In memoriam dr. István Bajusz (1954–2021)

MARISIA

ARCHAEOLOGIA
HISTORIA
PATRIMONIUM

3

Târgu Mureș
2021

MUZEUL JUDEȚEAN MUREȘ
MAROS MEGYEI MÚZEUM • MUREȘ COUNTY MUSEUM

CONSILIUL JUDEȚEAN MUREȘ
MAROS MEGYEI TANÁCS I MUREȘ COUNTY COUNCIL

The publication was financially supported by:

National Cultural Fund of Hungary

CORRESPONDENCE

Muzeul Județean Mureș / Mureș County Museum
CP 85, str. Mărăști nr. 8A, 540328 Târgu Mureș, România
e-mail: marisiaedit@gmail.com

Cover: István KARÁCSONY

ISSN 2668–7232

editura MEGA
Editura Mega | www.edituramega.ro
e-mail: mega@edituramega.ro

CONTENTS

THE EXCAVATIONS AT THE NORTH-EASTERN ANGLE TOWER OF THE AUXILIARY FORT OF CĂLUGĂRENI / MIKHÁZA

Szilamér-Péter PÁNCZÉL* – Katalin SIDÓ** – Orsolya SZILÁGYI***

The current paper presents the excavations from the NE angle tower of the auxiliary fort of Călugăreni / Mikháza from 2020. During the excavations we managed to identify two major phases of the fort and based on the analogies and the archaeological material we were able to date them as well.

Keywords: *limes*, Dacia, auxiliary fort, angle tower, dating
Cuvinte cheie: *limes*, Dacia, castru auxiliar, turn de colț, datare

INTRODUCTION[1]

The Roman auxiliary fort of Călugăreni / Mikháza in Mureș / Maros County is located on the eastern *limes* of Roman Dacia in the valley of the Niraj / Nyárád River and along with a chain of watchtowers, fortlets and other defensive structures situated towards East, it had the task to control the Roman border section around the upper Niraj Valley which was an ancient traffic route towards the *barbaricum*. Due to the pandemic restrictions of 2020, the framework of the Călugăreni excavations was limited, so we decided to open up a smaller, but new area (trench D1) at the NE angle tower of the fort (Pl. I) identified during geophysical measurements.[2]

The area of the excavations was situated in the garden of houses no. 4 and 5 from Călugăreni, which were recently acquired by the Mureș County Council for the Archaeological Park of Călugăreni (Fig. 1). In the garden of house no. 4, during the 1961 excavations Dumitru Protase managed to identify two major phases of the auxiliary fort, an earlier wooden phase and a later stone phase. In the evaluation trench SI (Pl. I – the 1961 excavations are marked in blue), excavated perpendicularly on the northern defensive wall, he managed to identify most of the defensive elements belonging to both phases, and based on analogies he dated the building of the stone fort to the 2nd century AD.[3]

With the 2020 excavation we aimed to collect more accurate data concerning the dating of the two phases, to verify the building technique and material of the angle tower and the defensive

* Mureș County Museum, Târgu Mureș, RO, pszilamer@yahoo.com.
** Mureș County Museum, Târgu Mureș, RO, benjikatka@yahoo.com.
*** Mureș County Museum, Târgu Mureș, RO, szilorsi@rocketmail.com.

[1] Following abbreviations have been used: D = diameter; D_{base} = base diameter; D_{body} = body diameter; D_{head} = head diameter; D_{rim} = rim diameter; D_{shaft} = shaft diameter; l = length; l_{rod} = length of rod; th = thickness; w = width; CAL 2020 = Călugăreni 2020 excavations; Tr. = trench; Cx. = context; SF no. = small find number. The artefacts belong to the Archaeological collection of the Mureș County Museum.

[2] For the results of the geophysical measurements and the research history of the fort see: Pánczél–Bajusz 2021.

[3] Protase 1965, 210–212, fig. 3.

Fig. 1. The area of the auxiliary fort with the angle tower from trench D1.

wall, and to start developing conservation and management strategies for this area of the archaeological park, based on the state of preservation of the structures.[4] The Single Context Planning System[5] was used at the excavations in order to document the identified archaeological features.

CONTEXTS AND PHASES

During the excavations at trench D1 a 10 × 10 m area was opened based on the georadar measurements, and an 8.5 × 2 m extension on the N and a 0.5 × 5 m extension on the W side had to be made, to grasp the entire structure.

As far as the relative chronology of the site is concerned, (Pl. II) the major chronological sequences identified during the excavation have been marked in the stratigraphic matrix. The phases are easier to comprehend if one compares them to the two plans related to the major phases of the structure (Pl. III–IV) and the section drawings (Pl. V–VI) of the trench D1.[6]

To approximate the absolute chronology of the phases, we relied strongly on the archaeological material and the dated analogies for this type of angle tower. This issue will be discussed in the relating chapter.

Concerning the stratigraphy, we started

[4] The authors are grateful to Lóránt Vass (Pázmány Péter Catholic University from Budapest), Levente Daczó (Hungarian National Museum from Budapest), Koppány-Bulcsú Ötvös, Csongor Lukácsi (Mureș County Museum from Târgu Mureș) the students from the Babeș-Bolyai University from Cluj-Napoca, the volunteers and the workers who helped us during the excavations. Our special thanks go to Péter Simon (Babeș-Bolyai University from Cluj-Napoca) for his help with the illustrations.

[5] MOLAS 1997.

[6] Even if the contexts related to the modern use and the disuse of the tower have been thoroughly documented, we did not consider it relevant to publish a separate plan with these features. Based on the Single Context Planning System, the fills do not appear on the plans because their extent is visible due to the cut, but in the matrix, section drawings and the context description they appear next to their cuts. The square brackets were used to point out the masonry structures.

Fig. 2. Features related to the disuse of the second phase fort.

excavating the topsoil (Cx. 1) covering the whole area. The trench was located in the garden of houses, so the layer had a humus-like character with a high concentration of modern material and occasional redeposited Roman artefacts. The thickness varied from 0.1–0.3 m, slightly sloping from S to N.

As regards the **modern use** of the area, several garbage pits (Cx. 34/35; Cx. 7/16), *latrinae* (Cx. 4/11; Cx. 18/20) and fence postholes (Cx. 12/15; Cx. 13/14) have been documented. These contained mostly modern archaeological material and only occasional Roman finds.

Regarding the quite modern **disuse of the second phase fort** (Fig. 2–3) of the Roman walls we can relate the robbing trench (Cx. 9=21=22/23=24) of the defensive wall [Cx. 6] and its foundation [Cx. 42].

Several contexts can be linked to the post abandonment destruction. In the exterior of the fort a destruction layer of the *agger* could be documented (Cx. 10). It was visible in the NE corner of the trench, containing mid brownish-yellow silty clay, and lacking almost any archaeological material. The thickness of this context is 0.55 m. Underneath, covering most of the external area, a stone demolition of the defensive wall and the angle tower (Cx. 3) could be observed. The thickness of the context varied between 0.65–1 m and contained a huge amount of cobbles and boulders, roof tiles, occasionally brick fragments, abundant pottery and bones. The fill of the defensive ditch (Cx. 39) which can be related to the same phase, was a quite similar context. Another stone demolition (Cx. 5), outlined in the SW corner of the trench, can be related to the internal demolition of the wall, containing river cobbles, pottery and occasionally CBM. Also related to the destruction of the tower are the two fractured parts of the defensive wall [Cx. 40] and [Cx. 41]. One of them [Cx. 40] is a 0.8 × 0.3 m fragment which broke

Fig. 3. Features related to the construction and use of both phases from N.

off and sloped towards the *berma*. The other [Cx. 41], is at the extremity of the northern internal buttress of the tower and broke due to the ditch from the earlier phase, the fragment is 1.3 m long and 0.32 m wide.

To the **construction and use of the second phase** fort (Fig. 3–4), we can link the *via sagularis* (Cx. 45), which was identified only in the SW corner on a 1 × 0.5 m surface, containing mid greyish brown silty clay and river cobbles. Between the *via sagularis* and the angle tower a 0.8 m thick walking level (Cx. 17), made of dark greyish black silty sand with occasional cobbles, pebbles and a small amount of ceramic building material (CBM) could be observed. From this level, two circular wells (Cx. 52/53 – with a diameter of ca. 1.1 m and 2 m depth; Cx. 56/58 – with a diameter of ca. 1 m and almost 2 m depth) were dug. The berm (Cx. 37), or external walking level in front of the wall, was excavated on a 15 m long sector. Its width varied between 1 and 1.5 m, since it was slightly affected by the stone demolition outside the wall. It consisted of light yellowish-grey silty sand mixed with mortar, occasionally containing fine pebbles, CBM and pottery. Related to the maintenance of the wall a scaffolding pit (Cx. 54/55) dug into the berm should be mentioned. The extent of the pit is 0.5 × 0.6 m, having a depth of 0.42 m.

The construction of the second phase started with the digging of the defensive ditch (Cx. 50) which existed and was maintained afterwards, and was filled up completely only during the long decay of the fort. The break of slope at the top of the ditch was heavily disturbed by erosion due to the long exposure, and after ca. 1 m depth, it started to get angular, ending in a quite sharp V-shaped base at the NE corner of the trench. The *agger* (Cx. 8) was built most probably from the clay excavated from the ditch. This consisted of brownish-yellow silty clay, occasionally containing fine sandy pebbles. It was only partially unearthed (9 × 1–1.5 m), in order to preserve the structures from the second phase, but the excavated part lacked archaeological material. The building pit (Cx. 19/48) of the defensive wall [Cx. 6] and its foundation [Cx. 42] was identified in the interior but it was excavated only partially (13 × 0.7 m, until a 0.45 m depth), to safeguard the masonry structures. The foundation of the wall [Cx. 42] had a plinth made of ragstones on the sides and the space between them was filled with pebbles, sand and smaller cobbles roughly bond with mortar. Its width varied between 1.6–1.8 m and the height was excavated

Fig. 4. Features related to the construction and use of both phases from S.

only up to 0.2 m. The stone wall [Cx. 6] was built in *opus incertum* technique, and had a width of 1.4–1.6 m, the maximum preserved height was 1.4 m. The S part was more damaged due to previously mentioned robbing activities. The preserved part of the elevation consists of large, slightly regular ragstone boulders bound with whitish and pinkish mortar. The wall is rounded at the corner, where two perpendicular buttresses were built towards the interior, on which the structure of the angle tower was leaning as well. On their axis two smaller buttresses can be observed, which fortified the wall from the exterior and may also have had an ornamental purpose.

The other structural element of the tower and the *agger* is a 5 × 1.1 m large dry wall foundation [Cx. 2]. It was constructed of large ragstone boulders and river cobbles, bound with a mixture of clay and well-sorted pebbles. Between the wall and the stone buttresses in the *agger,* a line of five postholes was detected. Three of them (Cx. 26/32=38, 0.5 × 0.35 m and a depth of 0.1–0.15 m; Cx. 28/36, 0.4 × 0.8 m depth of 0.2 m; Cx. 27/31 extent 0.4 × 0.5 m depth of 0.15 m) were close to the northern buttress, the other two (Cx. 30/33, 0.3 × 0.5 m, depth of 0.2 m; Cx. 25/29, 0.35 × 0.4 m, depth of 0.3 m) were in the vicinity of the southern buttress. These posts were planted to hold the wooden frame of the angle tower which was also leaning on the dry wall foundation [Cx. 2]. Since there was no floor detected on the ground level of the angle tower, it is much more likely, that the tower was accessible from the first floor which might have been reached by stairs, probably located on the S side. In the support of this idea we can quote the presence of a larger posthole (Cx. 46/47) visible in the *agger* next to the angle tower (0.6 × 0.4 m, depth of 0.2 m), which could have been part of such a structure.

The **disuse of the first phase** is perceptible by two massive fills (Cx. 43=56, Cx. 44) of the first phase ditch. These are located underneath the *via sagularis* (Cx. 45), the walking level next to it (Cx. 17), the dry wall foundation of the tower [Cx. 2], the *agger* (Cx. 8) and partially the second phase building pit (Cx. 48). The later one (Cx. 44) is a yellowish-brown clay fill under the *via sagularis* (3.5 × 1.2 m), the earlier one (Cx. 43=56) is a dark greyish-brown clay fill, which was excavated on an area of 6.2 × 2.5 m, and is 1.25 m thick. Different fills, consecutively put into the ditch to fill up and level the area for the structures of the second phase are visible in the profile.

Fig. 5. Final orthophoto of trench D1 (Made by Cloudscale Digital).

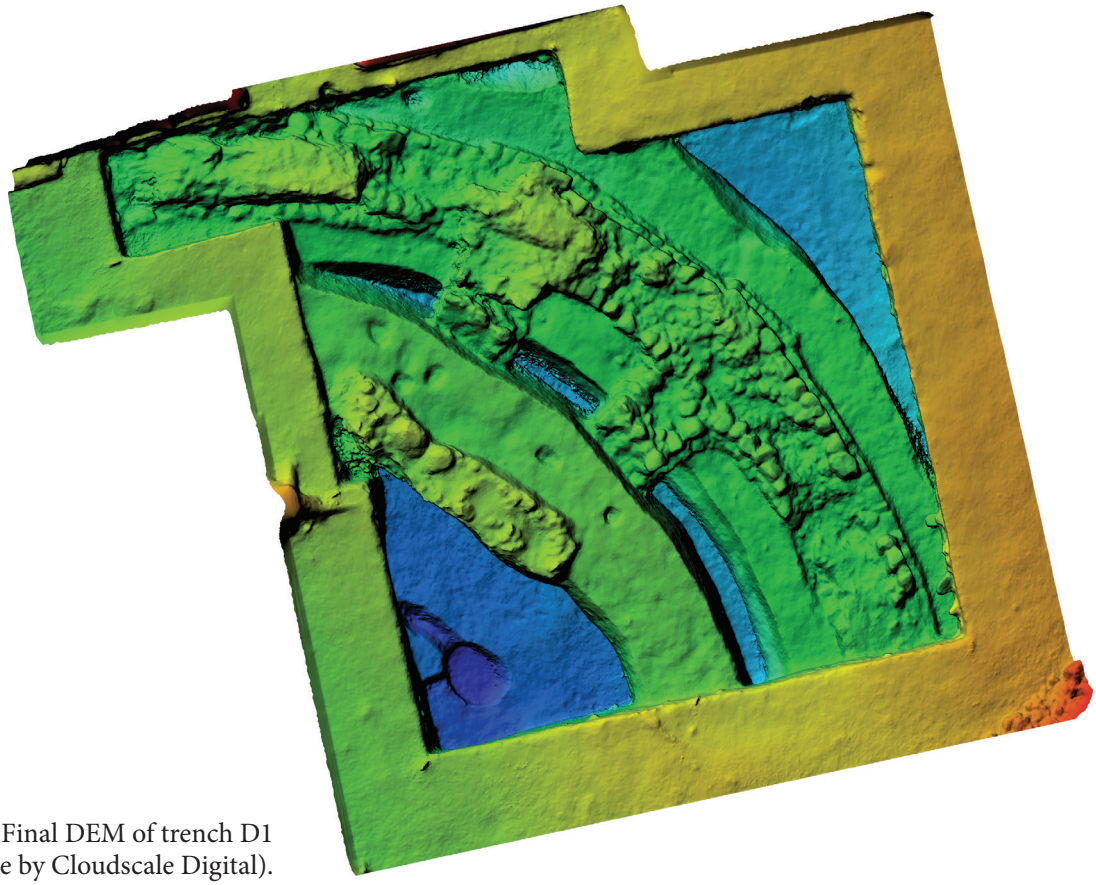

Fig. 6. Final DEM of trench D1 (Made by Cloudscale Digital).

The only context, which can be linked to the **construction and the use of the first phase** is the cut of the ditch (Cx. 51=58), which could not be excavated as it is situated underneath some features belonging to the second phase. The form of the ditch is preserved partially in the vicinity of the stone wall [Cx. 6], SW of the dry wall foundation [Cx. 2] and the *agger* (Cx. 8). It was excavated on an area of 6.75 × 9.2 m and had a 1.3 m depth, the break of slope at the top of the ditch started gradually and became quite angular. The deepest point of the ditch was in the SW corner, where a channel-like V-shaped base could be documented. The structural instability of the stone wall (Cx. 6) and the buttresses (Cx. 41) can be linked to the fact that the backfill of the first ditch (Cx. 43, Cx. 44) was not compact enough to support a large scale construction.

Regarding the use of the area before the first phase construction, no structural elements could be observed, only a walking level (Cx. 57) was documented covering the natural clay (Cx. 49).

ANALOGIES AND DATING

The angle tower of the second phase fort from Călugăreni has an unusual building technique, since timber and masonry structures were combined and used simultaneously (Fig. 5–6). The analogies for such angle towers are not so numerous, even though they can be found in Dacia and other provinces as well. According to the plan of the fort, the SW corner of the fortlet from Titești (*Dacia inferior*)[7] has a pair of buttresses similar to those from Călugăreni, although in the description it is mentioned that the angle towers are missing and the corners are thickened.[8] The building of the fortlet was dated to the reign of Hadrian,[9] based on the nearby fortlets from Copăceni, Arutela and Rădăcinești.

The African fort from Gemellae has a similar angle tower in the SW corner.[10] Discussing the case of Gemellae, Welsby suggests that the buttresses could have supported a timber superstructure,[11] and considering the dating, it seems that this phase was built around 132 AD.[12]

For the angle towers built in the Novaesium and Duisburg-Rheinhausen fortlets (*Germania inferior*), a similar building technique was attested. The fortlet at Novaesium had similar buttresses in all corners and probably functioned from the end of the 1st to the middle of the 3rd century.[13] The one form Duisburg-Rheinhausen was in the vicinity, had similar features in all corners and was dated to the same interval.[14]

A slightly different type of angle tower solution, with combined building technique can be noted in Saalburg (*Germania inferior*).[15] We can also quote the fort from Hofheim *(Germania inferior*)[16] as a good analogy for archaeological evidence of wooden angle towers.

In the case of the fort from Housesteads (*Britannia*), similar buttresses are present in the NE corner on the plan of the Hadrianic fort, and they were interpreted as remains of a stone angle tower.[17] However, based on the presented evidence they could be similar to the one from Călugăreni.

[7] Vlădescu 1983, 219, fig. 67.
[8] Vlădescu 1983, 104–105; Vlădescu 1986, 65–67; Gudea 1997, 92, nr. 80; Țentea et al. 2021, 37.
[9] Țentea et al. 2021, 37
[10] Baradez 1948, 391; Breeze et al. 2013, 68; Trousset 1998, 4.
[11] Welsby 1990, 123–124, fig. 4/1.
[12] Trousset 1998, 2.
[13] Horn 2002, 586, Abb. 500.
[14] Horn 2002, 567, Abb. 484.
[15] Baatz–Hermann 1982, 469–474, Abb. 444.
[16] Baatz–Hermann 1982, 350–357, Abb. 297; Nuber 1986, 226–227, Abb. 1.
[17] Rushworth 2009, 19–20, 27, fig. 1.12.

Taking into consideration that all the angle towers of the forts and fortlets built in the same, or similar manner as the one from Călugăreni have been dated to the first half of the 2nd century AD, we can date the building of the second phase fort up to the middle of the 2nd century. Since the early second century was the earliest date when the first fort could have been built, we have to take into account a quite early date for the rebuilding of the fort.[18] We have to remark that we did not have any finds which would push the abandonment of the fort beyond the 3rd quarter of the 3rd century AD.

The chronological assessment has also been confirmed by the archaeological material recovered during the excavations.

ANALYSIS OF THE CERAMIC VESSELS

During the excavations in trench D1 a total of 852 ceramic shards, originating from 813 vessels have been recovered. The Roman ceramic material counts 493 shards which form 459 vessels.

Most of them belong to the category of tableware dominated by the 190 jugs, followed by 33 beakers and 22 bowls. Cooking ware is represented by 144 jars and 12 lids. The category of utilitarian ware, made up by storage jars and *dolia* were poorly represented with only 48 vessels. The group of possibly cultic vessels contained 4 *turibula* and one *thymiaterion* base fragment.

In order to discuss the chronology of the two building phases of the fort, the ceramic material from some of the contexts should be analysed in detail. Cx. 17 and Cx. 43 are two fills of the ditch from the first phase, the second being also a later walking level, which contributes to the dating of the second phase fort. It is worth underlining that Cx. 37 is the exterior walking level on the *berma* of the fort, Cx. 3 is a demolition layer, which can be linked to the use of the second phase.

From the earlier fill of the first phase ditch (Cx. 43) only two vessel fragments were recovered (Fig. 7). The first one is a cooking jar (Pl. VII/1) with slightly everted rim with triangular section, with a round-running groove on top and inner groove for the lid. The fabric is coarse, reduced burnt. This form, being quite frequent, has many analogies in Dacia and in other provinces as well. The examples from Napoca are dated to the period from the reign of Traianus to Antoninus Pius,[19] the ones from Apulum have a similar dating, being present in the pottery workshop 'B', which functioned in the middle of the 2nd century.[20] Jars of this type discovered in Romula, Răcari and Orlea were produced in the 2nd century.[21] Similar vessels from Carnuntum are dated to the 1st century,[22] the ones from Sirmium from the end of the 1st to the beginning of the 3rd century.[23] The second vessel is a bowl (Pl. VII/2) with vertical, rounded and thickened rim, with a pronounced groove under the rim. The bowl has fine, reduced burnt fabric. Similar vessels from Napoca are dated to the reign of Hadrianus and Antoninus Pius.[24]

From the later fill of the first phase ditch (Cx. 17) 66 vessels were discovered, mostly tableware, the other categories being poorly represented (Fig. 7). A Drag. 37 bowl fragment (Pl. VII/3) from Lezoux, came from the *officina* of Paterclvs, bearing similar decoration motifs as the vessels of Qvintilianvs and Ianvaris I. These *officinae* produced pottery between 125–150 AD. The fabric of the shard and the concentric circle motif, used instead of the *ovolo* line defines

[18] The stone phases of most forts from Roman Dacia have been dated after the Marcomanic Wars or even during the reign of the Severan Dynasty, facts which might need to be reanalysed based on our current assessment.

[19] Rusu-Bolindeț 2007, 412–413, pl. XCVII/582.

[20] Ciaușescu 2004, 324, 7; Egri 2018, 123, fig. 10/7.

[21] Popilian 1976, 87, pl. XXXIII/318.

[22] Grünewald 1979, 55, Taf. 44/12.

[23] Brukner 1981, T. 114/62.

[24] Rusu-Bolindeț 2007, 382, pl. LXXXIV/448.

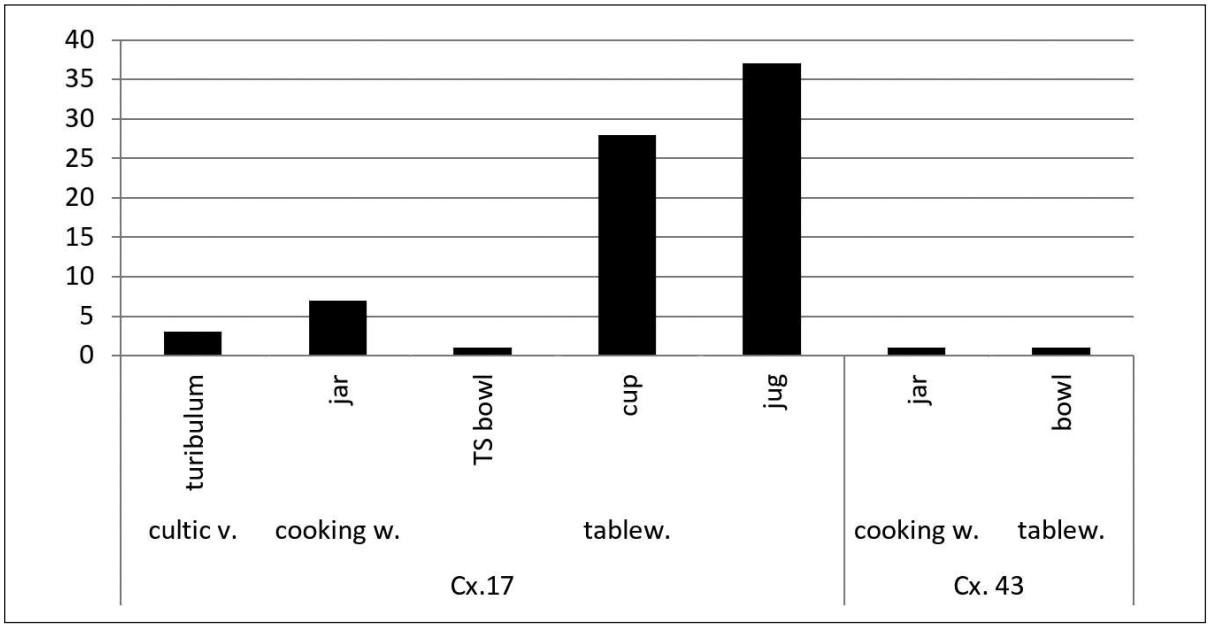

Fig. 7. The vessel categories form the disuse of the first phase fort.

the provenience.[25] Another tableware is a Drag. 36 plate imitation (Pl. VII/4), with accentuated inner groove. These vessels are very frequent and are dated mainly to the end of 1st–middle of the 2nd century in *Moesia superior*,[26] and the 2nd century in Dacia.[27] From the repertoire of bowls, a waster should be pointed out, with vertical, rounded rim with two smooth grooves on the outer side (Pl. VII/5). This vessel has analogies from Călugăreni, where it appeared in a waste pit from the *vicus*, among several thin walled cups, dated to the first half of the 2nd century.[28] A beaker fragment (Pl. VII/6) also contributes to the dating of the context. It has a slightly evazed, rounded rim. The prototype of this form can be found in the repertoire of the thin walled vessels, dated to the end of the 1st, first half of the 2nd century.[29] The same forms appear also in Napoca[30] and Sirmium,[31] their production being dated to the first half of the 2nd century. A small size *krater* (Pl. VII/7), with flattened, thickened rim has a wider production span. Analogies from Moesia Superior[32] and Dacia Inferior[33] suggest that it was produced during the 2nd–3rd centuries. The following vessels are cooking jars with almost vertical rim. The first one (Pl. VII/8) has elongated, rounded rim, the fabric is coarse, oxidized burnt. Similar vessels are to be found in Napoca, dated to the 2nd–3rd century,[34] and Apulum dated to the first half of the 2nd century.[35] The other jar (Pl. VII/9) is a one handled vessel, similar to the previous one

[25] Oswald–Pryce 1920, pl. XXX/84; Stanfield–Simpson 1958, pl. 72/35.
[26] Brukner 1981, 153, T. 66/19, 67.
[27] Rusu-Bolindeț 2007, 380, pl. LXXXIII/443.
[28] The ceramic material from the pit is unpublished, it appears in this study only to underline the chronological classification of the described bowl. For preliminary data concerning the pit and the archaeological material from it see Höpken et al. 2020, 103–104.
[29] Bet–Henriques Raba 1989, 24, fig. 5/3.
[30] Rusu-Bolindeț 2007, 315, pl. LXXIII/386.
[31] Brukner 1981, 157, T. 100/1–7.
[32] Brukner1981, 158, T. 103/4.
[33] Popilian 1976, 9, pl. XXXIX/401.
[34] Rusu-Bolindeț 2007, 412, pl. XCVI/578.
[35] Ciaușescu 2004, fig.1/6; Egri 2018, 123, fig. 10/6.

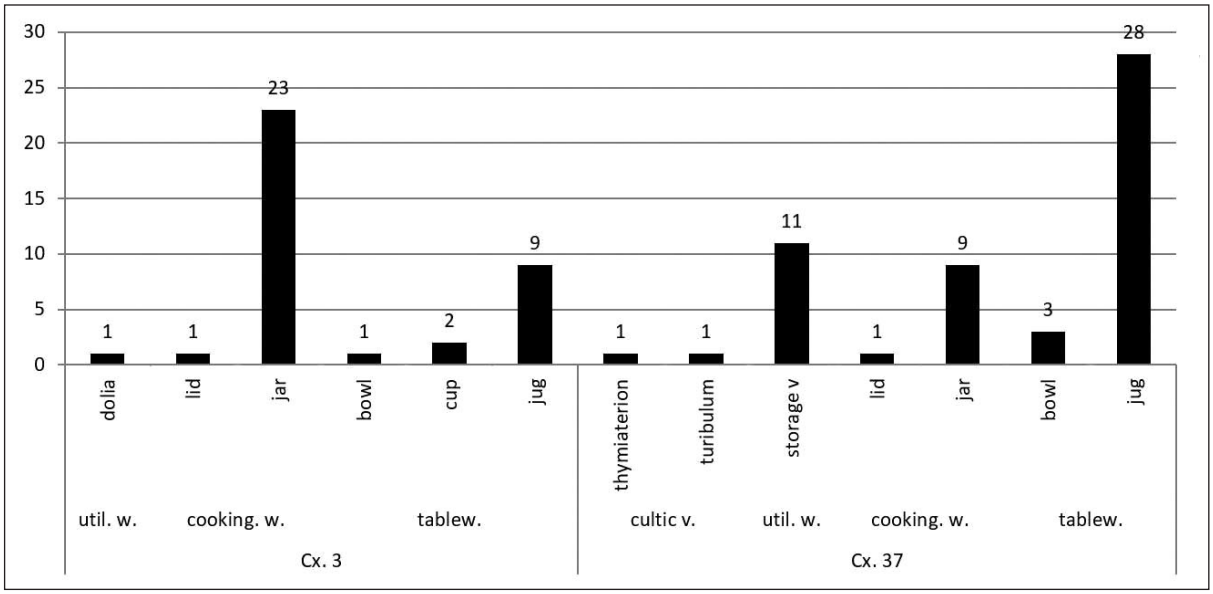

Fig. 8. The vessel categories from the use of the second phase fort.

with almost vertical rim, triangular in section, with three grooves on the shoulder of the vessel, coarse fabric, reduced burnt. The vessel's analogies in Apulum are dated to the 2nd century and those in *Dacia inferior* to the same time frame.[36] A *turibulum* body fragment (Pl. VII/10), with fine, oxidized fabric has similar morphological features as one from Carnuntum, dated to the 2nd–3rd century,[37] and one from the necropolis at Tăul Corna in Alburnus Maior, from the 2nd century.[38]

Concerning the dating of contexts Cx. 17 and Cx. 43, most of the vessels hint towards the beginning and middle of the 2nd century, only a few were produced until the 3rd century. This shows, that the dismantling of the first phase fort and the levelling works for the construction of the second phase fort started probably in the middle of the 2nd century.

The other context group which is chronologically relevant to the use of the second phase fort is the outer demolition and the *berma* around the fort.

The earliest demolition layer of the fort from the second phase (Cx. 3) contained a varied repertoire of forms. Most of the vessels are body fragments of cooking pots (Fig. 8) and the tableware is represented by a relatively high number of vessels, 12 in total. From these, four will be analysed in detail. A Drag. 37 imitation (Pl. VIII/1), with fine, oxidized fabric[39] has analogies from many sites,[40] having a time span between the 1st–4th centuries. Two jug fragments, one with everted, grooved rim (Pl. VIII/2) is dated to the first half of the 2nd century,[41] the other has a vertical, thickened rim (Pl. VIII/3).[42] The *dolium* fragment (Pl. VIII/4) has a longer time frame, from the beginning of the 2nd to the first half of the 3rd century.[43]

The ceramic material of the *berma* (Cx. 37) contained mostly tableware, of which 28 are jugs (Fig. 8). One of the jugs has everted rim,

[36] Popilian 1976, 90, pl. XXXVII/378.
[37] Grünewald 1979, 48, Taf. 35/1.
[38] Bocan–Neagu 2018, 108, fig. 16/T14.
[39] The fabric is unusual and quite rare. It contains a lot of golden mica, the colour is bright orange to red (2.5YR 5/8) and the quality of the burning is not too good.
[40] Rusu-Bolindeț 2007, 203–204, pl. XL/185.
[41] Brukner 1981, 164, T. 147/146.
[42] Rusu-Bolindeț 2007, 424–425, pl. CII/621.
[43] Rusu-Bolindeț 2007, 427, pl. CIV/636.

rounded at the end, and S-shaped in profile (Pl. VIII/5). This quite rare form has analogies in the necropolis at Kalvaka, and also in the production centre at Pavlikeni, their production being dated to the second half of the 2nd century.[44] Such vessels were also discovered in the necropolis from Sucidava, along with coins from Severus Alexander[45] and at Carnuntum, with a wide chronological range, being specified, that the prototype and the different variants of this form were produced for a long period.[46] From the three bowls, two are Drag. 44 imitations. The first has inverted rounded rim (Pl. VIII/6),[47] while the other has a much more vertical rim and smaller diameter (Pl. VIII/7).[48] The dating of these vessels can be linked to the *terra sigillata* prototype, produced between the middle of the 2nd–middle of the 3rd century.[49] The third bowl has slightly everted rim, with a groove on the inner side and tronconic body (Pl. VIII/8). These kind of vessels can be found in Romula,[50] in Butovo and Novae as well.[51] It is possible that this kind of bowl originates from the eastern *sigillata* B2, form 58, dated to the middle of the 1st–beginning of the 2nd century.[52] The category of cultic vessels is represented by a possible *thymiaterion*[53] or torch support fragment (Pl. VIII/9). One quite similar example is known from Cristești,[54] other ones are known from the ceramic production centre of Lágymányos.[55] A similar object, described as the neck of a vessel, was discovered in Mogontiacum. The fragment has a reduzed fabric and bears the *CVPITVS F(ecit)* graffito. The workshop in which it was discovered functioned between 160–200/210 AD.[56]

We have to count a solid *turibulum* base (Pl. VIII/10) to the same group, with analogies in Carnuntum[57] and Aquincum, dated to the end of the 2nd–beginning of the 3rd century.[58]

As a conclusion, the ceramic material from the contexts related to the use of the second phase of the fort is to be dated between the middle of the 2nd–first half of the 3rd century.

CATALOGUE OF THE CERAMIC VESSELS

Pl. VII/1. Cooking jar with slightly everted, triangular in section rim, with a round-running groove on top and inner groove for the lid. The fabric is coarse, reduced burnt. D_{rim}: 20 cm, th: 0.5cm (CAL 2020, Tr. D1, Cx. 43).

Pl. VII/2. Bowl with vertical, rounded and thickened rim, with a pronounced groove under the rim. The bowl has fine, reduced burnt fabric. D_{rim}: 23 cm, th: 0.75 cm (CAL 2020, Tr. D1, Cx. 43).

Pl. VII/3. Drag. 37 bowl fragment from Lezoux, from the *officina* of Paterclvs, bearing similar decoration motifs as the vessels of Qvintilianvs and Ianvaris I. These *officinae* produced pottery

[44] Sultov 1985, 73, pl. XXXIII/6.
[45] Popilian 1976, 99–100, pl. XLIX/521–522.
[46] Grünewald 1979, 44, Taf. 29/3.
[47] Rusu-Bolindeț 2007, 392, pl. LXXXVII/480.
[48] Rusu-Bolindeț 2007, 393, pl. LXXXVII/485.
[49] Oswald–Pryce 1920, pl. LXI.
[50] Popilian 1976, 120, pl. LXIV/774.
[51] Sultov 1985, 64–65, table XXVII/7.
[52] Pugliese Carratelli et al. 1985, tavola XIV/3; Robinson 1959, 222, pl. 61/G19.
[53] The functionality of this ceramic vessel is not certain, due to the resemblance of the fragment to Kapitän II amphora legs and necks, the fabric being also very similar to the Aegean amphora fabrics. The only contradicting fact is the rough and uneven surface of the interior. For Kapitän II amphorae see Peacock–Williams 1986, 193–195, class 47.
[54] Man 2011, 188, pl. CXXXVII/63.
[55] Nagy 2017, 205, fig. 3/19–20. These forms are rather *turibula* since the base is not too high.
[56] Heising 2007, 352, Taf. 61/51,03.
[57] Grünewald 1979, 48, Taf. 35/5.
[58] Vámos 2015, 46, Abb. 6/44–46.

between 125–150 AD. Oxidized, well burnt fine fabric, with dark red, seeding slip. D_{body}: 16.2 cm, th:0.8 cm (CAL 2020, Tr. D1, Cx. 17).

Pl. VII/4. Drag. 36 plate imitation, with accentuated inner groove. The fabric is fine, oxidized, the quality of the burning is medium. D_{rim}: 19.4 cm, th: 0.5 cm (CAL 2020, Tr. D1, Cx. 17).

Pl. VII/5. Waster bowl, with vertical, rounded rim with two smooth grooves on the outer side. The fabric is COS2, produced probably in Călugăreni.[59] D_{rim}: 23cm, th: 0.6cm (CAL 2020, Tr. D1, Cx. 17).

Pl. VII/6. Beaker with slightly everted, rounded rim. The fabric is fine, oxidized with yellowish-cream colour, traces of pinkish-red slip are visible on the neck. D_{rim}: 8.2 cm, th: 0.5 cm (CAL 2020, Tr. D1, Cx. 17).

Pl. VII/7. Krater, with flattened, thickened rim. The fabric is fine, oxidized with yellowish-cream colour, containing a lot of mica. D_{rim}: 16 cm, th: 0.7cm (CAL 2020, Tr. D1, Cx. 17).

Pl. VII/8. Cooking jar with almost vertical, elongated, rounded rim. The fabric is coarse, oxidized burnt. D_{rim}: 15,8cm, th: 0,5 cm (CAL 2020, Tr. D1, Cx. 17).

Pl. VII/9. One handled cooking jar, with almost vertical, triangular in section rim, with three grooves on the shoulder of the vessel. The fabric is coarse, reduced burnt. D_{rim}: 10 cm, th: 0.7 cm, (CAL 2020, Tr. D1, Cx. 17).

Pl. VII/10. *Turibulum* body fragment, with fine, oxidized fabric. D_{body}: 8.6 cm, th: 0.9 cm (CAL 2020, Tr. D1, Cx. 17).

Pl. VIII/1. Drag. 37 bowl imitation, with fine, oxidized fabric. The fabric is unusual and quite rare. It contains a lot of golden mica, the colour is bright orange to red (2.5YR 5/8) and the quality of the burning is poor. D_{rim}: 13.6cm, th: 0.5 cm (CAL 2020, Tr. D1, Cx. 3).

Pl. VIII/2. Jug with everted, triangular in section, grooved rim. The fabric is fine, oxidized and hard burnt, with frequent lime and quartz fragments. On the upper side of the rim, traces of light red slip can be seen. D_{rim}: 13.8cm, th: 0.7 cm (CAL 2020, Tr. D1, Cx. 3).

Pl. VIII/3. Jug with vertical, thickened rim. The fabric is fine, oxidized, the colour of the shard is brownish pink. In the inner side of the rim, traces of dark red slip can be seen. D_{rim}: 10 cm, th: 0.6 cm (CAL 2020, Tr. D1, Cx. 3).

Pl. VIII/4. *Dolium* with down leaning, flattened rim. The fabric is coarse, in the inner side oxidized burnt, on the outer side being a reduced layer. D_{rim}: 24.6cm, th: 0.8 cm (CAL 2020, Tr. D1, Cx. 3).

Pl. VIII/5. Jug with evazed, rounded at the end, S in profile rim. The fabric is fine, oxidized, the colour of the shard is orange- pink. D_{rim}: 12.4cm, th: 0.5 cm (CAL 2020, Tr. D1, Cx. 37).

Pl. VIII/6. Drag. 44 bowl imitation, with inverted, rounded and thickened rim. The fabric is fine, reduced burnt. D_{rim}: 23 cm, th: 0.75 cm (CAL 2020, Tr. D1, Cx. 37).

Pl. VIII/7. Drag. 44 bowl imitation, with almost vertical, rounded and thickened rim. The fabric is fine, oxidized burnt. D_{rim}: 15 cm, th: 0.6 cm (CAL 2020, Tr. D1, Cx. 37).

Pl. VIII/8. Bowl with slightly flanged rim, a groove on the inner side and tronconic body. The fabric is fine, very orange, oxidized burnt. Traces of light red slip can be observed mainly in the inner side. D_{rim}: 28 cm, th: 0.8 cm (CAL 2020, Tr. D1, Cx. 37).

Pl. VIII/9. *Thymiaterion* or torch support base fragment, consisting of three horizontal ribs. The fabric is coarse, oxidized, very dark orange-red. D_{body}: 5.4 cm, th: 1.4 cm (CAL 2020, Tr. D1, Cx. 37).

Pl. VIII/10. Solid *turibulum* base fragment, with fine, oxidized fabric. D_{body}:7 cm, th:1.4 cm (CAL 2020, Tr. D1, Cx. 37).

ANALYSIS OF THE CERAMIC BUILDING MATERIAL (CBM)

During the excavation in trench D1, a total of 673 CBM fragments have been recovered, which belonged to 648 individual artefacts. The recovered material was quite fragmentary,

[59] COS2 is an oxidized, semifine fabric with large pieces of reused pottery, moderate mica, and rarely small quartz fragments. The consistency of the fabric is soapy, due to the very fine clay basis.

so only a small percentage of them were matching. Since 2013, five major *tegula* types and four *imbrex* types have been established for the site of Călugăreni. It is important to underline that these types are probably from local workshops and are based on the morphology of the roof tiles discovered mainly at the *principia* and the *thermae*. In the case of the *tegulae* the types were classified according to the form of the flange, while in the case of the *imbrices* we relied on the form of the internal base edge.[60] The brick types were separated based upon their thickness.

The typological categories are:

TA1: *tegula* with a straight inside and outside edge, the total height of the tile is ca. 3.9 cm, and flange width is ca. 2.2 cm.

TA2: *tegula* with straight inside and outside edge, the total height of the tile is ca. 5.1 cm and flange width is ca. 3.8 cm.

TA3: *tegula* with straight inside and outside edge, the total height of the tile is ca. 5.7 cm and flange width is ca. 4 cm.

TA4: *tegula* with straight outside edge and rounded inside edge sloping inwards, the total height of the tile is ca. 5 cm and flange width is ca. 2.6 cm.

TA5: *tegula* with straight outside edge and rounded inside edge sloping inwards, the total height of the tile is ca. 5.9 cm and flange width is ca. 5.4 cm.

TA6: *tegula* with straight outside edge and rounded inside edge, the flange's top is flat, the total height of the tile is ca. 4.87 cm and flange width is ca. 3.6 cm.

TB1: Sicilian style *imbrex* with a straight inner base edge.

TB2: Sicilian style *imbrex* with an inner base edge tapering towards the outside.

TB3: Sicilian style *imbrex* with an inner base edge tapering towards the inside.

TB4: Sicilian style *imbrex* with an inner base edge that is cropped out.

BA1: brick with an average thickness of 3–4 cm. Most probably used as a floor tile.

BA2: brick with an average thickness of 4–5 cm. Most probably used for walls.

BA3: brick with an average thickness of 5≤ cm. Most probably used for walls.

The CBM recovered from the angle tower's excavation was quite fragmentary, so only in certain cases could we determine their exact morphological type (Fig. 9). All the scientific data is influenced by this factor, but we shall not doubt that this tower had a roof made of *tegulae* and *imbrices*.

Cx. 9 has a total of 97 fragments belonging to 88 objects, this high number could be explained by the fact that this was the fill of a modern robbing trench that disturbed several later contexts. Beside the standard *tegulae* and *imbrices,* two stamped *tegulae* fragments have been

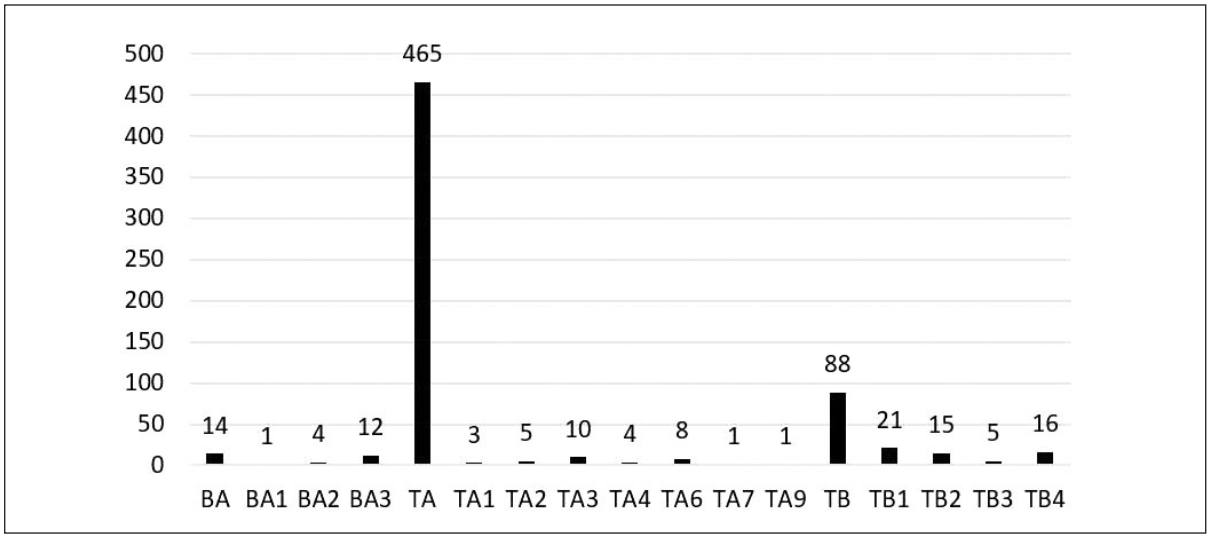

Fig. 9. Distribution of the CBM types in trench D1.

[60] The description of the *tegula* and *imbrex* types was based on Philip Mills' work (Mills 2013, 30–32).

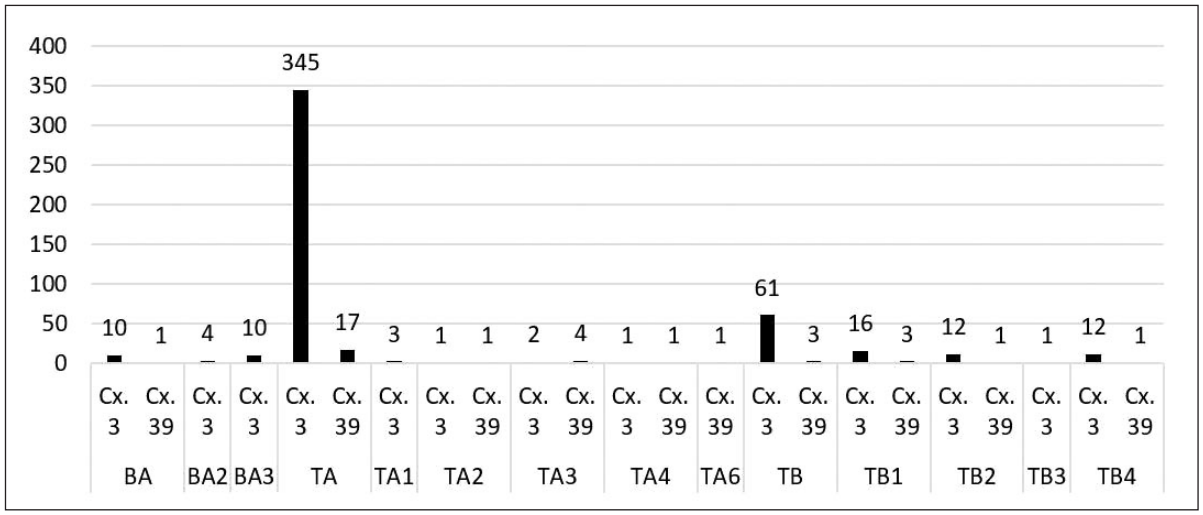

Fig. 10. CBM types related to the disuse of the second phase fort.

recovered as well. The context with the highest CBM concentration is Cx. 3 (Fig. 10). It had 477 fragments from 474 objects, four of which are stamped roof tiles. Since this context signals the destruction of the second phase, it also explains the reason why the ceramic building material is so fragmentary and numerous. The number of *tegulae* (351) is more than three times higher than that of the *imbrices* (102). A total of 24 bricks have been identified in this context. Due to the fragmentary nature of the recovered tiles, only a small number of them could be classified into types, although in the case of the *imbrices*, the most frequent types are TB1 and TB4.

The building material found in the fill of the second phase ditch (Cx. 39) had 33 fragments from 32 objects; this is also the context that can be linked to the abandonment and disuse of the fort (Fig. 10). It is worth mentioning, that we also found the flange of a *tegula mammata* related to this context.

At the *berma* of the later fort (Cx. 37) a total of 19 fragments belonging to 18 objects were found, two of which were bricks (Fig. 11). Due to the small amount and fragmentary nature of the roof tiles, we couldn't identify any prevalent morphological types. Cx. 17, which is the last fill of the early fort's ditch, had altogether only 8 fragments from 3 objects, most of which were *tegulae* (Fig. 11). No dominant morphological

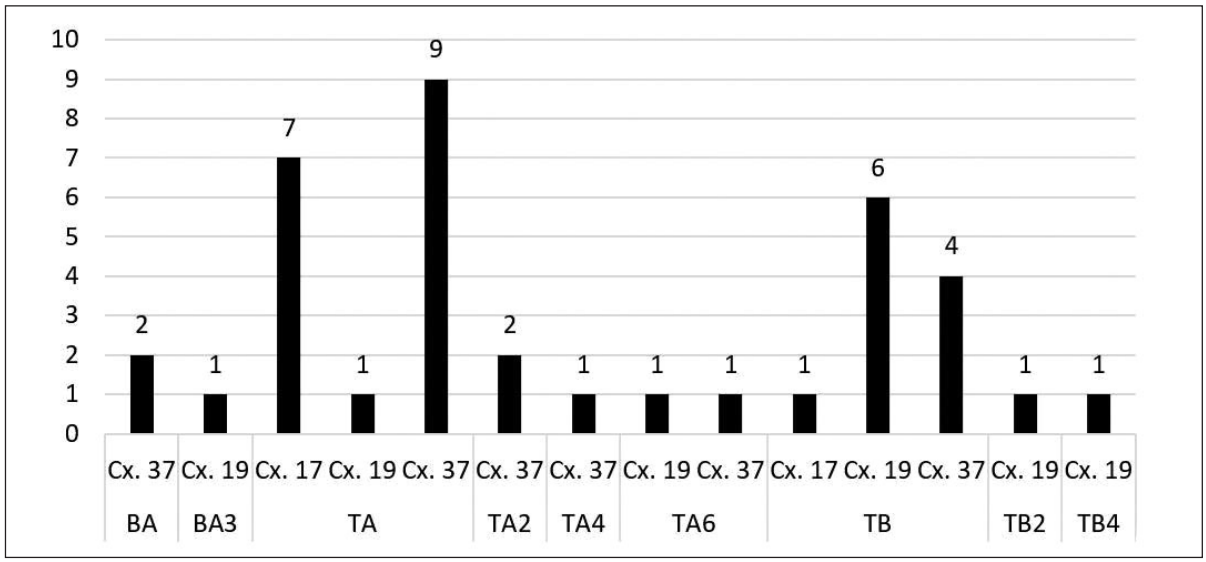

Fig. 11. CBM types related to the building and the use of the second phase fort.

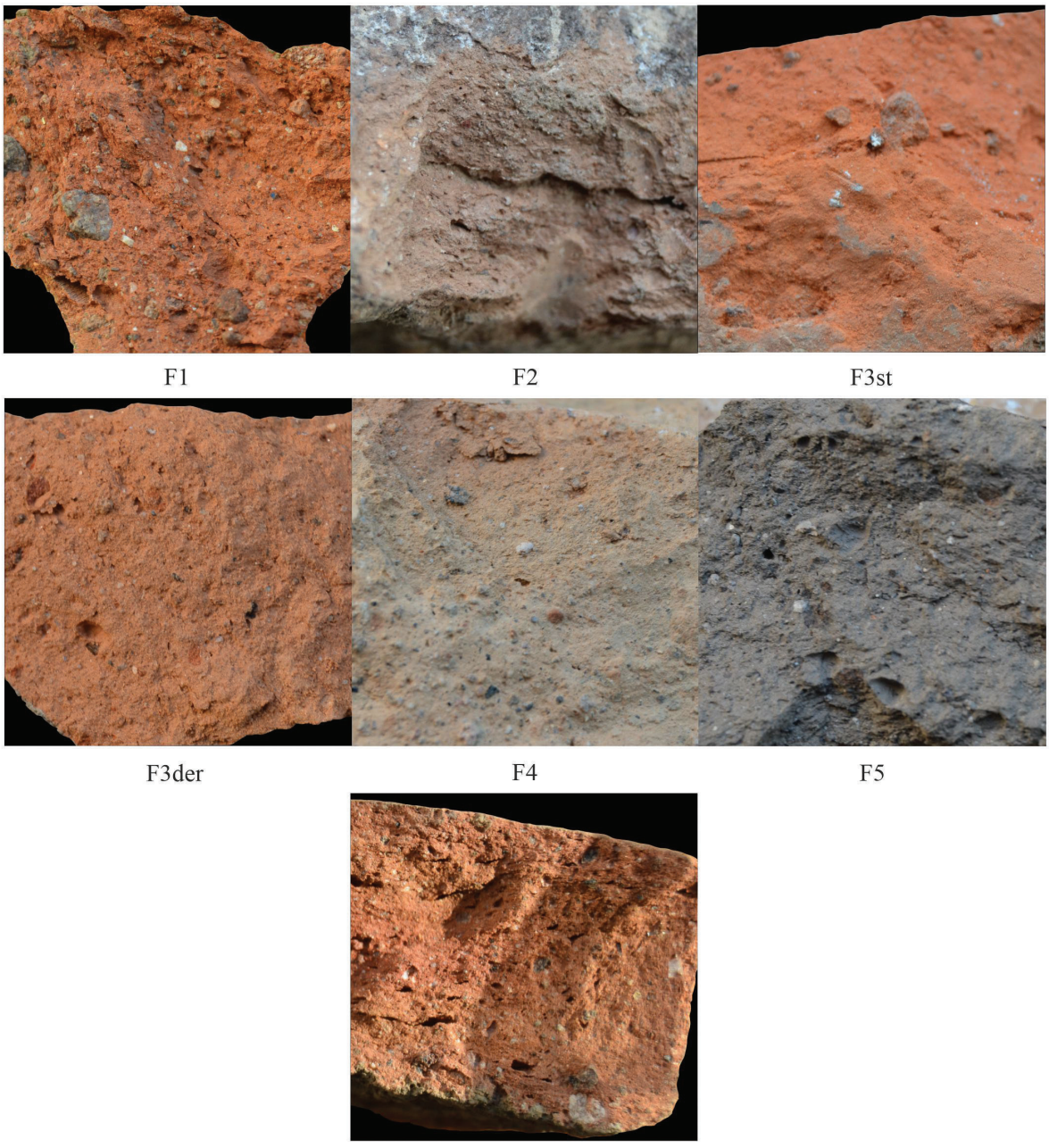

Fig. 12. CBM fabric types from Călugăreni.

types were identified. The fill of the building pit of the second phase (Cx. 19) had 11 fragments belonging to 7 objects, most of which were *imbrices* (Fig. 11).

Thus, categorizing them based on their fabric can be also useful, so seven types of fabrics were established (Fig. 12):

F1: Red, hard, coarse fabric, usually with inclusions of small pebbles and quartz.

F2: Dark brown, hard, coarse fabric, usually with inclusions of small pebbles and lime.

F3st[61]: Light to dark orange, soft, fine fabric, usually with inclusions of very small to small pebbles and quartz.

[61] The "st" comes from standard. The abbreviation was used in order to differentiate between the two types of F3, that look really similar at first glance.

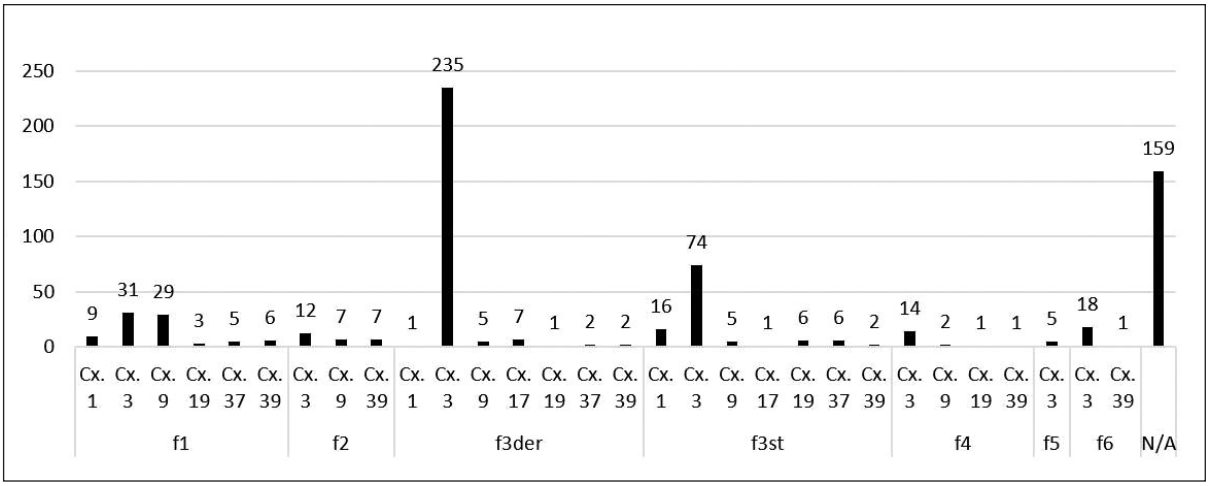

Fig. 13. Distribution of CBM fabric types in trench D1.

F3der[62]: Light to dark orange, soft, coarse fabric, usually with inclusions of very small pebbles and quartz.

F4: Beige/cream, soft, coarse fabric, usually with inclusions of very small to small pebbles.

F5: Grey, hard, coarse fabric, usually with inclusions of small pebbles and quartz.

F6: Pink, hard, coarse fabric, usually with inclusions of very small to small pebbles and quartz.

The most frequent fabric type from the trench D1 excavation (Fig. 13) is F3der with 252 fragments, followed by F3st (110 frag.), F1 (83 frag.), F2 (26 frag.), F6 (19 frag.), F4 (18 frag.) and F5 (5 frag.). The destruction layer of the fort wall (Cx. 3) had the most CBM fragments of F3der, a significant percentage of them being *tegulae*. In the case of 160 fragments the fabric type could not be established.

The large number of CBM found in the vicinity of the former angle tower suggests that it had a roof during the Roman period, which slowly started to collapse after the fort's abandonment, evidenced by the tile fragments in the fills of the ditch.

A special category of the CBM finds are the stamped *tegulae* with the abbreviation of the military unit's name stationed in the fort. The *C(ohors) P(rima) A(ugusta) I(tureorum)* stamps (Pl. IX/1–7) have been attested with a large typological variation at the site of Călugăreni[63], suggesting that for the larger building projects several *signacula* were used simultaneously.

The only CBM fragment belonging to a *hypocaustum* system (Pl. IX/8) cannot be related to a possible floor heating in the tower, this fragment was rather part of the rubble and building debris surrounding the tower.

CATALOGUE OF CERAMIC BUILDING MATERIAL SMALL FINDS

Pl. IX/1. *Tegula* fragment with *CPAI* type 1 stamp and fabric type F3der. The stamp is fragmentary, with the bottom right quarter missing. The *ansa* is simple, letters *C*, *A* and *I* are vertical, letter *P* is slightly leaning forward. The upper part of *P* and the bottom of *A* and the cartouche are slightly eroded. W: 9.5 cm, l: 9.1 cm, th: 2.5 cm (CAL 2020, Tr. D1, Cx. 9, SF no. 14).

Pl. IX/2. Two matching *tegula* fragments with *CPAI* type 2 stamp and fabric type F3der. Only a small portion of the stamp survived. The *ansa* is doubled, the *C* has a round form and the

[62] The "der" comes from derivate. The abbreviation was used in order to tell the two types of F3 apart, that look really similar at first glance.

[63] For the most recent typology of the *CPAI* stamps see Sidó–Ötvös 2015, 179–180.

letter ending is straight. W: 4.7 cm, l: 4.5 cm, th: 1.7 cm (CAL 2020, Tr. D1, Cx. 9, SF no. 36).
Pl. IX/3. *Tegula* fragment with *CPAI* type 3 stamp and fabric type F6. Only the left bottom quarter of the stamp is still intact. The *ansa* is simple, only the bottom half of the *C* and *P* are visible. The *C* has a cropped out ending and is leaning slightly backwards, the *P* is vertical. W: 9.3 cm, l: 9.6 cm, th: 2.8 cm (CAL 2020, Tr. D1, Cx. 3, SF no. 45).
Pl. IX/4. *Tegula* fragment with *CPAI* type 7 stamp and fabric type F3der. The stamp is fragmentary, with the upper side of the cartouche and the two *ansa* missing. Letters *C*, *P* and *A* are leaning backwards. All four letters have their upper part missing. W: 14.2 cm, l: 13.6 cm, th: 2.7 cm (CAL 2020, Tr. D1, Cx. 3, SF no. 50).
Pl. IX/5. *Tegula* fragment with *CPAI* type 8 stamp and fabric type F3der. Only the right half of the stamp is visible, which is slightly eroded. The left half of *A* is missing; the *I* is slightly bigger. The *ansa* is simple and heavily eroded. W: 11.5 cm, l: 11.7 cm, th: 2.8 cm (CAL 2020, Tr. D1, Cx. 3, SF no. 47).
Pl. IX/6. *Tegula* fragment with *CPAI* type 3 or type 6 stamp and fabric type F3der. Very fragmentary and eroded stamp, only its bottom right half survived. Letters *A* and *I* are faintly visible, with the bottom and right side of the cartouche being also fragmentary. W: 7.5 cm, l: 6.3 cm, th: 3 cm (CAL 2020, Tr. D1, Cx. 1, SF no. 2).
Pl. IX/7. *Tegula* fragment with *CPAI* type 4 stamp and fabric type F3der. The stamp is very fragmentary and eroded, with a small portion of the upper side of the cartouche and the upper part of the letter *A* surviving. W: 6.4 cm, l: 11.2 cm, th: 2.7 cm (CAL 2020, Tr. D1, Cx. 3, SF no. 48).
Pl. IX/8. *Tegula mammata* fragment with fabric type F4. Only one of the four flanges survived. W: 9.5 cm, l: 7.2 cm, th: 5.3 cm (CAL 2020, Tr. D1, Cx. 39, SF no. 67).

ANALYSIS OF THE SMALL FINDS

During the excavation of the angle tower, a total of 74 small finds were found, of which 51 are made of iron, 13 of ceramic, 5 of glass, 2 are made of bone and 1 is made of bronze. The context with the most artefacts (27 in total) is the fill of the modern robbing trench (Cx. 9). On the *berma* (Cx. 37) of the second phase 13 objects were discovered, while to the destruction layer of the second phase (Cx. 3) a total of 12 objects can be related. From the robbing trench, several modern artefacts have been recovered as well, they have been recorded as small finds, but they will not be discussed in the present paper.

The most representative items found during the excavations, are an iron lamp (Pl. X/1) and two fragments of the same glass *aryballos* (Pl. X/12). While the latter is from the fill of the robbing trench (Cx. 9), the lamp is from a context related to the tower's substructure from the second phase [Cx. 2]. Two iron lamps have already been found in the *principia* in Călugăreni, and although the currently discussed lamp is very corroded, it is seemingly of an open lamp type.[64] It is worth mentioning, that despite the fact that the angle tower was a wooden building with a roof made of ceramic tiles, there's an insignificant number of iron nails (Pl. X/2–3) among the small finds.

A high percentage of the finds are hobnails (Pl. X/4–7), something that can be generally observed at the *principia* of the fort as well. However, a pair of *caligae* had a large number of such hobnails embedded into their soles, these finds are more likely the ones that fell out of the sandals while being used on a day-to-day basis.[65] A typology for hobnails has been established in the past, but the items found in the vicinity of the angle tower are heavily corroded and worn-out, thus their categorization is not advised.[66]

The presence of ceramic counters (Pl. X/9–11)

[64] Nyulas 2018; Vass 2020.
[65] Volken et al. 2011, 338.
[66] Volken et al. 2011, 333–338.

inside a fort is not unusual, being often related to *convivia*,[67] similar finds have also been found at the headquarters' building. The small fragment of a *lorica squamata* scale (Pl. X/8) is not an unusual occurrence, there have been many larger fragments discovered at the *principia* in recent years.[68]

The smaller than usual number of small finds connected to this trench also supports our theory about the angle tower not having a functional ground floor. Usually this space was mainly reserved as a deposit for items related to the daily life in a Roman fort.

CATALOGUE OF THE SMALL FINDS

Pl. X/1. Iron lamp. Open type with figure eight shape, the nozzle is slightly rounded, the lamp has a fragmentary rod for hanging opposite of the nozzle. The lamp is fragmentary and very corroded. D_{base}: 4 cm, D_{rim}: 6 cm, th: 0.2 cm, l_{rod}: 4.5 cm (CAL 2020, Tr. D1, Cx. 2, SF no. 1).

Pl. X/2. Iron nail with square shaft and round head, heavily corroded. D_{head}: 2.7 cm, l: 9.1 cm, th: 0.9 cm (CAL 2020, Tr. D1, Cx. 37, SF no. 71).

Pl. X/3. Iron hobnail with round shaft and round head, fragmentary and heavily corroded. D_{head}: 1.2 cm, D_{shaft}: 0.7 cm, l: 1.6 cm (CAL 2020, Tr. D1, Cx. 17, SF no. 46).

Pl. X/4a. Iron hobnail with round shaft and round, flat head, heavily corroded. D_{head}: 1.2 cm, D_{shaft}: 0.5 cm, l: 1.5 cm, (CAL 2020, Tr. D1, Cx. 9, SF no. 37).

Pl. X/4b. Iron hobnail with round shaft and mushroom-like head, heavily corroded. D_{head}: 1.1 cm, D_{shaft}: 0.3 cm, l: 1.8 cm (CAL 2020, Tr. D1, Cx. 9, SF no. 39).

Pl. X/4c. Iron hobnail with round head, very heavily corroded. D_{head}: 1.3 cm, l: 1.6 cm (CAL 2020, Tr. D1, Cx. 9, SF no. 19).

Pl. X/4d. Iron hobnail with round, bent shaft and round head, heavily corroded. D_{head}: 1.3 cm, D_{shaft}: 0.5 cm, l: 1.6 cm (CAL 2020, Tr. D1, Cx. 9, SF no. 16).

Pl. X/4e. Iron hobnail with round shaft and globular head, heavily corroded. D_{head}: 0.8 cm, D_{shaft}: 0.5 cm, l: 2 cm (CAL 2020, Tr. D1, Cx. 9, SF no. 34).

Pl. X/5a. Iron hobnail with round shaft and globular head, heavily corroded. D_{head}: 1.2 cm, D_{shaft}: 0.5 cm, l: 1.2 cm (CAL 2020, Tr. D1, Cx. 37, SF no. 73).

Pl. X/5b. Iron hobnail with round, curved shaft and round, fragmentary head, heavily corroded. D_{head}: 0.7 cm, D_{shaft}: 0.5 cm, l: 1.2 cm (CAL 2020, Tr. D1, Cx. 37, SF no. 51).

Pl. X/5c. Iron hobnail with round shaft and globular head, very heavily corroded. D_{head}: 1.2 cm, D_{shaft}: 0.7 cm, l: 1 cm (CAL 2020, Tr. D1, Cx. 37, SF no. 70).

Pl. X/5d. Iron hobnail with round shaft and globular head, heavily corroded. D_{head}: 0.8 cm, D_{shaft}: 0.5 cm, l: 1 cm (CAL 2020, Tr. D1, Cx. 37, SF no. 35).

Pl. X/5e. Iron hobnail with round shaft and globular head, heavily corroded. D_{head}: 1.2 cm, D_{shaft}: 0.3 cm, l: 1.6 cm (CAL 2020, Tr. D1, Cx. 37, SF no. 58).

Pl. X/5f. Iron hobnail with missing shaft and round head, heavily corroded. D_{head}: 1.2 cm, l: 1 cm (CAL 2020, Tr. D1, Cx. 37, SF no. 57).

Pl. X/5g. Iron hobnail with missing shaft and globular head, heavily corroded. D_{head}: 1.2 cm, l: 0.8 cm (CAL 2020, Tr. D1, Cx. 37, SF no. 53).

Pl. X/6. Iron hobnail with missing shaft and round head, heavily corroded. D_{head}: 1 cm, l: 0.7 cm (CAL 2020, Tr. D1, Cx. 19, SF no. 69).

Pl. X/7. Iron hobnail with round, curved shaft and round head, heavily corroded. D_{head}: 1 cm, D_{shaft}: 0.5 cm, l: 1.2 cm, (CAL 2020, Tr. D1, Cx. 3, SF no. 49).

Pl. X/8. *Lorica squamata* scale fragment, heavily corroded. W: 2.1 cm, l: 0.9 cm, th: 0.1 cm (CAL 2020, Tr. D1, Cx. 9, SF no. 29).

Pl. X/9. Ceramic counter with chipped side,

[67] Mustață et al. 2014, 228.

[68] Ötvös–Cioată 2020, 52–53.

made from the base of a vessel. The fabric is slightly coarse with occasional inclusions of small pebbles and quartz, reduced burnt. W: 4.6 cm, l: 4.7 cm, th: 0.7cm. (CAL 2020, Tr. D1, Cx. 19, SF no. 66).

Pl. X/10. Ceramic counter made from the body of a vessel. The fabric is coarse with frequent inclusions of small pebbles and black quartz, reduced burnt. Measurements: D: 4.2 cm, th: 0.8 cm (CAL 2020, Tr. D1, Cx. Spoil, SF no. 65).

Pl. X/11. Ceramic counter with chipped side, made from the body of a vessel. The fabric is coarse with frequent inclusions of small pebbles and black quartz, reduced burnt. D: 4.5 cm, th: 0.7 cm. (CAL 2020, Tr. D1, Cx. 37, SF no. 72).

Pl. X/12. Glass *aryballos* fragments, type AR151 = I 61 = T 135[69], dating from the 1st to the middle of the 3rd century AD. Free blown, translucent, aqua glass handle with an oval section and a slightly concave flat base. D: 3.4 cm, D_{base}: 7.6 cm, th: 0.4 cm (CAL 2020, Tr. D1, Cx. 9, SF no. 24; 74).

REFERENCES

Baatz–Hermann 1982

D. Baatz – F.-R. Herrmann, *Die Römer in Hessen* (Stuttgart 1982)

Baradez 1948

J. Baradez, Gemellae, camp d'Hadrien et ville des confins sahariens, *Comptes rendus des séances de l'Académie des Inscriptions et Belles-Lettres* 92/3, 1948, 390–395.

Bet–Henriques Raba 1989

P. Bet – C. Henriques Raba, Les céramiques à parois fines de Lezoux, in: P. Bet – A. Desbat – G. Gimard – C. Laroche– Y. M. Marin – Y. Rigoir – L. Rivet – N. Rohmann (eds.) *S.F.E.C.A.G. (Société Française d'Etude de la Céramique Antique et Gaule) Actes du Congres de Lezoux 4–7 May 1989* (Lezoux 1989) 21–29.

Bocan–Neagu 2018

I. Bocan – C. M. Neagu, The pottery workshops at Alburnus Maior, in: V. Rusu-Bolindeț – C. A. Roman – M. Gui – I. A. Iliescu – F. O. Botiș – S. Mustață – D. Petruț (eds.), *Atlas of the roman pottery workshops from the provinces Dacia and Lower Moesia/Scythia Minor (1st–7th centuries AD) I* (Cluj-Napoca 2018) 91–114.

Breeze et al. 2013

D. J. Breeze – S. Jilek – D. Mattingly – A. Rushworth – M. Sterry – V. Leitch, Frontiers of the Roman Empire. The African frontiers (Edinburgh 2013)

Brukner1981

O. Brukner, *Rimska keramika u Jugoslovenskom delu provincije Donje Panonije* (Beograd 1981)

Ciaușescu 2004

M. Ciaușescu, Early pottery production in Apulum (Partos) – an overview of recent research, *ReiCretActa* 39, 2005, 321–329.

Egri 2018

M. Egri, Pottery production at Apulum, in: V. Rusu-Bolindeț – C.A. Roman – M. Gui – I. A. Iliescu– F. O. Botiș – S. Mustață – D. Petruț (eds.) *Atlas of the roman pottery workshops from the provinces Dacia and Lower Moesia/Scythia Minor (1st–7th centuries AD) I* (Cluj-Napoca 2018) 115–130.

Fünfschilling 2015

S. Fünfschilling, *Die römischen Gläser aus Augst und Kaiseraugst*, Forschungen in Augst 51/1–2 (Augst 2015)

[69] For the typologies see: AR (Fünfschilling 2015); I (Isings 1957); T (Goethert-Polaschek 1977).

Goethert-Polaschek 1977
K. Goethert-Polaschek, *Katalog der römischen Gläser des Rheinischen Landesmuseums Trier*, Trierer Grabungen und Forschungen 9 (Mainz 1977)

Grünewald 1979
M. Grünewald, *Die Gefässkeramik des Legionslagers von Carnuntum (Grabungen 1968–1974)*, Der Römische Limes in Österreich 29 (Wien 1979)

Gudea 1997
N. Gudea, Der dakische Limes. Materialien zu seiner Geschichte, *JbRGZM* 44/2, 1997, 497–609.

Heising 2007
A. Heising, *Figlinae Mogontiacenses. Die römischen Töpfereien von Mainz*, Augrabungen und Forschungern 3 (Remshalden 2007)

Horn 2002
H. G. Horn, *Die Römer in Nordrhein-Westfalen*, 2. Auflage (Hamburg 2002)

Höpken et al. 2020
C. Höpken – M. Fiedler – K. Oberhofer, Ausgrabungen im vicus von Călugăreni/Mikháza, Kreis Mureș (Rumänien), *Marisia-AHP* 2, 2020, 101–118.

Isings 1957
C. Isings, *Roman glass from dated finds* (Groningen-Djakarta 1957)

Oswald–Pryce 1920
F. Oswald – T. D. Pryce, *An introduction to the study of terra sigillata treated from a chronological standpoint* (London 1920)

Ötvös–Cioată 2020
K. B. Ötvös – D. Cioată, Armură romană de solzi / Római pikkelypáncél, in: Z. Soós (coord./fő. szerk.), *Valori și achiziții muzeale / Múzeumi értékek* (Târgu Mureș 2020) 52–53.

Man 2011
N. Man, *Așezarea romană de la Cristești,* BMM. Series Archaeologica 3 (Cluj-Napoca 2011)

Mills 2013
P. Mills, *The Ancient Mediterranean Trade in Ceramic Building Materials* (Oxford 2013)

MOLAS 1997
Museum of London Archaeological Service, *Archaeological Site Manual*, 3rd edition (London 1994)

Mustață et al. 2014
S. Mustață – Sz. Pánczél – D. Petruț – K. Sidó, Drinking and gaming in the Roman fort of Porolissum. Preliminary data offered by the excavation at building C3, *SUBB-Historia* 59/1, 2014, 215–238.

Nagy 2017
A. Nagy, *Resatus and the Stamped Pottery*, Aquincum Studies 1 (Budapest 2017)

Nuber 1986
H. U. Nuber, Das Steinkastell Hofheim (Main- Taunus – Kreis), *Studien zu den Militärgrenzen Roms III, 13. Internationale Limeskongreß (Aalen 1983),* Forschungen und Berichte Vor- und Frühgeschichte in Baden-Württemberg 20 (Stuttgart 1986) 226–234.

Nyulas 2018
D. Nyulas, An unusual iron lamp from the eastern limes of Dacia, in: O. Tutilă – C. Cristescu – N. C. Rișcuța – A. T. Marc (eds.), *Archaeological Small Finds and Their Significance. Proceedings of the International Symposium from Deva-Geoagiu Băi, 23rd–25th of March 2017* (Cluj-Napoca 2018) 119–133.

Pánczél–Bajusz 2021
Sz.-P. Pánczél – M. Bajusz, Searching for the North-eastern angle tower of the auxiliary fort of Călugăreni / Mikháza, *Marisia-AHP* 3, 2021, 99–110.

Peacock–Williams 1986
D. P. S. Peacock – D. F. Williams, *Amphorae and the roman economy – an introductory guide* (London 1986)

Popilian 1976
G. Popilian, *Ceramica romană din Oltenia* (Craiova 1976)

Protase 1965
D. Protase, Castrul roman de la Călugăreni (r. Tîrgu Mureș). Săpăturile din anul 1961, *ActaMN* 2, 1965, 209–214.

Pugliese Carratelli et al. 1985
G. Pugliese Carratelli – I. Baldassarre – T. Lanzillotta – G. Mannironi Lubrano – S. Salomi – E.M. Steinby (eds.), *Atlante delle forme ceramiche II Ceramica fine romana nel Bacino Mediteraneo (Tardo Ellenismo e Primo Impero)* (Roma 1985)

Robinson 1959
H. S. Robinson, *Pottery of the Roman Period. Chronology*. The Athenian Agora. Results of excavations conducted by the American School of Classical Studies V (New Jersey 1959)

Rushworth 2009
A. Rushworth, *Housesteads Roman Fort. The grandest station I* (Swindon 2009)

Rusu-Bolindeț 2007
V. Rusu-Bolindeț, *Ceramica romană de la Napoca* (Cluj-Napoca 2007)

Sidó–Ötvös 2015
K. Sidó – K. B. Ötvös, New types of roman stamped tiles from Călugăreni, in: A. Dobos – D. Petruț – S. Berecki – L. Vass – Sz. P. Pánczél – Zs. Molnár-Kovács – P. Forisek (eds.), *Archaeologia Transylvanica. Studia in Honorem Stephani Bajusz* (Cluj-Napoca – Târgu Mureș – Budapest 2015) 175–187.

Stanfield–Simpson 1958
J. A. Stanfield – G. Simpson, *Central Gaulish potters* (London 1958)

Sultov 1985
B. Sultov, *Ceramic production on the territory of Nicopolis ad Istrum (IInd–IVth century),* Terra Antiqua Balcanica I (Serdicae – Tirnovi 1985)

Trousset 1998
P. Trousset, Gemellae (el Kasbat), *Encyclopédie berbère* 20 (Gauda – Girrei 1998) 1–6.

Țentea et al. 2021
O. Țentea – F. Matei-Popescu – V. Călina, Frontiera romană din Dacia Inferior, *CA* 28/1, 2021, 9–90.

Vass 2020
L. Vass, Opaiț roman din fier / Római vasmécses, in: Z. Soós (coord./fő. szerk.), *Valori și achiziții muzeale / Múzeumi értékek* (Târgu Mureș 2020) 54–55.

Vámos 2015
P. Vámos, Die Militärische Töpferwerkstatt der Canabae von Aquincum, in: J. Beszédes (ed.), *Legionslager und Canabae Legionis in Pannonien. Internationale Archäologische Konferenz 16–17 November 2015* (Budapest 2015) 45–62.

Vlădescu 1983
C. M. Vlădescu, *Armata romană în Dacia Inferior* (București 1983)

Vlădescu 1986
C. M. Vlădescu, *Fortificațiile romane din Dacia Inferior* (Craiova 1986)

Volken et al. 2011
M. Volken – O. Paccolat – S. Volken, Les clous de chaussures du site de Pfyngut: les bases d'une typo-chronologie, in: O. Paccolat (ed.), *Pfyn/Finges, evolution d'un terroir de la plaine du Rhône. Le site archéologique de «Pfyngut» (Valais, Suisse)*, Cahiers d'archéologie romande 121. Archaeologia Valessiana 4 (Lausanne 2011) 315–355.

Welsby 1990
D. A. Welsby, Observations on the defences of Roman forts in North Africa, *Antiquités africaines* 26, 1990, 113–129.

Plate I. General plan of the research excavations from Călugăreni.

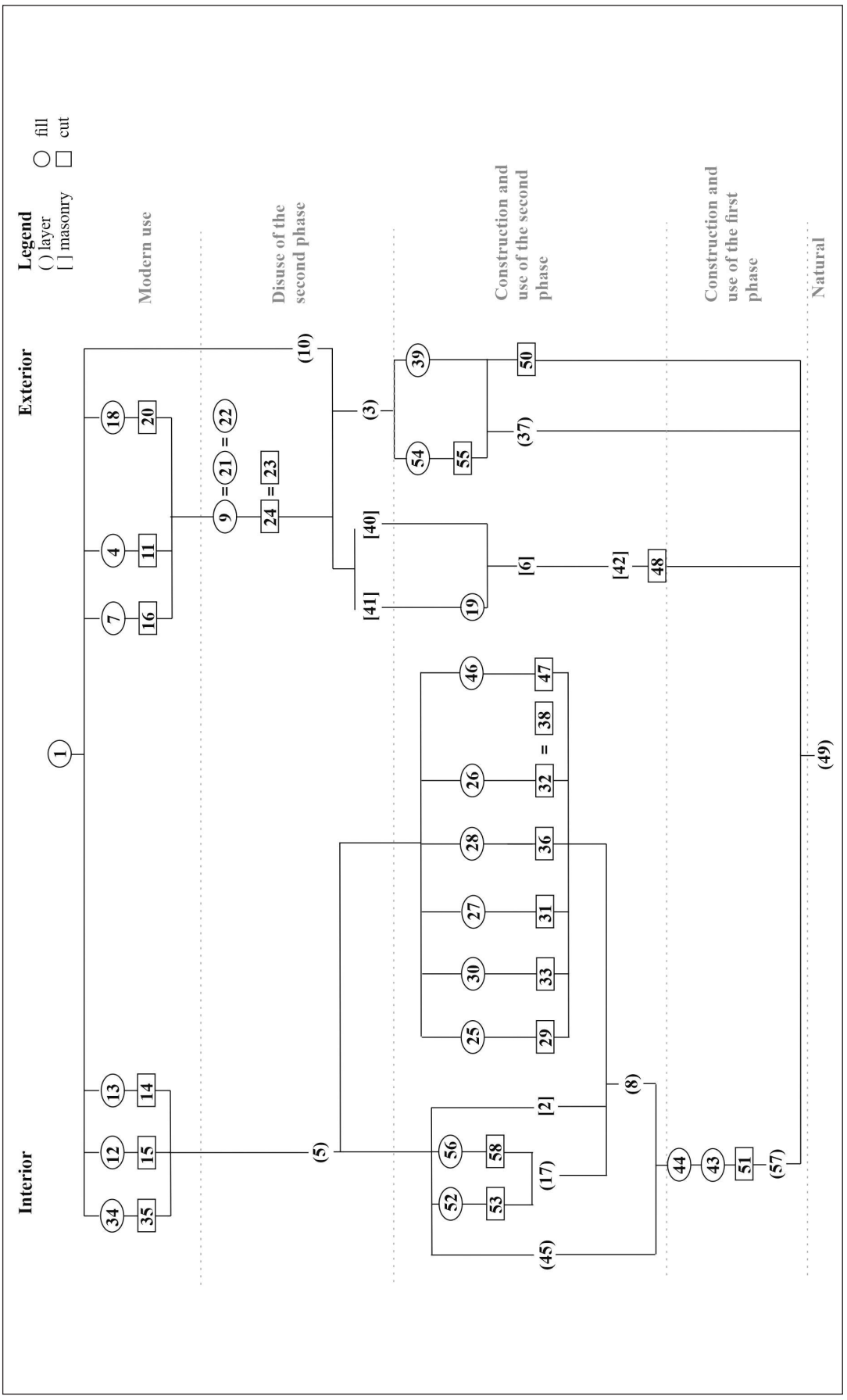

Plate II. General stratigraphic matrix of trench D1.

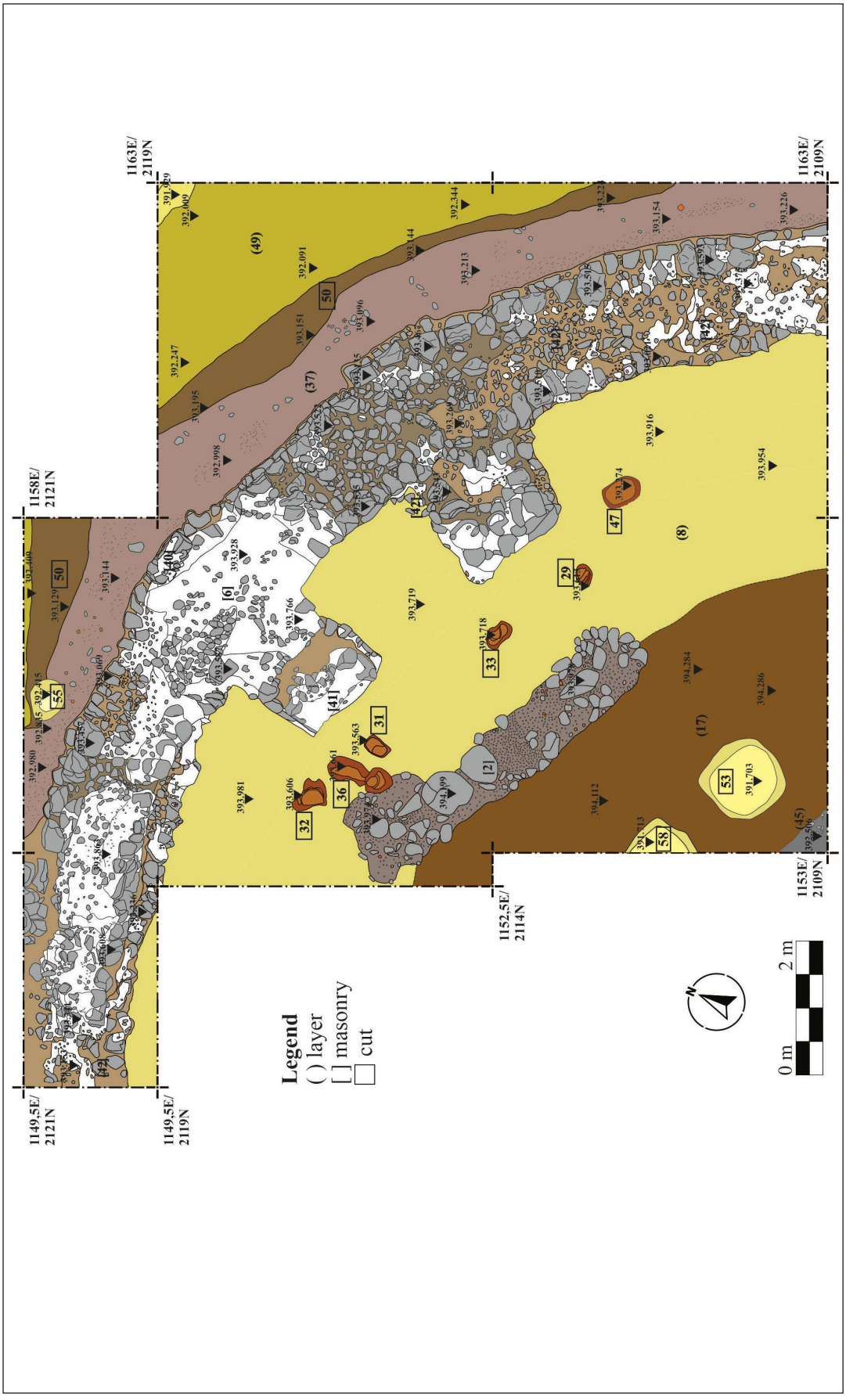

Plate III. Archaeological features belonging to the second phase of the fort in trench D1.

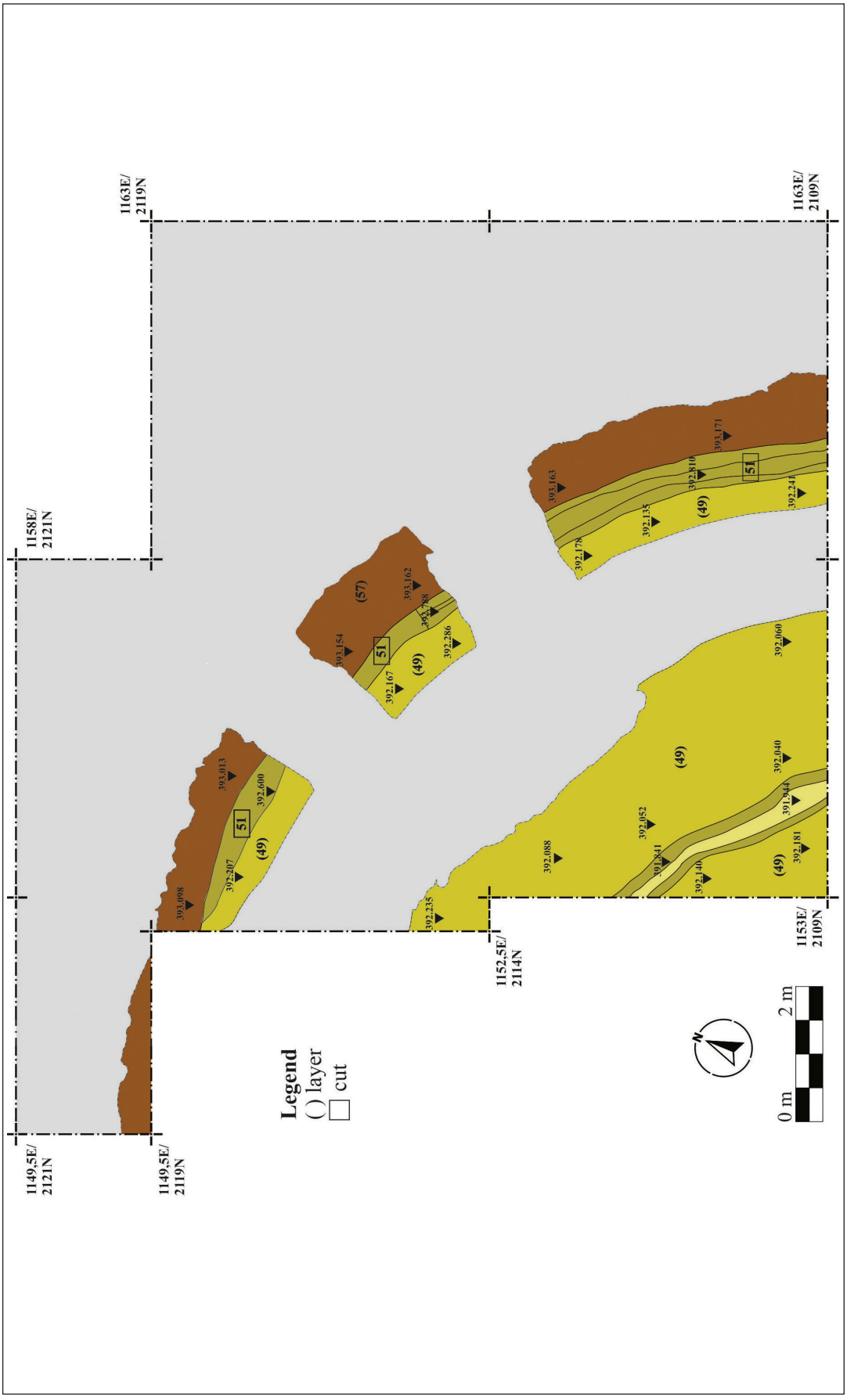

Plate IV. Archaeological features belonging to the first phase of the fort in trench D1.

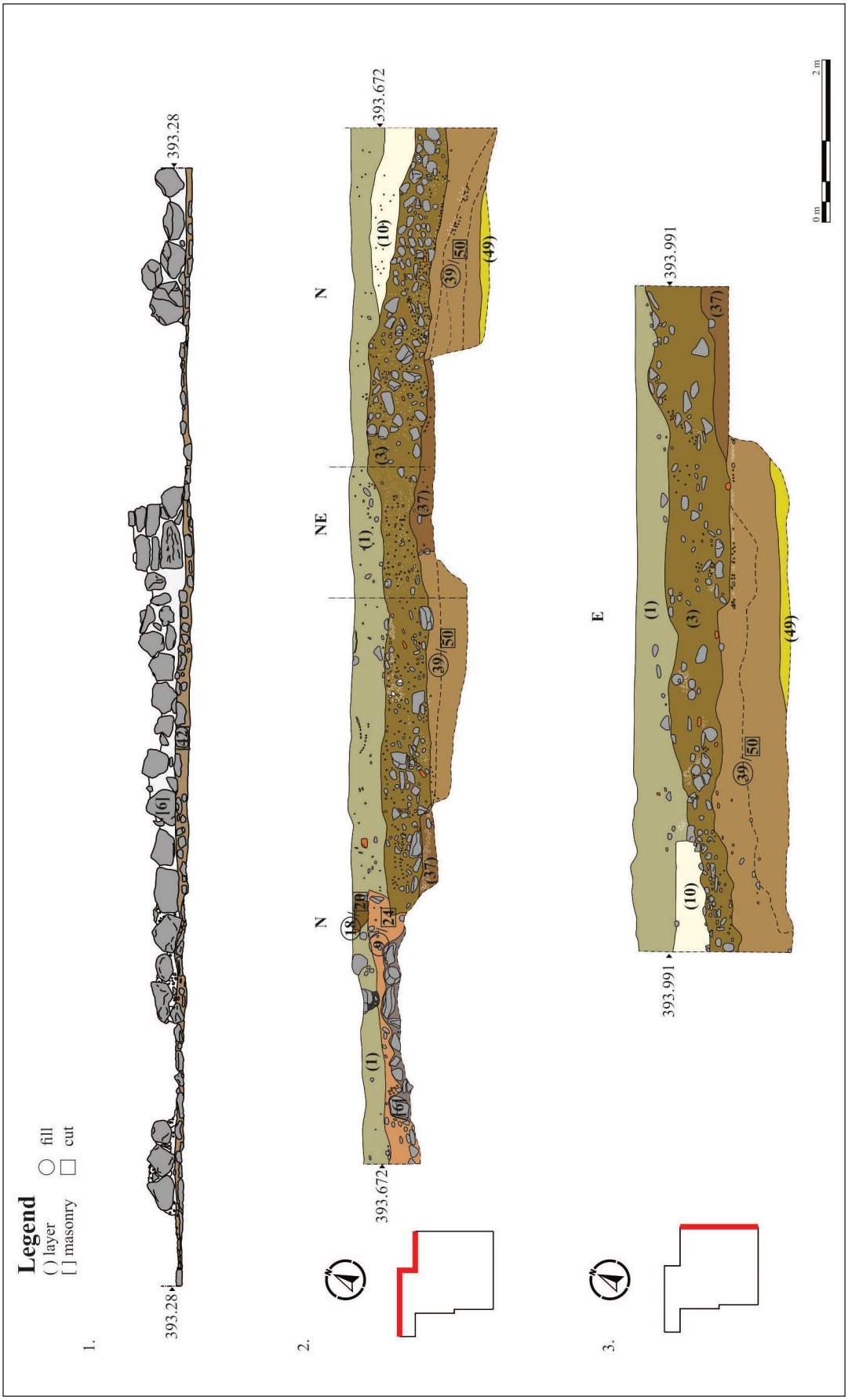

Plate V. 1. External façade of Cx. 6 and Cx. 42; 2. Northern sections; 3. Eastern section.

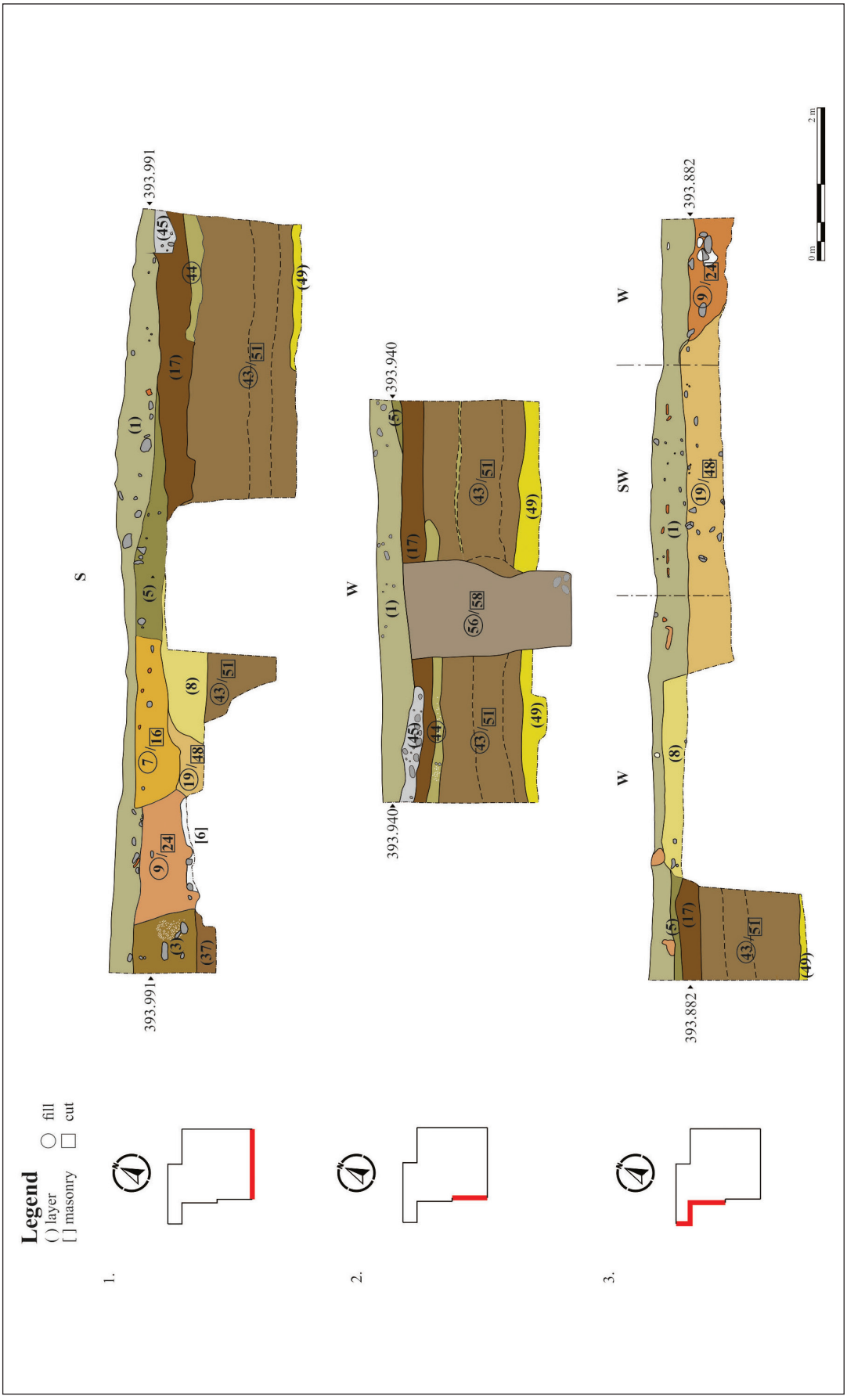

Plate VI. 1. Southern section; 2–3. Western sections.

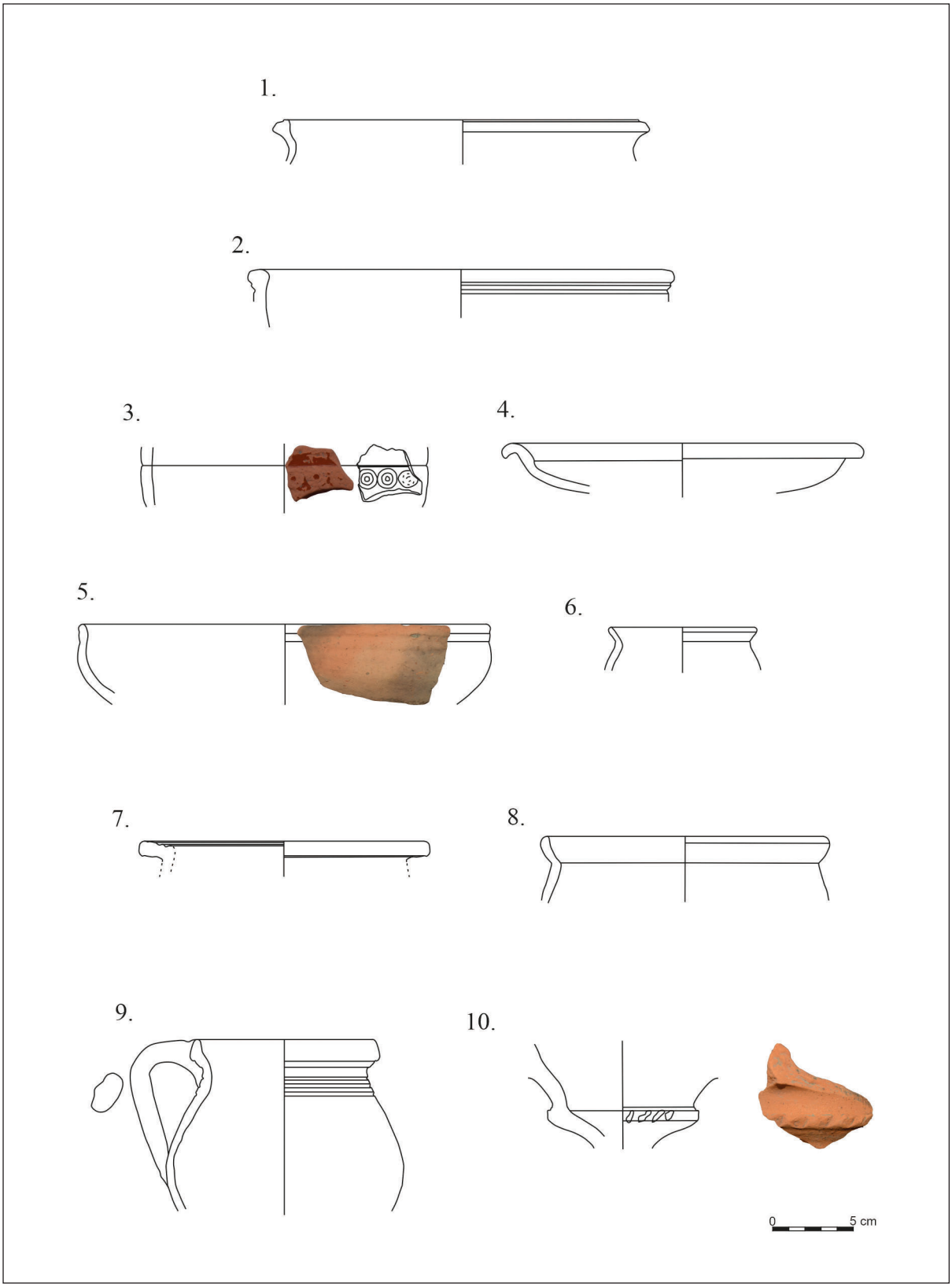

Plate VII. Ceramic vessels.

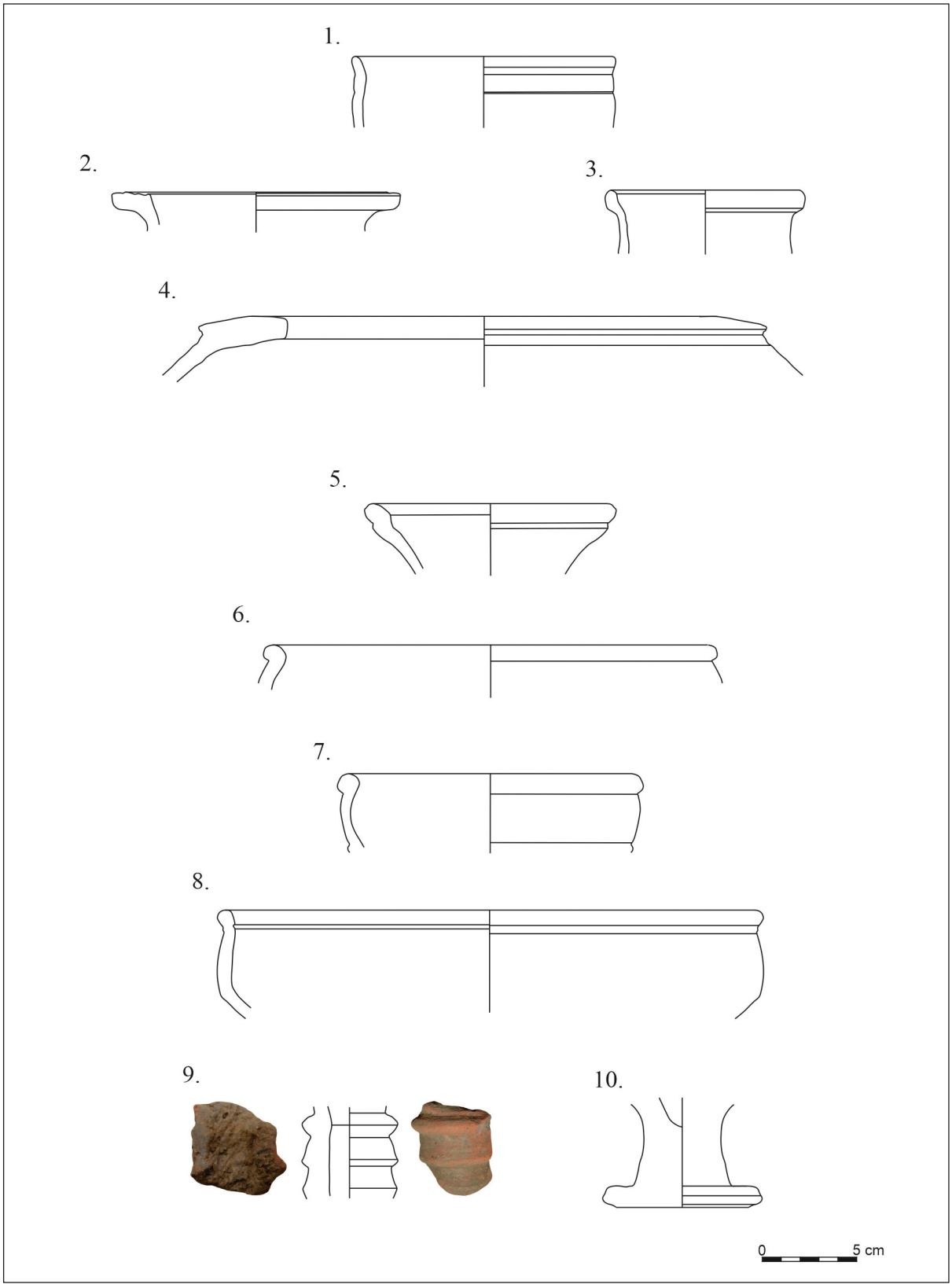

Plate VIII. Ceramic vessels.

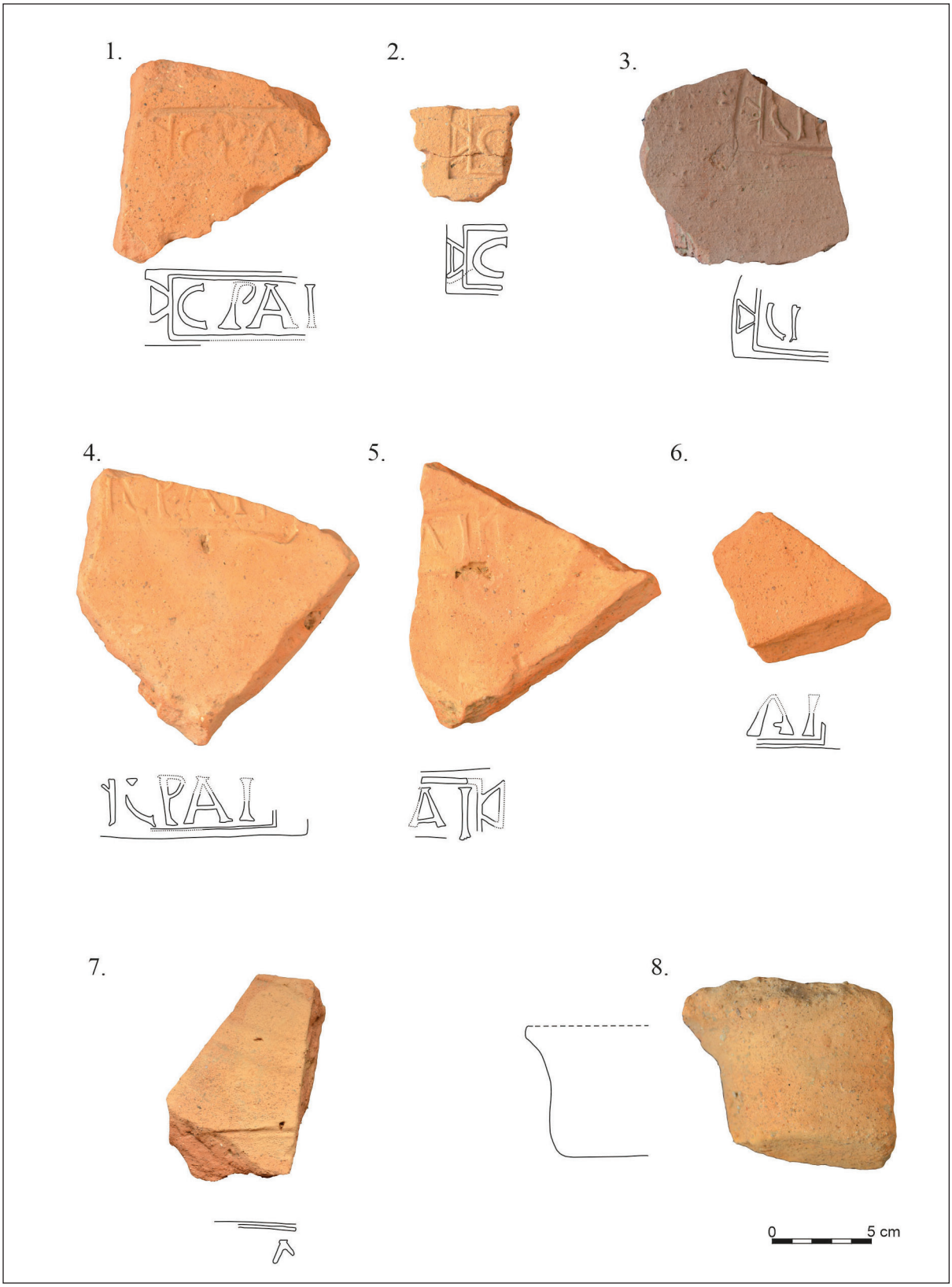

Plate IX. Ceramic building material small finds.

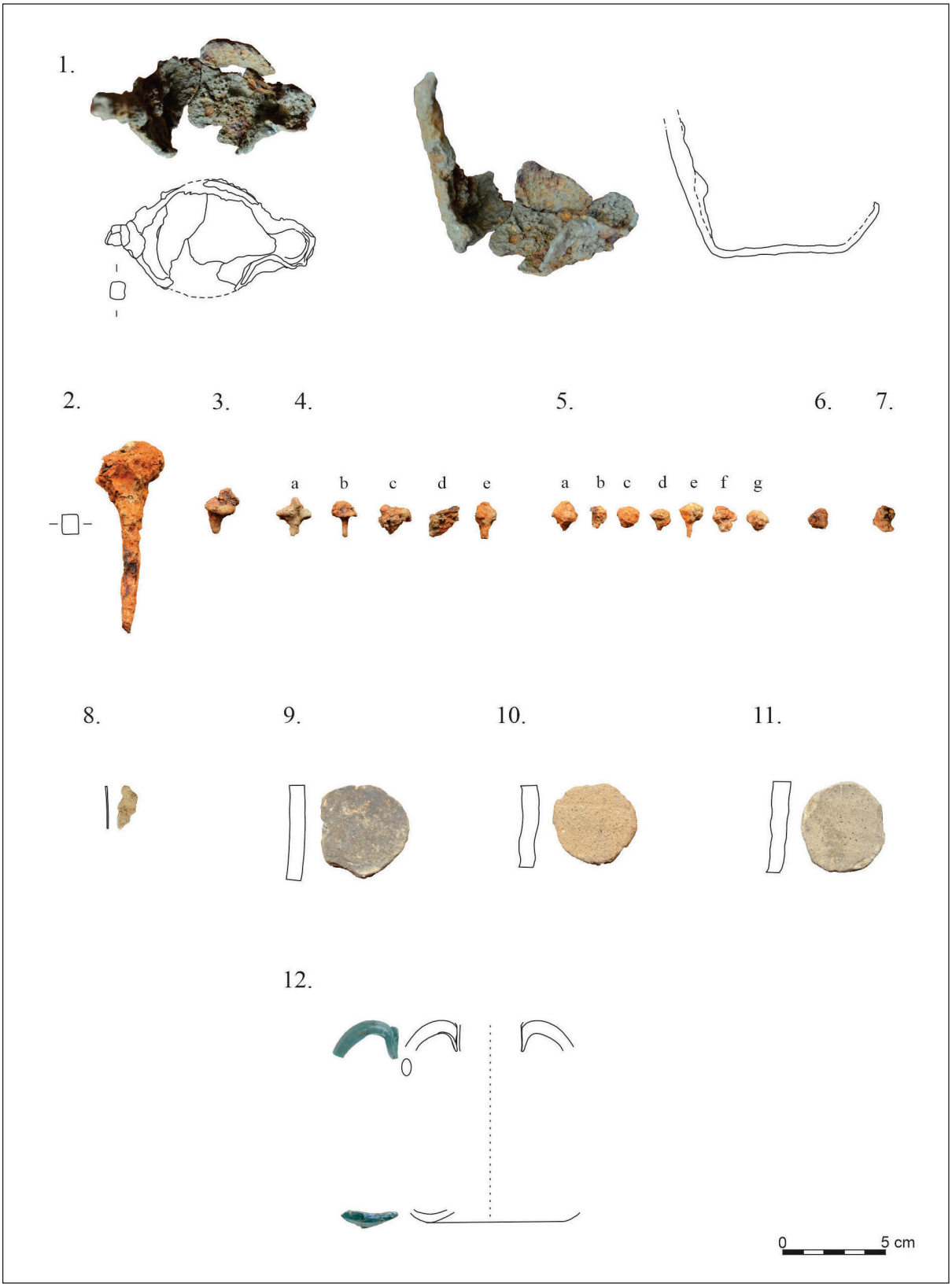

Plate X. Metal, ceramic and glass small finds.

ABBREVIATIONS

ActaArchHung	Acta Archaeologica Academiae Scientiarum Hungaricae
ActaMN	Acta Musei Napocensis
AISC	Anuarul Institutului de Studii Clasice Cluj
Aluta	Aluta. Studii și cercetări
AnB	Analele Banatului (Serie nouă 2006–)
Angustia	Angustia. Muzeul Carpaţilor Răsăriteni
AnnUA-Hist	Annales Universitatis Apulensis. Series Historica
Antiquity	Antiquity. A Quarterly Review of Archaeology
Apulum	Apulum. Acta Musei Apulensis
ArchÉrt	Archaeologiai Értesítő
ArchHung	Archaeologia Hungarica
ArchKorr	Archäologisches Korrespondenzblatt
ArchSlovMonComm	Archaeologica Slovaca Monographiae: Communicationes
Argesis	Argesis. Studii și comunicări
AVSL	Archiv des Vereins für Siebenbürgische Landeskunde
Banatica	Banatica, Muzeul Banatului Montan
BB	Bibliotheca Brukenthal
BCȘS	Buletinul Cercurilor Științifice Studențești
BeitUfGMMKR	Beiträge zur Ur- und Frühgeschichte des Mittelmeer-Kulturraumes
BerRGK	Bericht der Römisch-Germanischen Kommission
BICA	Bullettino dell'Instituto di corrispondenza archeologica = Bulletin de l'Institut de correspondance archéologique
BHAUT	Bibliotheca Historica et Archaeologica Universitatis Timisiensis
BJ	Bonner Jahrbücher
BMA	Bibliotheca Musei Apulensis
BMM	Bibliotheca Musei Marisiensis
BudRég	Budapest Régiségei
CA	Cercetări Arheologice
Carpica	Carpica. Muzeul Județean Iulian Antonescu
CCAR	Cronica Cercetărilor Arheologice din România
CH	Cahiers d'Histoire. Publiés par les Universités de Clermont-Ferrand
CommArchHung	Communicationes Archaeologicae Hungariae
Dacia (N. S.)	Dacia. Recherches et décuvertes archéologiques en Roumanie, I–XII (1924–1948), Nouvelle série (N. S.): Dacia. Revue d'archéologie et d'histoire anciene
DDMÉ	A Debreceni Déri Múzeum Évkönyve
DissArch	Dissertationes Archaelogicae ex Instituto Archaeologico Universitatis de Rolando Eötvös Nominatae
DM	Dissertationes et monographiae Beograd
DolgKolozsvár (Ú.S.)	Dolgozatok az Erdélyi Nemzeti Múzeum Érem- és Régiségtárából, (Új sorozat 2006–)
DolgSzeged	Dolgozatok a Szegedi Tudományegyetem Régiségtudományi Intézetéből
EDR	Ephemeris Dacoromana
EMúz	Erdélyi Múzeum

EphemNap	Ephemeris Napocensis
HOMÉ	A Herman Ottó Múzeum Évkönyve
IA	Internationale Archäologie
ICA	Interdisciplinary Contributions to Archaeology
IPH	Inventaria Praehistorica Hungariae
JAHA	Journal of Ancient History and Archaeology
JAAH	Journal of Archaeology and Ancient History
JASc	Journal of Archaeological Science
JbRGZM	Jahrbuch des Römisch-Germanischen Zentralmuseums
JRA	Journal of Roman Archaeology
JRS	Journal of Roman Studies
KM	Keresztény Magvető. Az Erdélyi Unitárius Egyház Folyóirata
KuBA	Kölner und Bonner Archaeologica
Lymbus	Lymbus. Magyarságtudományi Forrásközlemények
Marisia	Marisia (V–XXXV): Studii şi Materiale
Marisia-AHP	Marisia: Archaeologia, Historia, Patrimonium
MCA	Materiale şi Cercetări Arheologice
MFMÉ (StudArch)	A Móra Ferenc Múzeum Évkönyve, (Studia Archaeologica 1995–)
MGLDMS (N. F.)	Magazin für Geschichte, Literatur und alle Denk- und Merkwürdigkeiten Siebenbürgens, Neue Folge
Mousaios	Mousaios. Muzeul Judeţean Buzău
MSVFG	Marburger Studien zur Vor- und Frühgeschichte
MűvtÉrt	Művészettörténeti Értesítő
NuclInstMethPhys-Sect. B	Nuclear Instruments and Methods in Physics Research. Section B
OJA	Oxford Journal of Archaeology
PAS	Prähistorische Archäologie in Südosteuropa
PBF	Prähistorische Bronzefunde
Radiocarbon	Radiocarbon. An International Journal of Cosmogenic Isotope Research
ReiCretActa	Rei Cretariae Romanae Fautorum Acta
RégFüz	Régészeti Füzetek
RevBis	Revista Bistriţei. Complexul Judeţean Muzeal Bistriţa-Năsăud
Sargetia (S.N.)	Sargetia. Acta Musei Devensis
SBA	Saarbrücker Beiträge zur Altertumskunde
SCIV(A)	Studii şi Cercetări de Istorie Veche (şi Arheologie 1974–)
SlovArch	Slovenská Archeológia
StCl	Studii Clasice
StComSibiu	Studii şi comunicări. Muzeul Brukenthal
StComSM	Studii şi Comunicări Satu Mare
SUBB-Historia	Studia Universitatis Babeş–Bolyai, series Historia
StudUCH	Studia Universitatis Cibiniensis, Series Historica
Terra Sebus	Terra Sebus. Acta Musei Sabesiensis
Thraco-Dacica	Thraco-Dacica. Institutul de Arheologie "Vasile Pârvan" Centrul de Tracologie
Tisicum	Tisicum. A Jász-Nagykun-Szolnok Megyei Múzeumok Évkönyve
Tyragetia	Tyragetia. The National Museum of History of Moldova
UPA	Universitätsforschungen zur Prähistorischen Archäologie
VAH	Varia Archaeologica Hungarica
WMMÉ	A Wosinsky Mór Múzeum Évkönyve
ZPE	Zeitschrift für Papyrologie und Epigraphik