

# A NEW ARCHAEOLOGICAL SITE FOUND AT TOBOLIU „RÂTU ALCEULUI” (BIHOR COUNTY)

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## UN NOU SIT ARHEOLOGIC DESCOPERIT LA TOBOLIU „RÂTU ALCEULUI” (JUD. BIHOR)

Abstract

În timpul campaniei de geomagnetism din 2019, în aşezarea secundară a tell-ului de epoca bronzului de la Toboliu *Dâmbu Zănăcanului*, prin cercetări de suprafaţă a fost descoperit un nou sit arheologic în punctul numit *Râtu Alceului*. Acesta este localizat la aproximativ 2km Sud de comuna Toboliu şi 2,2km Sud-Vest de *Dâmbu Zănăcanului*. Pe baza fragmentelor ceramice descoperite aici se poate spune că sunt reprezentate următoarele perioade: epoca cuprului, epoca bronzului, prima şi a doua epocă a fierului, perioada romană şi evul mediu timpuriu. Intenţia lucrării de faţă este de a face cunoscut acest sit şi de a contribui la prezentarea unei imagini mai detaliate asupra reţelei de aşezări din această zonă.

**Keywords:** Field survey, Pottery, Copper Age, Bronze Age, Iron Age, Roman Period, Baden-Coţofeni Culture, Cernavodă III - Boleráz Culture, Otomani Culture, Cehăluţ-Hajdúbagos Culture, Gáva, Sarmatians

During the spring geomagnetic survey in 2019<sup>1</sup> at the Middle Bronze Age site Toboliu *Dâmbu Zănăcanului* (Fazecaş 2014, 111-116; Fazecaş, Lie 2018, 29-38; Lie et. al 2018, 63-76) a new area of interest has emerged. The new site is located at about 2 km South of the village Toboliu (com.Toboliu, jud.Bihor) (see Map 1) and it displays a high diversity of ceramic styles characteristic to different chronological periods. The fact that the site is completely unknown in the archaeological literature is the main reasons for presenting the site of Toboliu „*Râtu Alceului*” in this paper, therefore contributing to a better understanding of the micro-region that the Middle Bronze Age communities have occupied here. Furthermore, the other finds that are dated before and after our main chronological area of interest may be relevant for other colleagues.

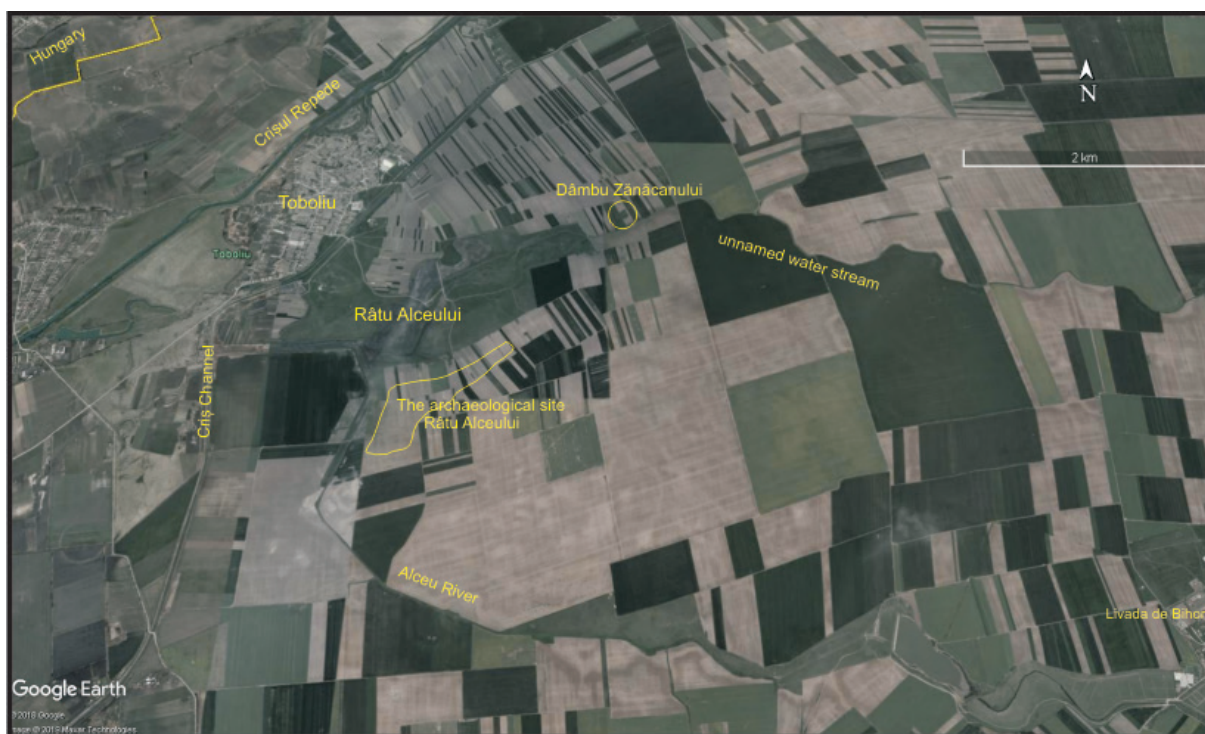
The identification of the site started from a pure theoretical assumption in 2017. The hydrographical system of the local streams that were tributary to the *Crişul Repede* River before the regularization works of the 19th and 20th century in the area (Ujvári 1972, 273), the river *Alceu* and the unnamed stream that passes South of the tell settlement from Toboliu *Dâmbu Zănăcanului*, are merging together and forming a swampy area called *Râtu Alceului*<sup>2</sup>. Today, both of the streams are taken by the *Criş Canal*, constructed between the *Crişul Repede* and the *Crişul Negru* rivers. However, we can assume that in the past the two local streams were forming an even greater swamp together with the *Criş River*. In the systematic field survey conducted in 2015 in the secondary settlement of the tell-site (Fazecaş, Lie 2018, 29-38), we observed that most of the ceramic finds were concentrating along the old river bed and towards the swamp to the west in the furthest regions. Looking at the impressive development of the tell-site and its surrounding inhabited area, one can assume that the swamp itself was a reason to prosper. The modern age view, according to which swamps were considered a source of disease and infection, is starting to change in the last decades and not only concerning the protection of natural habitats. They can provide for small communities a subsistence economy for a long-time exploitation of renewable food source and construction material (Dinnin, Van de Noort 1996, 69-78). It also filters the fresh water reserves and regulates the humidity excess (Karácsonyi 1994-1995, 228). The question that raised from the above discussion was why would they only inhabit the eastern higher area and not similar landscapes, such as the *Alceu*

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<sup>1</sup> The geomagnetic survey from Toboliu *Dâmbu Zănăcanului* is an ongoing project in cooperation with the University of Cologne from 2016 until present, coordinated by Prof. Dr. Tobias Kienlin.

<sup>2</sup> Because of the unique fauna the swamp is included today in the protected area of the *Alceu Valley* Natura 2000 Cod Sit ROSPA0103

terrace situated South of the floodplain. A field survey was done in the summer of 2017 in the above-mentioned area, to confirm or infirm if people have inhabited it, but without any clear results. Because of the agricultural crops, only two atypical pottery fragments were discovered. In the spring of 2019, we have redone the survey while the fields were freshly ploughed and the results were far more revealing.



Map 1. The archaeological site from Toboliu „Râtu Alceului”.

The archaeological site of Toboliu *Râtu Alceului*<sup>3</sup> is situated at about 2.2 km South-west of the Middle Bronze Age tell-settlement, following the 102.5 m topographical height curve along the right terrace of the Alceu River and the south terrace of the *Râtu Alceului* swamp in the Plain of *Miersig* (Berindei et al.1992, 127) also known as *Gepiului Plain* (Posea 1997, 29, 220). In total, the site comprises an area of about 25-30 hectares. At its southern border, towards the swamp, it has the largest concentration of pottery fragments, but this is most likely due to the erosion of the terrace and of the archaeological levels.

### The identified pottery fragments

The first chronological sequence is represented here by ten pottery fragments characteristic for the Copper Age (Pl. 1/1-3; Pl. 2/1-5). All of them have been found at the North-Eastern extremity of the site (see Map 1). Three of them are decorated with *nail impressions* disposed in a horizontal band (Pl.2/1,3). On the fragments illustrated in Pl.2/1 this type of decoration is associated with a girdle that has a triangular shape in profile. The preservation condition for these fragments is rather poor and they probably miss the slip that was covering the inner and outer part. Fragments from Pl.2/2,5 are decorated with oblique incisions that in the case of the one in Pl.2/2 are separated by a vertical one. Shallow vertical grooves are also present, as for the rim fragment from Pl.1/1. Most likely, they were disposed on the whole body of the pot, but the poor preservation of the shard makes even the ones present hardly perceptible. The last method of decoration present here is represented by circular impressions disposed in vertical and horizontal groupings (Pl.2/3). Bowl shapes could be reconstructed from Pl.1/1-2,4. Regarding the cultural association, for most of them we can find analogies within the *Baden* and *Cotofeni* ceramic horizons: oblique incisions (Sava 2015, 231-234; 257-258; Plate 141/10-17; 142/1-8; 168/8,11; 169/1,11; 170/1,5; 174/14,15,18;

<sup>3</sup> 47°0134.12N 21°4350.77E

175/1-3; Popa, Fazecas 2013, 55, Pl.3/3,5,8; Pl.5/6; Pl.6/4,7; Pl.8/3-5, 7-9; Pl.9/4-11; Pl.11/3-6; Pl. 2/1,3 nail impressions (Sava 2015, Plate 145/1; 178/14,15; 193/19; 220/7; 221/2); oval knobs applied under the rim Pl.1/3 (Popa, Fazecas 2013, 56; Pl.7/4,6; Pl.8/6; Sava 2015, Plate 157/13; 158/8; 160/9,10; 163/12, 188/4). However, some of the decorations are not characteristic to the Baden-Cotofeni horizon, such as the shallow vertical flutes (Pl.2/1). These are more characteristic for the Cernavoda III- Boleráz ceramic cultural area (Roman 2001, Abb.9/3; 11/4, Taf.8 1-5; Taf.10/1; Taf.11/1-6; Lichardus, Iliev 2001, Taf.12/1; Taf.13/1,2,4,5; Némethi 2001, Pl.XII/2; Pl.XIV/1,4; Pl.XXII/2,10,12). Nevertheless, the flattened globular form of the pot on which the flutes were applied can be found within the Baden-Cotofeni horizon (Pl.1/1,2) ( Popa, Fazecas 2013, 52; Fig.1/VII; Pl.9/2; Sava 2015, Plate 147/6), but it seems more characteristic for the Cernavodă III - Boleráz ( Roman 2001, Abb.7/2; 11/3,4; 12/1,2; Taf. 9/1; Lichardus, Iliev 2001, Taf.8/8; Zmeykova 2001, 215, Pl.III/1-3,5; Tasić 2001, Abb.5/4). Also, impressions made by a pointy round tool are known both in Baden - Cotofeni and in Cernavodă III-Boleráz (Pl. 2/4) (Sava 2015, Plate 152/9; 153/1; 155/12,13; Popa, Fazecas 2013, 55-56, Pl. 4/1,4; Pl.5/3; Pl.6/6; Lichardus, Iliev 2001, Taf. 7/1-6). Another shard with circular impressions and a shallow incision was found towards the western part of the site (Pl.6/2), but it is hard to say with certainty if it can be related with the Baden culture, although the combination of circular impressions and incisions are known (Ordentlich et al. 2014a, 215, Pl.II/11,12). The fragment of a bowl found at the site, which comprises a full profile from the rim to the bottom (Pl.1/4), is also a fairly common form encountered in both of the above mentioned cultures (Sava 2015, 152/4; 188/6; 194/3,6-9; 195/1,6,8; Popa, Fazecas 2013, Pl.13/5, Roman 2001, Abb.6/9; Zmeykova 2001, Tabl.1). From the nearby Copper Age archaeological sites with analogies for the pottery fragments found at Toboliu *Râtu Alceului*, we can mention here the one from Girișu de Criș *Râturi* (Fazecas 2018, 100; Roman, Némethi 1978, 13 Pl. 58/13-15; Pl.59/7-9,13,14,17-19; Pl.69/4-12; Pl.70/1,2,8,10; Pl.71/1-11,13; Pl.72/1,2), Sântandrei *Hotarul comunei* ( Fazecas 2018, 100; Sava 2008, 56, nr.67; Roman, Némethi 1978, 12), Sântandrei *La Țigani* ( Fazecas 2018, 101; Sava 2008, 56, nr.68 ), Sântandrei *Podul Moii* (Fazecas 2018, 101; Sava 2008, 56, nr.69;) Sântandrei *Podul Pricopului* ( Fazecas 2018, 101; Roman, Némethi 1978, 12, Pl.56/1-3,5,6,10; Pl.57/1,3,4; Sava 2008, 57, nr.70), Sântandrei *Șanțul Antitanc* (Fazecas 2018, 101; Sava 2008, 57, nr.71; Roman, Némethi 1978, 13), Oradea *Cimitirul Rulikowski* ( Fazecas 2018, 100; Sava 2008, 56, nr.53; Roman, Némethi 1978, 13 ); Oradea *Salca I* (Fazecas 2018, 100; Sava 2008, 56, nr. 54; Roman, Némethi 1978, 13, Pl.49/9); Oradea *Strada Cireșilor* ( Fazecas 2018, 100; Fazecas, Marta 2014, 7-17, Pl. III/9,10; Pl.IV/11,13-14; Pl.V/22; Pl.VI/5,6,13,15; Pl.VII/2), Oradea *Ghețarie* (Roman, Némethi 1978, 13, Pl.50/1,4,5,7; Pl.51/1,5,6,8,12?; Pl.52/1,4,8-11; Pl.53/1,2,5,10,11; Pl.54/2,6,13; Pl. 55/2) Biharea *Cetatea de pământ* (Fazecas 2018, 100; Sava 2008, 55, nr.19; Roman, Némethi 1978, 13), Cefa *Fântâna Mighiveghi și Feleștăniar* ( Fazecas 2018, 100; Sava 2008, 55, nr.32, Crișan 1987, 20, Pl. II/1-7), Cefa *La Pădure* (Fazecas 2018, 100; Sava 2008, 55, nr.33; Crișan 1994, 23-24, Pl.II/6; Crișan 1998, 7-14, Pl. II/1,2,7; Pl.III/1,3,4; Pl.IV/1,2,5,6). Based on such a small assemblage of ceramic materials, it is hard to establish a more precise chronological framing and point towards potentially contemporaneous sites from the ones listed above. However, with some reserves we can assume an early stage of the Baden culture.

The following chronological sequence is represented by the Middle Bronze Age (MBA). However, most of the finds that I have attributed here to the MBA do not necessarily display a typical decoration for this period; more so, the forms are rather common for other ceramic horizons (Pl.3/1-6, Pl.4/1-5). For instance, the shapes of rims represented in Pl.4/4,5 can be found in Middle and Late Bronze Age, as well as the x incisions on the rim (Crișan 1994, 24, Pl.III/2; Banner, Bonna 1974, Tafel 43/5; Marta 2014, 38, Pl.II/2). Shards more characteristic for the Otomani culture are the ones represented in Pl.5. The incised ornaments present on the shard from Pl.5/1 is well represented in the first two phases of the tell-site in Toboliu *Dâmbu Zănăcanului*, as well as on other MBA tell settlements from north-western Romania (Marta 2014, Pl.II/5 - 38, *Bervenii*; Ordentlich et al.2014b , 145, Pl.III/12 - *Otomani* - *Cetățuie* ; Molnár 2014, Pl. 128/2) . The fragment of a miniature cup represented in Pl.5/2, incised with a spiralled motif and the upper part filled with oblique incisions, is also well represented in the first two phases of the tell-site from *Dâmbu Zănăcanului* and other Otomani culture tell-sites (Ghemîș 2014, 34,



PI.II/4; Gogâltan 2014, 205, PI.II/8; PI.III/5). The horizontal incisions from PI.5/3, especially in combination with this type of fabric, are also often part of the decoration style characteristic to the Otomani Culture (Ordentlich 2014a, 218, PI.V /1, Banner, Bonna 1974, Tafel 4/8, 11; 19/14; 41/4; Gogâltan 2014a, 97, PI.I/2; Molnar 2014, PI.158/2). The parallel incisions present on the fragments illustrated in PI.5/4, although present in the MBA repertory of design, can also be found on Late Bronze Age shards characteristic to the Cehăluț group (Kacso 1999, Taf.V/4). The same problem is encountered also for the subsequent shards, decorated with parallel oblique incisions (PI. 5/5) (Popa, Totoianu 2001, PI.77/1), with parallel horizontal incisions and curved incisions (PI.5/6) (Molnar, Némethi 2014, 57, PI.IX/3, XII/1-4; Banner, Bonna 1974, Taf. 2/2; 21/10, 11; Popa, Totoianu 2010, PI.72/14; 78/1, 12; Marta 2014, 38, PI.II/14; Găvan 2014, 282-283, PI.IV/8; PI.V/4, Petric 2014, 256, PI.VI/5), and with vertical parallel incisions (PI.9/5) (Fazecaș 2014a, 195, PI.III/5, Gogâltan 2014, 205, PI.II/ 12, Ordentlich, 2014a, 220, PI.VII/7). Another motif that combines round impressions made by a pointy tool and parallel incisions (PI.5/2, Fig 2/10) was found, with analogies in the MBA (Găvan, Ignat 2014, 163, PI. VII/8, 9, 11). The motif on the shard from PI.6/7 also has parallels in the Otomani Culture (Ordentlich, 2014a, 230, PL. XVII/3; Molnar 2014, PI.64/5; Banner, Bonna 1974, PI.44/20). The only pottery fragment with grooves that can certainly be associated with the Otomani culture is the one from PI.6/3. For the other grooved ceramics (PI.7/6, 8, 10, 13, 15), it is uncertain if they are part of a later Otomani phase or if they represent the Late Bronze Age Cehăluț or Suciul de Sus aspects. Regarding the latter, such decorations are present in both cultural groups. Clear Late Bronze Age elements are also present, such as the ones illustrated in PI.7/1-7 (Kacso 2018, 67-68, Fig.2-5). The subsequent chronological stage is represented by grooved pottery fragments that are black at the outer part and red at the inner part (Fig.5/5/6, PI.7/9, 16), specific to the Early Iron Age Gava horizon.

Considering the above stated information, the MBA pottery found at *Rătu Alceului* has good parallels within the final two stages of the tell-site from Toboliu *Dâmbu Zănăcanului*, site that belong to the MBA III. This assumption is furthermore suggested by the fact that no shards with *broom-stroke* could be found within the new site, decoration elements that are characteristic for the early stages of the tell site and the secondary settlement around it. Appropriate analogies for these later aspects can also be found nearby, at the settlement of Palota Veche (Emödi 2002, Fig.3/1, 10; Fig.5/2; Fig.10/4, 8; Fig.22/1, 2; Fig.23/13; Fig.28/2).

Regarding the Late Bronze Age discoveries (see also Fazecaș 2018, 114 and the discussion of Cehăluț and Gava elements), a few parallels can be made with several neighbouring sites: Cefa *La pădure* (Crișan 1994, 24-25, PI.III/1-5), Cefa *Silvaș* (Crișan 1987, 20, PI.III/1), Cefa *Târle* (Crișan 1987, 21, III/2, 3), Cefa *Futraș* (Crișan 1987, 21, PI.III/4, 5), Biharea *Grădina CAP-Baraj* (Dumitrașcu, Emödi 1980, 47-67, Fig.1/3; Fig.2/2, 3, 5; Fig.3/8, 11, 12; Fig.4, 6, 10, 14, 17, 18; Fig.6/2, 5), Oradea *Salca* (Dumitrașcu, Emödi 1980, Fig.7/5, 7, 8, 9, 10, 12; Fig.8/2, 3, 13, 14, 17), Oradea *Salca Pepinieră* (Bulzan et al., 2000, PI.III/7-9, 12, 16, PI.IV/3, PI.V/1, 6, 8, 40, 11; PI.VI/14, 18, PI.VII/6, 10; PI.X/1, 4, 8; PI.XI/ 1, 17?; PI.XII/2, 8, 9), Sănnicolau Român *Bereac* (Fazecaș 2017, 22; Dumitrașcu, Crișan 1990, 98), Roit *Fosta fermă Legumicolă nr.2* (Fazecaș 2017, 22; Dumitrașcu 1986, 694), Roit *Duleul Pietrelor* (Fazecaș 2017, 22).

The La Tène period is also represented by several finds, such as the shards illustrated in PI.8/1-3; PI.9; PI.10. While the shards from PI.8/1-3; PI.9/1-2, 5-6 come from hand-made pots, the ones from PI.9/3-4, PI.10/1-4 come from wheel-thrown pottery. Also, worth mentioning is the fact that most of the wheel-thrown fragments have graphite in the fabric. A good analogy for the ceramics can be found in the nearby village of Tărian, where 12 celtic graves have been excavated (Chidioșan, Ignat 1972). As in the case of *Rătu Alceului*, hand-made pottery of local tradition is combined with wheel-thrown pottery of Celtic tradition. Also, the fragment from PI.9/1 has an analogy with a bi-truncated cup from a cremation grave (Chidioșan, Ignat 1972, Fig.5/4), while the bowls with inverted rims from PI.8/1-3 can be compared with the ones discovered in grave 18 from Tărian (Chidioșan, Ignat 1972, 22-23, fig.5/1-3). The graves containing the pots are dated in the La Tène C1 (Pupeză 2012, Ap1, 329). However, the lack of any other ornamentation on the above-mentioned pots from *Rătu Alceului* renders the analogies with Tărian as rather poor, as both of the forms have a wide chronological frame that starts as early as the end of the First Iron Age (Vulpe 1967, 38; Pupeză 2010, 130-132, 136-137). Thus



being said, any attempt to establish a narrower chronological frame would be futile, considering the context of discovery and number of individuals. Therefore, a La Tene B-C would be more prudent, bearing in mind the analogies with other finds from North-Western-Romania (see Nemeți 1988, 87-111).

Roman period ceramics were also found (Pl.7). Most of them are wheel-made, but there are also three dark-greyish shards that were handmade (Pl.7/6-8). Considering the restricted batch, we can associate them with the Sarmatian communities and the interval from the 2nd to the 4th century AD.

The early medieval period is represented at the site from *Râtu Alceului* by several pottery shards (Pl. 12/1-12), decorated with series of wavy and horizontal incisions (Crișan 1994, 27-28, Pl.4/1,2; Pl.5/8-10,12,13; Pl.6/2,6,9).

The newly identified archaeological site from Toboliu *Râtu Alceului* presents a diverse repertory of ceramic finds, assigned to communities which inhabited the *Alceu – Criș* micro-region in different periods. Therefore, pinning this previously unknown site on the map is an important contribution in better understanding the local cultural dynamics. For the MBA period, the site in Toboliu *Râtu Alceului* is extremely important, as it represents a missing link between the tell-site and the net of settlements surrounding it. As previously mentioned, the MBA ceramics found here are similar with the ones from the latest phases of the tell-site *Dâmbu Zănăcanului*. However, it is difficult at the moment to establish any relation between the two sites, as tempting as it is to assume that the newly found site might have functioned as a so-called *satellite settlement*.

The information presented in this paper was only intended as a preliminary presentation, which would make the site known to a wider and potentially interested public. In the following years, further research in the area will focus on non-destructive approaches, such as aerial photography and geomagnetism.

## References

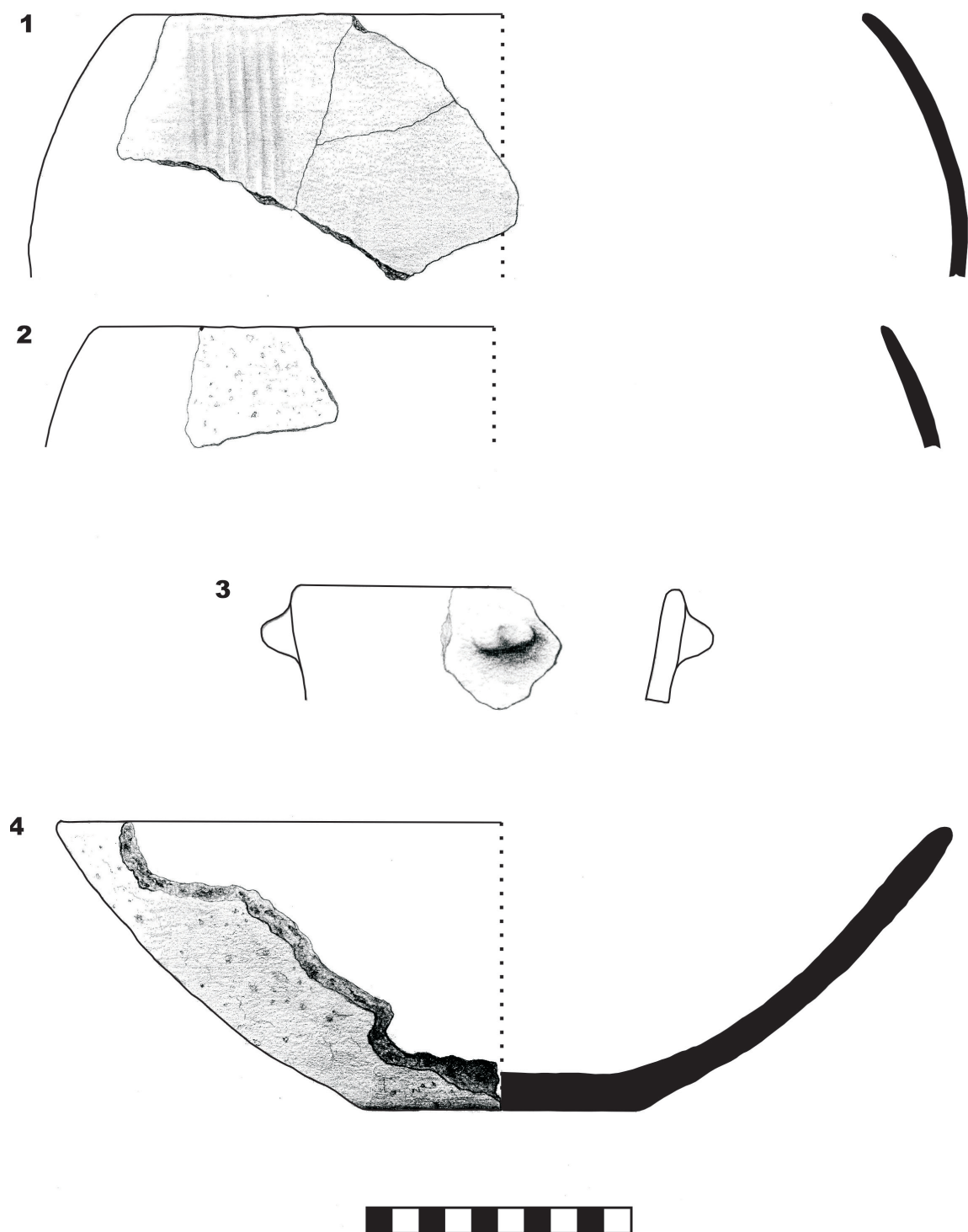
- |                           |                                                                                                                                                                                                                                                                                                                                                                                                                 |
|---------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Banner, Bónna 1974        | János Banner, István Bóna, <i>Mittelbronzezeitliche Tell-Siedlung bei Békés</i> , Budapest, 1974.                                                                                                                                                                                                                                                                                                               |
| Berindei et al. 1992      | Ignăție Berindei, Grigor Pop, Gheorghe Măhărea, <i>Câmpia Crișurilor</i> , în <i>Geografia României</i> vol. IV - <i>Regiunile pericarpatică, Dealurile și Câmpia Banatului și Crișanei, Podișul Mehedinți, Subcarpații, Piemontul Getic, Podișul Moldovei</i> , Editura Academiei Române, București 1992.                                                                                                      |
| Bulzan et al. 2000        | Sorin Bulzan, Călin Ghemiș, Gruia Fazecaș, <i>Săpăturile arheologice de salvare de la Oradea punctul Salca Pepinieră</i> , în <i>Crisia</i> 30, 2000. 81-140.                                                                                                                                                                                                                                                   |
| Chidioșan, Ignat 1972     | Nicolae Chidioșan, Doina Ignat, <i>Cimitirul celtic de la Tărian</i> , în <i>SCIVA</i> 23/4 1972, 553-579.                                                                                                                                                                                                                                                                                                      |
| Crișan 1987               | Ioan Crișan, <i>Descoperiri arheologice în hotarul localității Cefa (Jud. Bihor)</i> , în <i>Crisia</i> XVII, 1987, 25-53.                                                                                                                                                                                                                                                                                      |
| Crișan 1994               | Ioan Crișan, <i>Săpăturile arheologice din anul 1993 de pe șantierul Cefa-La Pădure, jud. Bihor</i> , în <i>Crisia</i> XXIV, 1994, 23-42.                                                                                                                                                                                                                                                                       |
| Crișan 1998               | Ioan Crișan, <i>Materiale arheologice din perioada de tranziție de la Eneolitic la Epoca Bronzului descoperite în așezarea Cefa-La Pădure, județul Bihor</i> , în <i>Crisia</i> XXVIII, 1998, 7-14.                                                                                                                                                                                                             |
| Dinnin, Van de Noort 1996 | Mark Dinnin, Robert Van De Noort, <i>Wetland habitats, their resource potential and exploitation. A case study from the Humber wetlands</i> , în Coles, B., Coles, J., Shou-Jørgenson, M., (eds). <i>'Bog bodies, sacred sites and wetland archaeology: proceedings of a conference held by WARP and the National Museum of Denmark, in conjunction with Silkeborg Museum, Jutland, September 1996</i> , 69-78. |
| Dumitrașcu, Emödi 1980    | Sever Dumitrașcu, Ioan Emödi, <i>Materiale arheologice de la sfârșitul epocii bronzului și de la începutul epocii fierului descoperite la Biharea</i> , în <i>Acta Musei Porolissensis</i> IV, 1980, 75-109.                                                                                                                                                                                                    |

- Dumitrașcu, Crișan 1990 Sever Dumitrașcu, Ioan Crișan, *Descoperiri și cercetări arheologice în anul 1988 de la Sânnicolau Român jud. Bihor*, în *Crisia XX*, 1990.
- Dumitrașcu 1986 Sever Dumitrașcu, *Descoperiri arheologice din Valea Crișului Repede și semnificația lor istorică*, în *Crisia XVI*, 1986.
- Emödi 2002 Ioan Emödi, *O așezare din epoca bronzului de la Palota Veche*, în *Ephemeris Napocensis*, XII, 2002, 5-35.
- Fazecaș 2014 Gruia Fazecaș, *Girișu de Criș Alceu (Bihor County)*, în Florin Gogâltan, Cristina Cordoș, Ana Ignat, *Bronze Age Tell, Tell-like and Mound-Like Settlements on the Eastern Frontier of the Carpathian Basin*, Cluj-Napoca, Editura Mega, 2014, 111-116.
- Fazecaș 2014a Gruia Fazecaș, *Salonta "Dealul trupului = Test halom", Bihor County*, în Florin Gogâltan, Cristina Cordoș, Ana Ignat, *Bronze Age Tell, Tell-like and Mound - Like Settlements on the Eastern Frontier of the Carpathian Basin*, Cluj-Napoca, Editura Mega, 2014, 191-195.
- Fazecaș 2017 Gruia Fazecaș, *Preistoria*, în Gruia Fazecaș (coord.), *Monografia comunei Sânnicolau Român*, Editura Primus, Oradea, 2017, 17-25.
- Fazecaș 2018 Gruia Fazecaș, *Preistoria și Protoistoria*, în Gabriel Moisa, Sorin Șipoș, Aurel Chiriac, Radu Românașu, *Istoria Bihorului, Societate, Economie, Mentalități*, Editura Muzeului Țării Crișurilor, Oradea, 2018, 75-124.
- Fazecaș, Marta 2014 Gruia Fazecaș, Doru Marta, *Locuirea eneolitică târzie de la Oradea – str. Cireșilor*, în *Crisia XLIV*, 2014, 7-17.
- Fazecaș, Lie 2018 Gruia Fazecaș, Marian Adrian Lie, *Determinarea suprafeței sitului arheologic de Epoca Bronzului de la Toboliu Dâmbu Zănăcanului*, în *Crisia XLVIII*, 2018, 29-38.
- Găvan 2014 Alexandra Găvan, *Vârșand "Movila dintre vii = Lopóshalom", Arad County*, în Florin Gogâltan, Cristina Cordoș, Ana Ignat, *Bronze Age Tell, Tell-like and Mound-Like Settlements on the Eastern Frontier of the Carpathian Basin*, Cluj-Napoca, Editura Mega, 2014, 274-285.
- Găvan, Ignat 2014 Alexandra Găvan, Ana Ignat, *Pecica "Șanțul Mare = Nagysánc", Arad County*, în Florin Gogâltan, Cristina Cordoș, Ana Ignat, *Bronze Age Tell, Tell-like and Mound-Like Settlements on the Eastern Frontier of the Carpathian Basin*, Cluj-Napoca, Editura Mega, 2014, 148-167.
- Ghemiș 2014 Călin Ghemiș, *Ateaș "Holumbu Voghiului", Bihor County*, în Florin Gogâltan, Cristina Cordoș, Ana Ignat, *Bronze Age Tell, Tell-like and Mound-Like Settlements on the Eastern Frontier of the Carpathian Basin*, Cluj-Napoca, Editura Mega, 2014, 31-34.
- Gogâltan 2014 Florin Gogâltan, *Săcueni "Cetatea Boului = Cetatea Taurului = Ökörvár = Ökördomb = Bikavár", Bihor County*, în Florin Gogâltan, Cristina Cordoș, Ana Ignat, *Bronze Age Tell, Tell-like and Mound-Like Settlements on the Eastern Frontier of the Carpathian Basin*, Cluj-Napoca, Editura Mega, 2014, 200-206.
- F.Gogâltan 2014a Florin Gogâltan, *Diosig "Colonia = Lângă colonia", Bihor County*, în Florin Gogâltan, Cristina Cordoș, Ana Ignat, *Bronze Age Tell, Tell-like and Mound-Like Settlements on the Eastern Frontier of the Carpathian Basin*, Cluj-Napoca, Editura Mega, 2014, 95-97.
- Kacsó 1999 Carol Kacsó, *Die Endphase der Otomani-Kultur und die darauffolgende kulturelle Entwicklung in Nordwesten Rumaniens, in Die Otomani - Füzesabony - Kulturentwicklung, Chronologie, Wirtschaft*, Krosno, 1999, 85-112.
- Kacsó 2018 Carol Kacsó, *Oarța de Sus - Așezarea Suciu de Sus*, în *Apulum LV*, 2018, 67-86.

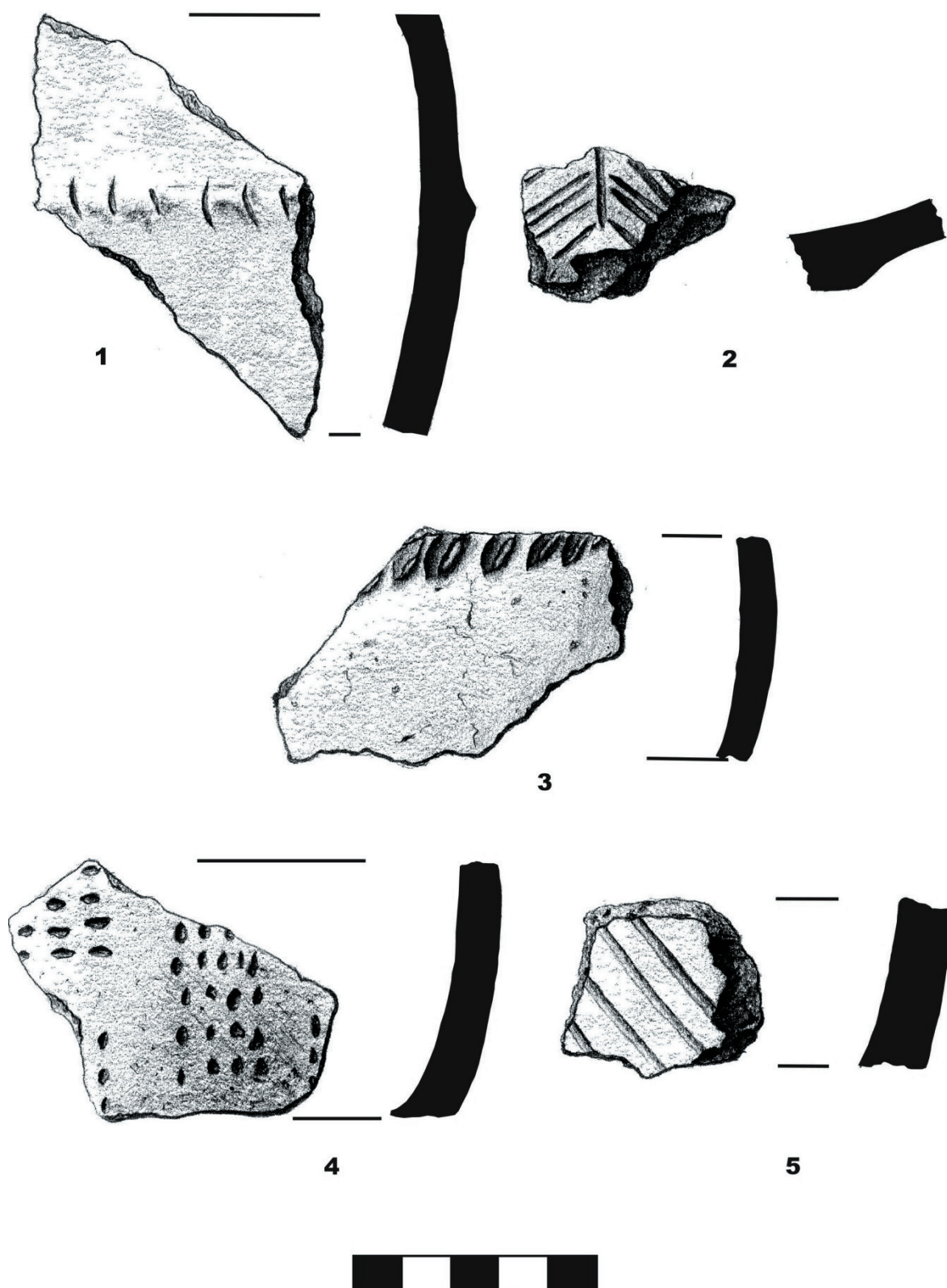
- Karácsonyi 1994-1995 Carol Karácsonyi, *Date istorice despre apele și lucrările de hidroameliorații efectuate în Nord-Vestul României (Cu referiri la modificările microclimatice edafice și biocenotice survenite în urma acestor lucrări)*, în Studii și Comunicări Satu-Mare XI-XII, 1994-1995, 195-233.
- Lichardus, Iliev 2001 Jan Lichardus, Ilja Krastev Iliev, *Die Cernavodă III - Siedlung von Drama-Merdžumekja in Südostbulgarien und ihre bedeutung für Südosteuropa*, în *Studia Danubiana Series Symposia - Cernavodă III - Boleraz, Ein Vorgeschichtliches Phänomen zwischen dem Oberrhein und der unteren Donau*, Mangalia/ Neptun (18-24 Oktober 1999), București, 2001, 166-198.
- Lie et al. 2018 Marian Adrian Lie, Cristina Cordoș, Alexandra Găvan, Gruia Fazecaș, Tobias L. Kienlin, Florin Gogâltan, *An overview of the Bronze Age tell-settlement in Toboliu (Bihor County, Romania)*, în *Gesta - A Miskolci Egyetem Történettudományi Intézetének folyóirata*, XVII/2, 2018, 63-76.
- Marta 2014 Liviu Marta, *Bervenii "Holmoș", Satu Mare County*, în Florin Gogâltan, Cristina Cordoș, Ana Ignat, *Bronze Age Tell, Tell-like and Mound-Like Settlements on the Eastern Frontier of the Carpathian Basin*, Cluj-Napoca, Editura Mega, 2014, 35-38.
- Molnár 2014 Zsolt Molnár, *Contribuții la cunoașterea culturii Otomani din nord-vestul Transilvaniei - Ceramică și metal*, Editura Mega, Cluj-Napoca, 2014.
- Németi 1988 I. Németi, *Unele aspecte ale evoluției ceramicii din a doua epocă a fierului în nord-vestul R.S. România (Latène B-C)*, în Studii și Cercetări de Istorie Veche și Arheologie 39/2, 1988, 87-111.
- Molnár, Németi 2014 Zsolt Molnár, János Németi, *Carei "Bobald = Bobáld", Satu Mare County*, în Florin Gogâltan, Cristina Cordoș, Ana Ignat, *Bronze Age Tell, Tell-like and Mound-Like Settlements on the Eastern Frontier of the Carpathian Basin*, Cluj-Napoca, Editura Mega, 2014, 43-60.
- Németi 2001 János Németi, *Cernavodă III - Boleráz Finds in North-West Romania*, în *Studia Danubiana Series Symposia - Cernavodă III - Boleraz, Ein Vorgeschichtliches Phänomen zwischen dem Oberrhein und der unteren Donau*, Mangalia/ Neptun (18-24 Oktober 1999), București, 2001, 299-329.
- Ordentlich et al. 2014a Ivan Ordentlich, Alexandra Găvan, Călin Ghemiș, *Sălacea "Dealul Vida = Vida hegy", Bihor County*, în Florin Gogâltan, Cristina Cordoș, Ana Ignat, *Bronze Age Tell, Tell-like and Mound-Like Settlements on the Eastern Frontier of the Carpathian Basin*, Cluj-Napoca, Editura Mega, 2014, 207-230.
- Ordentlich et al. 2014b Ivan Ordentlich, Marian Adrian Lie, Călin Ghemiș, *Otomani "Cetățuie = Várhegy", Bihor County*, în Florin Gogâltan, Cristina Cordoș, Ana Ignat, *Bronze Age Tell, Tell-like and Mound-Like Settlements on the Eastern Frontier of the Carpathian Basin*, Cluj-Napoca, Editura Mega, 2014, 129-138.
- Petric 2014 Paul Petric, *Socodor "Căvăjdia", Arad County*, în Florin Gogâltan, Cristina Cordoș, Ana Ignat, *Bronze Age Tell, Tell-like and Mound-Like Settlements on the Eastern Frontier of the Carpathian Basin*, Cluj-Napoca, Editura Mega, 2014, 247-257.
- Popa, Fazecaș 2013 Cristian Ioan Popa, Gruia T. Fazecaș, *Contribuții la cunoașterea etapei finale a culturii Coțofeni în Crișana. Așezarea de la Tășad (jud. Bihor)*, în *Apulum*, L, 2013, 47-85.
- Popa, Totoianu 2001 Cristian Ioan Popa, Radu Totoianu, *Date noi asupra locuirilor umane de la Sebeș - Podul Pricopului, jud. Alba*, în *Patrimonium Apulense I*, 2001, 33 - 54.



- Popa, Totoianu 2010 Cristian Ioan Popa, Radu Totoianu, *Aspecte ale Epocii Bronzului în Transilvania (Între vechile și noile cercetări)*, Sebeș, 2010.
- Posea 1997 Grigore Posea, *Câmpia de Vest a României (Câmpia Banato-Crișană)*, Editura Fundației România de Măine, București 1997.
- Pupeză 2010 Paul Pupeză, *Ceramica geto-dacică din interiorul arcului Carpatic*, în *Revista Bistriței XXIV*, 2010, 129-162.
- Pupeză 2012 Paul Pupeză, *The Local Tradition Pottery from the Eastern Carpathian Basin Celtic Graves*, în Sandor Berecki (ed.), *Iron Age Rites and Rituals in the Carpathian Basin*, Editura Mega, Târgu Mureș 2012, 317-342.
- Roman 2001 Petre Roman, *Die Cernavodă III - Boleráz-Kulturerscheinung im Gebiet der unteren Donau*, în *Studia Danubiana Series Symposia - Cernavodă III - Boleraz, Ein Vorgeschichtliches Phänomen zwischen dem Oberrhein und der unteren Donau*, Mangalia/ Neptun (18-24 Oktober 1999), București, 2001.
- Roman, Némethi 1978 Petre I. Roman, Ioan Némethi, *Cultura Baden în România*, Editura Academiei Republicii Socialiste România, București, 1978.
- Sava 2008 Victor Sava, *Situri ale finalului Epocii Cuprului din Câmpia de Vest*, în *Analele Banatului*, XVI, 2008, 45-80.
- Sava, Gogâltan 2014 Victor Sava, Florin Gogâltan, *Munar "Weingarten = Wolfsberg", Arad County*, în Florin Gogâltan, Cristina Cordoș, Ana Ignat, *Bronze Age Tell, Tell-like and Mound-Like Settlements on the Eastern Frontier of the Carpathian Basin*, Cluj-Napoca, Editura Mega, 2014, 123-128.
- Sava 2015 Victor Sava, *Neolithic and Eneolithic in the Lower Mureș Basin*, Editura Mega, Cluj-Napoca, 2015.
- Tasić 2001 Nikola Tasić, *Cernavodă III - Boleráz-Kultur im westlichen teil der jugoslawischen Donauniederung*, în *Studia Danubiana Series Symposia - Cernavodă III - Boleraz, Ein Vorgeschichtliches Phänomen zwischen dem Oberrhein und der unteren Donau*, Mangalia/ Neptun (18-24 Oktober 1999), București, 2001, 342-357.
- Ujvári 1972 Ioan Ujvári, *Geografia Apelor României*, Editura Științifică, București, 1972.
- Vulpe 1967 Alexandru Vulpe, *Necropola hallstatiană de la Ferigile*, București, 1967.
- Zmeykova 2001 Ilka Zmeykova, *The Cernavodă III Culture in North-Eastern Bulgaria*, în *Studia Danubiana Series Symposia - Cernavodă III - Boleraz, Ein Vorgeschichtliches Phänomen zwischen dem Oberrhein und der unteren Donau*, Mangalia/Neptun (18 - 24 Oktober 1999), București, 2001, 213-235.

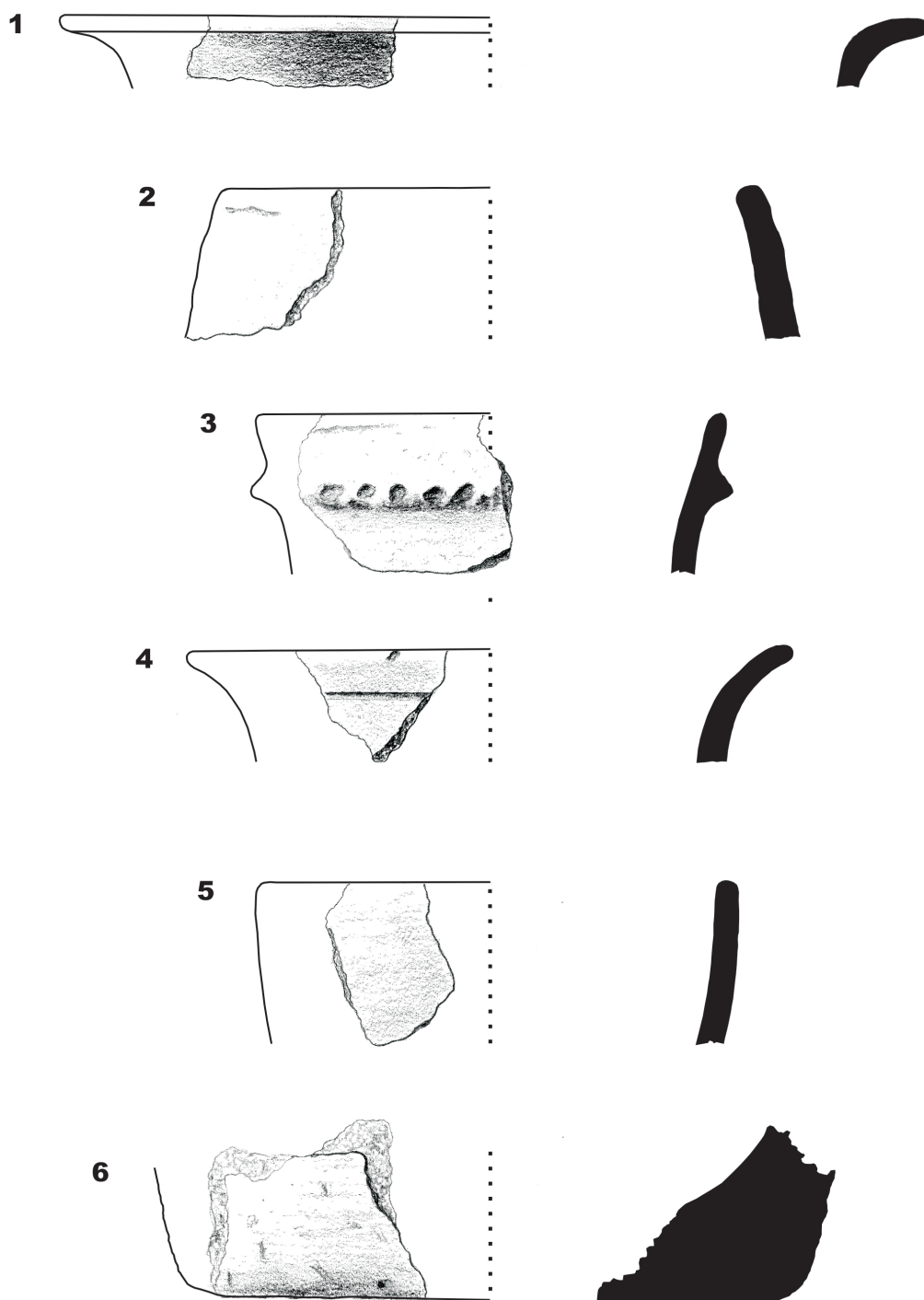


Pl. 1

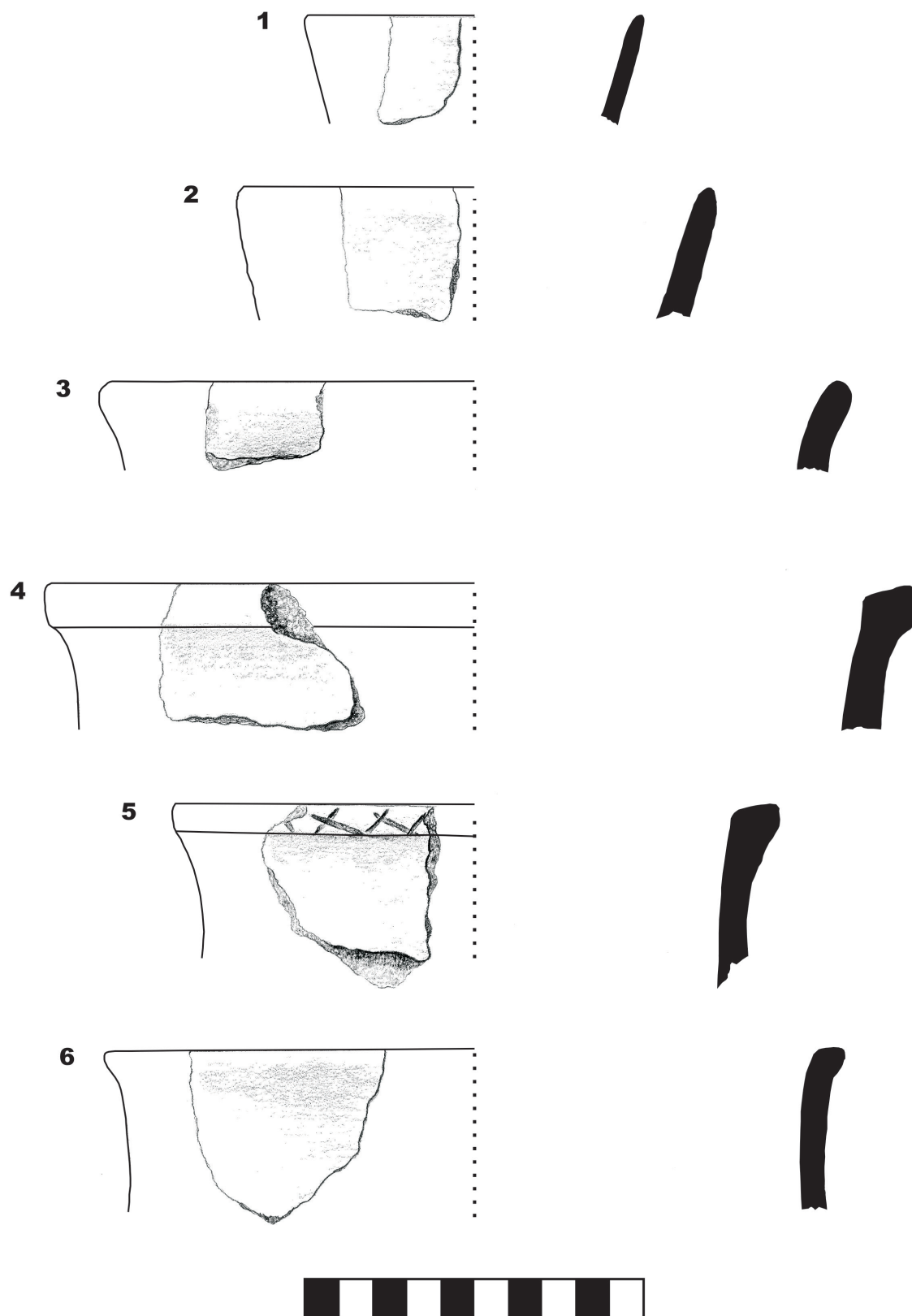


Pl. 2

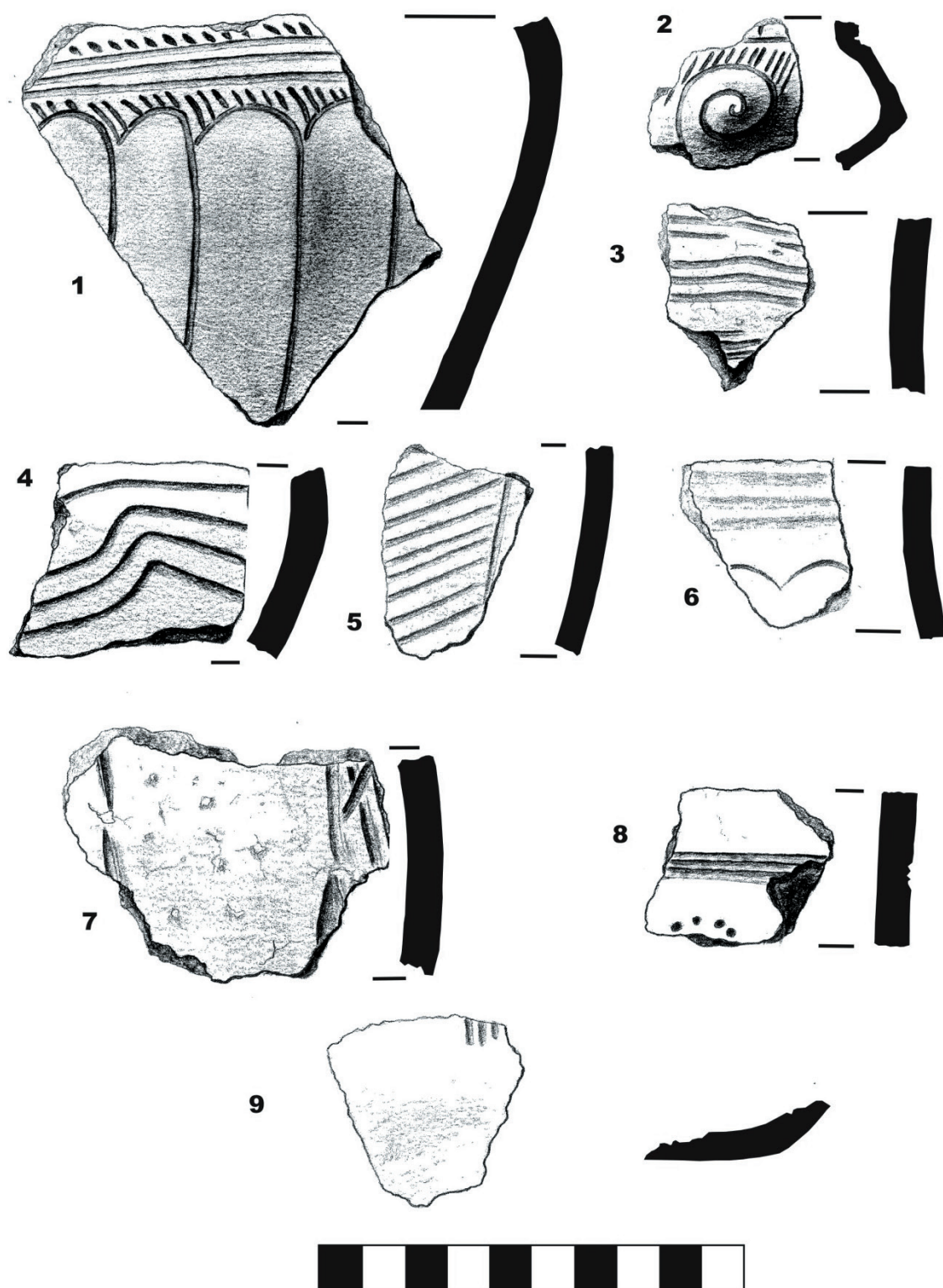




Pl. 3

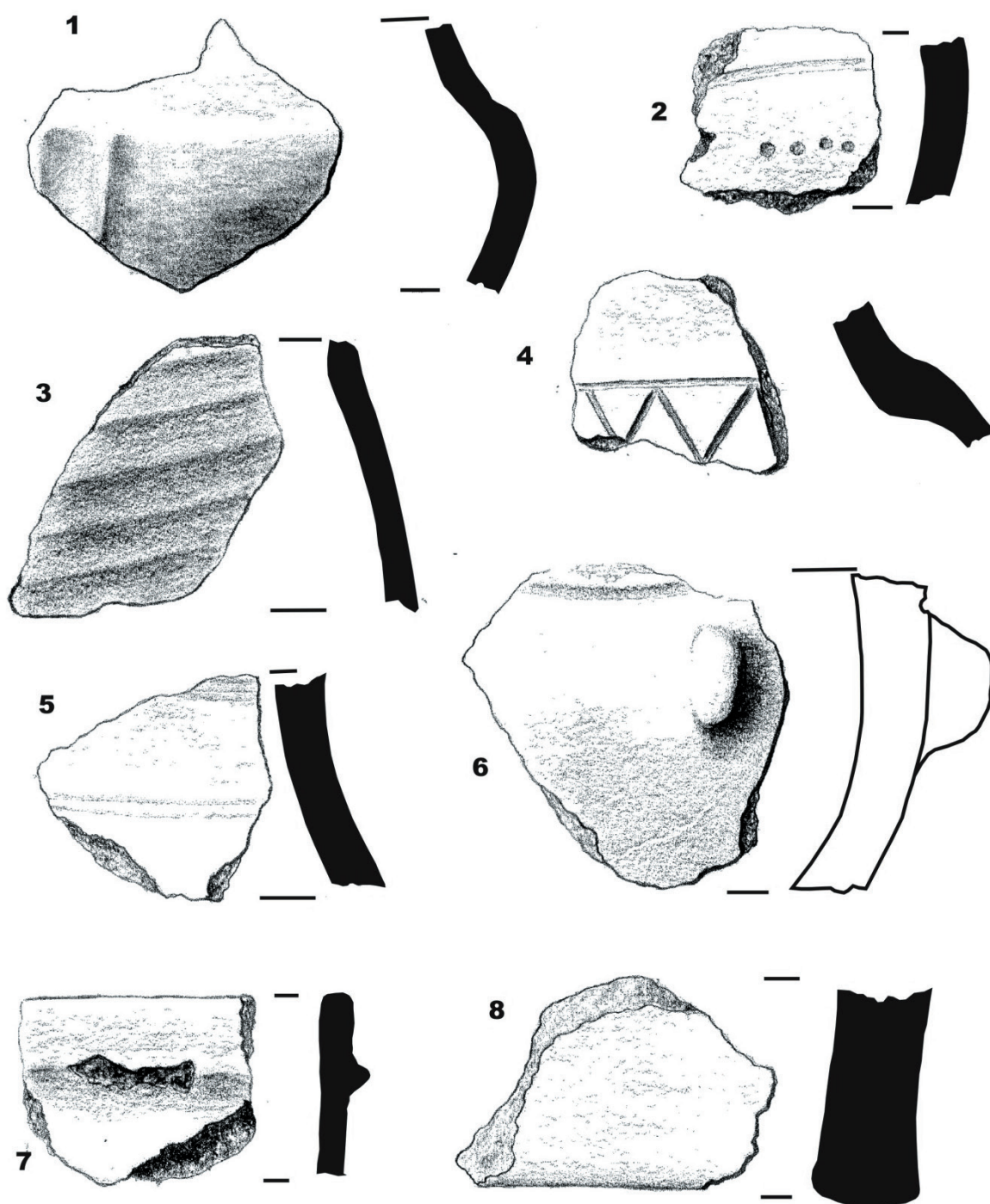


Pl. 4

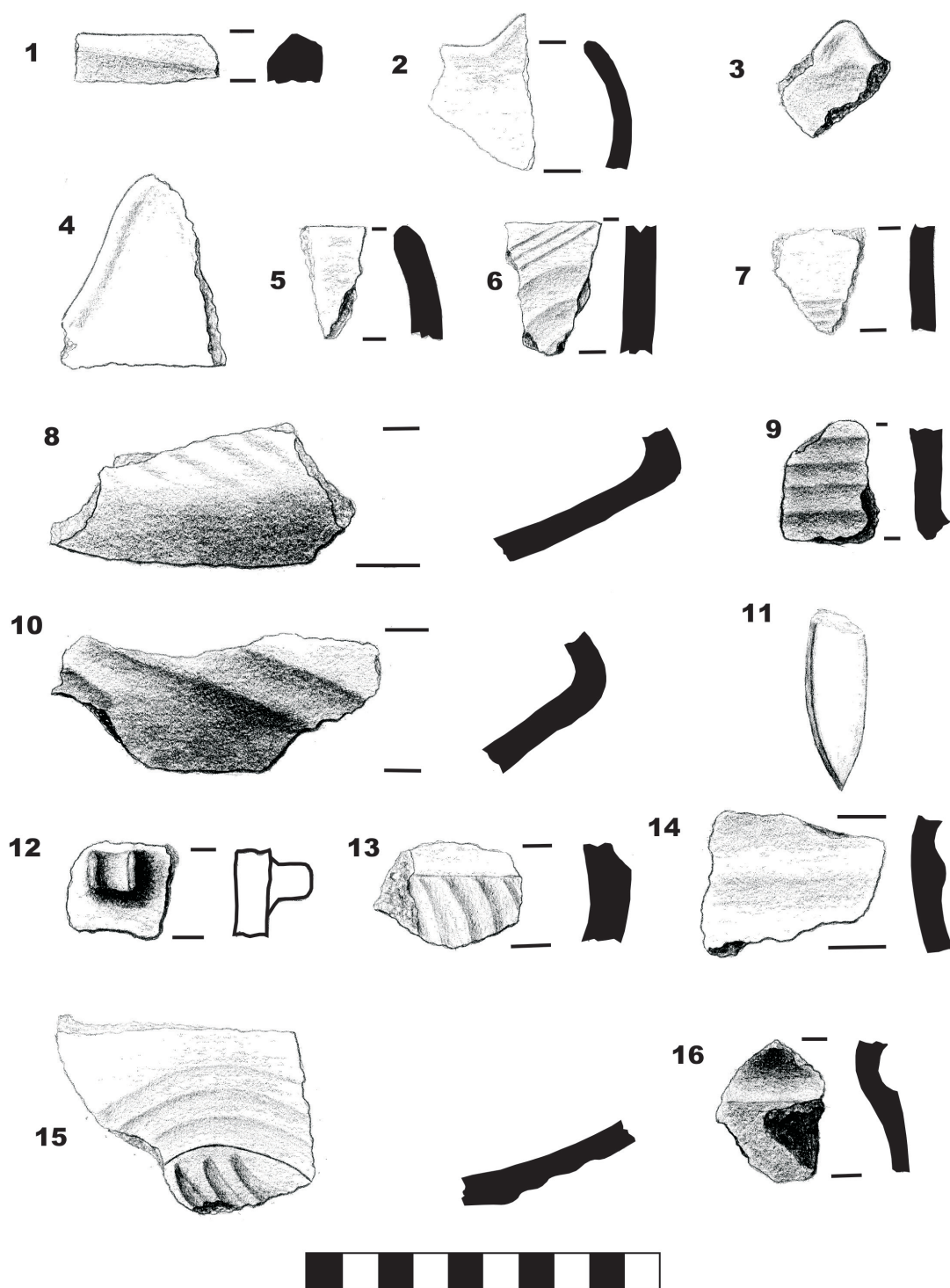


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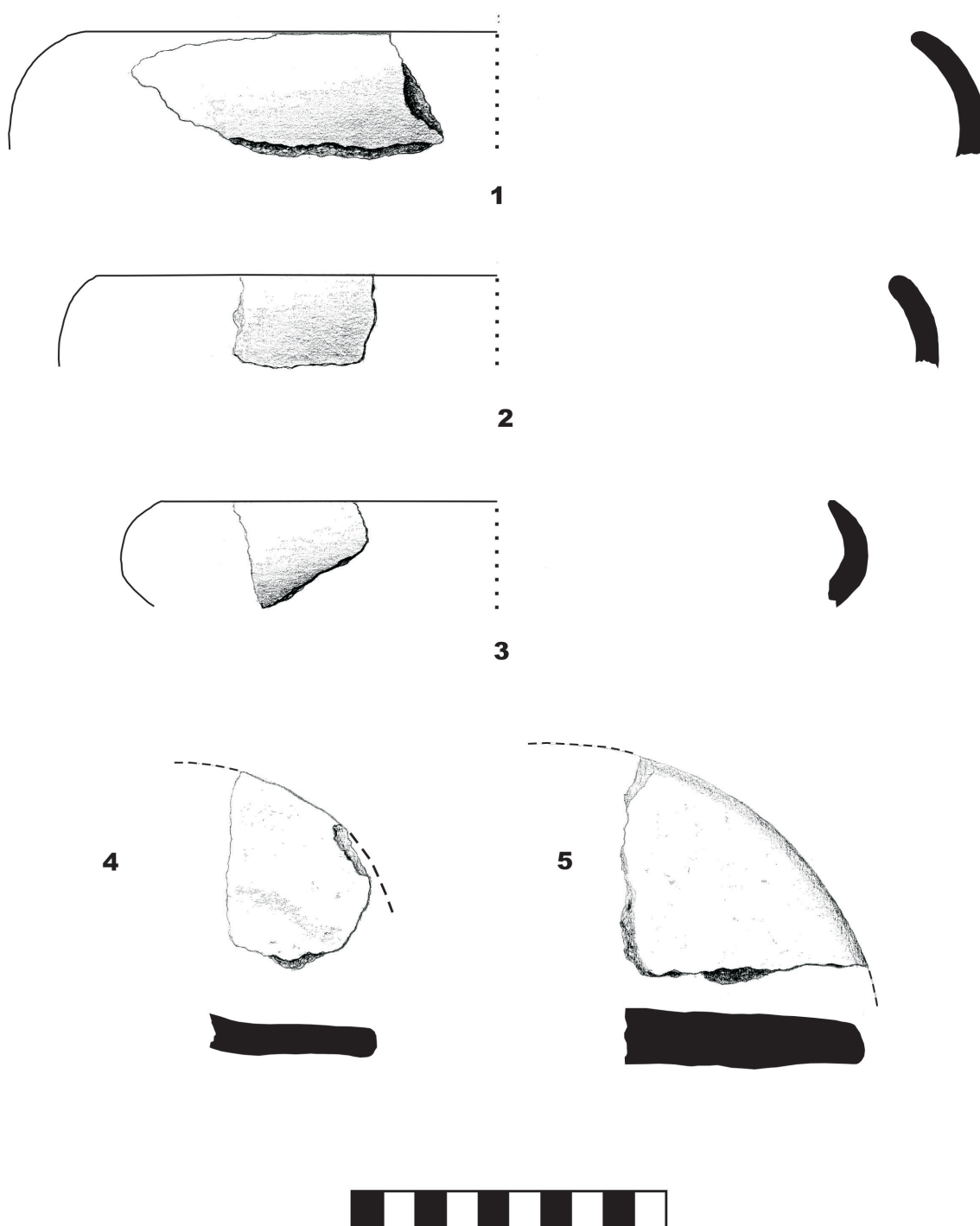




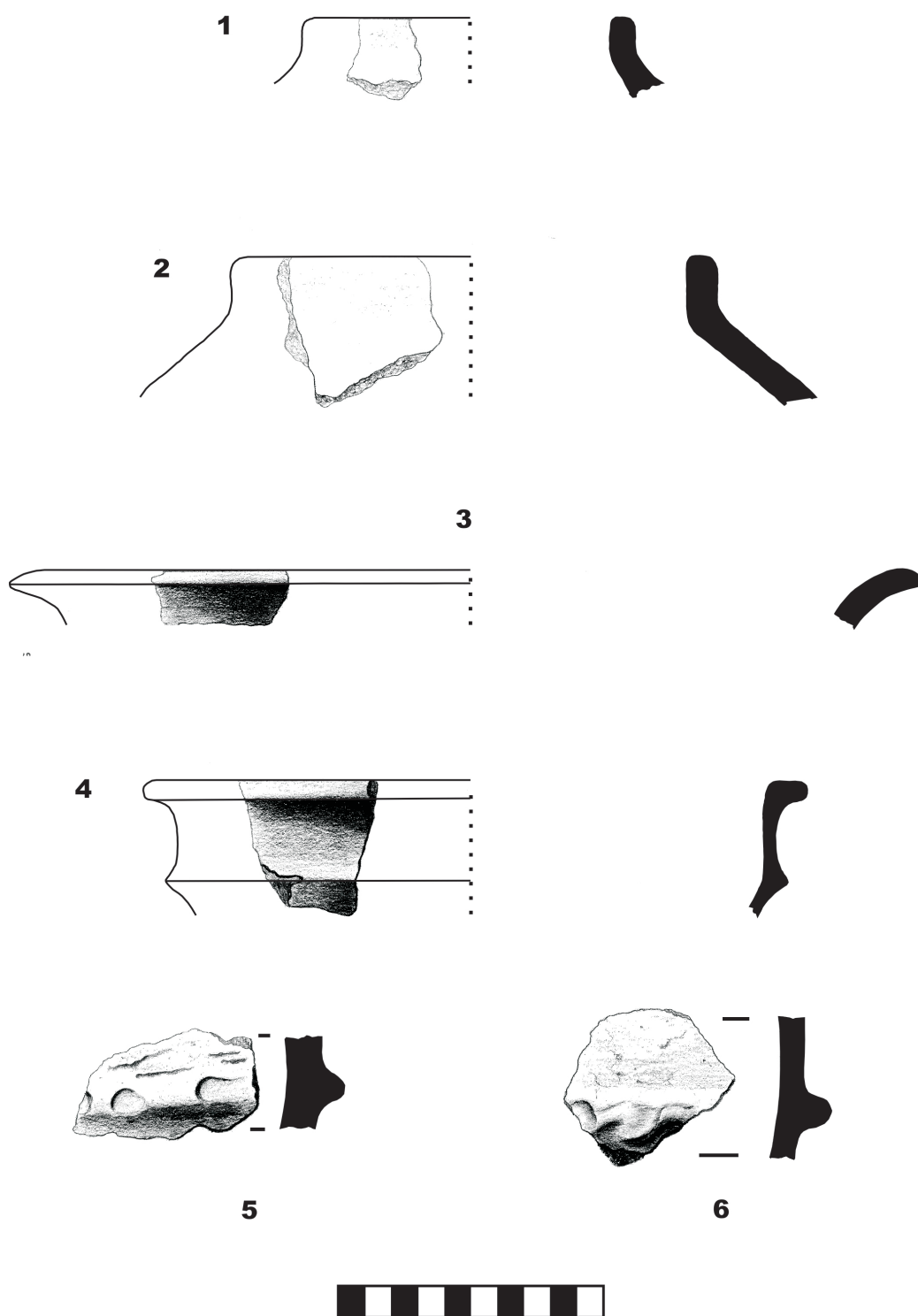
Pl. 6



Pl. 7

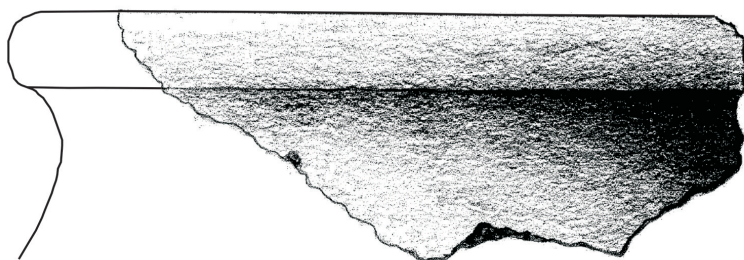




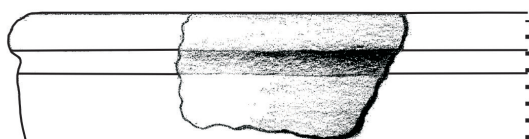


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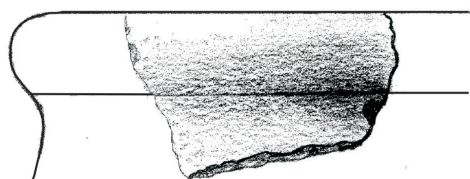
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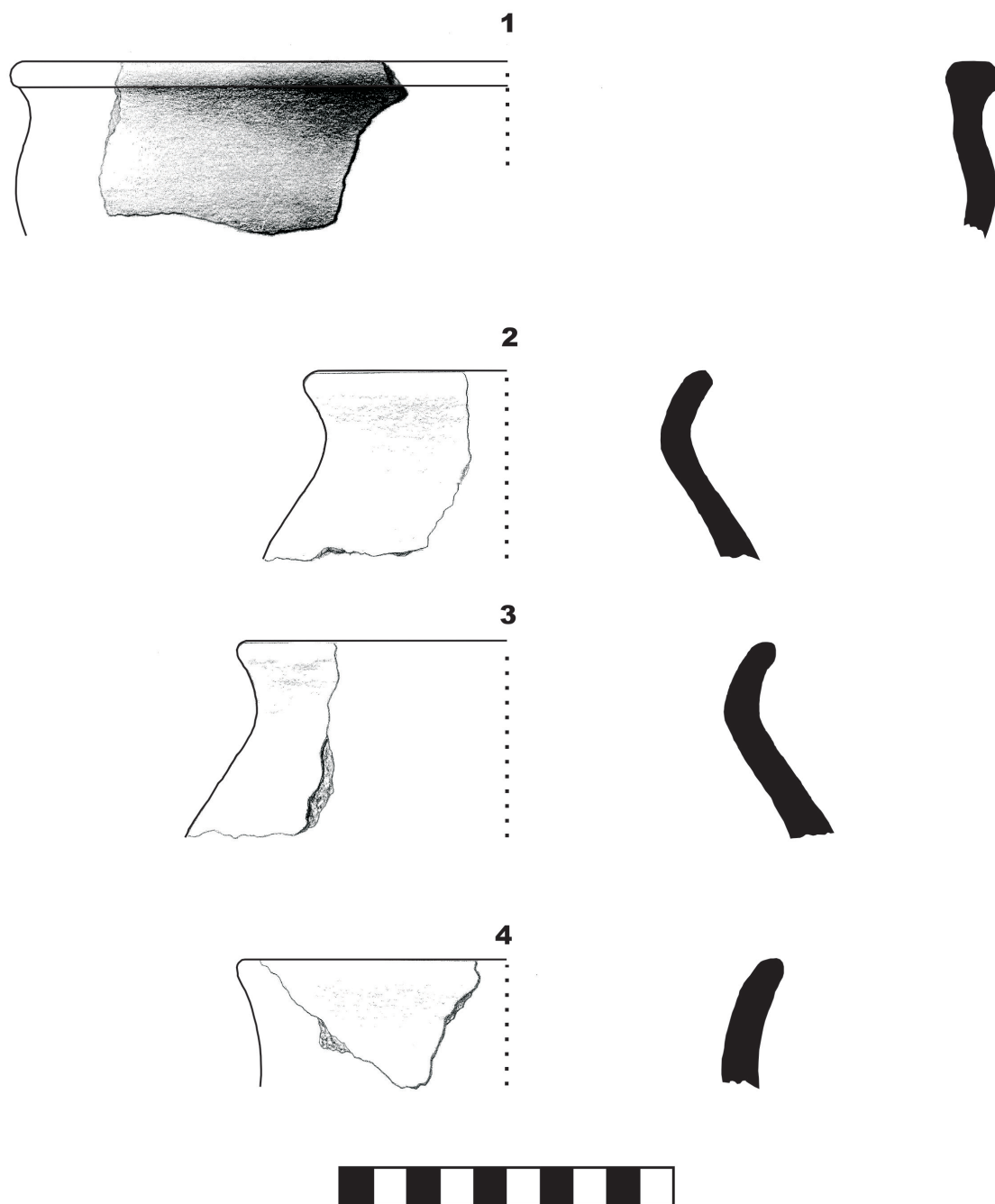


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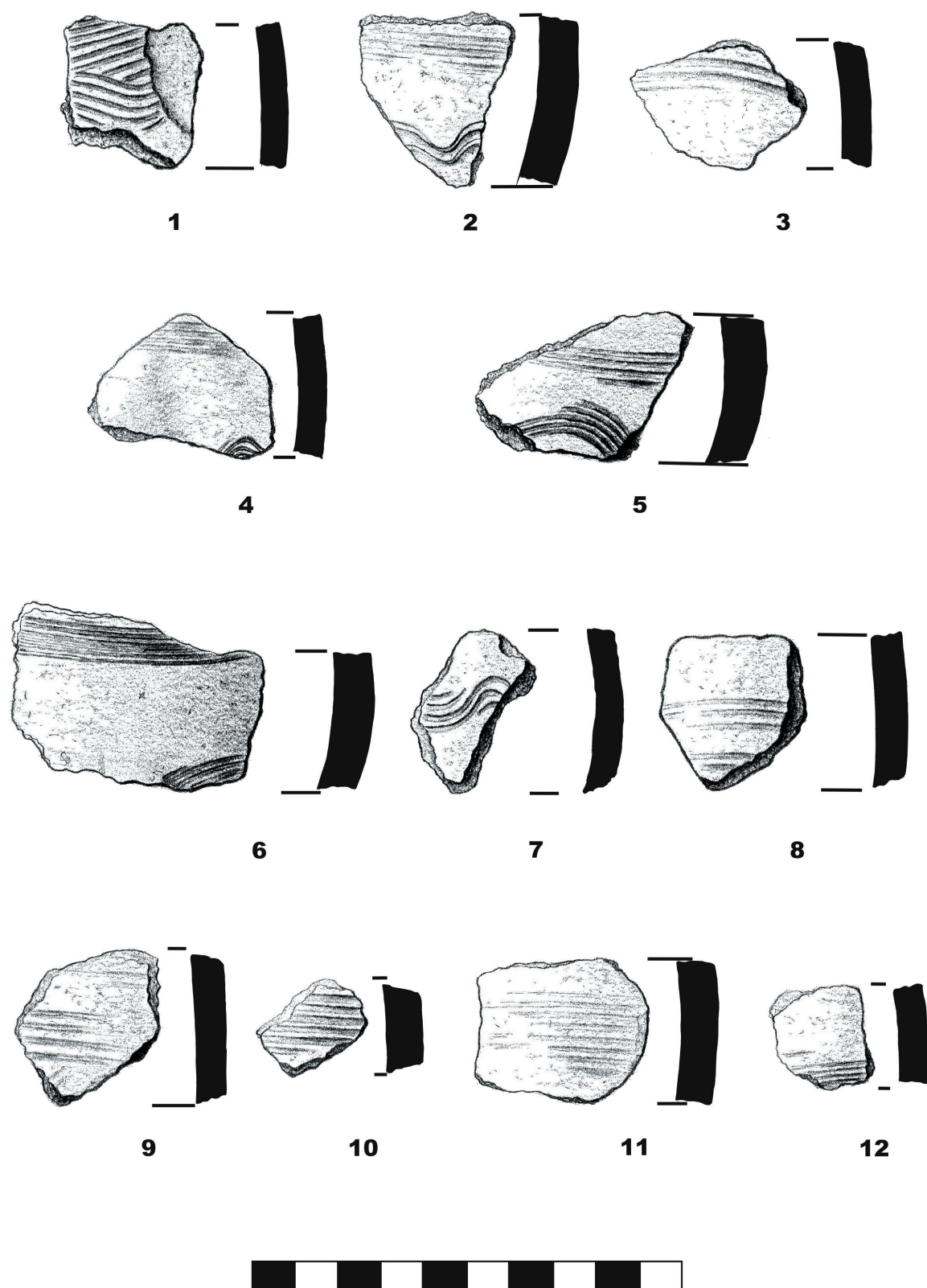
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Pl. 11





Pl. 12