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PANNONIAN PRODUCTION OF THIN-WALLED POTTERY FROM *MURSA*: CAMPUS 2001–2015

I*n the period from 2001 to 2015, in the area of the present day University Campus in Osijek (Croatia), rescue archaeological excavations of Roman* Mursa *were conducted. Thin–walled pottery found in these excavations is represented by a small number of finds in comparison to other classes of pottery, however, they present characteristics by which is possible to determine affiliation to certain major production centers. Under their influences, potters in* Pannonia *also developed their own local production which follows the usual template in forms and decoration. In the period from the second half of 1st to the first half of 2nd century AD the most common vessels are the ones that imitate forms of Italian production. By the later period, during the 2nd and 3rd century AD, new forms of thin-walled cups and beakers had taken over the local market. During this time they were also produced in Mursa, which is confirmed by the numerous findings from pottery kilns. These new forms became the common types of drinking vessels and completely took over the local market, slowly pushing earlier Italic forms out of use.*

Thin-Walled Pottery Production in *Pannonia*

Production of thin-walled pottery in *Pannonia* presumably began in the 1st century AD with one of the earliest production centers in *Sirmium.*[1] A part of the findings from the rescue archaeological excavations in the area of the present day University Campus can be ascribed to this production center. The assumption is based on macroscopic analysis of the fabric which showed its typical manufacturing technology.[2] The vessels are oxidised-fired, their fabric is hard, without inclusions, and of pink, rose or reddish colour. The wall surface is covered in a coating of orange or brown colour. The walls on the inner side of the vessel can sometimes contain grains of sand.[3] The decorative motifs, made in barbotine technique in the form of a pseudo-vegetable wave that generally come in combination with incised decorations, are typical for thin-walled pottery of *Sirmium* production (**fig. 1**).[4] The vessels are made in a classical biconical Italic form.[5] Analogies are found at *Sirmium,*[6] *Cibalae,*[7] *Carnuntum*,[8] etc. These findings in *Mursa* date back to the end of the 1st and the beginning of the 2nd century AD, which is also confirmed by the numismatic finds from the reign of *Domitian* and by findings of *terra sigillata* Tardo-Padana (form Consp. 34).[9]

In the same period one of the most common locally produced forms found in *Mursa* is a small oxidised-fired cup of type Brukner 16 and 16a (**fig. 2**).[10] This type of vessel can also be connected to the *Sirmium* production centre.[11] Its production at *Mursa* is also possible, based on findings of the foot of this vessel in pottery kilns that can be ascribed to this form. For the time being there is not enough evidence to confirm this theory. The fabric of this type is of orange colour, a little more porous and softer than the previous examples, with very small particles of quartz sand. There can be a thin layer of orange colour coating on the inside and outside of the walls of the vessel. The form derivates from Italic predecessors. It has an almost conical form where the upper part is more wide and pronounced and the lower part narrows. The whole vessel rests on a lightly pronounced vertical or slightly conical foot. The rim is inclined outwards and divided from the rest of the body with one groove which additionally emphasizes this transition. The two types, 16 and 16a, differ only in decoration. Type 16 doesn't have any decoration and type 16a has a kind of stylized motif of pseudo-vegetable wave made in barbotine technique. The decoration is on the upper part of the vessel.[12] Analogies are found at *Sirmium*, *Cibalae*, Vukovar, *Acumincum* and *Singidunum*.[13]

Production in *Mursa*

Based on the pottery kilns found at the sites in Campus we can assume that the earliest pottery production in this part of *Mursa* started at the end of the 1st century AD and lasted all through the

1 Premek 1987, 448–449.
2 Gassner 1992, 449–450.
3 Filipović/Crnković 2014, 106–107.
4 Krekovič 2002, 165.
5 Schindler-Kaudelka 1975 T. 20.
6 Brukner 1981, T. 55.
7 Ožanić Roguljić 2007, 175–176.
8 Gassner 1992, 462, Abb. 9.
9 Filipović/Crnković 2014, 107; Crnković/Filipović 2016, 549.
10 Brukner 1981, 152.
11 Brukner 1981, 36.
12 Brukner 1981, 152.
13 Brukner 1981 T.57; Nikolić-Đorđević 2000, 43.

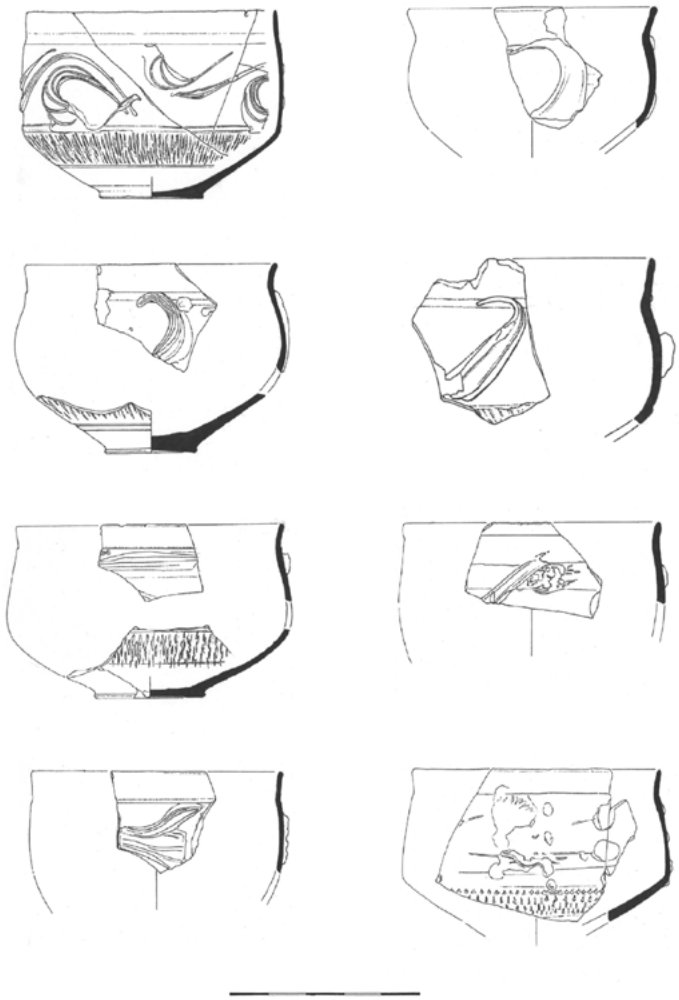

Fig. 1. Forms and decoration of thin-walled pottery belonging to *Pannonian* production.

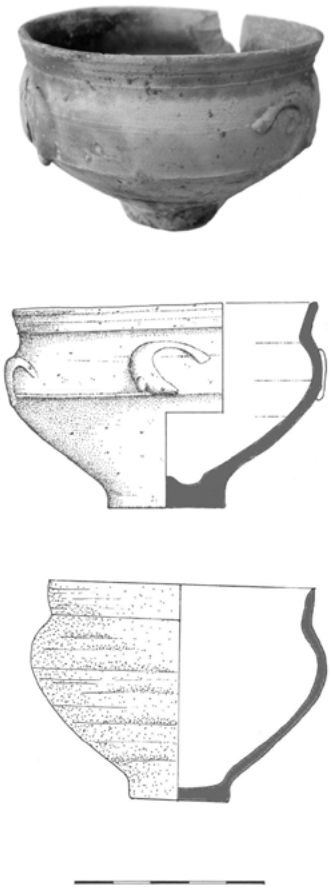

Fig. 2. Thin-walled pottery of type Brukner 16 and 16a.

2nd and 3rd century AD. The products of these pottery kilns are oxidized-fired cups and beakers, and reduced-fired beakers.[14]

Oxidised-fired cups (**fig. 3**) are of the same or similar fabric as the form Brukner 16 and 16a. Some examples have a thin coating of orange colour. All of the cups are wheel-thrown. The form is globular with pronounced vertical or slightly conical foot. Some examples have one handle. The rim is vertical, inclined outwards or biconical. Apart from the grooves that separate the rim or the bottom from the body of the vessel, these forms do not bear any decoration.

The simultaneous production of cups and beakers was noted in production centers in Lyon and the lower Rhineland.[15] *Mursa* followed the same standards. Presumably at the end of the 1st century AD, along with oxidised-fired cups, began the production of beakers which were widely produced in *Pannonia* especially during the 2nd and, in some areas, 3rd century AD. While the production of cups ceased with time, production of beakers continued certainly to the end of the 3rd century AD.

Oxidised-fired beakers of various sizes with relativly thin walls coated with orange, red, dark red, reddish-brown or dark brown slip which sometimes contains different density of crushed clay particles (**fig. 4**). These beakers are also known as *Firnisbecher*.[16] They come in many variations and they are wheel-thrown. The fabric is more porous with visible gaps of 0.5 to 1.0 mm. In the production of *Mursa* ten fabrics have been determined, based on the variations in colour (depending on the process of firing) and the amount of inclusions of quartz sand, which is generally part of the structure in almost all the types and classes of pottery products in *Mursa*. The form of these beakers is globular or ovoid with small conical or biconical foot. Five types of rim profiles are possible to determine.

With the globular and ovoid forms, a type with oval indentations is also produced in the same fabric and coating technique (**fig. 5**). There are usually six oval indentations, but the number can vary depending on the size of the vessel. Three types of rim profile are possible to determine.

The local production of these beakers probably developed under the influence of the major production centres of Gaul and the lower Rhineland. Only one imported finding of this form of beaker has been discovered in *Mursa* (Hees 4). It

[14] Research of the pottery kilns in *Mursa* was partialy presented at the „Third International Archaeological Colloquium of Roman pottery and glass manufactures in Crikvenica (Croatia) in 2014.

[15] Greene 1979, 24; 59.

[16] Fényes 2004, 235–236.

Fig. 3. Forms of thin-walled cups produced in *Mursa.*

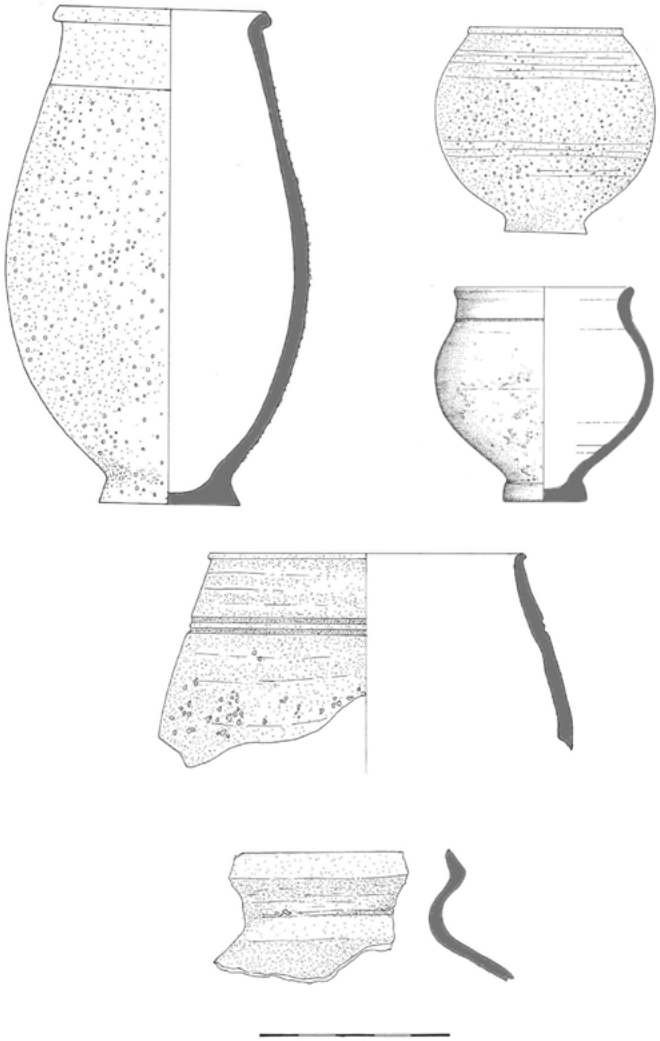

Fig. 4. Oxidised-fired beakers with slip containing crushed clay particles.

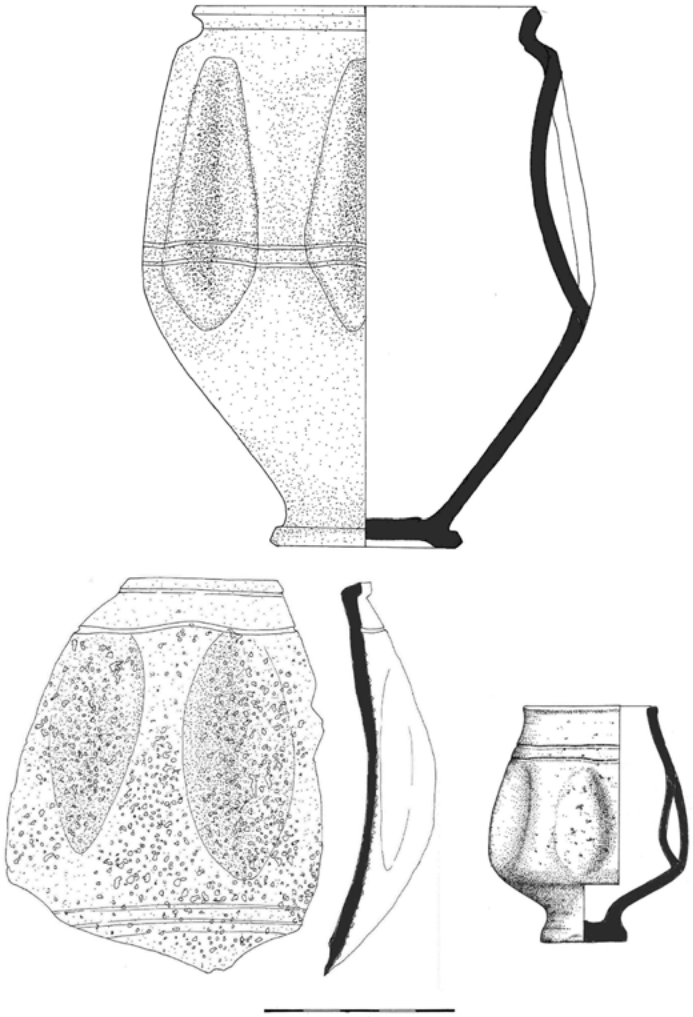

Fig. 5. Oxidised-fired beakers with indentations.

is reduced-fired which differentiates it from all the locally produced beakers in *Mursa*. All examples from *Mursa* are oxidised-fired and of lower quality, which is visible in the fabric. Possible production centers of this one example of an import can be placed in Cologne, Xanten or Clochester.[17]

Along with the oxidised-fired beaker, a new form appeared, reduced-fired conical beaker of various sizes, from 7 up to 25 cm with vertical or slightly everted, thickened rim (**fig. 6**). Their surface had no special treatment and they appear rough to the touch. Decoration is absent. All of the examples are wheel-thrown. The fabric is rich with inclusions, which contributes to the appearence of a rough surface. The microscopic analy-

[17] Vilvorder 2010, 330; 336; Ricci 1985, 272.

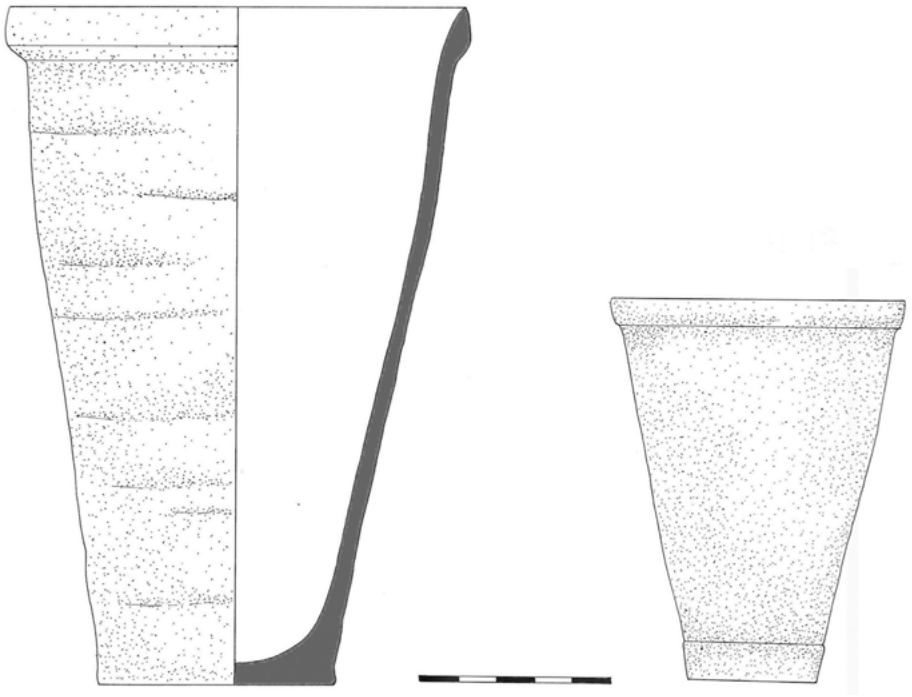

Fig. 6. Reduced-fired conical beakers.

ses are not yet implemented, but according to analogies from *Poetovio*, examples in *Mursa* probably also have a very high percentage of quartz, iron and calcium.[18] They could have been modeled according to glass beakers found in Canton Ticino because other pottery analogies were not found.[19] Regardless of the great deal of inclusions, their density contributes to the high quality of these vessels. This form is the most abundant type of drinking vessel found at the seven sites of University Campus in *Mursa*. For the very tall beakers (around 25 cm) their function is not very clear and maybe they could have been used for other purposes. In conversations with our colleagues, they confirmed that the same form of vessel was found in Moesia and Dacia.[20] Some authors do not include this type of vessel in the category of thin-walled pottery, although they include its major feature – tenuity of the walls.

More globular and ovoid forms (**fig. 7**) of the same and similar fabric (depending on the number of inclusions) were also produced in *Mursa*. A large amount of fragments and whole vessels were found inside pottery kilns. Decoration is absent. Two main forms can be determined, globular and ovoid form. The globular form has slightly pronounced rim and it narrows to the foot of the vessel. The ovoid form has clearly defined shape, with everted rim and vertical or conical foot. All of the reduced-fired findings are absent of any kind of coating.

[18] Istenič 1999, 115–116.
[19] Istenič 1999, 115–116.
[20] Based on oral communication with T. Cvjetičanin, V. Rusu-Bolinde□ and G. Kabakchieva

Conclusion

In the archaeological excavations of the sites in the area of University Campus besides the usual imported thin-walled pottery findings, local production was determined. Based on the quantity of the findings and the examples found in pottery kilns, a classification of forms has been made.

Some of the earliest forms from the end of the 1st and the beginning of the 2nd century AD, belonging to Pannonian production, are the products of other Pannonian centres, with the most likely centre in *Sirmium*.

Typical productions of *Mursa* consisted of oxidised-fired cups and beakers with slip containing crushed clay particles, as well as reduced-fired beakers of conical, globular and ovoid forms.

In terms of the distribution of the products, for the time being we can only conclude that these forms were produced primarily for the everyday needs of town's residents. Similar forms found in other parts of *Pannonia*, *Moesia* and *Dacia* are also probably the result of local production then the result of destribution of *Mursa* products.

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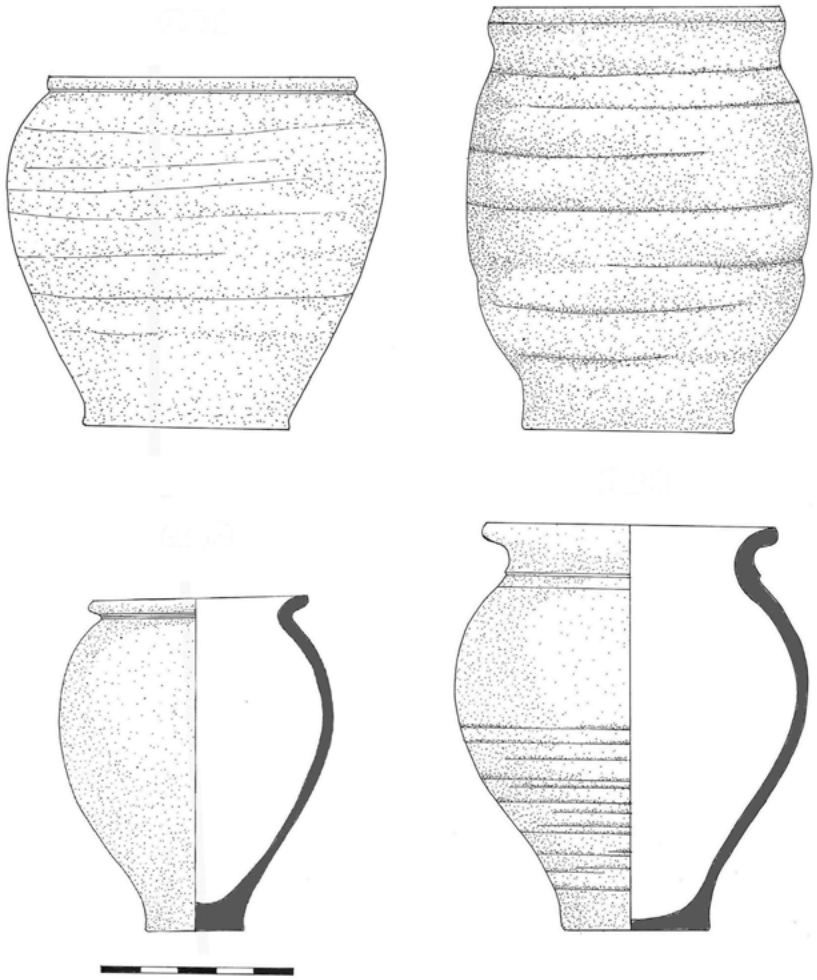

Fig. 7. Reduced-fired globular and ovoid beakers.

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