie, Asociația ARA, București
Carpica – Carpica. Complexul Muzeal „Iulian Antonescu" Bacău, Bacău
CCA – Cronica Cercetărilor Arheologice din România, București
CCDJ – Cultură şi Civilizaţie la Dunărea de Jos, Călăraşi
CercIst – Cercetări Istorice, Muzeul de Istorie a Moldovei, Iași
CN – Cercetări numismatice, București
CollAn – Colloquium Anatolicum. Anadolu Sohbetleri, Institutum Turcicum Scientiae Antiquitatis, Istanbul
Crisia – Crisia. Muzeul Țării Crișurilor, Oradea
Cuadernos del Museo Geominero – Museo Geominero, Instituto Geológico y Minero de España, Madrid
Current Anthropology – Current Anthropology. University of California, Merced
Dacia – Dacia (Nouvelle Série). Revue d'archéologie et d'histoire ancienne. Académie Roumaine. Institut d'archéologie « V. Pârvan », Bucarest
Danubius – Danubius, Revista Muzeului de Istorie Galați
Documenta Praehistorica – Documenta Praehistorica, University of Ljubljana, Faculty of Arts, Department of Archaeology, Ljubljana
DolgCluj – Dolgozatok az Erdélyi Nemzeti Múzeum Érem- és Régiségtárából, Kolozsvar
DTKFD – Ankara Üniversitesi Dil ve Tarih–Coğrafya Fakültesi Dergisi
EJA – European Journal of Archaeology
ERAUL – Études et Recherches archéologiques de l'Université de Liège
ÉtAlex – Études Alexandrines, Centre d'Études Alexandrines
ÉtTrav – Etudes et travaux. Studia i prace. Travaux du Centre d'archéologie méditerranéenne de l'Académie Polonaise des Sciences
EurAnt – Eurasia Antiqua. Deutsche Archäologisches Institut, Berlin
FrC – Fragmenta Comica
FolArch – Folia Archaeologica. A Magyar Nemzeti Múzeum Évkönyve. Annales Musei Nationalis Hungarici, Budapest
FSI – Forensic Science International
Germania – Germania. Anzeiger der Römisch-Germanischen Kommission des Deutschen Archäologischen Instituts, Frankfurt
Geoarchaeology – Geoarchaeology. An International Journal
Hesperia – Hesperia. Journal of the American School of Classical Studies at Athens, Cambridge
HOMO – HOMO. Journal of Comparative Human Biology, Stuttgart
Human Evolution – Human Evolution, International Institute for Humankind Studies and University of Florence
Ialomița – Ialomița. Studii de cercetări de arheologie, istorie, etnografie și muzeologie, Slobozia
IJO – International Journal of Osteoarchaeology
Iran – Iran. Journal of the British Institute of Persian Studies
IstMitt – Istanbuler Mitteilungen, Istanbul
Istros – Istros, Muzeul Brăilei, Brăila
IzvestijaVarna – Izvestija na Archeologiceskii Institut, Sofia
JAHA – Journal of Ancient History and Archaeology, Cluj-Napoca
JAnat – Journal of Anatomy
JAS – Journal of Archaeological Science
JAS: Reports - Journal of Archaeological Sciences: Reports
JDAI.AA – Jahrbuch des Deutschen Archäologischen Instituts, Archäologischer Anzeiger, Berlin
JFS – Journal of Forensic Sciences

JHE – Journal of Human Evolution
JRA – Journal of Roman Archaeology
JRGZM – Jahrbuch des Römisch-Germanischen Zentralmuseums Mainz, Mainz
JRS – The Journal of Roman Studies
KST – T. C. Kültür Bakanlığı, Eski Eserler ve Müzeler Genel Müdürlüğü, I. Kazı Sonuçları Toplantısı, Ankara / Republic of Turkey, General Directorate of Ancient Monuments and Museums, Ankara, Turkey
LIMC – Lexicon Iconographicum Mythologiae Classicae, Zürich, München, Düsseldorf
Litua – Litua, Studii și cercetări, Târgu-Jiu
LRBC – *Late Roman Bronze Coinage A.D. 394-498*, Londra, 1965: I, *The Bronze Coinage of the House of Constantine A.D. 324–346* (P. V. Hill, J. P. C. Kent); II, *Bronze Roman Imperial Coinage of the Later Empire A.D. 346–498* (R. A. G. Carson, J. P. C. Kent).
Macedoniae Acta Archaeologica – Macedonian Archaeological Society, Skopje, Republic of Macedonia
MAMA – Monumenta Asiae Minoris antiqua. Publications of the American Society for Archaeological Research in Asia Minor
Marisia – Marisia. Studii și materiale. Arheologie – Istorie – Etnografie, Târgu Mureș
Marmatia – Muzeul Județean de Istorie și Arheologie Maramureș, Baia Mare
MarNero – Il Mar Nero. Annali di archeologia e storia
MCA – Materiale și Cercetări Arheologice, București
MDOG – Mitteilungen der Deutschen Orient Gesellschaft
MemAnt – Memoria Antiquitatis, Piatra Neamţ
MFMÉ – A Móra Ferenc Múzeum Évkönyve, Szeged
Mousaios – Mousaios. Buletinul Științific al Muzeului Județean Buzău
MuzNaţ – Muzeul Național, București
NAC – Numismatica e Antichità Classiche, Lugano-Pregassona
OIP – Oriental Institute Publications, University of Chicago
OJA – Oxford Journal of Archaeology, Oxford
Olba – Mersin University Publications of the Research Center of Cilician Archaeology, Mersin, Turkey
PALMA – Papers on Archaeology of the Leiden Museum of Antiquities, Leiden, Olanda
PAS – Prähistorische Archäologie in Südosteuropa, München-Berlin
PBF – Prähistorische Bronzefunde, Münster
Peuce – Peuce. Studii şi cercetări de istorie şi arheologie, Institutul de Cercetări Eco-Muzeale, Tulcea
Phoenix – Phoenix. The Journal of the Classical Association of Canada
Plural – Journal of the History and Geography Department „Ion Creangă" Pedagogical State University, History, Culture. Society. Seria Archaeologica II, Chișinău
PMMB – Publicațiile Muzeului Municipiului București
Pontica – Pontica. Studii și materiale de istorie, arheologie și muzeografie, Muzeul de Istorie Națională și Arheologie Constanța
PZ – Präehistorische Zeitschrift, Berlin-Mainz
Quaternary International – Quaternary International. The Journal of the International Union for Quaternary Research
Quaternary Science Reviews – Quaternary Science Reviews. The International Multidisciplinary Research and Review Journal
RA – Revue Archéologique, Paris
RAASI – Revista de Arheologie, Antropologie și Studii Interdisciplinare, Institutul de Cercetări Bioarheologice și Etnoculturale, Republica Moldova
Radiocarbon – An International Journal of Cosmogenic Isotope Research, Cambridge
RCAN – Revista de Cercetări Arheologice și Numismatice, Muzeul Municipiului București
RevBistr – Revista Bistriței. Complexul Muzeal Bistrița-Năsăud, Bistrița
RevMuz – Revista Muzeelor, București
RGZM – Römisch-Germanisches Zentralmuseums Mainz, Mainz
RIC – *The Roman Imperial Coinage*, Londra: I^2, *From 31 BC to AD 69*, 1984 (C. H. V. Sutherland); II, *Vespasian to Hadrian*, 1926 (H. Mattingly, E. A. Sydenham); II.1, *From AD 69–96. Vespasian to Domitian*, 2007 (I. A. Carradice, T.V. Buttrey); II.3, *From AD 117–138. Hadrian*, 2019 (R. A. Abdy, P. F. Mittag); III, *Antoninus Pius to Commodus*, 1930; IV.1, *Pertinax to Geta*, 1968 (H. Mattingly, E. A. Sydenham); IV.2, *Macrinus to Pupienus*, 1938; IV.3, *Gordian III – Uranius Antoninus*, 1949 (H. Mattingly, E. A. Sydenham, C. H. V. Sutherland); V.1, 1927 (reimprimat 1968; P. H. Webb); VII, *Constantine and Licinius A.D. 313–337*, 1966 (P. M. Bruun); VIII, *The Family of Constantine I A.D. 337–364*, 1981; X, *The Divided Empire and the Fall of the Western Parts A.D. 395–491*, 1994 (J. P. C. Kent)
SAA – Studia Antiqua et Archaeologica, Iași
Sargetia – Sargetia. Acta Musei Devensis. Buletinul Muzeului județean Hunedoara, Deva

SAV – Študijné zvesti Archeologicky ústav SAV, Nitra
Sci Rep – Scientific Reports
SCIV(A) – Studii și Cercetări de Istorie Veche (și Arheologie), București
SCN – Studii și Cercetări de Numismatică, București
Seleucia – Seleucia. Olban Excavations Series
SP – Studii de Preistorie, București
SprawArch – Sprawozdania Archeologiczne, Warsaw
SRMKA – Seramik Araştırmaları Dergisi, The Journal of Ceramic Research
StArchBrno – Studia Archaeologica Brunesia, Masaryk University, Brno
Starinar – Starinar. Arheološki institut Beograd
StComPitești – Studii și Comunicări, Seria Istorie, Muzeul Județean Argeș, Pitești
StudCom Satu Mare – Studii și comunicări Satu Mare
Studia Praehistorica – National Archaeological Institute with Museum of the Bulgarian Academy of Sciences
Syria – Syria. Archéologie, art et histoire. Institut Français du Proche-Orient
Terra Sebus – Terra Sebus. Acta Musei Sabesiensis, Anuarul Muzeului Municipal „Ioan Raica", Sebeș
Th-D – Thraco-Dacica, București
Thracia – Thracia, Sofia
TIB – *Tabula Imperii Byzantini*, Wien
Transylvanian Review –Transylvanian Review. Centrul de Studii Transilvane, Cluj-Napoca
TÜBA-AR – TÜBA-AR Türkiye Bilimler Akademisi arkeoloji dergisi (TÜBA-AR Turkish Academy of Sciences Journal of Archeology)
UPA – Universitätsforschungen zur Prähistorischen Archäologie, Bonn
VAH – Varia Archaeologica Hungarica V. Redigit Csanád Bálint. Publicationes Instituti Archaeologici Academiae Scientiarum Hungaricae, Budapest
Varia Anatolica – Varia Anatolica. L'Institut Français d'Études Anatoliennes, Istanbul
Ziridava – Ziridava. Studia Archaeologica, Arad