



# JOURNAL OF ANCIENT HISTORY AND ARCHAEOLOGY

Institute of Archeology and Art History of  
Romanian Academy Cluj-Napoca  
Technical University Of Cluj-Napoca



# Journal of Ancient History and Archaeology

DOI: <http://dx.doi.org/10.14795/j.v8i2>

ISSN 2360 – 266X

ISSN-L 2360 – 266X



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**No. 8.2 /2021**

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Design & layout:  
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### THE LATE BRONZE AGE GÁVA POTTERY FROM THE LOWER MUREŞ

**Abstract:** The widespread societal collapse that occurred in the Lower Mureş Basin in the Late Bronze Age following the destruction of mega-sites during the 13<sup>th</sup> century BC is largely mirrored in the dwindling number of settlements, prestige goods, and metal finds. The same period is also associated with the spread of Gáva pottery. Apparently, the respective pottery style has been subject to thorough investigation; however, ceramic analyses and 14C data are quite scarce. We are publishing here a pottery assemblage from contexts located in the Lower Mureş Basin, where Gáva pottery style was discovered. Besides illustrating representative potsherds, we have analyzed their style and added 14C data when available. The results of the study proper and comparative analyses with other assemblages suggest a different perspective from certain approaches to Gáva culture as a unitary phenomenon. Starting from the stylistic features of the pottery, we have attempted at offering a regional perspective without overlooking the distinctive characteristics of a much wider area. Moreover, 14C data and previous studies on LBA II pottery enable us to argue that several well-known features of the Gáva pottery style can be identified, at least in the Lower Mureş Basin, as early as the 14<sup>th</sup>-13<sup>th</sup> century BC and even earlier, with some dating back to the 15<sup>th</sup> century BC

**Keywords:** *pottery, style, absolute chronology, Gáva, Lower Mureş Basin.*

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DOI: 10.14795/j.v8i2.642

ISSN 2360 – 266X

ISSN-L 2360 – 266X

#### INTRODUCTION

Gáva pottery has been a constant preoccupation for specialists of the Bronze Age in the Carpathian Basin and the neighboring areas. The main reason for the persistent interest in the topic is perhaps the wide geographical diffusion of several stylistic and technological elements that constitute the common basis of the Gáva pottery style. The literature in the field most often postulates that Gáva pottery is a unitary phenomenon spread across a vast area<sup>1</sup>. However, there are not enough analyzed ceramic assemblages and 14C data available. For instance, there is no absolute dating for any context associated with Gáva pottery in the Banat Region, the Central Plain of the Tisza River, and the Lower Mureş Basin. Moreover, the number of hitherto published studies is not sufficient enough to offer an accurate picture of the evolution of the respective pottery style.

The following paper will introduce a ceramic assemblage displaying the general features of Gáva pottery. The ceramic ware under discussion has been excavated from two sites in close geographic proximity, *Pecica-Est* and *Pecica-Forgaci*, during extensive pre-development excavations conducted over the last years. The respective pottery has been analyzed stylistically according to

<sup>1</sup> See most recently DIETRICH 2015.

criteria already established on other occasions<sup>2</sup>. For a most comprehensive stylistic analysis, we have identified the main features of the pottery, alongside with several technological aspects, and we have interpreted the data according to the context from where the specimens have been taken. Three contexts have been 14C dated and thus we are able to determine an accurate timeline of the data currently available.

The data supplied by 14C measurements in the archeological contexts at *Pecica-Est* and *Pecica-Forgaci*, the stylistic analysis of the pottery, as well as the results of studies conducted in other regions allow us to argue that the Lower Mureş Basin can also be regarded as one of the birth places of the Gáva pottery. At the same time, we should draw the attention to the many regional characteristics of this ceramic style without failing to notice its supra-regional elements.

### SETTING AND BACKGROUND

While quite a few studies on various aspects of Late Bronze Age (LBA) I and II finds in the Lower Mureş Basin are available<sup>3</sup>, LBA III in the same region is much less known for the time being. One possible reason for the absence of studies dealing with the latter chronological phase could be the small number of finds dating to this period.

The chronological system used in the present study is newly developed on the basis of a consistent set of 14C measurements and concerns the main events that occurred in the investigated region, the Lower Mureş Basin<sup>4</sup>. Accordingly, LBA I (1550-1450 BC) covers the time span between the abandonment of the Middle Bronze Age (MBA) *Pecica-Şanţul Mare* tell-settlement and the beginning of fortification construction in *Sântana-Cetatea Veche* and *Corneşti-Iarcuri*. LBA II (1450-1250 BC) corresponds to the heyday of vast fortifications (mega-forts/sites). LBA III (1250-900? BC) starts with the destruction of fortification III in *Sântana*, and ring I and II in *Corneşti*. Unfortunately, the lack of studies on the latter chronological phase prevents any attempt at pinpointing a major event that could stand for the end of LBA III in the investigated region. A potential clue in this respect can be found in a close-by region (South West Transylvania), that is the destruction of the Teleac defensive system, which occurred towards the end of the 10<sup>th</sup> century BC<sup>5</sup>.

During the 13<sup>th</sup> century BC, the most important fortification in the Lower Mureş Basin went through violent destruction: *Sântana-Cetatea Veche*<sup>6</sup>, *Corneşti-Iarcuri*<sup>7</sup>, and *Idoš-Gradište*<sup>8</sup>. At the same time, the settlement of *Şagu-Site A1\_1*, inhabited as early as the 16<sup>th</sup> century BC, seemed to be less peopled by the 13<sup>th</sup> century BC and was most likely abandoned as late as the 12<sup>th</sup> century BC<sup>9</sup>. We should note

here that there was a conspicuous decline in the amount of finds from this period on. However, in certain cases such as *Corneşti-Iarcuri* and *Idoš-Gradište* it can be proved that, after the ruin of the defense systems in the 13<sup>th</sup> century BC, the respective places were still in use as late as LBA III and Early Iron Age (EIA)<sup>10</sup>. Other examples of continuity are the burial grounds of *Tápé* and *Pecica-Site 14*, which mostly developed during LBA I and LBA II. In this respect, we are certain that a cremation grave (188) from *Tápé* dates back to the 12<sup>th</sup>-11<sup>th</sup> century BC<sup>11</sup>, and that the graveyard of *Pecica-Site 14* has been used until the 10<sup>th</sup>-9<sup>th</sup> century BC, the last phase being represented by cremation graves.

In order to acquire accurate data on LBA III sites in the Lower Mureş Basin, we conducted a case study focused on Arad County (7754 km<sup>2</sup>), an essential part of the investigated region (Fig. 1)<sup>12</sup>. We should mention that our research included thorough perusal of the literature in the field, field surveys to locate and check each and every site in the area, comprehensive evaluation of the entire archeological collection of the Arad Museum, accompanied by a decade-long field survey conducted over almost 183000 ha (1830 km<sup>2</sup>), countless test excavations over 1263 ha, and 43 pre-development excavations.

We noticed from the very beginning that there were only a few cases of LBA II sites still in use during LBA III; the general tendency was to set up new settlements. At the same time, the number of settlements, burial grounds, and metal finds dating back to this phase decreased drastically (Fig. 1; 2). As opposed to LBA II, the number of fortifications and settlements halved during LBA III. While in LBA II fortifications extended over large areas<sup>13</sup> and certain structures turned into actually monumental constructions<sup>14</sup>, it seems that the buildings were small-scale during LBA III. Although the literature in the field mentions one LBA III fortification in *Lipova-Coasta Rea/Lipoviţa*, located on a prominent hilltop in the mountain gorge of Mureş River<sup>15</sup>, the lack of excavations makes it difficult to ascribe it to this phase. Surface surveys were conducted in the vast majority of the 14 settlements under investigation, alongside test excavations in certain cases such as the settlement in *Arad-Centru*. Several stray finds or test trenches and pre-development excavations conducted over time on the perimeter of the settlement in Arad did not amount to much; all in all, the settlement remains largely unknown<sup>16</sup>. The bronze hoard of *Arad-Astoria*<sup>17</sup>, a sword<sup>18</sup>, and a sandstone mold for casting socketed axes<sup>19</sup> were unearthed from

<sup>2</sup> SAVA 2019; SAVA 2020.

<sup>3</sup> SAVA 2020 with bibliography.

<sup>4</sup> SAVA 2020, 254-256, 289-290.

<sup>5</sup> UHNER et alii 2019, 188, Fig. 20.

<sup>6</sup> GOGÂLTAN/SAVA/KRAUSE 2019, 209, Fig. 22-24; SAVA, GOGÂLTAN/KRAUSE 2019, 170-174.

<sup>7</sup> LEHMPHUL et alii 2019, 273-275, Tab. 8.

<sup>8</sup> MOLLOY et alii 2020, 15-17; Tab. 3.

<sup>9</sup> SAVA 2019.

<sup>10</sup> LEHMPHUL et alii 2019, 275-276, Tab. 9; MOLLOY et alii 2020, 15-17; Tab. 3.

<sup>11</sup> O'SHEA et alii 2019, Tab. 3.

<sup>12</sup> The available data on Arad County cannot be interpreted within the wider context of the intra-Carpathian area because of the absence of centralized data on LBA III discoveries; Körös region is an exception, see BÓKA 2012; BÓKA et alii 2017.

<sup>13</sup> GOGÂLTAN/SAVA 2010; GOGÂLTAN/SAVA/KRAUSE 2019; KRAUSE et alii 2019; MOLLOY et alii 2020; SAVA, GOGÂLTAN/KRAUSE 2019; SZEVERENYI et alii 2017.

<sup>14</sup> GOGÂLTAN/SAVA/KRAUSE 2019, 199-200, Fig. 8-9.

<sup>15</sup> CHIRILA/HÜGEL 1999, 80; MARUIA 2011, Annex 2, 1361-1368.

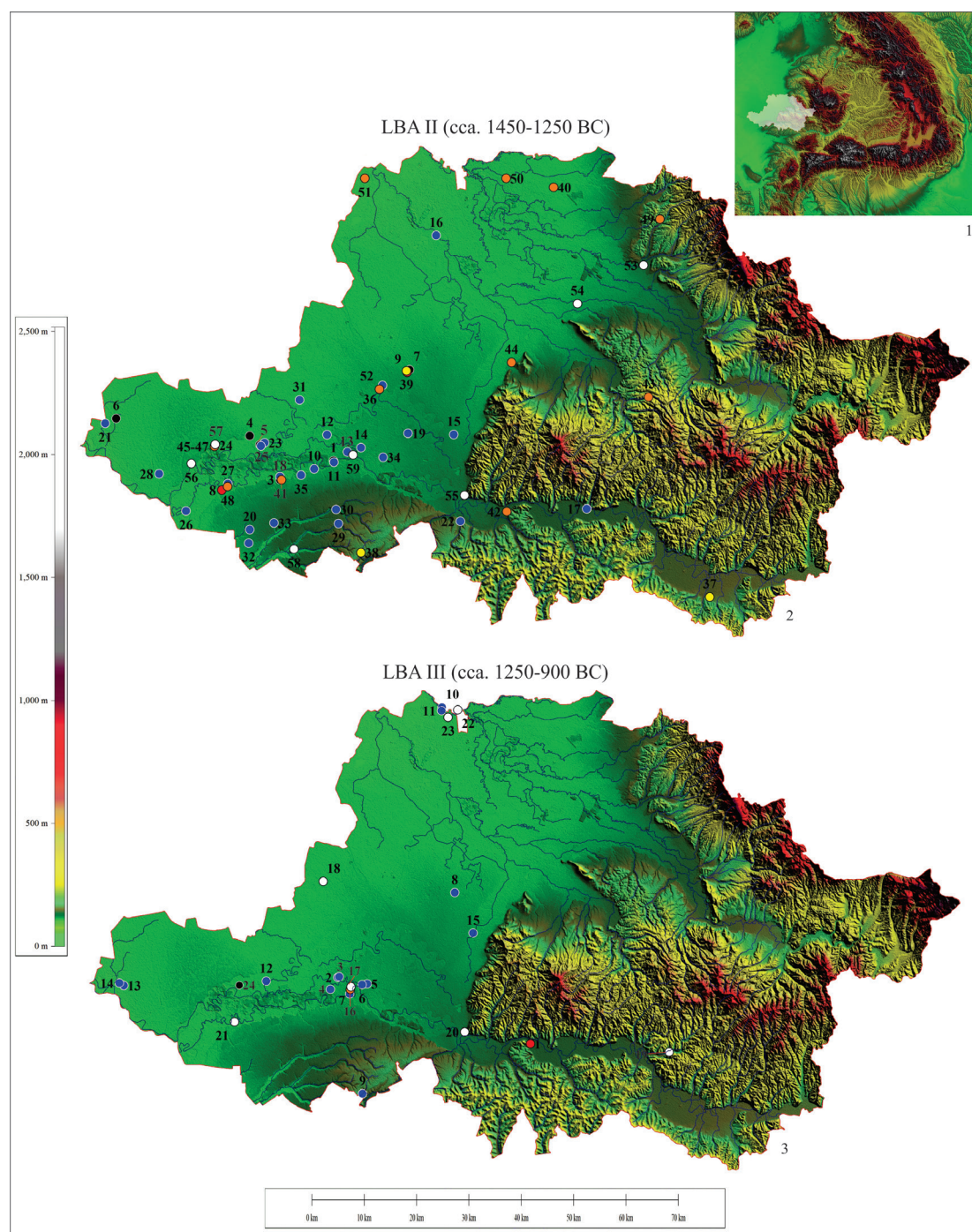
<sup>16</sup> SAVA/PĂDUREAN 2009, 38-39.

<sup>17</sup> RUSU et alii 1977, R68a-R68f; PETRESCU-DIMBOVIŢA 1977, 125, Pl. 296-297.

<sup>18</sup> BADER 1991, 115, nr. 277, Taf. 28/277.

<sup>19</sup> DÖRNER 1970, 449, Fig. 8/2; RUSU et alii 1977, R68a/9.

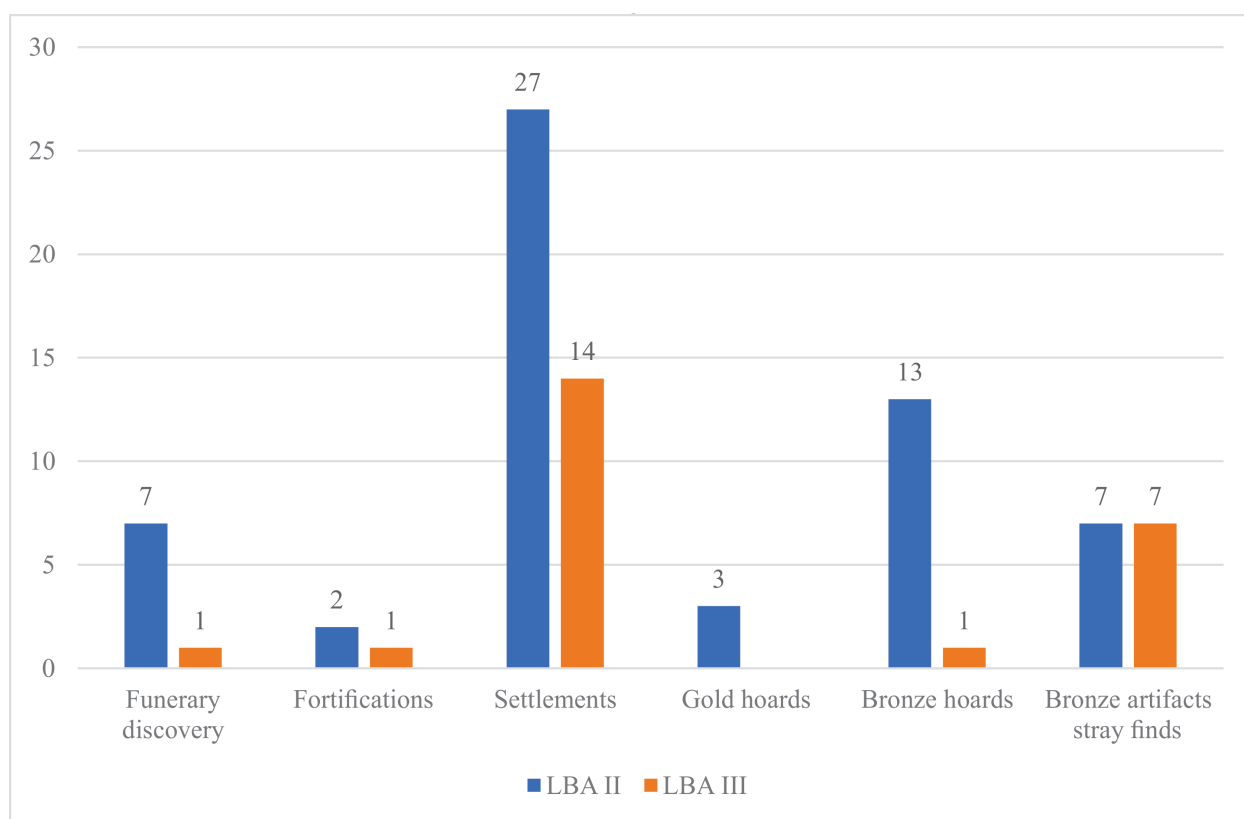




**Fig. 1.** 1. Map of the intra-Carpathian area with the outlying of Arad county (map by authors).

2. LBA II discoveries from Arad county, with the outlying of the hydrographic network mapped in the second topographic survey of the Habsburg Empire (1806-1869) (map by authors). *Funerary discoveries (black)*: 1. Arad-Site B0\_3; 2. Conop-Situl 5; 3. Felnac-Complexul Zootehnic; 4. Pecica-Site 14; 5. Pecica-Site 15; 6. Nădlac-Site 9M; 7. Sântana-Cetatea Veche. *Fortifications (red)*: 8. Munar-Wolfsberg; 9. Sântana-Cetatea Veche. *Settlements (blue)*: 10. Arad-Bufniț; 11. Arad-Bypass B03-B04; 12. Arad-Gai; 13. Arad-Palatul Cultural; 14. Arad-Uzina de apă; 15. Covăsânț-Situl 9; 16. Chișineu Criș-Situl 5; 17. Conop-Situl 5; 18. Felnac-Complexul Zootehnic; 19. Horia-Situl V7; 20. Mailat; 21. Nădlac-Situl N8; 22. Neudorf-Pârâul Roșia; 23. Pecica-Forgaci; 24. Pecica-În vii; 25. Pecica-Site 15; 26. Satu Mare; 27. Sâmpetru German; 28. Semlac-Situl 21; 29. Șagu-Situl A1\_1; 30. Șagu-Lângă Gară; 31. Variașu Mare; 32. Vinga-Situl 30; 33. Vinga-Situl 43; 34. Vladimirescu; 35. Zădăreni; 36. Zimandu Nou. *Gold hoards (yellow)*: 37. Birchiș; 38. Firiteaz; 39. Sântana-Cetatea Veche. *Bronze hoards (orange)*: 40. Apateu; 41. Felnac; 42. Lipova; 43. Minișu de Sus; 44. Pâncota; 45. Pecica II; 46. Pecica III; 47. Pecica IV; 48. Sâmpetru German; 49. Secaci; 50. Vânători; 51. Vârșand IV; 52. Zimandu Nou. *Metal stray finds (white)*: 53. Beliu; 54. Ineu; 55. Păuliș; 56. Pecica, lângă Șanțul Mare; 57. Pecica "În vii"; 58. Vinga; 59. Zona Arad.

3. LBA III discoveries from Arad county, with the outlying of the hydrographic network mapped in the second topographic survey of the Habsburg Empire (1806-1869) (map by authors). *Fortifications (red)*: 1. Lipova-Coasta Rea/Lipovița. *Settlements (blue)*: 2. Arad-Bujac/Str. Tiberiu nr.5/str. Progresului nr. 34/str. Ghiocilor nr. 75; 3. Arad-Silvaș (Bujac); 4. Arad-Micălaca-Deluț; 6. Arad-Auto-gara veche; 7. Arad-Centru; 8. Caporal Alexa; 9. Firiteaz-Situl 2; 10. Iermata Neagră-Situl 1; 11. Iermata Neagră-Situl 7; 12. Pecica-Est și Forgaci; 13. Nădlac-Situl N28; 14. Nădlac-Situl N33; 15. Șiria. *Bronze hoards (orange)*: 16. Arad-Astoria. *Metal stray finds (white)*: 17. Arad-Centru; 18. Dorobanți; 19. Dumbrăvița; 20. Păuliș; 21. Sâmpetru German; 22. Tămașda; 23. Zona Zerind. *Funerary discoveries (black)*: 24. Pecica-Situl 14.



**Fig. 2.** The LBA II and III sites in Arad County, arranged according to the chronological stage and the main types of discoveries (graphic by authors).



**Fig. 3.** Administrative map of Romania and Arad County with location of Pecica Town (map by authors).

the settlement, proof of intense metallurgical activities. Beside the *cluster* of settlements found within the present boundaries of Arad town<sup>20</sup>, systematic field surveys

<sup>20</sup> SAVA/PĂDUREAN 2009, 36-39.

conducted around several localities had led to discovering new LBA III settlements. Two settlements were identified in the immediate vicinity of Nădlac town, Site N28 and Site N33; the archeological finds collected on their surface





**Fig. 4.** Satellite photo illustrating the Pecica-Est and Pecica-Forgaci sites, as well as the contemporary sites in the immediate vicinity (source: GoogleEarth modified by authors).

were scattered over 4, namely 10-11 ha. The settlements of Pecica-Est<sup>21</sup>, Pecica-Forgaci, Iermata Neagră-Site 7<sup>22</sup>, and Iermata Neagră-Site 1, small clusters of habitation in fact, also belong to LBA III. Alongside the LBA III sites, we should also mention several bronze artifacts discovered by accident, whose context is unknown, that typologically belong to Moigrad-Tăuteu horizon of hoards: a spearhead found in Dorobanți, a situla unearthed in Dumbrăvița<sup>23</sup>, and three socketed axes found within the boundaries of Sâmpetru German, Zerind, and in the south-west of Tămașda village.

Within the framework of material culture, the ceramic ware found in the Lower Mureș Basin displays the general traits of the Gáva pottery style<sup>24</sup> as summed up by A. Mozsolics nearly six decades ago: polished black on the outside and red inside, the most characteristic shape being the faceted-rim, round-bodied urn adorned with channeled decoration arranged obliquely or in garland patterns<sup>25</sup>. Other distinctive features<sup>26</sup> of this ceramic style have been added over time, and several morphological analyses performed on substantial ceramic assemblages<sup>27</sup> are now available. Since the term “Gáva culture” has been introduced in the literature in the field, many opinions concerning its terminology, origin, distribution, chronology, and importance have been

expressed<sup>28</sup>. To sum up the main points of the debate, it is obvious that there is a certain consensus on denomination, the term “Gáva” being quite widespread for the intra-Carpathian area, but other names such as Gáva-Holihrad, Reci-Mediaș, and Chișinău-Corlăteni can also be found. At the same time, the use of different denominations suggests the presence of a “cultural complex” made up of several groups scattered over a vast area: the central and northern part of the Tisza Plain, Transylvania, northern Banat, Moldavia, the Republic of Moldova, and southern Ukraine. Chronologically speaking, most specialists agree on the early emergence of the Gáva pottery, or proto/pre-Gáva pottery, in the north of the Tisza Plain and north-western Romania, as early as around 1400-1200 BC, gradually spreading to the south of Ukraine and north-western Moldavia.

## SITES AND CONTEXTS

Although many pre-development excavations<sup>29</sup> have been conducted in the Lower Mureș Basin in the past few years, new research projects have been initiated<sup>30</sup>, and old collections have been reevaluated<sup>31</sup>, we have unfortunately

<sup>21</sup> SAVA/MĂRGINEAN/URSUTIU 2017.

<sup>22</sup> MĂRGINEAN/HUREZAN/SAVA 2014.

<sup>23</sup> SOROCEANU 2008, 138, Abb. 20a, 20b, Taf. 27/102.

<sup>24</sup> DÖRNER 1970, 449-450, Fig. 8/1; SAVA/PĂDUREAN 2009, 36-39, Pl. IX.

<sup>25</sup> MOZSOLICS 1957, 121.

<sup>26</sup> ex. PANKAU 2004, 27-31; VASILIEV 2008; BADER 2012.

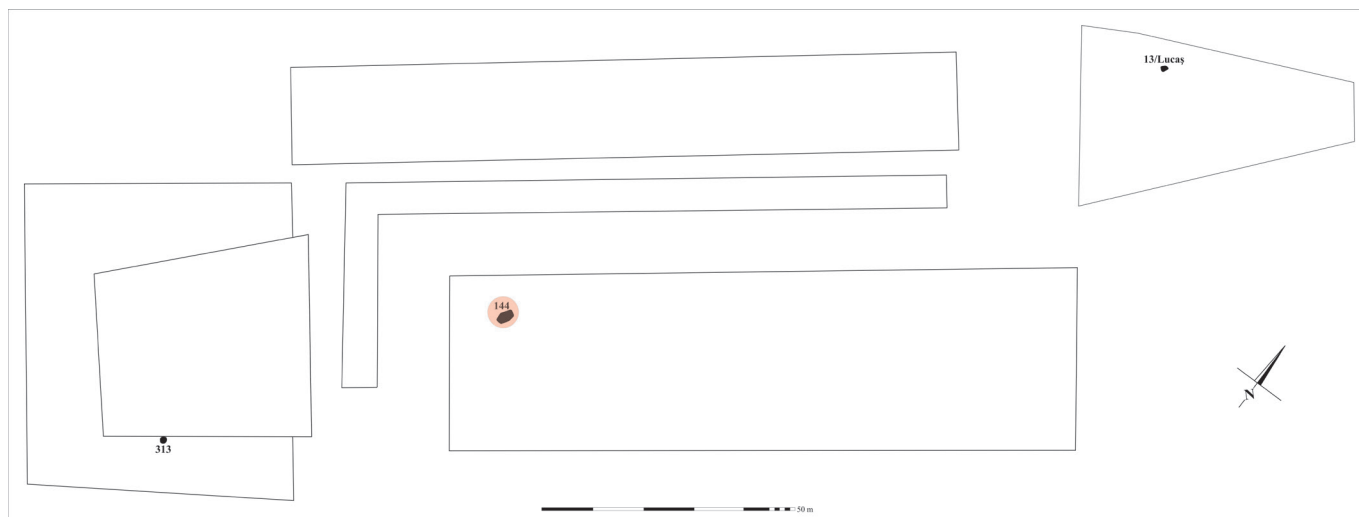
<sup>27</sup> KEMENCZEI 1984, 64-70; VASILIEV *et alii* 1991, 78-94; LÁSZLÓ 1994, 65-89, 111-124; LEVIŢKI 1994, 79-108; PANKAU 2004, 43-85; MARTA 2009, 60-76; KÓSA 2020; MARTA 2020.

<sup>28</sup> See presentations or summaries of these topics in KEMENCZEI 1984, 58-60; FURMÁNEK/VELIAČIK/VLADÁR 1991, 149-153; GUMĂ 1993, 181-184; LÁSZLÓ 1994, 48-50; BUKVIĆ 2000, 13-21; PANKAU 2004, 27-42; PRZYBYŁA 2009, 102-109; CIUGUDEAN 2011, 69-70; BADER 2012; METZNER-NEBELSICK 2012; CIUGUDEAN 2012; DIETRICH 2015; SZABÓ 2017; LÁSZLÓ 2019; GOGĂLTAN 2019, 52, 55, 57; KÓSA 2020, 7; MARTA 2020, 6-8.

<sup>29</sup> Ex. SAVA/HUREZAN/MĂRGINEAN 2011; SAVA/ANDREICA 2013; IGNAT/SAVA 2019.

<sup>30</sup> Ex. GOGĂLTAN/SAVA 2010; MOLLOY *et alii* 2020; SZEVEŢENYI *et alii* 2017; GOGĂLTAN/SAVA/KRAUSE 2019; KRAUSE *et alii* 2019; SAVA/GOGĂLTAN/KRAUSE 2019.

<sup>31</sup> Ex. SAVA/PĂDUREAN 2009; GOGĂLTAN/SAVA 2014; SAVA 2016;



**Fig. 5.** Topographic plan of the excavations carried out at Pecica-Est with the outlying of the LBA discoveries (plans by the authors).

**Table 1.** List of the LBA 14C dates from Pecica-Est and Pecica-Forgaci.

| No. | Site           | Feature no. | Lab no.       | Age 14C [BP] | ±  | Calibration value 2σ | Mean        | Material                 |
|-----|----------------|-------------|---------------|--------------|----|----------------------|-------------|--------------------------|
| 1   | Pecica-Est     | cx. 144     | RoAMS 996.80  | 3038         | 28 | cal BC 1396-1215     | cal BC 1293 | animal bone (bos taurus) |
| 2   | Pecica-Forgaci | cx. 70      | RoAMS 1526.80 | 2876         | 27 | cal BC 1191-933      | cal BC 1051 | animal bone (bos taurus) |
| 3   | Pecica-Forgaci | cx. 94      | RoAMS 1525.80 | 2854         | 34 | cal BC 1124-916      | cal BC 1019 | animal bone (bos taurus) |

noticed the presence of a rather small number of LBA III finds. Pecica-Est and Pecica-Forgaci, both recently investigated, can be dated to this period (Fig. 3; 4). Several pits excavated in the two sites contain LBA III ceramic ware known as Gáva pottery.

#### Pecica-Est

The site was discovered and studied in 2015-2017, when an area of 13800 m<sup>2</sup> (Fig. 4-5) was investigated and many archeological features dating back to different periods were found<sup>32</sup>. Among them there were three pits where specific LBA pottery was identified. Noteworthy was the fact that the finds scattered over the aforementioned area were discovered near the relatively contemporary settlements of Pecica-Site 15<sup>33</sup> and Pecica-Forgaci. Of the three pits, only cx. 144 contained pottery appropriate for analysis.

**Cx. 144** was rather rectangular in shape, with slightly slanted walls and honeycombed base, filled with dark-grey soil flecked with many calcareous concretions and with small daub fragments in the upper layer (Fig. 7). The pit fill contained pottery sherds (Pl. 1-3) and animal bones. Sample RoAMS 996.80 (Fig. 8/1; 9-10), belonging to an adult *Bos taurus* (bovine) mandible, was chosen from the pit and dated between cal BC 1396-1215 (2σ) (Table 1).

#### Pecica-Forgaci

In 2019, pre-development excavation was conducted over an area of 24470 m<sup>2</sup>. The site had been investigated before,

SAVA/IGNAT 2016; SAVA/GRUMEZA 2018; KAPURAN 2019.

<sup>32</sup> SAVA/MÁRGINEAN/URSUȚIU 2017; SAVA, URSUȚIU 2020A; SAVA, URSUȚIU 2020b.

<sup>33</sup> MARTA *et alii* 2012.

but smaller areas were taken into consideration<sup>34</sup>. Following the 2019 excavation, four pits with archeological material dating to LBA III were identified without the shadow of a doubt: cx. 70, 71, 73, and 94. Besides, we should also mention cx. 69, 101, and 102, pits with atypical pottery resembling LBA III ceramic ware, therefore not included in the present study. It was obvious that they were concentrated in the north-eastern corner of the investigated area, forming a small cluster (Fig. 6).

Pit **cx. 70** was identified and demarcated according to the color of the fill embedded in the archaeologically virgin soil. The fill was a loose grey soil with daub fragments, irregular in shape, 2.8 x 3.4 m in size, and a maximum depth of 0.16 m (Fig. 7). The archeological material consisted of pottery (Pl. 4-5) and animal bones. One mandible of *Bos taurus* (bovine), aged between 4 and 6 years old, was chosen from the pit for 14C dating, RoAMS 1526.80 (Fig. 8/3; 9-10), and the result was cal BC 1191-933 (2σ) (Table 1). The fill of pit **cx. 71** consisted of loose grey soil with daub fragments. The pit was round, flat-based, with irregular walls, approximately 1 m in diameter, and a maximum depth of 0.6 m (Fig. 7). The archeological assemblage consisted of animal bones and pottery (Pl. 6/1-9). The fill of pit **cx. 73** was loose grey soil with daub fragments. The pit was round, with honeycombed walls and base, approximately 1 m in diameter, and a maximum depth of 0.4 m (Fig. 7). The archeological material consisted of pottery (Pl. 6/10) and animal bones. Pit **cx. 94** was large, filled with loose grey soil with daub fragments. Irregular in shape and with honeycombed base, it was approximately 6 x 4.5 m in size and a maximum depth

<sup>34</sup> LUCA 1993; URSUȚIU *et alii* 2017.



**Fig. 6.** Topographic plan of the excavations carried out at Pecica-Forgaci with the outlying of the LBA discoveries (red) (plans by the authors).

of 0.8 m (Fig. 7). The archeological material was rich in animal bones and contained a substantial amount of pottery sherds (Pl. 7-20). From this pit we selected for 14C dating a mandible of *Bos taurus* (bovine), between 2.5 – 3 years of age, RoAMS 1525.80 (Fig. 8/2; 9-10), and the result indicated cal BC 1124-916 (2σ) (Table 1).

### POTTERY ANALYSIS

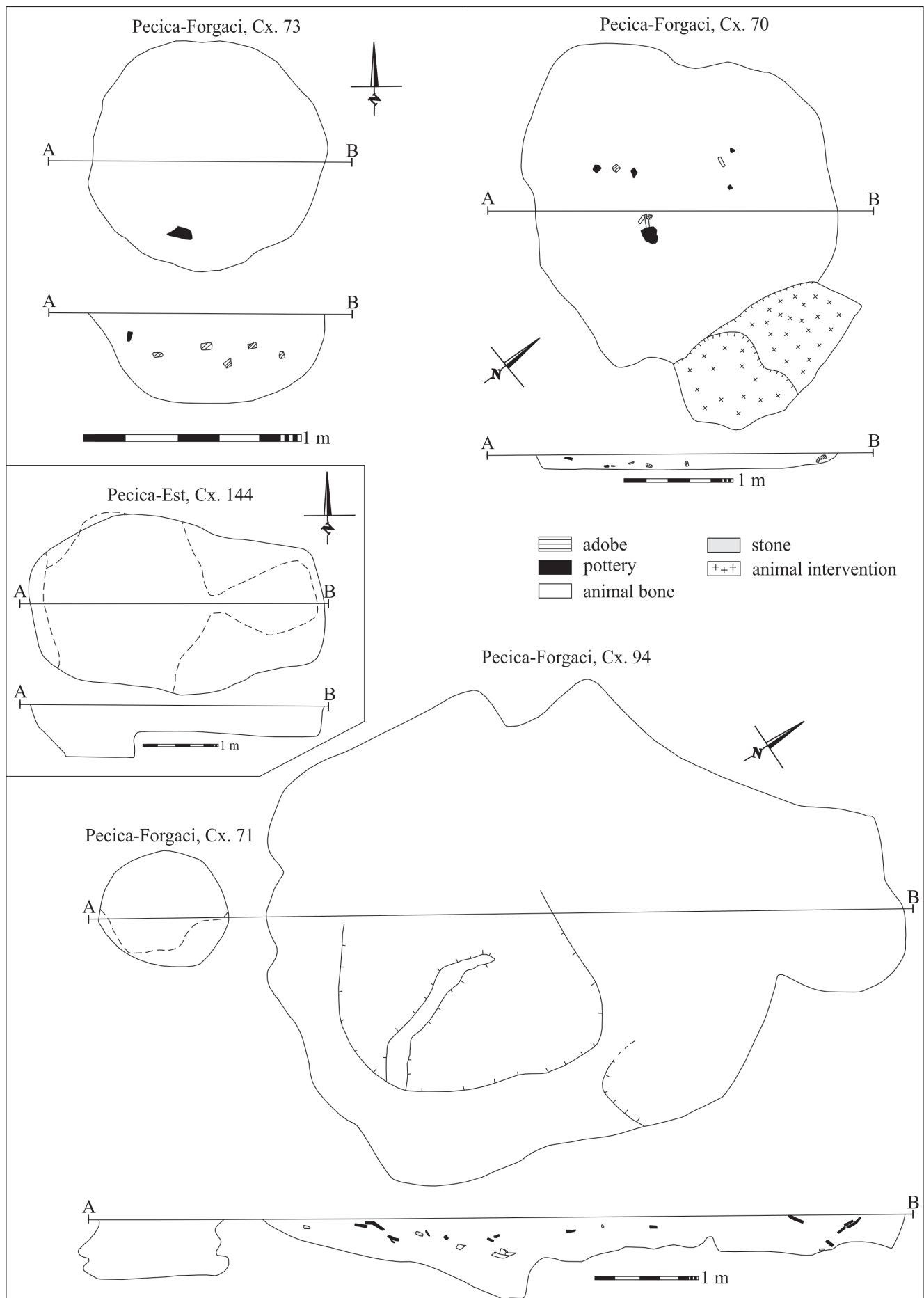
Our present study included the analysis of 2069 pottery sherds found in the five aforementioned archeological features at Pecica-Est and Pecica-Forgaci. Among them, 317 displayed elements appropriate for stylistic analysis (Fig. 11). It was quite clear that most of them were found in cx. 94 at Pecica-Forgaci, but the other features had enough pottery sherds appropriate for stylistic examination as well. All investigated contexts contained elements specific to Gáva style, and many similarities could be found between them and other finds throughout the intra-Carpathian area and in the neighboring regions. From the very beginning, 14C

measurements revealed chronological difference between cx. 144/Pecica-Est and cx. 70 and 94 in Pecica-Forgaci (Fig. 8-10), which was not apparent in the stylistic analysis. Considering that the vast majority (82%) of the investigated pottery was discovered in Cx. 94/Pecica-Forgaci, we did not use the comparative method according to context, but only in isolated cases. The methodology for pottery analysis applied in the present study was used before on other occasions, and the terminology employed for pottery shapes, decoration techniques, and ornaments was borrowed from Sava 2019; Sava 2020. Besides the stylistic features of the ceramic ware, we explored several aspects related to the firing technique, chiefly the one by which the bi-chrome effect was achieved (black exterior and red interior), because this was an essential criterion in defining the Gáva pottery.

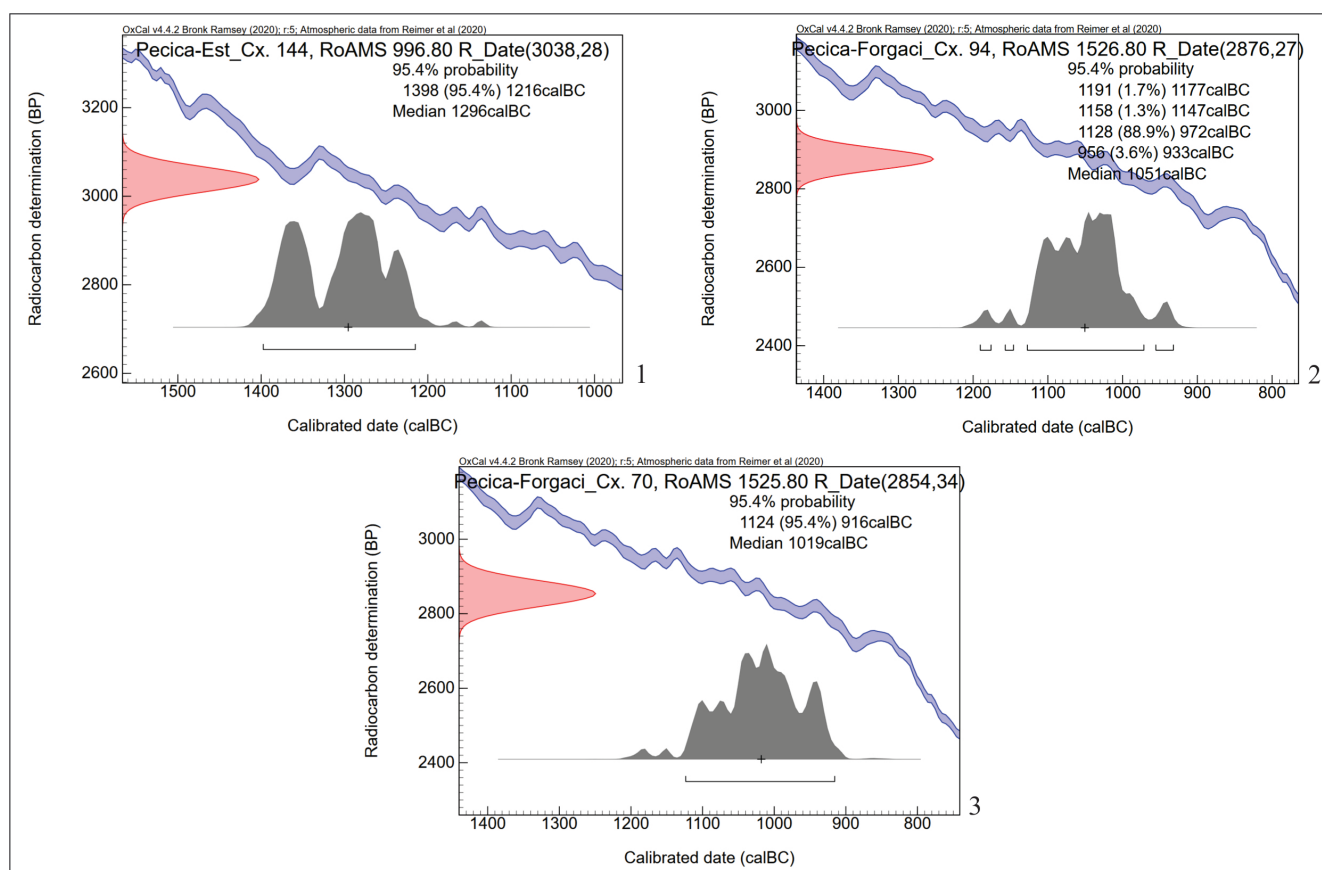
#### Pottery Shapes

Of the total amount of analyzed pottery, 179 sherds could be fit to the 5 types and 20 sub-types of identified

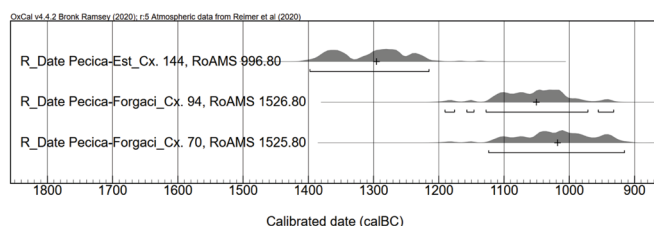




**Fig. 7.** Drawings of the features that yielded the analyzed pottery (plans by the authors).



**Fig. 8.** Individual calibrated <sup>14</sup>C dates from Pecica-Est and Pecica-Forgaci.



**Fig. 9.** The calibrated <sup>14</sup>C dates from Pecica-Est and Pecica-Forgaci.

vessels (Fig. 12; 13). The best represented type is by far the dish (1), illustrated by more than 51% of the specimens (Pl. 2/5-6; 3/9; 4; 6/1-4; 7-11; 12/1-6, 8-10), followed by large biconical vessels (6) (Pl. 1/1-6; 16; 20/14) and pots (3) (Pl. 13/5-11; 14-15), both around 23%, whereas cups (2) (Pl. 5/1; 12/7) and jars (10) (Pl. 13/3-4) are quite rare, making up 1%, namely 2% of the assemblage; of course, the ratio varies depending on the context where they have been discovered. Relatively similar percentages of ceramic types can be found in other contemporary pottery assemblages such as those at Baks-*Temetôpart*<sup>35</sup> and Petea-*Csengersima*<sup>36</sup>. In the case of Călinești-Oaș, the ratio is more balanced as the number of dishes and bowls is not much higher than the number of pots and biconical vessels<sup>37</sup>, whereas at Lazuri the reverse is true, pots prevail, followed by dishes and biconical vessels<sup>38</sup>. A percentage similar to Lazuri is revealed by the analysis of the ceramic ware found in Moldavia<sup>39</sup>, but when taking into

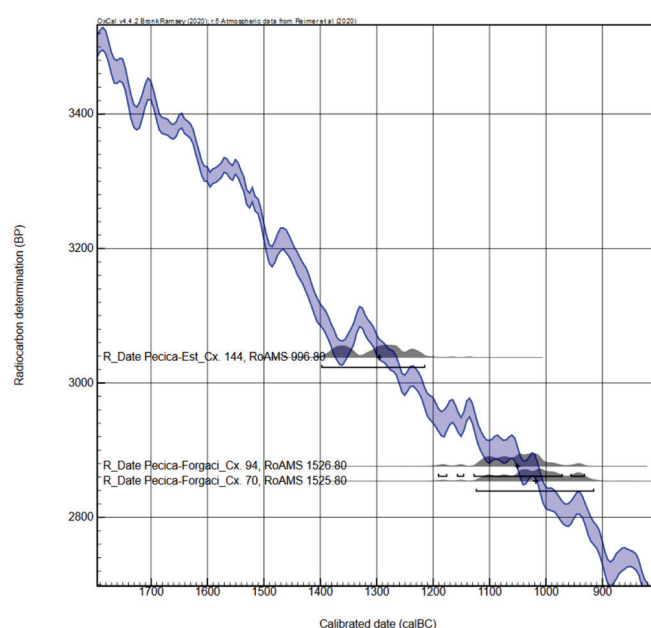
<sup>35</sup> KOSA 2020, 34, Fig. 18.

<sup>36</sup> MARTA 2009, 61.

<sup>37</sup> MARTA 2020, 21.

<sup>38</sup> MARTA 2020, 21.

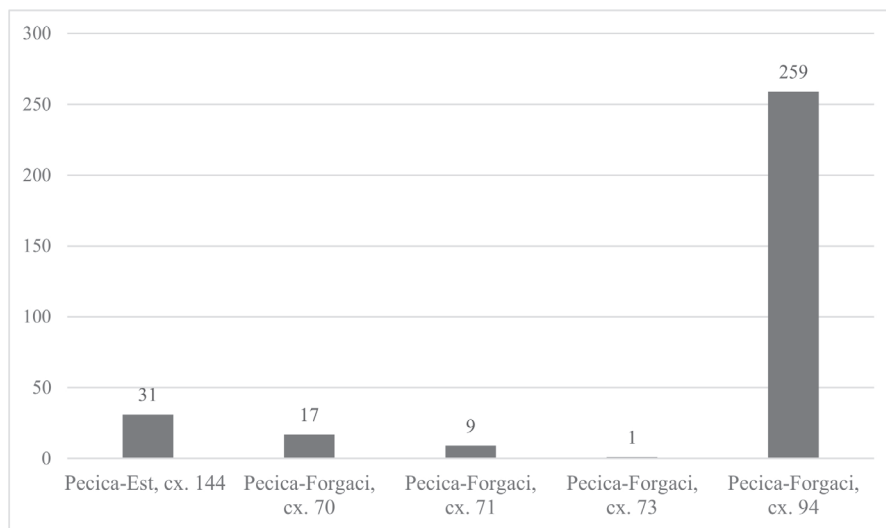
<sup>39</sup> LASZLO 1994, 68-82, Table 9.



**Fig. 10.** The <sup>14</sup>C dates from Pecica-Est and Pecica-Forgaci displayed on the calibration curve.

consideration the Republic of Moldova as well, it is plain clear that the situation varies depending on site<sup>40</sup>. The comparative analysis of these pottery assemblages should take into consideration several aspects such as the wide geographical dispersion, possible chronological discrepancies, as well as the investigated area of each site. Naturally, the respective figures should be taken with a grain of salt and not deemed







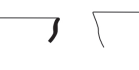






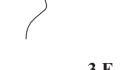
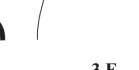

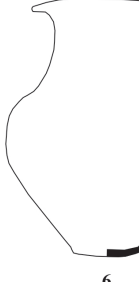


<sup>40</sup> LEVIȚKI 1994, 79-108.



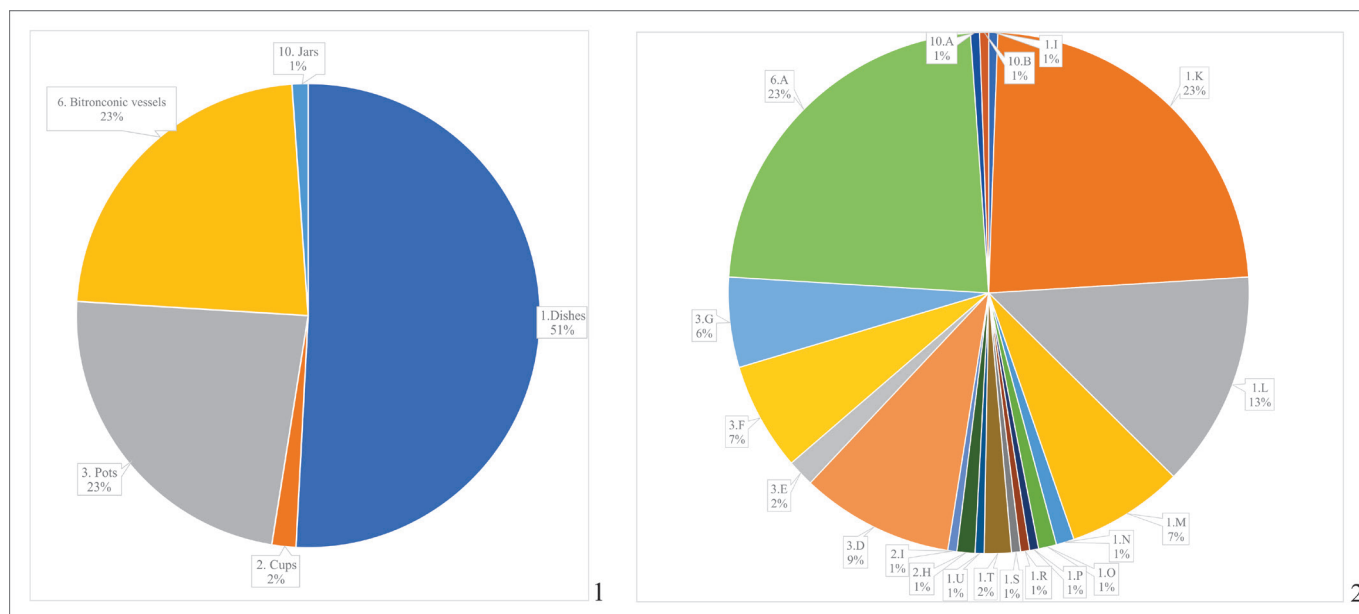
**Fig. 11.** Numerical distribution of typical pottery sherds by feature (graphic by the authors).

final as they represent just one stage in an ongoing research.

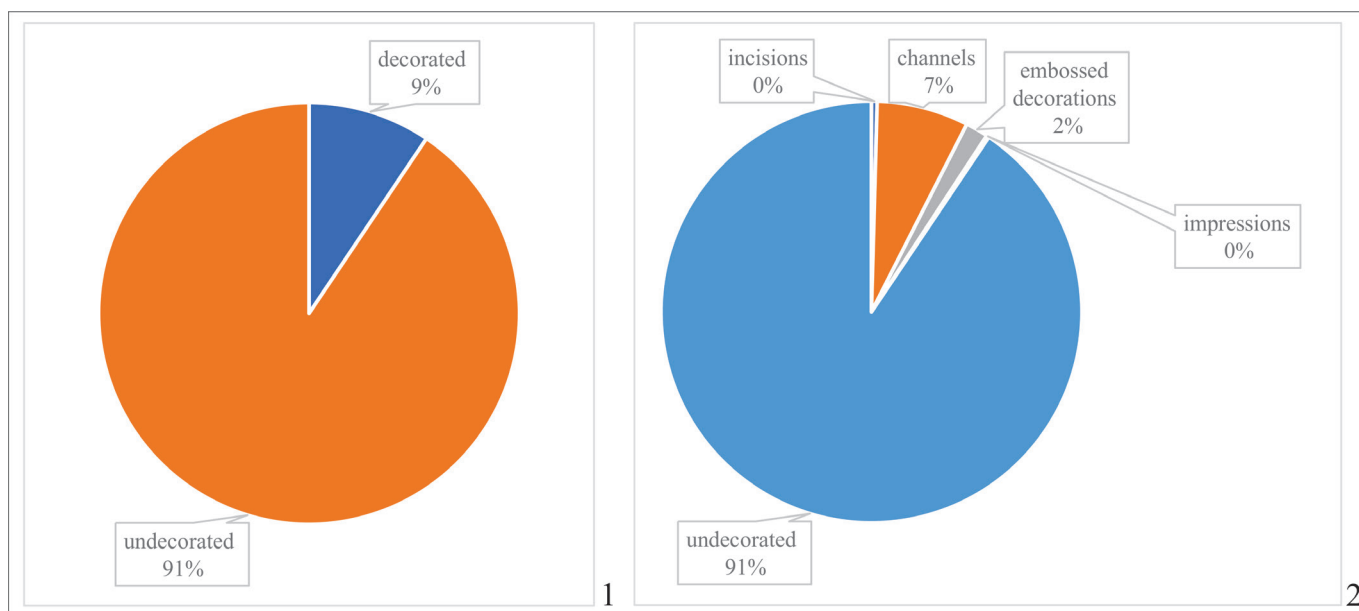
The most numerous vessels are dishes coming in various shapes, followed by pots and large biconical vessels; in contrast, the least numerous identified vessel shapes are cups and jars (Table 2). Moreover, we have noticed a clear preference for the use of certain sub-types, for instance dishes in 1.K (Pl. 4/1, 2, 5, 7; 6/1-2, 4; 7; 8; 9/5-7), 1.L (Pl. 9/1-4, 10; 11/3), and 1.M (Pl. 3/9; 4/3-4; 6/3; 11/1-2, 6-7); pots in 3.D (Pl. 15), 3.F (Pl. 13/8-11; 14/1-4) and 3.G (Pl. 14/5-8), and large biconical vessels (6.A) (Pl. 1/1, 3-6; 2/2; 16; 20/14). Considering the previous chronological stages, the

|                            |   |   |   |  |  |
|----------------------------|---|---|---|--|--|
| 1. Dishes                  |    |    |    |    |   |
|                            |   |   |   |   |  |
| 2. Cups                    |  |  |   |  |  |
| 3. Pots                    |  |  |  |  |  |
| 6. Large biconical vessels |  |   |   |  |  |
| 10. Jars                   |  |  |   |  |  |

**Fig. 12.** Typological table of the pottery shapes identified in the analysed features (graphic by the authors). **1. Dishes:** 1.I Dish in the shape of a truncated cone, with narrower mouth; 1.K Dish in the shape of a truncated cone, with larger mouth; 1.L Dish with slightly rounded walls; 1.M Slightly biconical dish; 1.N Slightly biconical dish with inverted rim; 1.O Dish with straight rim and sleeves on the inside; 1.P Dish with S-shaped body; 1.R Dish with almost straight rim and slightly convex body; 1.S Dish with oblique rim and globular body; 1.T Dish in the shape of a truncated cone (of reduced size); 1.U Small dish with straight, lobed lip and slightly biconical body; **2. Cups:** 2.H Cup in the shape of a slightly truncated cone and a handle rising slightly above the rim; 2.I Biconical cup, everted rim and a handle reaching up to the rim; **3. Pots:** 3.D Pot with straight body; 3.E Pot with globular body; 3.F Pot with slightly globular body; 3.G Pot in the shape of a truncated cone; **6. Large biconical vessels:** 6.A Large biconical vessels with flaring rim, biconical body and flat base; **10. Jars:** 10.A Jar with lobed rim, short neck and slightly globular body; 10.B Jar with lobed rim, long neck globular body.



**Fig. 13.** 1. Distribution of ceramics according to the types of pottery shapes; 2. Distribution of ceramics according to the sub-types of pot shapes (graphics by the authors).



**Fig. 14.** The ratio between the undecorated and decorated pottery (graphics by the authors).

number of vessel types and sub-types still remains rather large, but there is an obvious predilection now for certain types, whereas others are poorly represented. As in LBA II, dishes are the most numerous, but now large biconical vessels and pots become more and more abundant, while cups are less and less present<sup>41</sup>. It is obvious that they kept on using rather few ceramic types such as large biconical vessels dating back to LBA II, the vast majority consisting of more or less different types.

### Pottery decoration techniques

Like in the settlement of Grănicești<sup>42</sup>, only 9% of the pottery sherds found in Pecica-Est and Pecica-Forgaci

are decorated (Fig. 14/1). Of course, when interpreting the respective percentage, one should also take into account the excessive fragmentation of the pottery.

The stylistic analysis reveals the prevalence of channeled ware, although other decoration techniques are also present, such as embossed decoration, impression, and incision (Fig. 14/2; 15; Table 3). In cx. 144/Pecica-Est, as well as in the features identified in Pecica-Forgaci, there is a high ratio of pottery with channeled decoration, 73%, namely 88% of all the decorated sherds, but when taking into account the entire number of sherds the total ratio drops to 7%. Similar data on prevailing channel-decorated pottery are provided by the excavations at Teleac<sup>43</sup>, Mediaș<sup>44</sup>, and Petea-

<sup>41</sup> SAVA 2019, 112-113; SAVA 2020, 269-270.

<sup>42</sup> LASZLO 1994, 87.

<sup>43</sup> VASILIEV/ALDEA/CIUGUDEAN 1991, 92.

<sup>44</sup> PANKAU 2004, 69-70, 83.

**Table 2.** Distribution and frequency of pottery shapes by feature.

| Context                | 14Cage<br>[yr BP] | Calibration<br>value 2σ [cal BC] | Mean<br>[cal BC] | 1.I | 1.K | 1.L | 1.M | 1.N | 1.O | 1.P | 1.R | 1.S | 1.T | 1.U | 2.H | 2.I | 3.D | 3.E | 3.F | 3.G | 6.A | 10.A | 10.B |
|------------------------|-------------------|----------------------------------|------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|------|
| Pecica-Est, cx. 144    | 3038              | 28                               | 1398-1216        | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 1   | 2   | 1   | 1   | 11  |     |      |      |
| Pecica-Forgaci, cx. 70 | 2854              | 34                               | 1124-916         | 4   | 4   | 2   | 2   |     |     |     |     |     |     |     |     | 1   | 1   | 2   |     |     |     |      |      |
| Pecica-Forgaci, cx. 71 |                   |                                  |                  | 3   | 3   | 1   | 1   |     |     |     |     |     |     |     |     |     |     |     | 1   | 1   |     |      |      |
| Pecica-Forgaci, cx. 73 |                   |                                  |                  |     |     |     |     |     |     |     |     |     |     |     |     |     |     | 1   |     |     |     |      |      |
| Pecica-Forgaci, cx. 94 | 2876              | 27                               | 1191-933         | 35  | 24  | 9   | 2   | 2   | 2   | 1   | 1   | 1   | 2   | 1   | 2   |     | 14  | 3   | 8   | 9   | 29  | 1    | 1    |

*Csengersima*<sup>45</sup>. We should also mention that the channeled pottery represents only 1.46% of the total number of sherds found at Grănicești, whereas combed decoration is present on almost 5% of the sherds<sup>46</sup>.

The channeled decoration on the pottery found at Pecica is associated in very few cases with ornamentation made by other techniques such as embossing or impression, as a rule, channelings being the only ornament present on the outer surface of these vessels (Table 4). As in LBA II, channelings are never associated with incisions on the exterior of the vessels. Certain preferences are obvious when analyzing decoration techniques and vessel types; for instance, in most cases the dishes found at Pecica display channeled decoration both on the interior and exterior. Large biconical vessels and cups display only channelings, pots bear only impressed and various relief decorations, while jars have incisions and embossed ornaments (Table 5). In Grănicești for instance, jars and dishes are decorated differently, but the combed decoration that cannot be found in the Lower Mureș Basin seems to prevail; on the other hand, the biconical vessels discovered in the same settlement are channel-decorated like those found in Pecica, but also bear relief ornaments such as small knobs<sup>47</sup> for instance. Another case study significant for understanding the pottery of this chronological phase is the aforementioned Petea-Csengersima case; although several elements are similar to Pecica, biconical vessels are both channel and relief decorated, the most representative of the latter being the knob<sup>48</sup>.

In contrast with the previous stages LBA I and LBA II, when incision or channeling dominated pottery decoration techniques<sup>49</sup> in ratios depending on the investigated site, channeling becomes the most popular technique during LBA III. Moreover, the vast majority of large biconical vessels, cups, and dishes are now channel-decorated, while pots and jars are decorated by impression and embossing.

#### Decorative motifs

We were able to recreate the decorative motifs present on the outer or inner surface of the vessels for 65% (205 specimens) of the total amount of ornamented sherds. They were classified into 30 groups according to technique (Fig. 16; Table 6). The vast majority (50%) was made by channeling, the rest were made by embossing, and only a few by incision or impression.

Incised motifs are quite rare, whereas the most numerous motifs are executed by channeling. However, only a few are regularly used such as: narrow horizontal channelings (2.2) (Pl. 19/10-12), wide horizontal channelings (2.11) (Pl. 5/2-3, 6-7; 7/8; 12/6; 17/1-11, 13-16, 18, 20-21, 24; 18/4, 7, 10), wide channelings displayed on the inside (2.16) (Pl. 1; 2/2, 6; 3/3-2; 4/2, 7; 7/3, 7, 8; 8/1, 4, 5, 7-9; 9/5-7; 10/1-3; 12/10; 16/1-3, 5-9; 17/12, 17, 22; 18/5-6, 13), and oblique wide channelings displayed on the rim (2.19) (Pl. 6/3; 7/1, 10; 8/3, 6; 9/6; 11/4-6). In contrast to LBA I and LBA II, almost half of the number of motifs made by channeling is illustrated now by channels made on the rim, or even more often on the inside surface of the vessel. A significant number of decorative motifs is embossed, most popular being the elongated rectangular knob (4.4) (Pl. 4/6; 15/2-3; 20/3, 9-11) and the conical knob (4.1) (Pl. 2/4; 13/1, 3; 15/4; 20/2, 4, 8), the latter often present on the ceramic ware characteristic to LBA II. Impressed motifs are quite rare and illustrated by crest like ornaments on the rim (5.8) (Pl. 2/5; 10/6, 8). Sometimes, two decorative motifs are associated: oblique narrow channelings displayed on the rim (2.9) with wide channelings displayed on the inside (2.16) (Pl. 9/7; 13/1-3); wide horizontal channelings (2.11) with elongated vertical narrow ribs 4.14 (Pl. 19/17, 18); narrow channelings displayed in a star shape on the inside (2.22) with serrated rims (5.8) (Pl. 10/4-8). Even more scarce are the associations of more than two motifs: oblique narrow channelings displayed on the rim (2.9) with wide channelings displayed on the inside (2.16), narrow vertical channelings on the inside (2.20) and narrow horizontal channelings on the inside (2.21) (Pl. 10/1); narrow vertical channelings on the inside (2.20) with narrow horizontal channelings on the inside (2.21) and narrow channelings displayed in a star shape on the inside (2.22) (Pl. 7/5) (Table 7).

<sup>45</sup> MARTA 2009, 76.

<sup>46</sup> LÁSZLÓ 1994, 87.

<sup>47</sup> LÁSZLÓ 1994, 70-71, 74-75, 76-77.

<sup>48</sup> MARTA 2009, 63-64. See in METZNER-NEBELSICK 2012 a synthetical analysis of biconical vessels decorated with such knobs.

<sup>49</sup> SAVA 2020, 270-277.



**Table 3.** Distribution and frequency of pottery decoration techniques by feature.

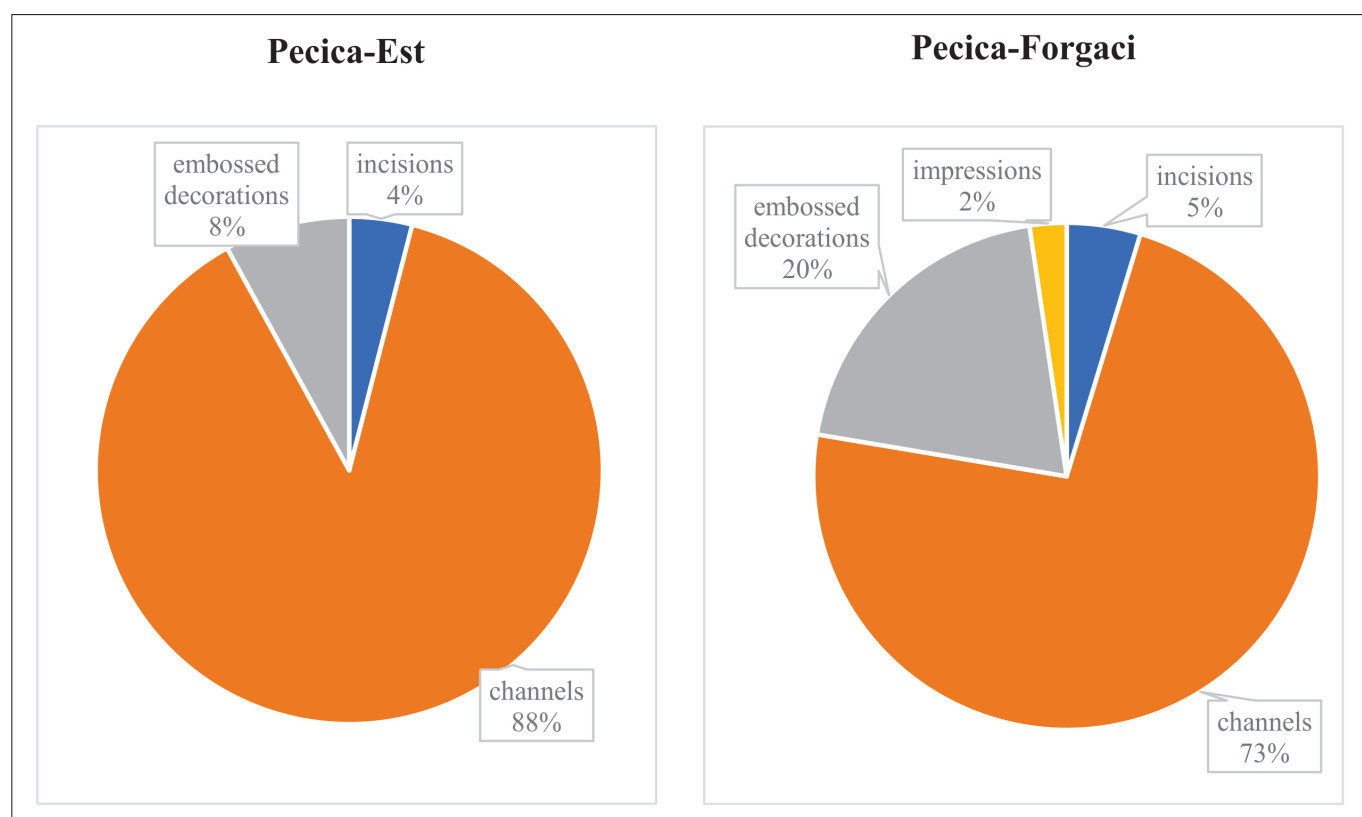
| Context                | 14C age<br>[yr BP] | ±  | Calibration value<br>2σ [cal BC] | Mean<br>[cal BC] | incisions<br>(1) | channels<br>(2) | embossed decorations<br>(4) | impressions<br>(5) |
|------------------------|--------------------|----|----------------------------------|------------------|------------------|-----------------|-----------------------------|--------------------|
| Pecica-Est_ cx. 144    | 3038               | 28 | 1396-1215                        | 1293             | 1                | 22              | 2                           |                    |
| Pecica-Forgaci, cx. 70 | 2854               | 34 | 1124-916                         | 1019             |                  | 10              | 1                           |                    |
| Pecica-Forgaci, cx. 71 |                    |    |                                  |                  | 1                | 1               |                             |                    |
| Pecica-Forgaci, cx. 73 |                    |    |                                  |                  |                  |                 |                             |                    |
| Pecica-Forgaci, cx. 94 | 2876               | 27 | 1191-933                         | 1051             | 7                | 113             | 33                          | 4                  |

**Table 4.** Distribution and frequency of the association of pottery decoration techniques by feature.

| Context                | 14C age [yr BP] | ±  | Calibration value 2σ [cal BC] | Mean [cal BC] | 1 | 2   | 4  | 5 | 1; 4 | 2; 4 | 2;5 |
|------------------------|-----------------|----|-------------------------------|---------------|---|-----|----|---|------|------|-----|
| Pecica-Est_ cx. 144    | 3038            | 28 | 1396-1215                     | 1293          | 1 | 22  | 2  |   |      |      |     |
| Pecica-Forgaci, cx. 70 | 2854            | 34 | 1124-916                      | 1019          |   | 10  | 1  |   |      |      |     |
| Pecica-Forgaci, cx. 71 |                 |    |                               |               | 1 | 2   |    |   |      |      |     |
| Pecica-Forgaci, cx. 73 |                 |    |                               |               |   |     |    |   |      |      |     |
| Pecica-Forgaci, cx. 94 | 2876            | 27 | 1191-933                      | 1051          | 5 | 104 | 26 | 2 | 2    | 5    | 2   |

When comparing data on vessel shapes and decorative motifs, certain preferences become apparent (Table 8). For instance, when large mouthed dishes with bucket-shaped bodies are decorated (1.K), they most often display wide channelings serially arranged on the inside (2.16) (Pl. 4/1-2, 7; 7/3, 7-8; 8/1, 4-5, 7-9; 9/5-7), sometimes just channelings on the rim (2.19) (Pl. 7/10; 8/3), and hardly ever both (2.16 and 2.19) (Pl. 9/6). The dish with slightly rounded walls (1.L) is in most cases unadorned, but it sometimes has

channelings on the rim (2.19) (Pl. 11/3-6). The decoration is also absent on most of the pots analyzed here, except for those with slightly globular body (3.D), which are typically decorated with conical knobs (4.1) (Pl. 2/4; 15/4, 6) or elongated rectangular knobs (4.4) (Pl. 4/6; 15/2, 3, 8). When large biconical vessels (6.A) are decorated, their ornament consists of channelings on the inner rim (2.16) (Pl. 1/5-6; 2/2; 16/1-3, 5-9).



**Fig. 15.** Distribution and frequency of decoration techniques by site (graphic by the authors).

Table 5. Distribution and frequency of the association between pottery decoration techniques and pottery shapes by feature.

| Context                   | 14C age<br>[yr BP] | ±  | Calibration value<br>2σ [cal BC] | Mean<br>[cal BC] | 1.I<br>+2 | 1.K<br>+2 | 1.L<br>+2 | 1.L<br>+2 | 1.L<br>+2,5 | 1.L<br>+5 | 1.M<br>+2 | 1.N<br>+2 | 1.O<br>+2 | 1.P<br>+2 | 1.R<br>+2 | 1.S<br>+2 | 1.T<br>+4 | 1.U<br>+4 | 2.H<br>+2 | 2.I<br>+2 | 3.D<br>+4 | 3.E<br>+4 | 3.F<br>+5 | 3.F<br>+5 | 3.G<br>+5 | 6.A<br>+2 | 6.A<br>+2 | 10.A<br>+4 | 10.B<br>+1,4 |  |
|---------------------------|--------------------|----|----------------------------------|------------------|-----------|-----------|-----------|-----------|-------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|------------|--------------|--|
| Pecica-Est_ cx.<br>144    | 3038               | 28 | 1396-1215                        | 1293             | 1         |           |           |           |             |           | 1         |           |           |           | 1         |           |           |           |           |           | 2         | 1         |           |           |           |           |           | 10         |              |  |
| Pecica-Forgaci,<br>cx. 70 | 2854               | 34 | 1124-916                         | 1019             |           | 3         |           |           |             | 2         |           |           |           |           |           | 1         |           |           | 1         |           | 2         |           |           |           |           |           |           |            |              |  |
| Pecica-Forgaci,<br>cx. 71 |                    |    |                                  |                  | 3         |           |           |           |             |           | 1         |           |           |           |           |           |           |           |           |           |           |           | 1         | 1         |           |           |           |            |              |  |
| Pecica-Forgaci,<br>cx. 73 |                    |    |                                  |                  |           |           |           |           |             |           |           |           |           |           |           |           |           |           |           |           |           |           | 1         |           |           |           |           |            |              |  |
| Pecica-Forgaci,<br>cx. 94 | 2876               | 27 | 1191-933                         | 1051             | 15        | 20        | 12        | 9         | 2           | 1         | 7         | 2         | 1         | 1         | 1         | 1         | 2         | 1         | 2         | 3         | 11        | 3         | 7         | 1         | 9         | 18        | 11        | 1          | 1            |  |

.....

Table 6. Distribution and frequency of ornamental motifs by feature.

| Context | 14C age<br>[yr BP] | ± | Calibration value<br>2σ [cal BC] | Mean<br>[cal BC] | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1 |
|---------|--------------------|---|----------------------------------|------------------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|---|
|---------|--------------------|---|----------------------------------|------------------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|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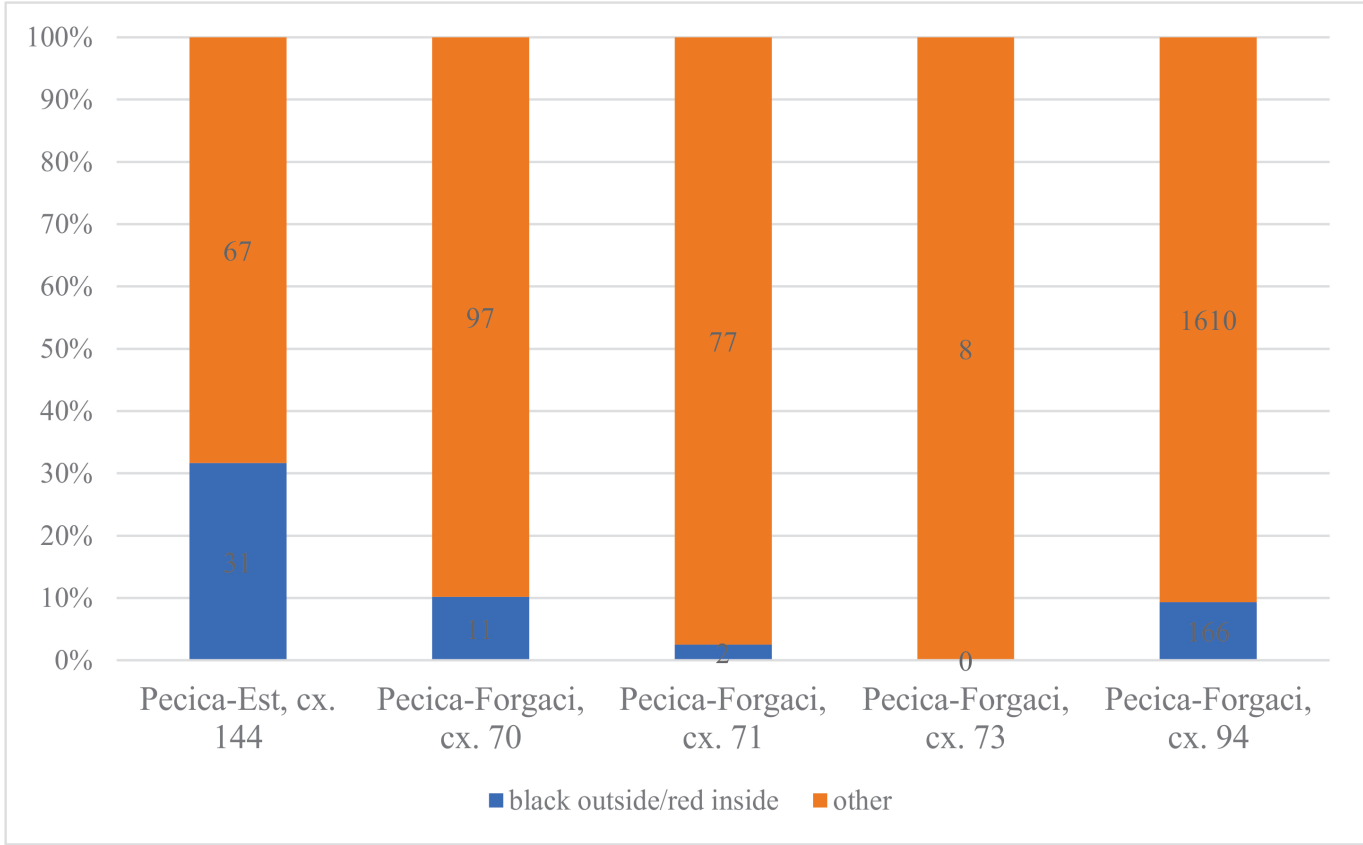
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Table 7. Distribution and frequency of the association of ornamental motifs by feature.

| Context | 14C age<br>[yr BP] | ± | Calibration value<br>2σ [cal BC] | Mean<br>[cal BC] | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 1. | 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|   |    |    |    |    |    |    |    |    |
|---|----|----|----|----|----|----|----|----|
| 1 | 24 | 25 | 26 | 27 | 28 | 29 |    |    |
| 2 | 1  | 2  | 6  | 9  | 10 | 11 | 12 | 14 |
|   | 15 | 16 | 18 | 19 | 20 | 21 | 22 |    |
| 4 | 1  | 4  | 10 | 11 | 12 | 13 | 14 | 15 |
| 5 | 8  |    |    |    |    |    |    |    |

**Fig. 16.** Typological table of the ornamental motifs identified within the analysed features (graphic by the authors). **1. Incisions:** 1.24. Oblique incisions; 1.25. Incisions arranged in the form of schematic arches; 1.26. X-shaped incisions; 1.27. Rows of narrow horizontal incisions; 1.28. Zigzag incisions; 1.29. Incisions arranged in textile form; **2. Channellings:** 2.1. Narrow vertical channellings; 2.2. Narrow horizontal channellings; 2.9. Oblique narrow channellings displayed on the rim; 2.10. Narrow channellings displayed semi-circularly on the inner rim; 2.11. Wide horizontal channellings; 2.12. Wide vertical channellings; 2.14. Wide channellings displayed in a garland pattern; 2.15. Wide oblique channellings; 2.16. Wide channellings displayed on the inside; 2.18. Narrow channellings displayed on the interior bottom of the vessel; 2.19. Oblique wide channellings displayed on the rim; 2.20. Narrow vertical channellings on the inside; 2.21. Narrow horizontal channellings on the inside; 2.22. Narrow channellings displayed in a star shape on the inside; **4. Embossed decorations:** 4.1. Conical knob; 4.4. Elongated rectangular knob; 4.10. Stripe made of alveoli; 4.11. Rib arranged in a semicircle; 4.12. Elongated knob; 4.13. Conical large knob; 4.14. Elongated vertical narrow rib; 4.15. Double stripe made of alveoli; **5. Impressions:** 5.8. Jagged rim.



**Fig. 17.** Distribution of ceramics from Pecica-Est and Pecica-Forgaci depending on the presence or absence of bi-chrome firing (graphic by the authors).

**Table 8.** Distribution and frequency of the association of ornamental motifs and shapes by feature.

[illegible]

Although the decorative motifs on the pottery assemblage unearthed at Pecica fall into the same category as the Gáva pottery, they display several regional features that can be put into evidence only by performing a comparative analysis with other available pottery assemblages. Unfortunately, very few of these studies have approached decorative motifs quantitatively and so it is quite difficult to assess their occurrence on vessels. Previous research on LBA pottery in the Lower Mureş Basin has plainly revealed that one of the most relevant criteria for analyzing decorative motifs is incidence rate<sup>50</sup>. From this perspective, the most pertinent analysis available up to now concerns the sites in Moldavia and has been conducted by A. László. It is worth mentioning that several features of the ceramic ware are quite similar, especially the range of decorative motifs<sup>51</sup>, although the distance between Pecica and Moldavia is about 500 km. Naturally, besides similar motifs such as horizontal and oblique channelings, garland-patterned channelings, and conical knobs found over a larger area, there are some regional differences. In the north-western part of Romania, north-eastern Hungary, and southern Slovakia, specific elements are associated with big knobs (*horn-like knobs*)<sup>52</sup>, while combed decoration is most popular in Moldavia<sup>53</sup>. A comparative analysis of the decorative motifs found at Pecica and Baks-*Temetőpart* clearly reveals the resemblance of the two pottery assemblages, which could be explained for sure by the relatively small distance - just about 80 km - between the two localities. However, we should mention the absence of elements specific to the area north to the Tisza River, like oversized/*horn-like knobs* and to the Moldavian combed ceramic ware from the inventory of the two assemblages. The Lower Mureş Basin can be more likely associated with central Transylvania rather than with Moldavia or Upper Tisza, but in the absence of comparative studies grounded on quantitative analyses this assertion should be taken with a grain of salt.

### Bi-chrome Firing

Since bi-chrome firing – black on the outside, red/reddish-brown on the inside – is an essential characteristic of the Gáva style we have decided to include this criterion related to pottery production technology in our study. Of the entire amount of pottery fragments discovered at *Pecica-Est* and *Pecica-Forgaci*, we have noticed that only 10% of the sherds display traces of bi-chrome firing. When taking into account the presence of this firing technique in each uncovered context, the ratio fluctuates up to 32% (Fig. 17). It is also worth mentioning that the pottery manufactured by the respective method has well-polished outer surface and is generally made from fine fabric. The sherds belong exclusively to biconical vessels, dishes and, to a lesser extent, cups. The only decoration present on the outer or inner surface of the bi-chrome pottery is channeling.

The data supplied by the literature in the field reveal that, in the few cases in which the firing technique was investigated, the results show bi-chrome firing ratios similar to Pecica<sup>54</sup>. Moreover, only certain vessels such as biconical vessels, dishes, and cups display the respective type of firing and the vast majority also has a shiny burnished surface<sup>55</sup>. Chronologically speaking, there is a general opinion that bi-chrome firing is more and more in use as the Gáva pottery style develops<sup>56</sup>. In the case of Pecica the reverse is true, that is the percentage of sherds displaying bi-chrome firing is clearly superior in the early stage of the Gáva pottery (cx. 144/Pecica-Est).

<sup>50</sup> SAVA 2019; SAVA 2020.

<sup>51</sup> LASZLO 1994, 86-87, Table 10.

<sup>52</sup> METZNER-NEBELSICK 2012, Fig. 4.

<sup>53</sup> LÁSZLÓ 1994, 87.

<sup>54</sup> An exception is the pottery found in the settlement of Chişinău, where this type of firing is present in 38,6% of the cases (LEVITKI 1994, 81).

<sup>55</sup> LÁSZLÓ 1994, 67; MARTA 2009, 61; MARTA 2020, 61.

<sup>56</sup> With this respect, see MARTA 2009, 61, note 380; MARTA 2020, 21.

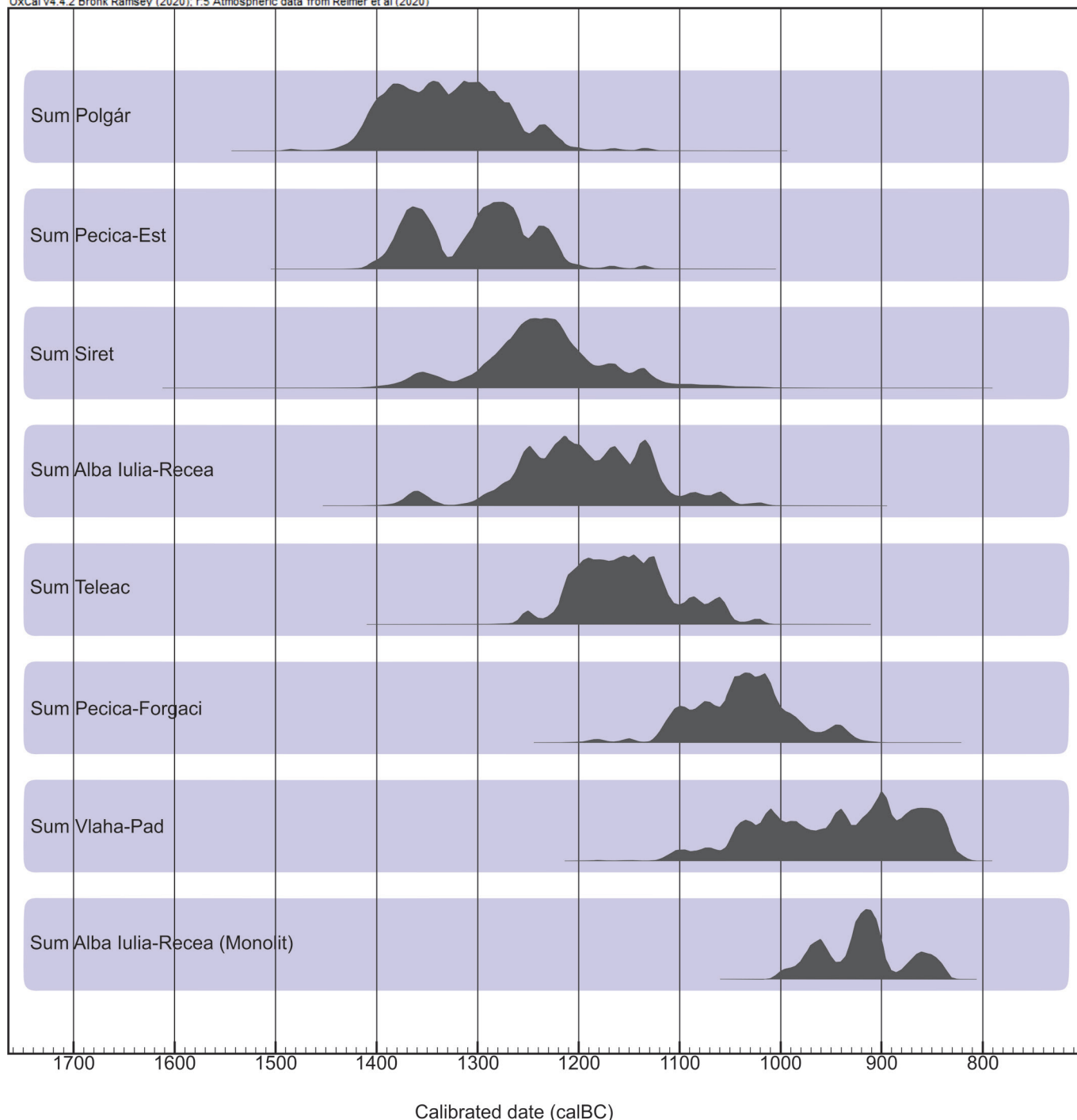
## DISCUSSION

The ceramic material found in *Pecica-Est* and *Pecica-Forgaci* adds up to a substantial but very fragmentary amount. The sherds come from disparate pits; most likely remnants of a small cluster of sparse habitation (low to medium intensity). Typical pottery represents only 9% of the total of 2069 sherds, most of which is decorated with channeled ornaments, and few specimens with embossed, incised, and impressed ornaments. The most popular shapes are dishes, followed by biconical vessels and pots. At the same time, we should mention that channeled decoration is preferentially used for dishes, biconical vessels, and cups,

while relief decoration is mainly chosen for pots. Another essential element is the firing technique used to achieve a bi-chrome effect; the number of sherds displaying evidence for this method varies depending on the context they have been unearthed from, but all in all, roughly 30% of the total amount of specimens belongs to bi-chrome vessels.

There are significant similarities between the pottery analyzed in our study and the Gáva ceramic style. The entire pottery assemblage found both at *Pecica-Est* and *Pecica-Forgaci* displays the same stylistic and technological characteristics. The only major difference between the context from *Pecica-Est* and the other contexts discovered

OxCal v4.4.2 Bronk Ramsey (2020); r.5 Atmospheric data from Reimer et al (2020)



**Fig. 18.** 14C calibrated dates belonging to the contexts associated with Gáva pottery, arranged by site.



**Table 9.** List of LBA II and III 14C data available from the eastern Carpathian Basin. (The data from Ludaş were not included in this analysis, because their tolerance is too high, nor the data from the Lower Mureş Basin, respectively those from Tápé, Şagu-Site A1\_1 and Pecica-Site 14, because for this region we do not have a stylistic attribution of ceramics).

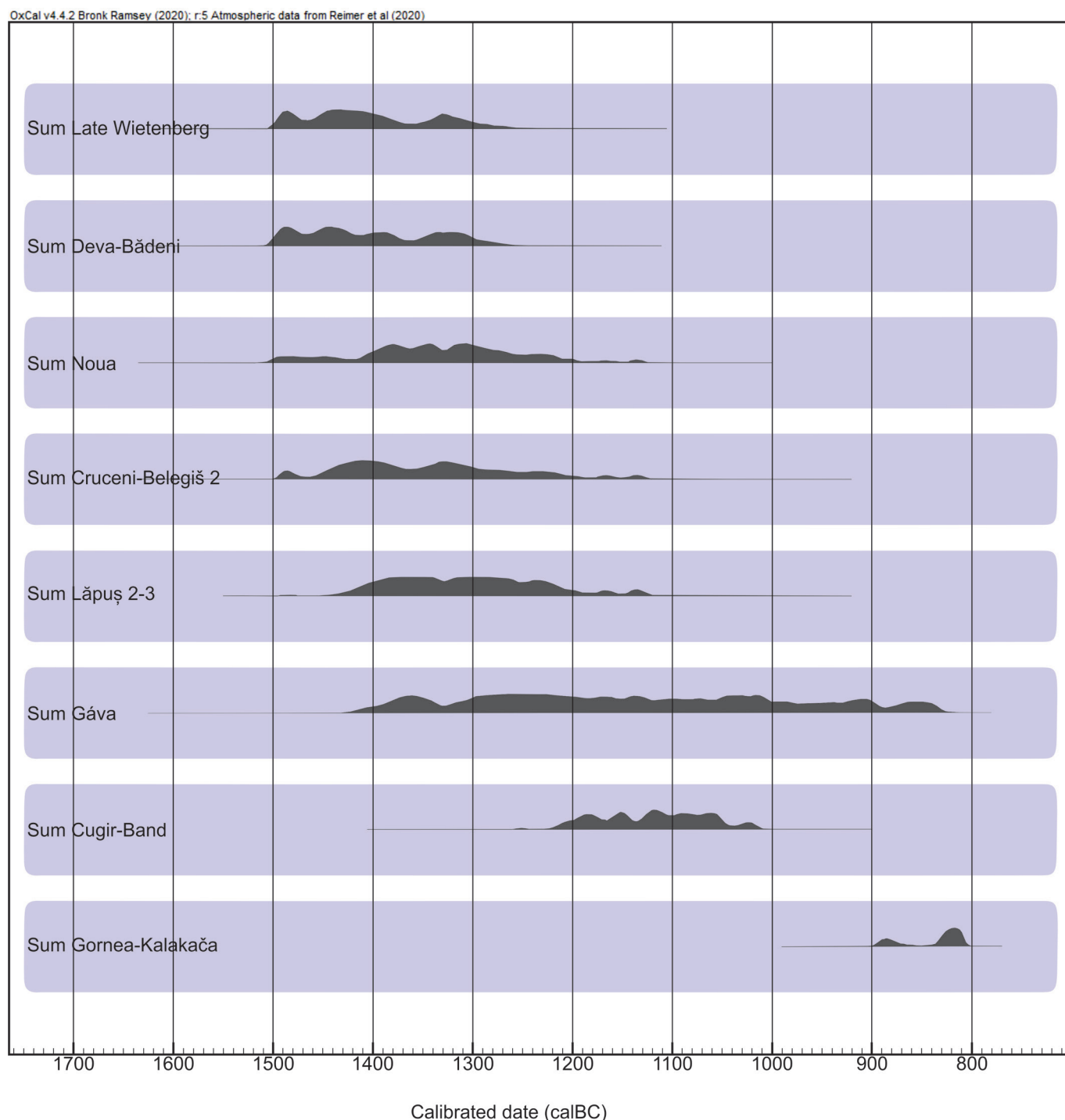
| Nr. Crt. | Lab. no.     | Site                        | Context                | 14C age [yr BP] | ±  | Material    | References                                 | Pottery style      |
|----------|--------------|-----------------------------|------------------------|-----------------|----|-------------|--|--------------------|
| 1        | Hd-27967     | Rotbav RT LP 31             | S IX. 11, Q E 31, Rt 3 | 3195            | 19 | animal bone | Dietrich 2014, Anhang 2                    | Wietenberg         |
| 2        | Hd-27989     | Rotbav RT LP 30             | S IX. 6, Q H 16, Rt 3  | 3174            | 16 | animal bone | Dietrich 2014, Anhang 2                    | Wietenberg         |
| 3        | OS-100527    | Geoagiu de Sus-Fântâna Mare | layer                  | 3130            | 20 | charcoal    | Ciugudean, Quinn 2015, tab. 2              | Wietenberg         |
| 4        | OS-100529    | Geoagiu de Sus-Fântâna Mare | layer                  | 3100            | 25 | charcoal    | Ciugudean, Quinn 2015, tab. 2              | Wietenberg         |
| 5        | OS-100528    | Geoagiu de Sus-Fântâna Mare | layer                  | 3070            | 25 | charcoal    | Ciugudean, Quinn 2015, tab. 2              | Wietenberg         |
| 6        | RoAMS 145.47 | Pălatca                     | layer IIa              | 3181            | 29 | animal bone | Palincaş et al. 2019, tab. 1               | Deva-Bădeni        |
| 7        | RoAMS 147.47 | Pălatca                     | layer IIb              | 3086            | 24 | animal bone | Palincaş et al. 2019, tab. 1               | Deva-Bădeni        |
| 8        | Hd-28276     | Rotbav RT LP 28             | S IX. 16, Q H 46, Rt 4 | 3196            | 30 | animal bone | Dietrich 2014, Anhang 2                    | Noua               |
| 9        | Hd-27972     | Rotbav RT LP 29             | S IX. 16, Q J 44, Rt 4 | 3085            | 23 | animal bone | Dietrich 2014, Anhang 2                    | Noua               |
| 10       | OS-113542    | Teiuş-Fântâna Viilor        | small pit from unit 1  | 3080            | 20 | charcoal    | Ciugudean, Quinn 2015, tab. 2              | Noua               |
| 11       | Hd-29183     | Alba Iulia-Bazinul olimpic  | animal bone            | 3062            | 21 | animal bone | Ciugudean, Quinn 2015, tab. 2              | Noua               |
| 12       | OS-108807    | Valea Viilor                | human bone             | 3060            | 25 | human bone  | Ciugudean, Quinn 2015, tab. 2              | Noua               |
| 13       | Beta-317259  | Floreşti-Polus P 22         | grave 17               | 3050            | 30 | human bone  | Rotea et al 2014, 34, pl. XIX              | Noua               |
| 14       | Hd-28321     | Rotbav RT LP 32             | S IX. 15, Q C 46, Rt 5 | 2994            | 19 | animal bone | Dietrich 2014, Anhang 2                    | Noua               |
| 15       | KIA 51810    | Gradişte Idoş               | Pit 6005, context 6011 | 3172            | 19 | seed        | Molloy et al. 2020, Tab. 3                 | Cruceni-Belegiş II |
| 16       | KIA 51804    | Gradişte Idoş               | Pit 6005, context 6006 | 3132            | 21 | bone        | Molloy et al. 2020, Tab. 3                 | Cruceni-Belegiş II |
| 17       | KIA 51813    | Gradişte Idoş               | Pit 6005, context 6010 | 3098            | 20 | charcoal    | Molloy et al. 2020, Tab. 3                 | Cruceni-Belegiş II |
| 18       | KIA 51807    | Gradişte Idoş               | Pit 6005, context 6006 | 3069            | 20 | bone        | Molloy et al. 2020, Tab. 3                 | Cruceni-Belegiş II |
| 19       | Beta-256557  | Foeni-Gomila Lupului        | L.1/2000               | 3100            | 40 | charcoal    | Szentmiklosi 2009, 106, 211                | Cruceni-Belegiş II |
| 20       | GrN 7370     | Gomolava                    | Level IVc              | 3090            | 55 | charcoal    | Waterbolk H.T., 1988, 119-121              | Cruceni-Belegiş II |
| 21       | KIA 51814    | Gradişte Idoş               | Pit 7003, context 7005 | 3024            | 28 | seed corn   | Molloy et al. 2020, Tab. 3                 | Cruceni-Belegiş II |
| 22       | KIA 51811    | Gradişte Idoş               | Pit 7003, context 7004 | 2985            | 27 | charcoal    | Molloy et al. 2020, Tab. 3                 | Cruceni-Belegiş II |
| 23       | Poz-22800    | Lăpuş P36/Tum26             | comp 74                | 3115            | 35 | charcoal    | Metzner-Nebelsick et al. 2010, 223, fig. 7 | Lăpuş 2-3          |
| 24       |              | Lăpuş P16/Tum26             | comp 56                | 3085            | 35 | charcoal    | Kacsó et al. 2011, fig. 6                  | Lăpuş 2-3          |
| 25       |              | Lăpuş P6/Tum26              | comp 25                | 3075            | 35 | charcoal    | Kacsó et al. 2011, fig. 6                  | Lăpuş 2-3          |

| Nr. Crt. | Lab. no.      | Site                       | Context       | 14C age [yr BP] | ±  | Material    | References                                 | Pottery style   |
|----------|---------------|----------------------------|---------------|-----------------|----|-------------|--|-----------------|
| 26       |               | Lăpuș P15/Tum26            | comp 68       | 3065            | 30 | charcoal    | Kacsó et al. 2011, fig. 6                  | Lăpuș 2-3       |
| 27       | Poz-22792     | Lăpuș P38/Tum26            | comp 87       | 3055            | 35 | charcoal    | Metzner-Nebelsick et al. 2010, 223, fig. 7 | Lăpuș 2-3       |
| 28       |               | Lăpuș P16a/Tum26           | comp 67       | 3050            | 30 | charcoal    | Kacsó et al. 2011, fig. 6                  | Lăpuș 2-3       |
| 29       | Poz-22795     | Lăpuș P23/Tum26            | comp 74       | 3005            | 30 | charcoal    | Metzner-Nebelsick et al. 2010, 223, fig. 7 | Lăpuș 2-3       |
| 30       |               | Lăpuș P22/Tum26            | comp 78       | 3005            | 30 | charcoal    | Kacsó et al. 2011, fig. 6                  | Lăpuș 2-3       |
| 31       | Poz-22788     | Lăpuș P14/Tum26            | comp 66       | 2995            | 35 | charcoal    | Metzner-Nebelsick et al. 2010, 223, fig. 7 | Lăpuș 2-3       |
| 32       | Deb-9674      | Polgár                     | Obj. 58       | 3070            | 40 |             | Szabó 2005, 158                            | Pre-Gáva        |
| 33       | Bln-5788      | Siret Pr.5 (2000)          | S5, square 56 | 3056            | 50 | charcoal    | László 2010, 130                           | Gáva            |
| 34       | RoAMS 996.80  | Pecica-Est                 | cx. 144       | 3038            | 28 | animal bone | inedit                                     | Gáva            |
| 35       | Bln-5786      | Siret Pr. 3 (1998)         | S5, square 82 | 3006            | 37 | charcoal    | László 2010, 130                           | Gáva            |
| 36       | Bln-5790      | Siret Pr. 8 (2000)         | S5, square 91 | 2987            | 49 | charcoal    | László 2010, 130                           | Gáva            |
| 37       | UA 43723      | Alba Iulia-Recea           |               | 2976            | 36 | animal bone | Ciugudean et al. 2019, Tab. 1              | Gáva            |
| 38       | KIA-37782     | Teleac                     |               | 2945            | 25 | animal bone | Ciugudean et al. 2019, Tab. 1              | Gáva            |
| 39       | Bln-5789      | Siret Pr. 7 (2000)         | S5, square 98 | 2929            | 65 | charcoal    | László 2010, 130                           | Gáva            |
| 40       | RoAMS 1526.80 | Pecica-Forgaci             | cx. 70        | 2876            | 27 | animal bone | inedit                                     | Gáva            |
| 41       | DeA-5095      | Vlaha-Pad                  | cx. 0010      | 2856            | 25 | animal bone | Gogáltan et al. 2015, fig. 8               | Gáva            |
| 42       | RoAMS 1525.80 | Pecica-Forgaci             | cx. 94        | 2854            | 34 | animal bone | inedit                                     | Gáva            |
| 43       | Hd-29365      | Alba Iulia-Recea (Monolit) |               | 2775            | 21 |             | Ciugudean 2012, fig. 11                    | Gáva            |
| 44       | DeA-5097      | Vlaha-Pad                  | cx. 0055      | 2743            | 23 | human bone  | Gogáltan 2019, Tab. 1                      | Gáva            |
| 45       | MAMS-40017    | Miceșt-Cigaș               |               | 2943            | 23 | animal bone | Ciugudean et al. 2019, 96, Fig. 6, Tab. 1  | Cugir-Band      |
| 46       | UGAMS-42281   | Teiuș-Gară                 | cx. 4         | 2920            | 20 | animal bone | Ciugudean et al. 2019, 98, Fig. 7, Tab. 1  | Cugir-Band      |
| 47       | MAMS-35023    | Turdaș                     | cx. 175       | 2907            | 19 | animal bone | Ciugudean et al. 2019, 99, Fig. 9, Tab. 1  | Cugir-Band      |
| 48       | KIA 51809     | Gradiște Idoș              | Context 05    | 2685            | 19 | seed        | Molloy et al. 2020, Tab. 3                 | Gornea-Kalakača |

in *Forgaci* is the different ratio of bi-chrome vessels (Fig. 17). However, the available absolute data indicate the presence of two different chronological horizons: cx. 144/*Pecica-Est*, dating back to ca. 1400-1200 BC, and the contexts of *Pecica-Forgaci*, dating back to ca. 1200/1100-900 BC (Fig. 8-10). In terms of relative chronology, the 14C data supplied by cx. 144/*Pecica-Est* suggest a connection to the Proto/Pre-Gáva horizon, while data provided by cx. 70 and 94 from *Pecica-Forgaci* reveal they belong to the classic Gáva period, failing to agree with the results of our stylistic analysis unable to distinguish any difference between the investigated

contexts. In the absence of a clear-cut definition of the Gáva pottery stages of evolution based on stylistic analysis and a substantial amount of 14C data evenly distributed over the distribution area of this ceramic style, we would rather not blow this discrepancy out of proportion.

When comparing the 14C data from the investigated contexts in *Pecica* with other available data, we see that they are not without the limits of the time span determined for the contexts associated with Gáva, namely Proto/Pre-Gáva pottery. At the same time, we notice a lengthy evolution of this ceramic style (Fig. 18-19). In terms of absolute



**Fig. 19.** The LBA II and LBA III calibrated 14C dates coming from the Eastern Carpathian Basin, ordered by pottery styles.

chronology, it seems that the respective pottery style has emerged during the 14<sup>th</sup>-13<sup>th</sup> century BC and is being used until the 9<sup>th</sup> century BC, a long evolution extending over almost 6 centuries. However, an overall analysis of the available data without taking into consideration regional aspects can lead to misinterpretations. Therefore we should mention that the earliest contexts, dating back to the 14<sup>th</sup>-13<sup>th</sup> century BC, have been found in Polgár, Siret and Pecica, namely Upper Tisza River, northern Moldavia and Lower Mureș River (Fig. 18). The site in Lăpuș should be added here as data indicate that it is contemporary with the aforementioned early sites<sup>57</sup>, but the available pieces

<sup>57</sup> METZNER-NEBELSICK 2012, 67.

of information do not allow us to clearly specify whether the pottery found in Lăpuș is Gáva or only displays some elements that define the respective ceramic style<sup>58</sup>. Later on, during the 13<sup>th</sup>-12<sup>th</sup> century BC, the Gáva pottery spreads in Transylvania and is being used during the 10<sup>th</sup> century BC, perhaps even during the 9<sup>th</sup> century BC given the late dating of *Vlaha-Pad*, cx. 0055 (Fig. 18).

Consequently, we should assume a gradual and uneven distribution of the Gáva pottery. At the same time, we should also take into consideration that at least in the

<sup>58</sup> C. Kacsó called the pottery from this chronological phase found in north-eastern Romania, Lăpuș (ex. KACSO 2011) or Lăpuș 2- Gáva (ex. MARTA 2009).

Lower Mureș Basin a significant part of the elements specific to the Gáva style are much earlier. For instance, channeling originates as early as MBA, but only during LBA II becomes dominant in certain representative communities<sup>59</sup>. A case in point is *Șagu-Site A1\_1*, where channelled pottery represents almost 70% of the total decorated ceramic ware<sup>60</sup> dating back to the 14<sup>th</sup> century BC. Moreover, vessels used as early as the 15<sup>th</sup> century BC are to be found in Gáva assemblages; a typical example is the large biconical vessel (6A) that comes to be representative for the Gáva pottery proper. Of course, there are certain elements particular to the Gáva pottery style such as channel decoration on the rim or inside the vessel, but the most characteristic aspect is bi-chrome firing. A similar evolution seems to have occurred in the Upper Tisza Basin, where the prevailing use of channeled pottery as early as LBA II<sup>61</sup> has led to the development of the Gáva pottery.

It is clear that the Gáva pottery style cannot be thoroughly explored without taking into account specific regional developments and complex phenomena revealed by the archeological contexts investigated up to now. Thus, in the region between the rivers Tisza and Dniester, the distribution area of the Gáva pottery, many other pottery styles (Fig. 19) can be found in the 14<sup>th</sup> – 10<sup>th</sup>/9<sup>th</sup> century BC. Available 14C measurements (Table 9) reveal that the Gáva ceramic ware has been used in various regions alongside other pottery styles. For instance, in certain sites from Banat the Cruceni-Belegiș pottery has been used up to the 13<sup>th</sup>-12<sup>th</sup> centuries BC<sup>62</sup>, and consequently the Gáva pottery from Pecica-Est is contemporary with the Cruceni-Belegiș pottery from Idoș-Gradiște. We can also find in Banat, perhaps in the same period (the 13<sup>th</sup>-12<sup>th</sup> centuries BC), the pottery defined by the discoveries in Susani and Bobda<sup>63</sup>. Northern Romania witnesses the development of the so-called Lăpuș pottery, in its 2<sup>nd</sup> and 3<sup>rd</sup> stage bearing a certain similarity to the Gáva style, used up to the 13<sup>th</sup>-12<sup>th</sup> centuries BC<sup>64</sup>, which means that it is contemporary with the Gáva pottery from Siret and the ceramic defined as Pre/Proto-Gáva from Polgár. By far the most complex situation is in Transylvania<sup>65</sup>. The MBA Wietenberg pottery is still being used up to the 14<sup>th</sup> century BC even though the Noua pottery has also been spreading in eastern Transylvania since the 16<sup>th</sup> century BC. These circumstances lead to a mixture between the two pottery styles in various parts of the region, phenomenon known as Gligorești or Deva-Bădeni<sup>66</sup>. Afterwards, in the 12<sup>th</sup>-11<sup>th</sup> centuries BC, the so-called Cugir-Band<sup>67</sup> pottery is used in central-western Transylvania, specifically in the middle basins of the rivers Mureș and Someșul Mic, contemporary

with the Gáva finds at Teleac and Vlaha as shown by 14C data (Fig. 19; Table 9, no. 38, 41, 45-47). Following the end of the Gáva pottery, perhaps during the 10<sup>th</sup>-9<sup>th</sup> centuries BC, the Gornea-Kalakača pottery emerges in Banat, and the Basarabi and Gornea-Kalakača in Transylvania.

As our analysis reveals, the question of the Gáva pottery is still open to debate. We believe that for now it is not possible to have an exhaustive discussion on the respective pottery style. Bearing in mind the vast geographical distribution of the Gáva pottery and the time span of almost six centuries of its evolution, there are not enough analyzed pottery assemblages and 14C measurements available. At the same time, present interpretations are much too indebted to the unitary perspective on the Gáva phenomenon, with too little emphasis on regional and micro-regional developments.

## ACKNOWLEDGEMENTS

We would like to thank Dr. Alexandra Găvan, Dr. habil. Florin Gogâltan, Dr. Dragoș Diaconescu and Ioan Cristian Cireap, who reviewed the manuscript and made welcome suggestions. At the same time, we are grateful to Daniel Preda and Roberto Tănăsache, who drew the illustrations of the pottery analyzed in the paper.

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<sup>59</sup> SAVA 2019; SAVA 2020, 270-277.

<sup>60</sup> SAVA 2019, 113-114.

<sup>61</sup> FURMANEK 1977, 299-314; KEMENCZEI 1984, 16-19; KACSO 1990; FURMANEK/VELIAČIK/VLADÁR, 138-145; MARTA 2009, 87-93; NEMETI 2009, 212-213; POP 2009, 14-24; MARTA *et alii* 2010, 65-69.

<sup>62</sup> MOLLOY *et alii* 2020, 15-16.

<sup>63</sup> DIACONESCU *et alii* 2018a, 131-132; DIACONESCU *et alii* 2018b, 29-30; GUMA 1993, 168-180.

<sup>64</sup> METZNER-NEBELSICK/KACSÓ/NEBELSICK 2010, 223; KACSÓ/METZNER-NEBELSICK/NEBELSICK 2011, 349, 351.

<sup>65</sup> See GOGÂLTAN 2019 and CIUGUDEAN *et alii* 2019 for summaries on the complex situation in Transylvania.

<sup>66</sup> CIUGUDEAN, QUINN 2015; GOGÂLTAN, POPA 2016, 197-198.

<sup>67</sup> CIUGUDEAN *et alii* 2019.



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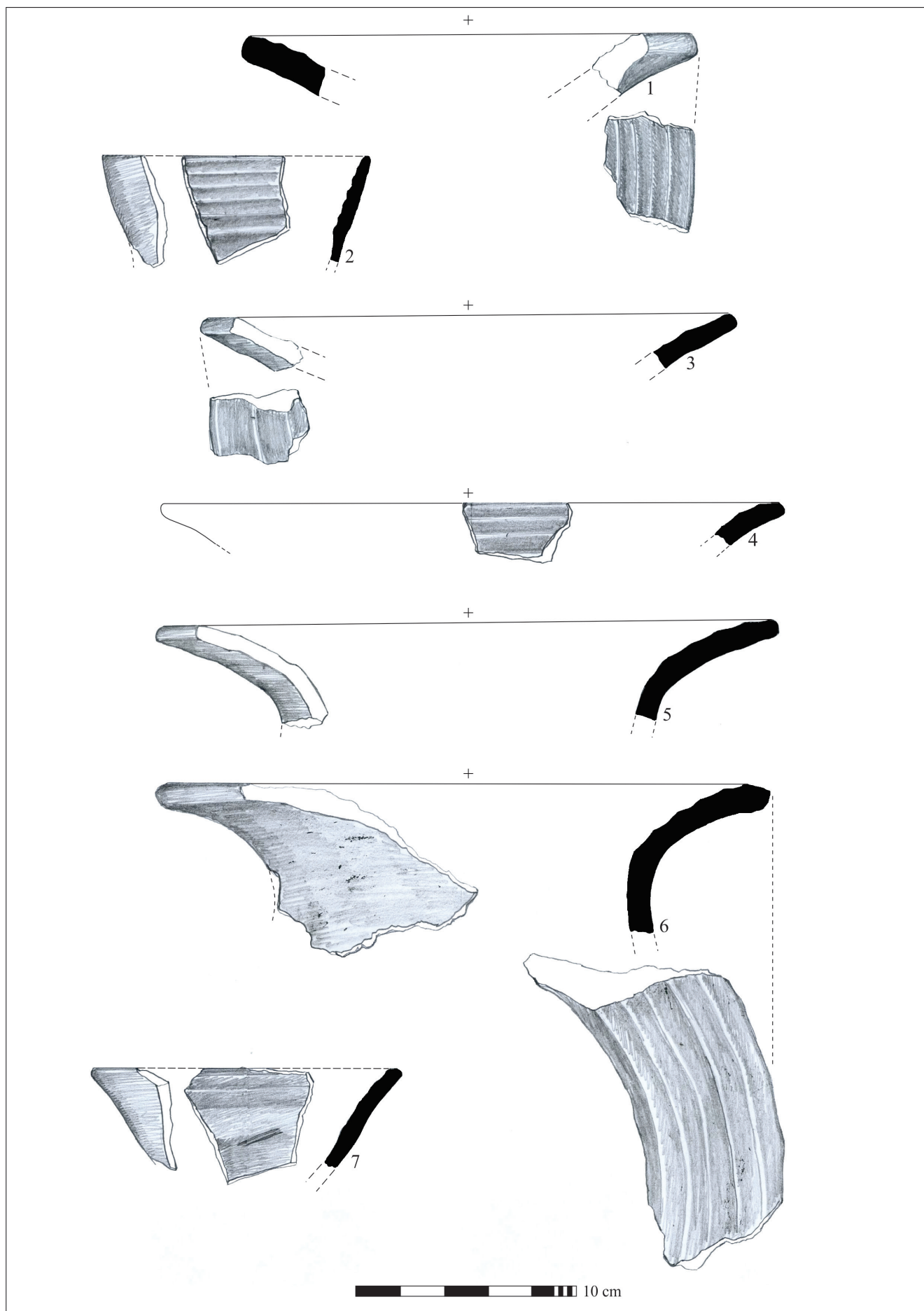
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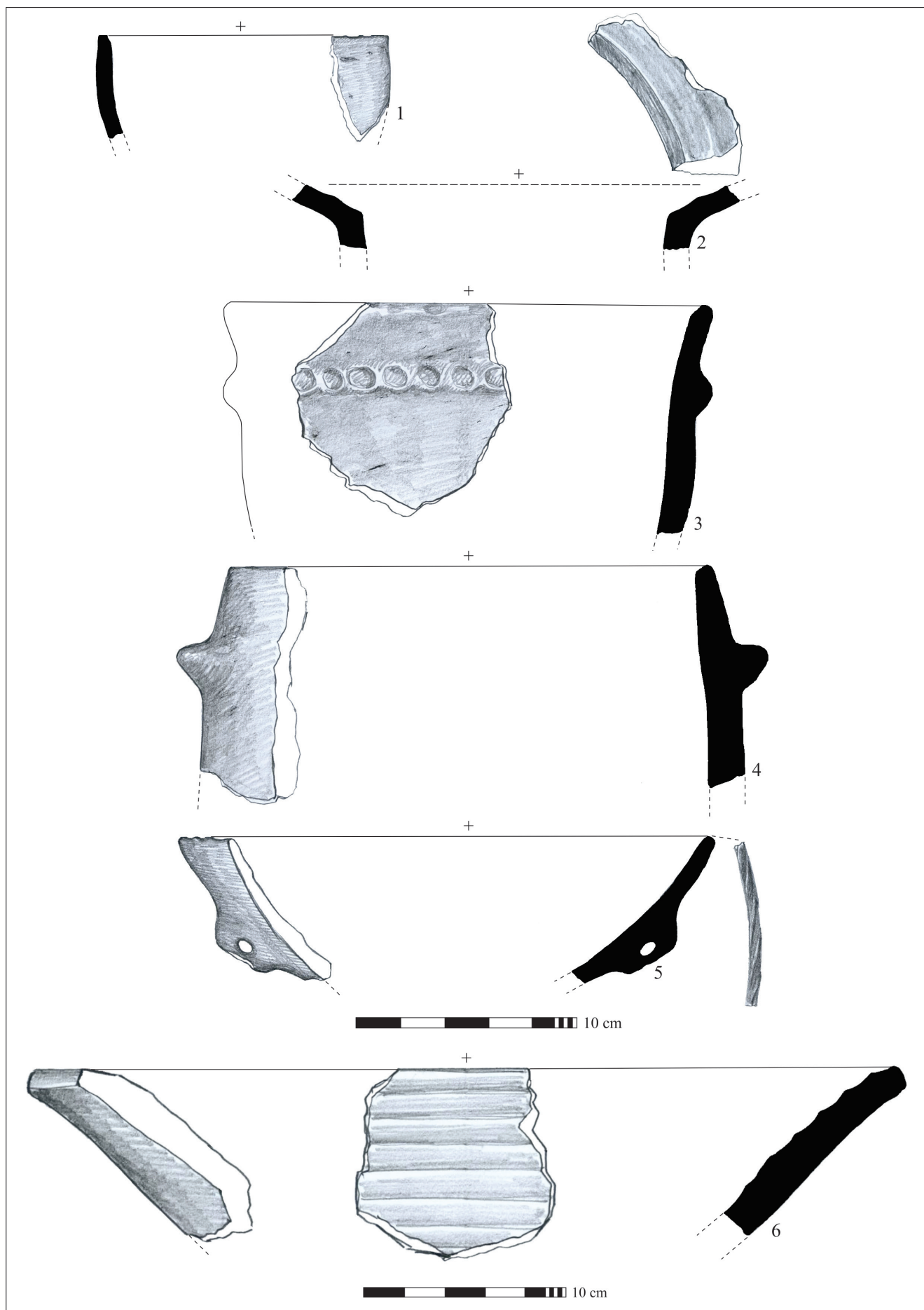
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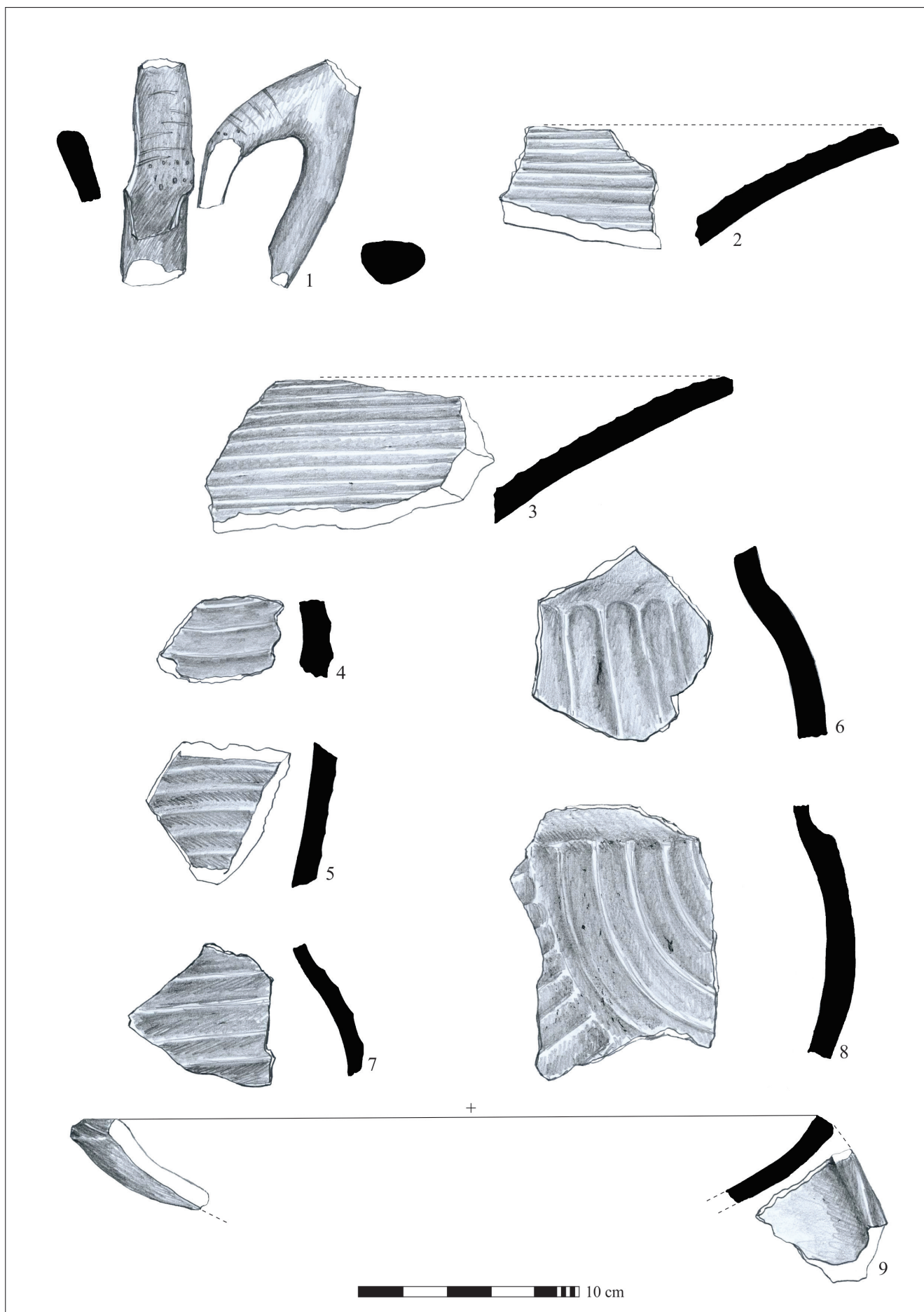


**Pl. 1.** Pottery fragments from Pecica-Est, cx. 144 (drawings by R. Tănăsache, layout by the authors).



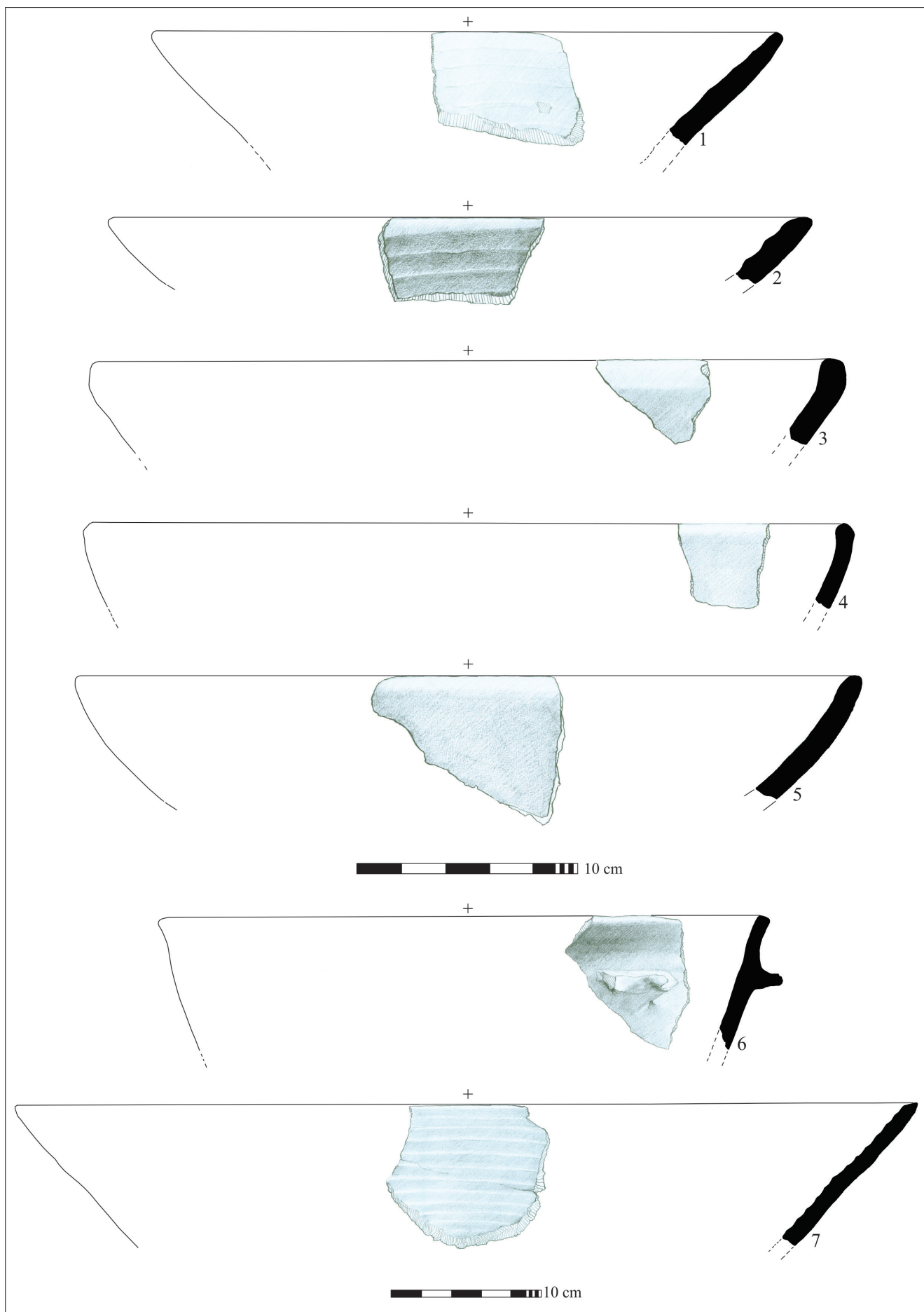
**Pl. 2.** Pottery fragments from Pecica-Est, cx. 144 (drawings by R. Tănăsache, layout by the authors).



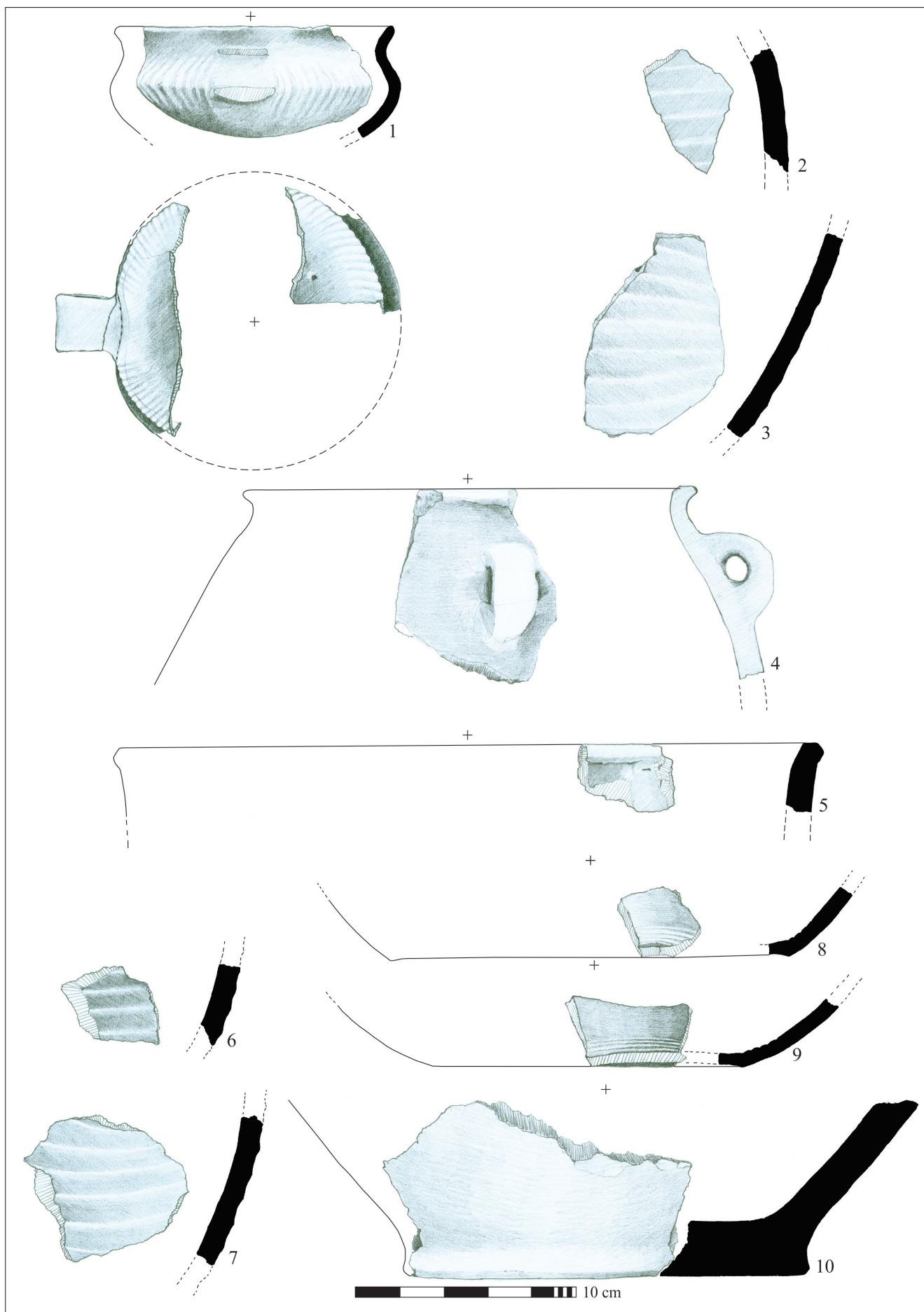


**Pl. 3.** Pottery fragments from Pecica-Est, cx. 144 (drawings by R. Tănăsache, layout by the authors).

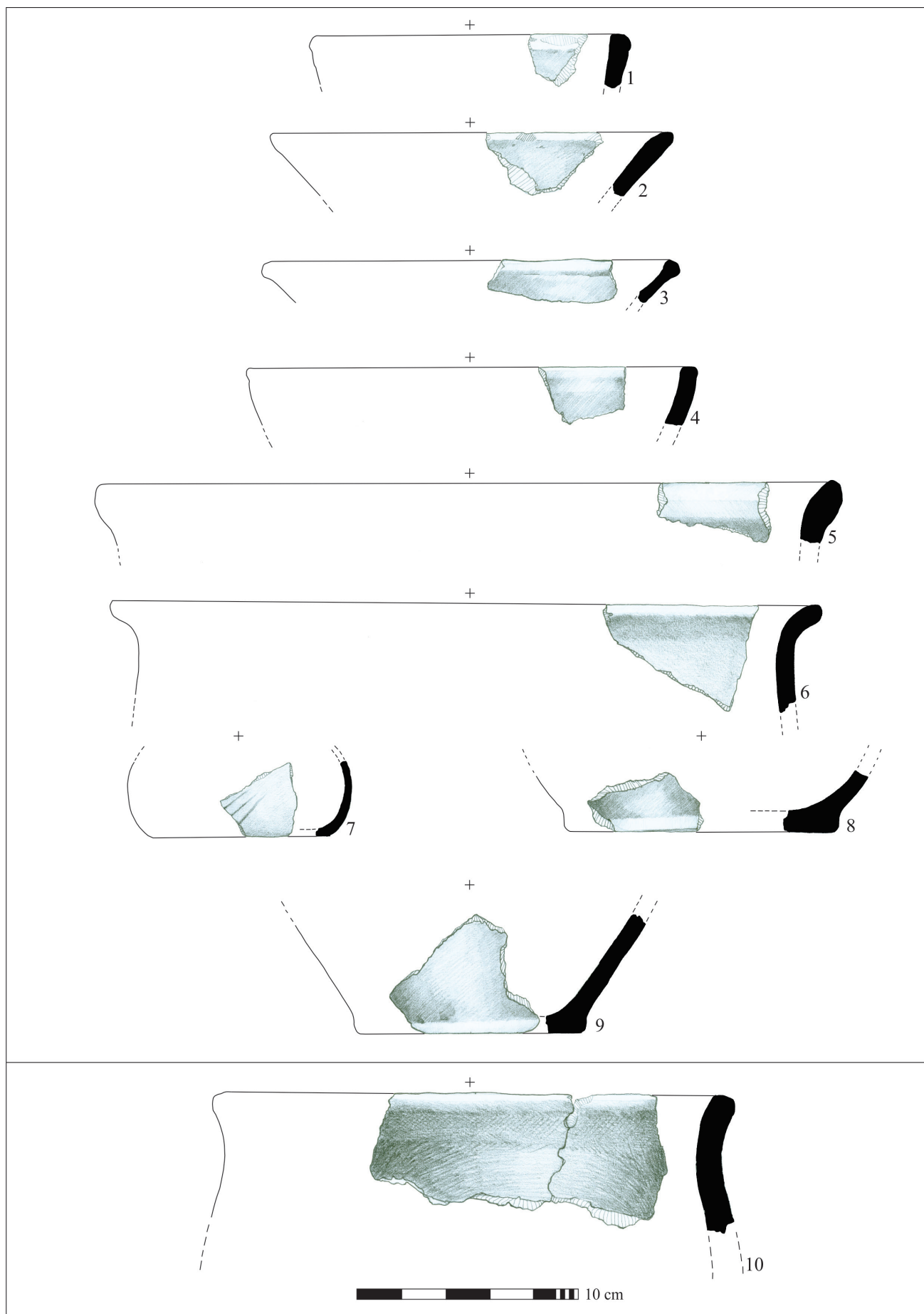




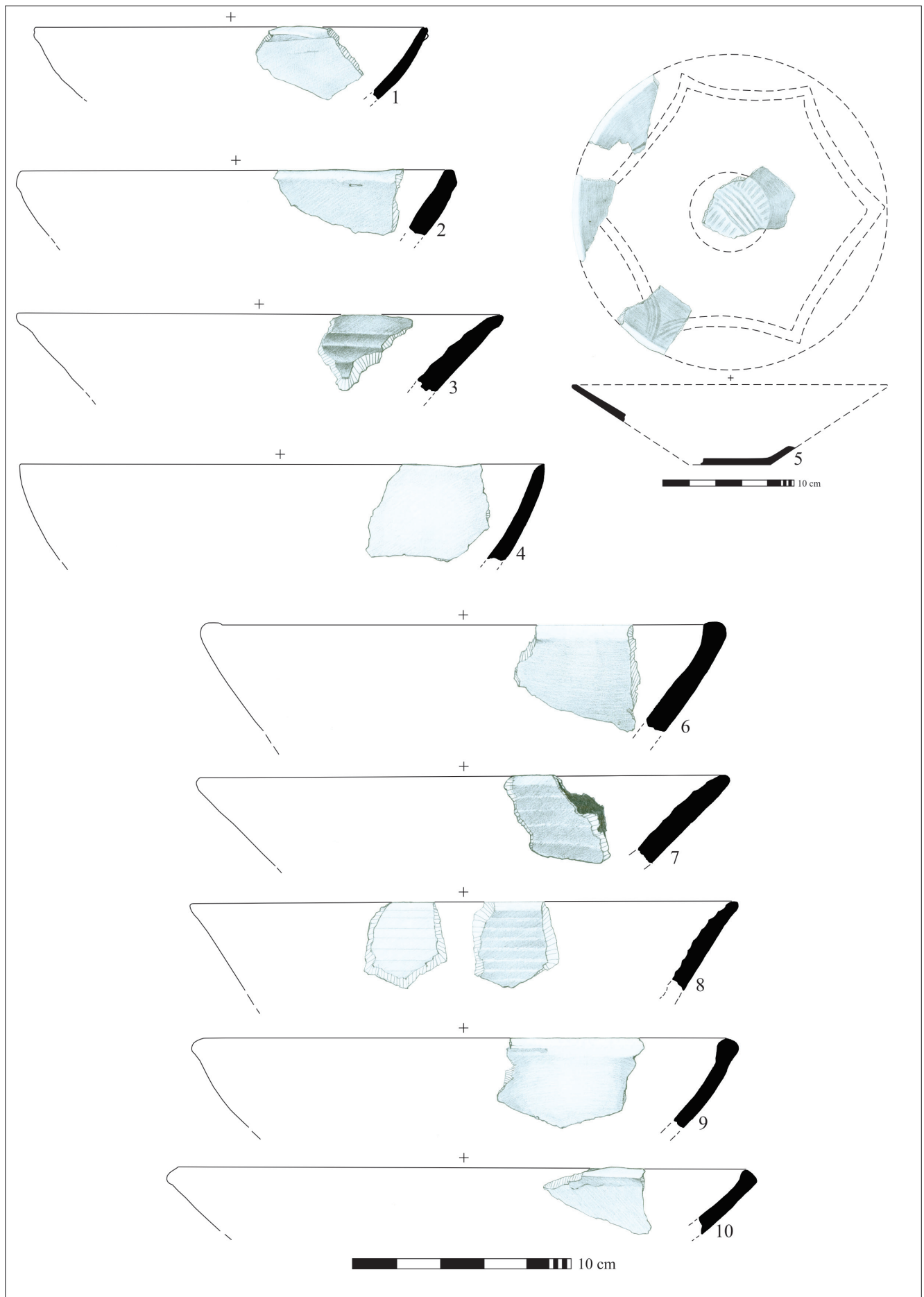
**Pl. 4.** Pottery fragments from Pecica-Forgaci, cx. 70 (drawings by D. Preda, layout by the authors).



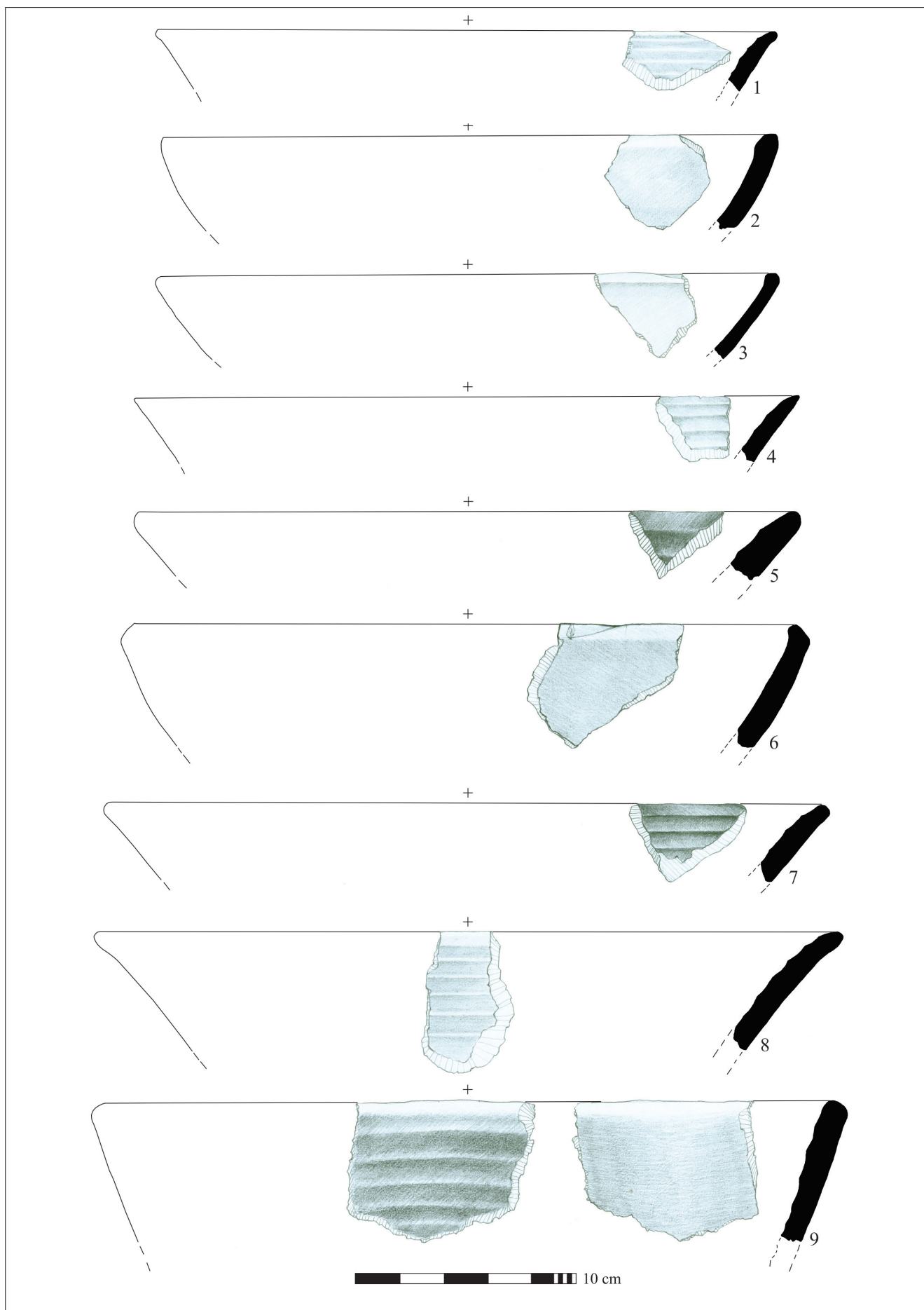
**Pl. 5.** Pottery fragments from Pecica-Forgaci, cx. 70 (drawings by D. Preda, layout by the authors).



**Pl. 6.** 1-9. Pottery fragments from Pecica-Forgaci, cx. 71; 10. Pottery fragments from Pecica-Forgaci, cx. 73 (drawings by D. Preda, layout by the authors).

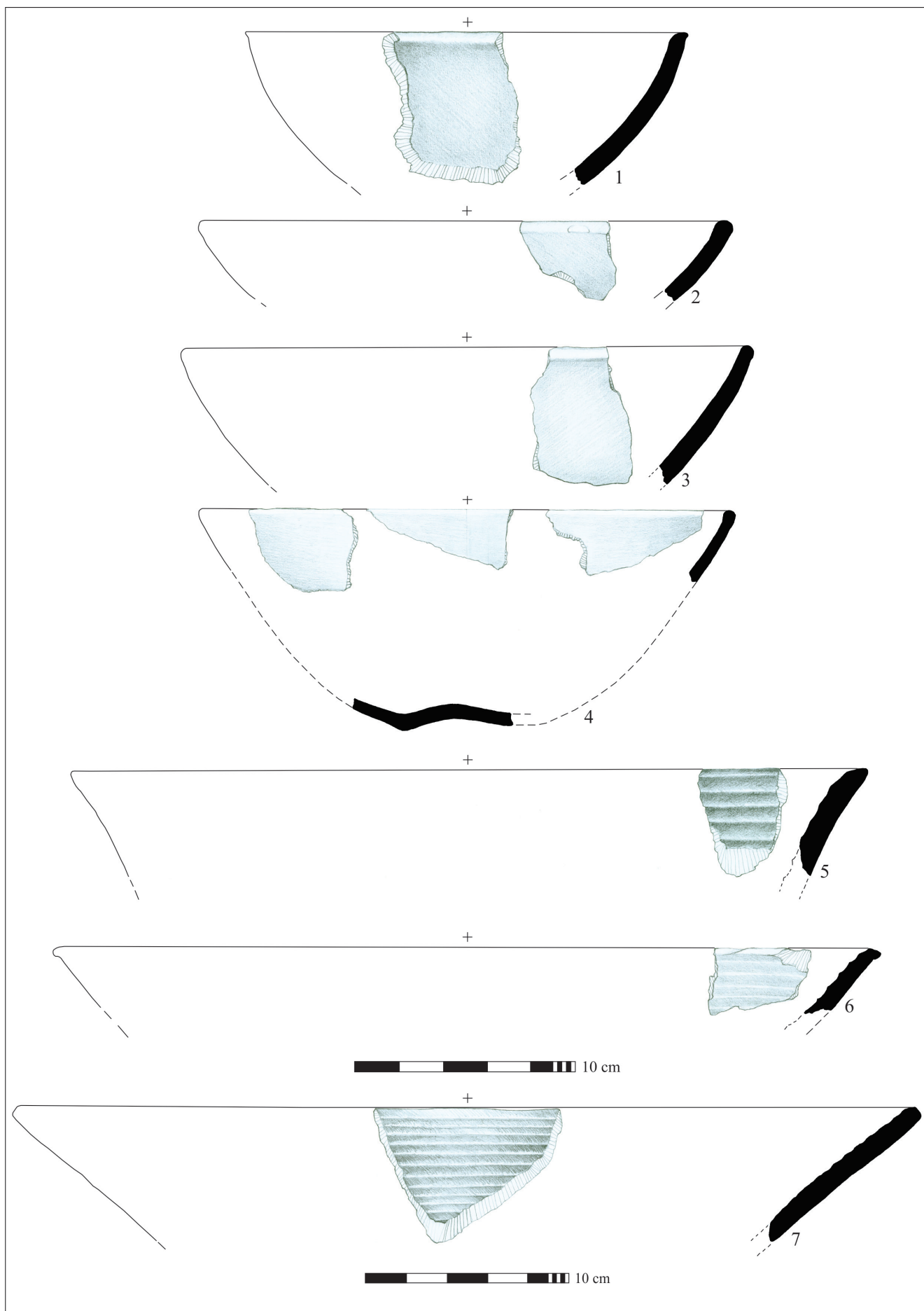


**Pl. 7.** Pottery fragments from Pecica-Forgaci, cx. 94 (drawings by D. Preda, layout by the authors).



**Pl. 8.** Pottery fragments from Pecica-Forgaci, cx. 94 (drawings by D. Preda, layout by the authors).

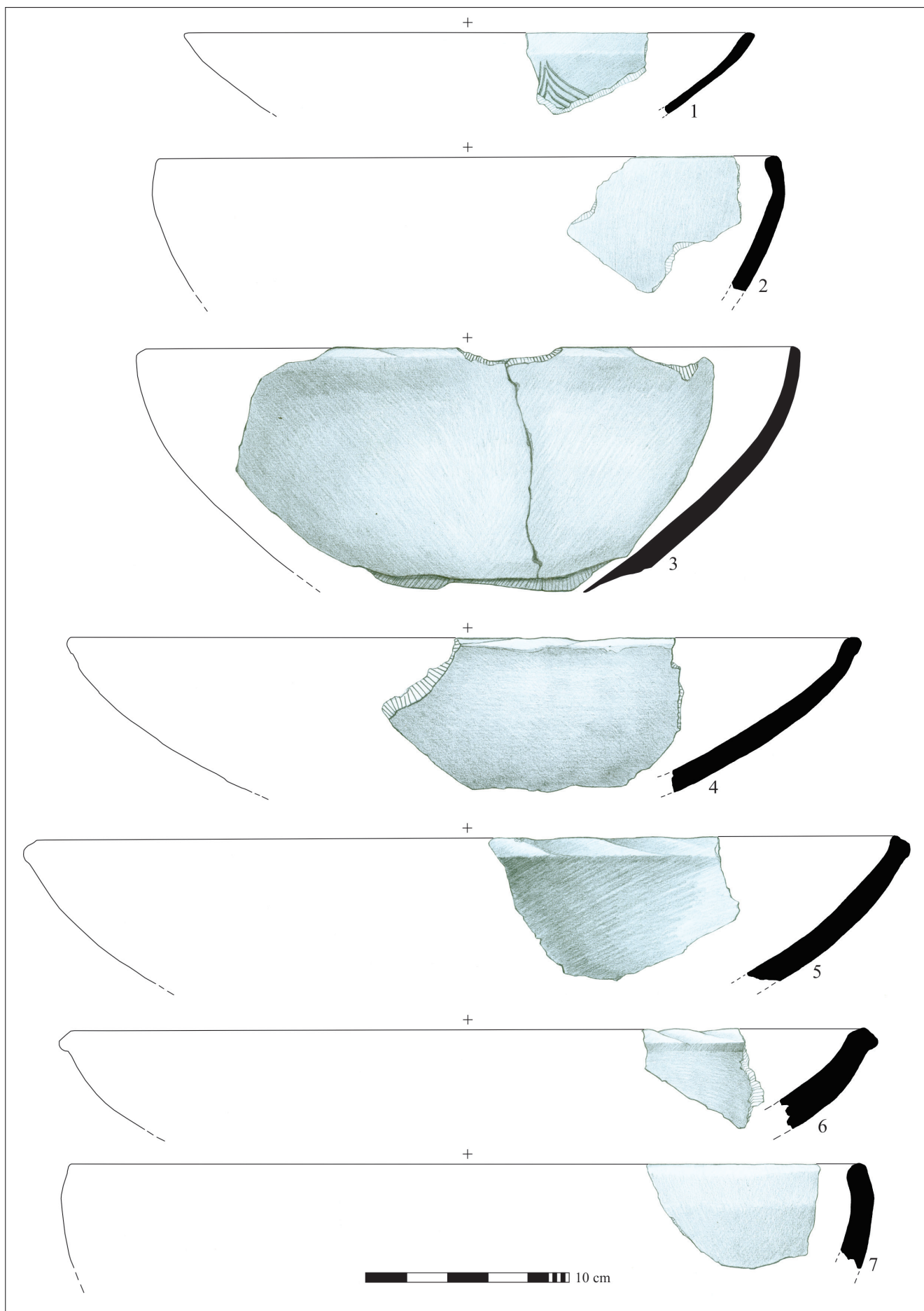




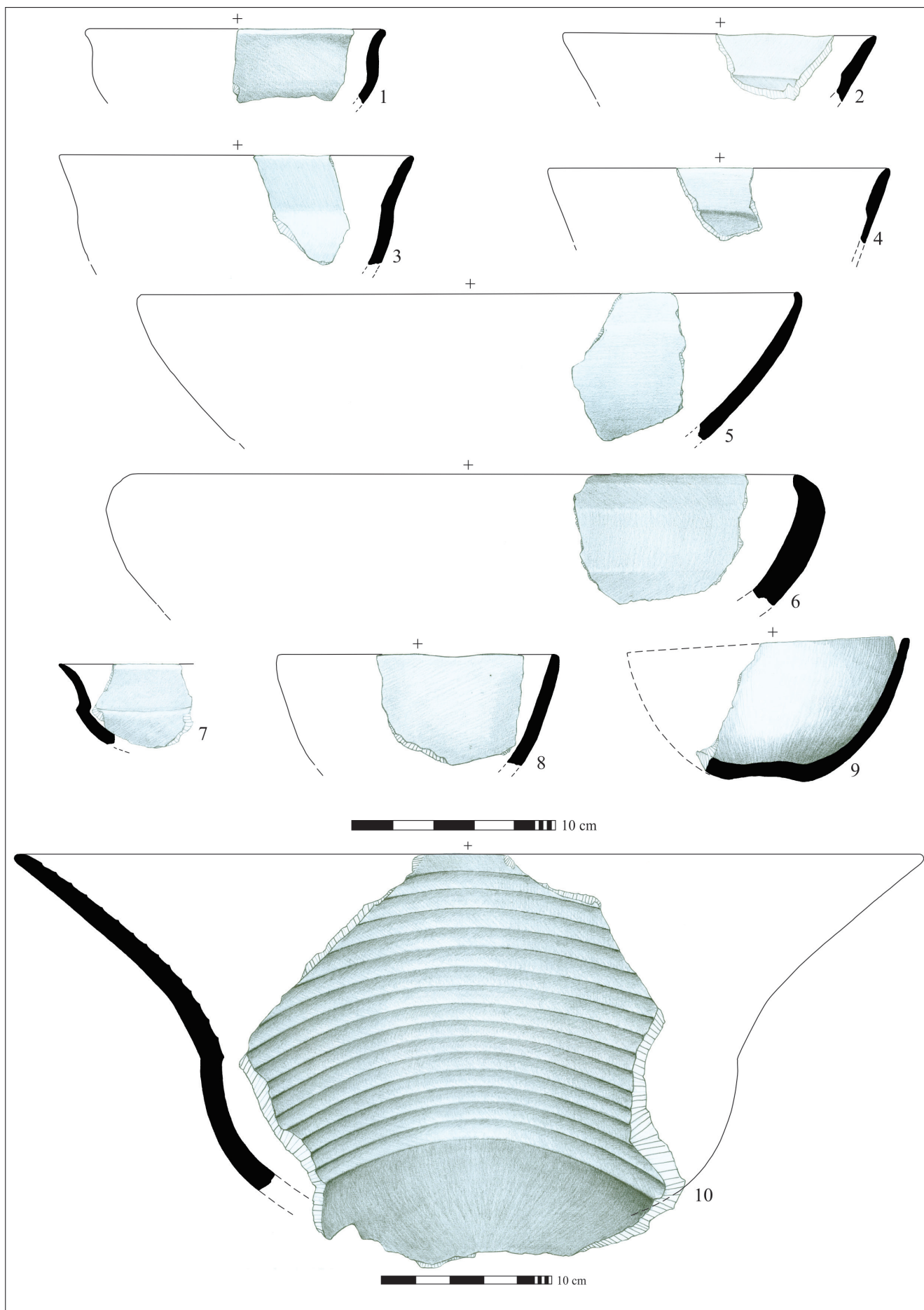
**Pl. 9.** Pottery fragments from Pecica-Forgaci, cx. 94 (drawings by D. Preda, layout by the authors).



**Pl. 10.** Pottery fragments from Pecica-Forgaci, cx. 94 (drawings by D. Preda, layout by the authors).

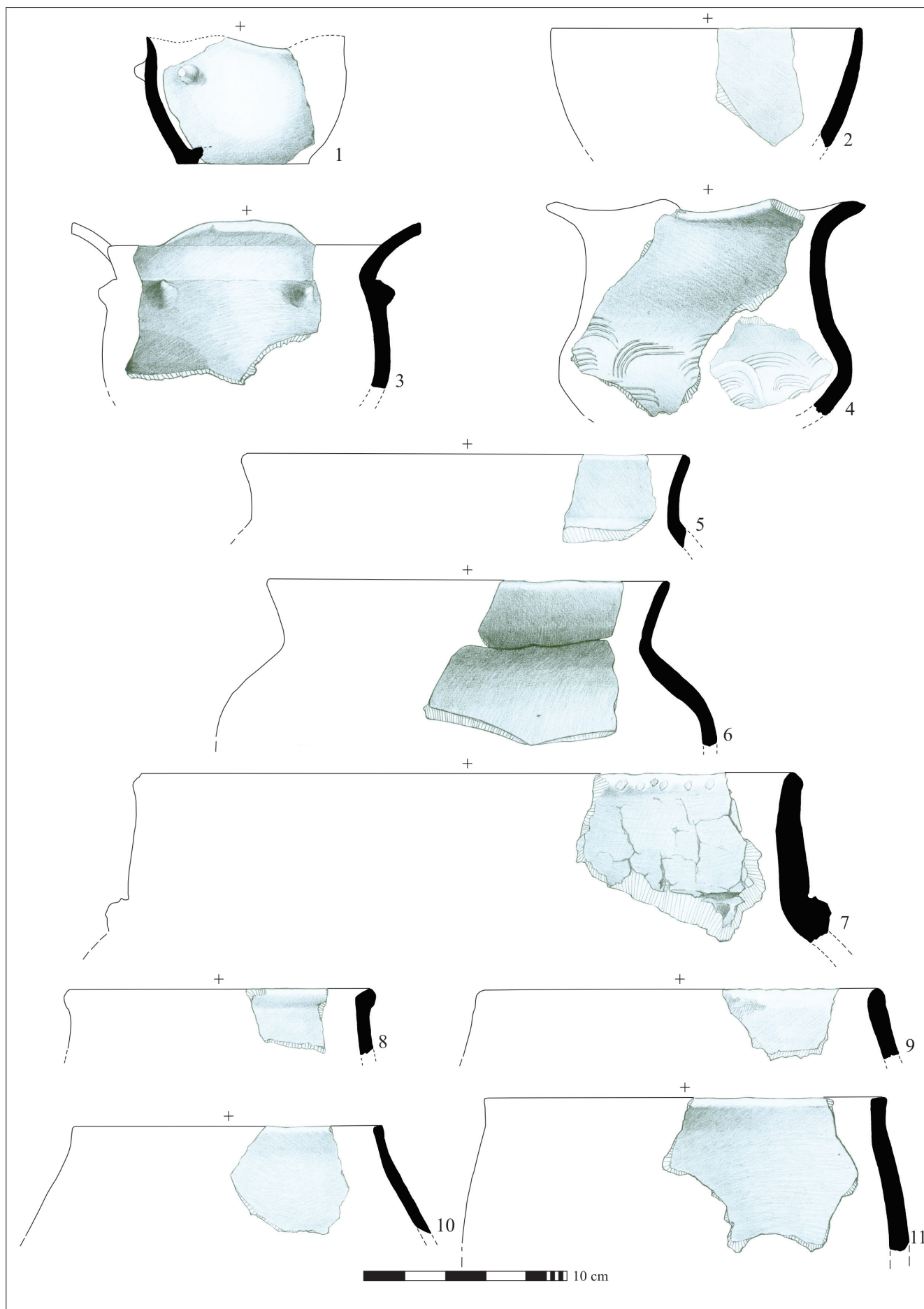


**Pl. 11.** Pottery fragments from Pecica-Forgaci, cx. 94 (drawings by D. Preda, layout by the authors).

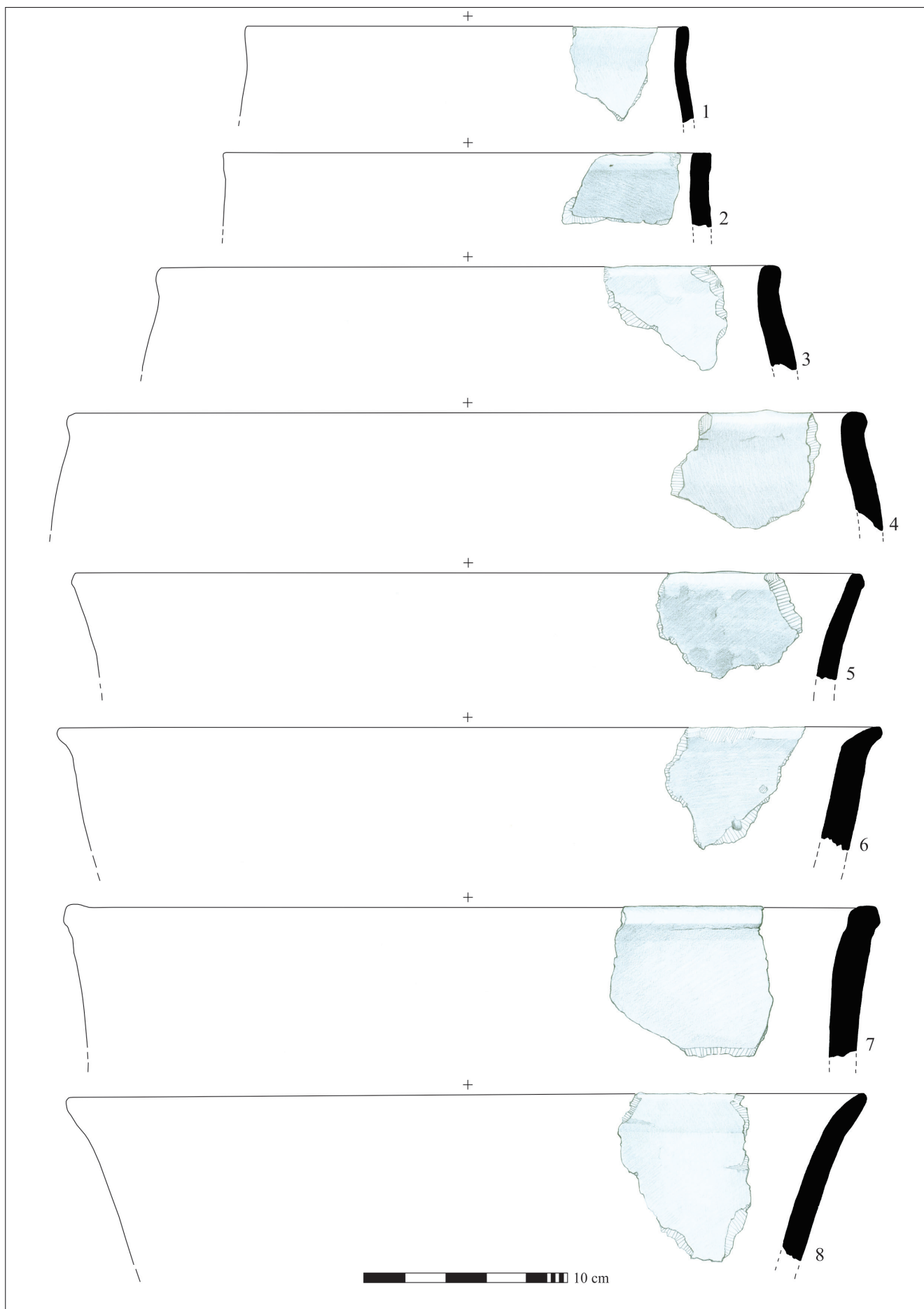


**Pl. 12.** Pottery fragments from Pecica-Forgaci, cx. 94 (drawings by D. Preda, layout by the authors).

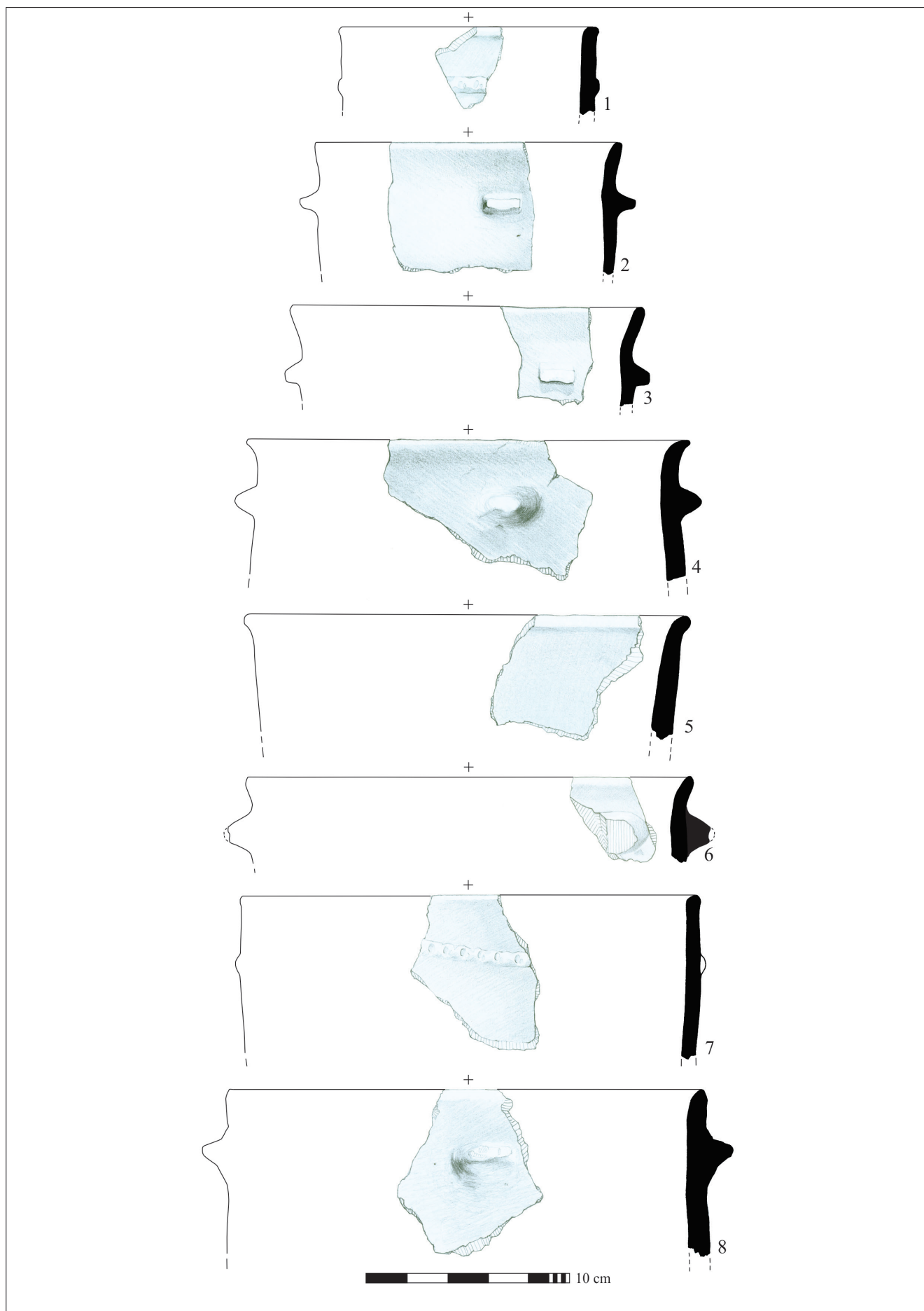




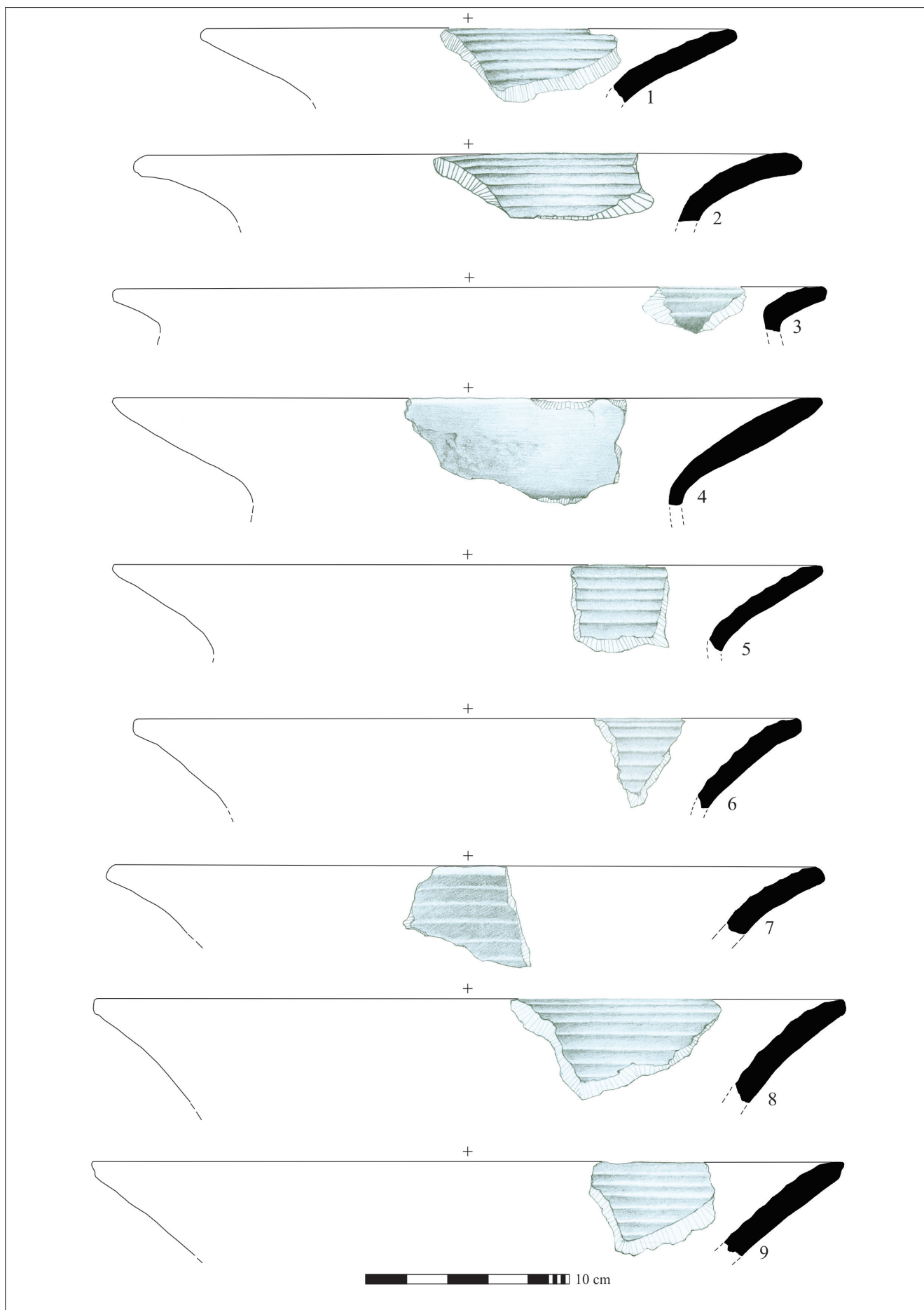
**Pl. 13.** Pottery fragments from Pecica-Forgaci, cx. 94 (drawings by D. Preda, layout by the authors).



**Pl. 14.** Pottery fragments from Pecica-Forgaci, cx. 94 (drawings by D. Preda, layout by the authors).



**Pl. 15.** Pottery fragments from Pecica-Forgaci, cx. 94 (drawings by D. Preda, layout by the authors).

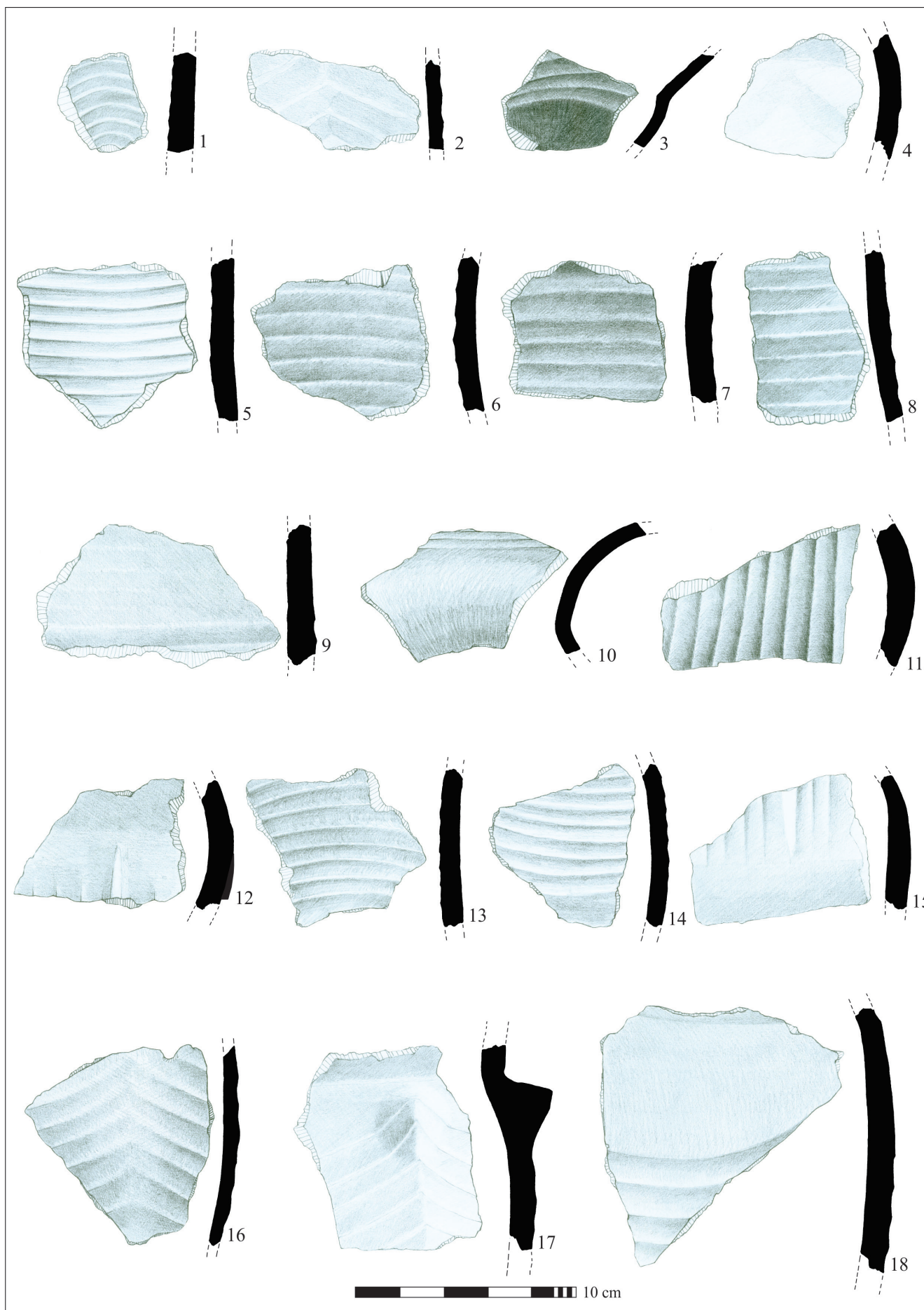


**Pl. 16.** Pottery fragments from Pecica-Forgaci, cx. 94 (drawings by D. Preda, layout by the authors).



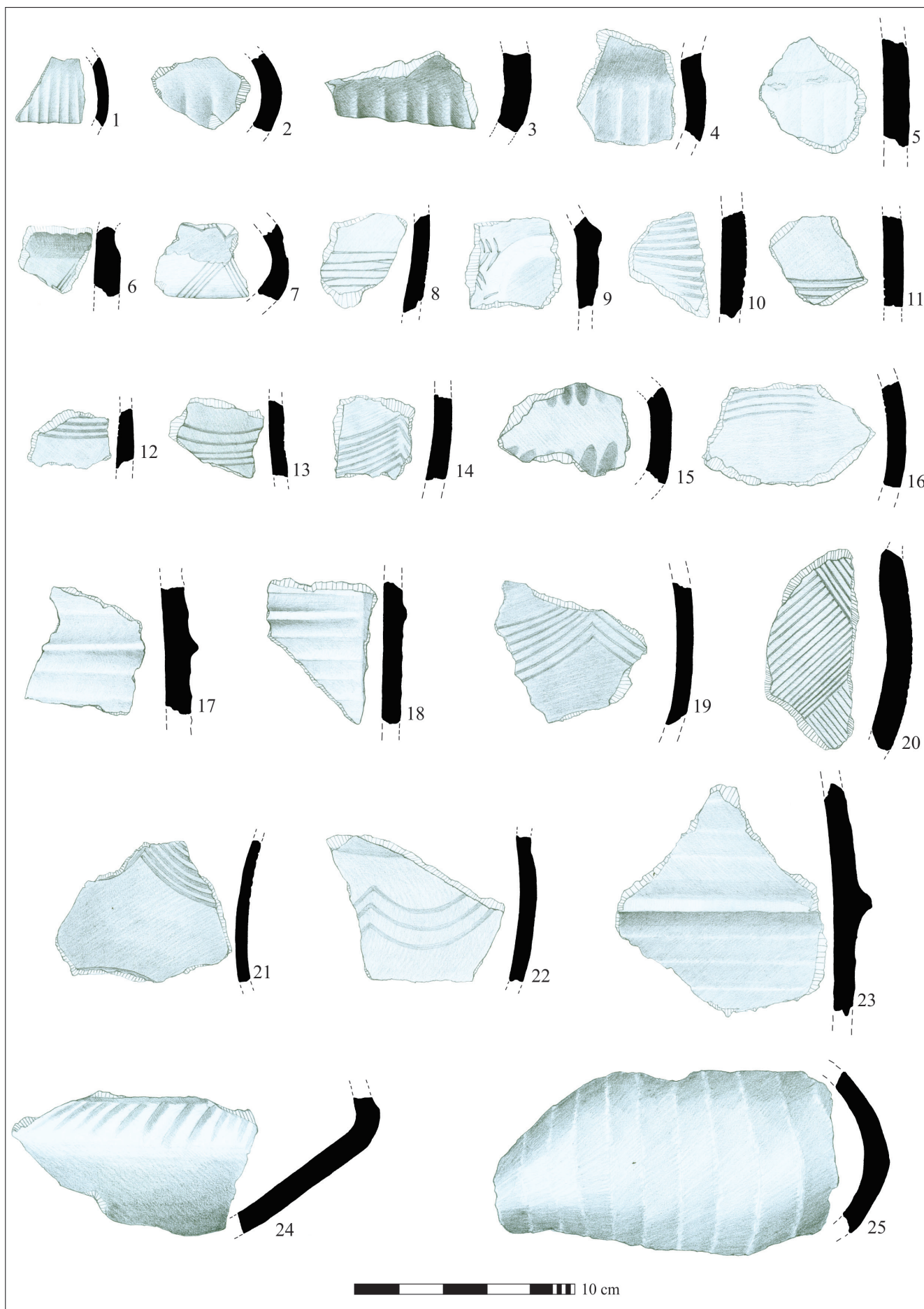


**Pl. 17.** Pottery fragments from Pecica-Forgaci, cx. 94 (drawings by D. Preda, layout by the authors).

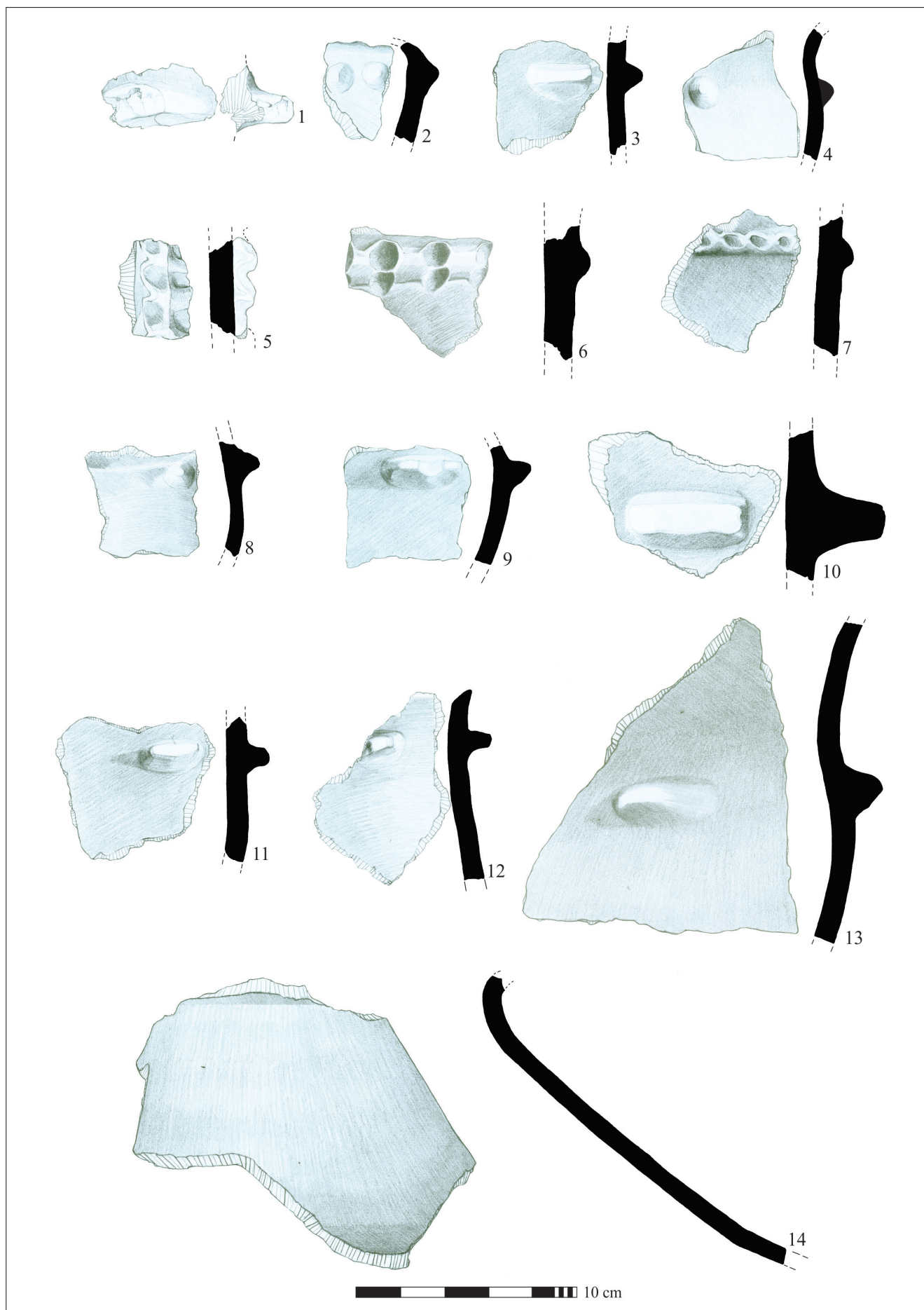


**Pl. 18.** Pottery fragments from Pecica-Forgaci, cx. 94 (drawings by D. Preda, layout by the authors).





**Pl. 19.** Pottery fragments from Pecica-Forgaci, cx. 94 (drawings by D. Preda, layout by the authors).



**Pl. 20.** Pottery fragments from Pecica-Forgaci, cx. 94 (drawings by D. Preda, layout by the authors).