

**CONTRIBUTIONS TO THE IDENTIFICATION OF THE TYPES OF ROMAN
OBJECTS MADE OF DACIA INFERIOR (MALVENSIS) GLASS.
A BATCH OF GLASS OBJECTS DISCOVERED IN ROMULA**

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Abstract

The Roman city of Romula was located at the crossroads of important Roman roads coming from the south and west, which favoured its economic development. Crafts such as pottery, stone and bone processing, and last, yet among the foremost, glass melting and processing were developed within the Roman city. This article refers to a batch of 26 containers (bowls, pots, cups, *aryballos*, *unguentaria*) and glass objects (tubes), discovered in archaeological research in the years 2022-2023. They represent a contribution to the completion of the typological and chronological information regarding the containers and other glass objects produced or disseminated on the territory of Lower Dacia (Malvensis).

Key words: glass, containers, Roman period, Romula.

Romula was one of the most relevant ceramic centres in Dacia, but also in the Danube provinces. On the first place, in terms of magnitude of craft production is ceramics (building materials, ceramic vessels, lamps, coroplastics, toys, etc.). In the northern sector of the Roman city, there were investigated eight ceramic workshops with 25 kilns for firing clay materials (Negru, 2023: 8).

Along with these, until now, workshops for stone and glass processing have been documented in Romula.

Obtaining glass was a laborious technological process and was based on advanced knowledge. Furthermore, for its melting, a high temperature of approx. 1380 degrees Celsius was required.

In Roman times, glass was originally produced in the East, from where it was traded throughout the Roman Empire in the form of raw glass (Degryse, Scott, Brems, 2014: 225-226). Certainly, the first reason would be that obtaining it required not only advanced knowledge, but also the difficulty of transport, due to their fragility.

In the Roman world, objects made of glass were used to serve meals, but also to store cosmetics, or as decorations (beads, ring stones).

In 2013 and 2018, two of the three glass melting kilns in Roman Dacia were identified and researched in Romula (Negru et al. 2023), the third kiln being discovered in Ulpia Traiana Sarmizegetusa (Băeștean, G., Hopken. C., 2009: 219-223.).

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The two kilns discovered so far at Romula were identified in the central sector of the archaeological site, in section S4.

The first of the glass melting kilns discovered at Romula was rectangular, with rounded corners. It had only one room. Surfaces with molten glass were discovered on its walls. Near it, there is a glass processing platform. Probably, this was done by blowing (Negru et al., 2023: 576-578).

The other glass melting kiln had two rectangular chambers. In one of them, the fire was burning, in the other there were probably the vessels in patterns. On the hearth of the second room, there were found numerous pieces of fragmented molten glass (Negru et al., 2023: 578).

In this article, it is to be presented a batch of glass containers and objects discovered during the research of 2022-2023, within the Central Fortification Sector. In the afore mentioned campaigns, there were traced 12 grids, numbered from G5 to G12, in the central-eastern part of the Central Fortification sector.

The vessels were ordered starting with short opened pots to tall closed pots, and other glass objects. We used the traditional Isings typology, along with a regional one, respectively the recent specialized literature. Bowls, pots, cups, jugs, ointments and cylindrical tubes are presented in order.

Glass containers

Bowls (1-7)

The bowls in this article have a globular body, a wide opening, thin walls and a generally thickened rim. The maximum diameter of the vessel is at its mouth.

Similar to Isings Form 81/Type Dévai T1.2A.

1. *Bowl with a globular body*, with the rim continuing the walls (Pl. 2:1). The vessel was discovered in the vegetal layer, being widely dated in the 2nd-3rd centuries AD.

The vessel originated in the 1st century AD, but continued to be produced in the 2nd-3rd centuries AD (Isings 1957: 96-97, Fig. 81).

A similar vessel is in the Intercissa Museum, dating from the 2nd-3rd centuries AD. (Dévai, 2024: 55, Fig. 5: 2). In Pannonia, this type of vessel was chronologically framed between the end of the third century and the first two thirds of the fourth century AD. (Dévai, 2016: 260, Fig. 1:2).

2. *Bowl with globular body*, the thickened rim is outplayed obliquely (Pl. 2: 2). The archaeological context in which the vessel was discovered was dated to the last decade of the second century AD, the first third of the 3rd century AD. Within the Intercissa Museum, there was a similar vessel, dated to the 2nd-3rd centuries AD (Dévai, 2024: 51, Fig. 4: 4).

Isings Form 80

3. *Bowl with an arched body*, with a thickened rim, slightly everted (Pl. 2:3). The vessel was discovered passim, which requires a wide dating, in the 2nd-3rd centuries AD.

The vessel was framed to Herstal in the 2nd half of the second century AD (Isings, 1957: 96, Fig. 80), but continued until the 4th-5th centuries (Isings, 1957: 96). A similar vessel was produced from the second half of the 4th century AD, to the first half of the 5th century AD (Isings, 1957: 144, Fig. 116).

Isings Form 20

4. *Bowl with arched body and thickened rim*, rounded on the outside, in the extension of the walls (Pl. 2: 4). The vessel was discovered in a secondary position, with chronological framing in the 2nd-3rd centuries AD. A similar vessel with the same chronological framing is in the Intercissa Museum (Dévai, 2024: 51, Fig. 3: 3).

The vessel is similar to the Isings 20 shape, with analogues in Britannia and Italy, where it was framed in the second half of the 1st century AD (Isings, 1957: 37, Fig. 20). The form continued to be produced until the second half of the 4th century AD. (Isings, 1957: 133, Fig. 107 b).

Dévai type P5.1A

5. *Bowl with arched body and outsplayed rim*, with a canal inside (Pl. 2:5). The vessel was discovered in an archaeological context dated in the last decade of the second century to the first third of the third century AD. A similar vessel was discovered at Romula in 2015, in a context dated to the first third of the third century AD (Negru 2016: Pl. 62: 1405).

In the Intercissa Museum in Pannonia, a similar vessel was dated to the second century AD (Dévai, 2024: 51, Fig. 3: 3). In Pannonia, this type of bowl continued to circulate in the 4th-5th centuries AD (Dévai, 2016: 51, Fig. 1, P5.1A).

Bucovală X type

6. *Deep bowl with globular body*, rounded outsplayed rim (Pl. 2:6). The vessel was discovered in an archaeological context dated to the middle of the third century AD. A similar vessel discovered at Tomis was dated to the second century AD (Bucovală, 1968: 40, No. 33, Fig. 33), and in the Museum of Intercissa, a similar vessel was dated to the 2nd-3rd centuries AD (Dévai, 2024: 51, Fig. 4: 3).

Bucovală X type

7. *Bowl with short conical body*, long everted rim (Pl. 2:7). The vessel was discovered in an archaeological context dated to the middle of the third century AD. Similar vessels were discovered at Romula in 2015, in contexts dated to the first third and the middle of the third century AD. (Negru 2016: Pl. 62: 1629, 1652).

A similar vessel was discovered at Tomis, where it was dated to the 1st-3rd centuries AD (Bucovală, 1968: 40, 136, No. 35, Fig. 35).

Small pots (Pl. 1: 8-10)

Isings 131

8-10. Small pots with an ovoid body. The rim is outcurved (Pl. 2:8-10). The vessels were discovered in archaeological contexts dated in the 2nd-3rd centuries AD.

Similar vessels dated to the 3rd-4th centuries were framed in Isings Form 131, originating at the end of the 3rd century AD (Isings, 1957: 160, Fig. 131). In the “Maria and Dr. George Severeanu” Collection, a similar vessel was dated to the 3rd-4th centuries AD (Streinu, 2019: 163-164, Pl. 16: 48).

Isings 21/Form Dévai P9.1B

11. Cup with tall conical body. The rim is rounded on the outside (Pl. 2:11). The vessel was discovered in an archaeological context dated to the middle of the third century AD.

The vessel is similar to the Isings 21 form, which was manufactured from the end of the 1st century AD and the 2nd century AD (Isings, 1957: 38, Fig. 21). A similar but later vessel is the conical cup with a rounded rim on the outside, type Isings 106 d, which begins its evolution in the fourth century and continues until the 5th-6th centuries AD (Isings 1957: 130-131, Fig. 106 d).

Similarly, in the “Maria and Dr. George Severeanu” Collection, a similar vessel was dated to the 3rd-4th centuries AD (Streinu, 2019: Pl. 12: 36).

In Pannonia a vessel similar in the upper part was classified in the P9.1B type, dating from the last third of the fourth century to the first quarter of the fifth century AD (Dévai, 2016: 290, Fig. 3: P9.1B)

Bucovală type XVIII

12. Cup with ovoid body, base with support ring (Pl. 2: 12). The vessel was discovered in an archaeological context dated to the middle of the third century AD. Several similar vessels discovered at Tomis were chronologically framed in the 3rd-4th centuries AD (Bucovală, 1968: 50-51, No. 53-56; Figs. 53-56).

Isings Form 68

13. Ointment jar. A small pot, with a short cylindrical neck, a thickened rim outplayed horizontally (Pl. 3:13). The vessel was discovered in an archaeological context dated in the last decade of the second century and the first third of the third century AD.

This form of vessel evolved from the middle of the first century AD, and in the 2nd-4th centuries AD (Isings 1957: 88-89, Fig. 68).

Aryballos (14-16)

Isings 61/Form Bucovală type XXXIX

14-16. Small vessel with globular body. The neck is cylindrically short, with the rim outcurved or outplayed (Pl. 3:14-16). Two band handles were symmetrically attached to the neck and shoulder of the vessel.

The vessels were discovered in archaeological contexts dated to the last decade of the second century and the first third of the third century (Pl. 3: 16),

the middle of the third century AD (Pl. 3: 15), respectively the second to third centuries AD (Pl. 3: 14). They had the function of toilet pots, which imitated bronze pots.

Similar vessels were described as Isings Form 61, being chronologically framed from the middle of the 1st century AD to the 4th century AD (Isings, 1957: 68-71, Fig. 61).

Similar vessels were discovered at Tomis, where they were dated to the 1st-3rd centuries AD. (Bucovală, 1968: 81-82, Nos. 129, 131, 133; Figs. 129, 131, 133).

Unguentaria (17-18)

Isings 82 A2/Bucovală type V (?)

17. *Vessel with a globular body*, cylindrical neck and wide horizontal rim (Pl. 3: 17). The vessel was discovered in an archaeological context dated in the second half of the second century AD, to the last decade.

The profile fragment of the rim looks similar to the Isings 81 type, variant A2. With a bell-shaped body. The origin of this vessel comes from the first century AD, but the shape continues until the fourth century AD (Isings, 97-98, Fig. 82 A2).

A similar vessel, considered to be a cup, was found by chance, without a recorded archaeological context, in Moesia Inferior in Tomis (Bucovală, 1968: 31-32, No. 17; Fig. 17), where they were dated to the fourth century AD (Bucovală, 1968: 32).

Bucovală type XLIII

18. Vessels with a small globular body in the lower part, with a long cylindrical neck and everted rim (Pl. 3: 18). The vessel was discovered in an archaeological context dated to the middle of the third century AD. Similar vessels were discovered at Romula in 2015, in archaeological contexts dated to the first third and mid-third centuries AD (Negru 2016: Pl. 62: 1423, 1571).

Similar vessels were discovered at Tomis, where they were dated to the first and second centuries AD (Bucovală, 1968: 94-95, nos. 169-170; Figs. 169-170), a vessel is also found in the "Maria and Dr. George Severeanu" Collection, with a wide chronological framing in the 2nd-5th centuries AD (Streinu, 2019: 78, Pl. 8: 24).

19-22. Vessel bases

Within the discoveries, there are also fragments of vessels with a support ring, which come from small containers (Pl. 3: 19-21), respectively from a vessel with a concave base (t22/21564). They were discovered in archaeological contexts dated to the middle of the third century (Pl. 3: 20), the second to the third centuries AD (Pl. 3: 19, 21), respectively the second half of the third century AD, and possibly to the first half of the fourth century AD (Pl. 3: 22).

Cylindrical tubes (Pl. 3: 23-26).

23-26. During the digs, four fragments of cylindrical glass tubes were discovered as well (Pl. 3:23-26). They were found in archaeological contexts, dated in the second half of the second century AD, to the penultimate decade (Pl. 3: 23, 25-26), respectively the middle of the third century AD (Pl. 3: 24).

Record of discoveries

Abbreviations

B.D. = base diameter

B.T. = base thickness

Gr. = grid

H.T. = handle thickness

M.D. = mouth diameter

Max.D. = maximum diameter

Min.D. = minimum diameter

P.H. = preserved height

P.L. = preserved length

R.T. = rim thickness

S.I. = site inventory

W.T. = wall thickness

1. Bowl. Fragment from the top. Conical body with arched wall. The rim continues the wall, with a slightly widened edge outwards. Clear glass. Technical data: M.D. = 160 mm, P.H. = 35 mm, W.T. = 3 mm, R.T. = 4 mm. Archaeological context: Romula 2022, C7, Gr. F4, -0.20 m. S. I. 19141. Chronology: vegetation layer. Centuries 2nd-3rd AD.
2. Bowl. Fragment from the top. Short, conical body. Clear glass. Technical data: M. D. = 300 mm, P.H. = 20 mm, W.T. = 2 mm, R.T. = 4.3 mm. Archaeological context: Romula 2022, C8, Gr. G1, -0.72 m. S.I. 19238. Chronology: the last decade of the second century the first third of the third century AD.
3. Vessel. Fragment from the top. Open, conical body, with a thickened rim, continuing the walls. Clear glass. Technical data: M.D. = 120 mm, P.H. = 16 mm, W.T. = 2 mm, R.T. = 2 mm. Archaeological context: Romula 2022, Passim. S. I. 19234. Chronology: 2nd-3rd centuries AD.
4. Cup. Fragment from the top. High conical body. Clear glass. Technical data: M.D. = 80 mm, P.H. = 20 mm, W.T. = 2 mm, R.T. = 5 mm. Archaeological context: Romula 2022, C8, Gr. 4, -0.16 m. S.I. 19105. Chronology: vegetation layer, 2nd-3rd centuries AD.
5. Vessel. Fragment from the top. Conical body with arched wall. The rim is in continuation of the wall, with a ridge on the inside. Clear glass. Technical data: M.D. = 100 mm, P.H. = 9 mm, W.T. = 1 mm, R. T. = 2 mm. Archaeological context: Romula 2022, C8, Gr. H4, -0.80 m. S.I. 19261. Chronology: the last decade of the second century, the first third of the third century AD.

6. Vessel. Fragment from the top. Bulged body. The rim is short, outsplayed. Clear glass. Technical data: M. D. = 140 mm, P. H. = 28 mm, W. T. = 3 mm, R. T. = 6 mm. Archaeological context: Romula 2022, C7, Gr. F3, -0.21 m. S.I. 19101. Chronology: mid-3rd century AD.
7. Open vessel. Fragment from the top. The maximum diameter is at the mouth of the bowl. Conical shape. The rim is thickened and everted. Clear glass. Technical data: M.D. = 60 mm, P.H. = 7 mm, W.T. = 1.2 mm, R.T. = 4.4 mm. Archaeological context: Romula 2023, C10, Gr. B2, -0.50 m. S.I. 21566. Chronology: mid-3rd century AD.
8. Tall vessel with bulged body. The rim is outsplayed. Clear glass. Technical data: M. D. = 40 mm, P.H. = 29 mm, W.T. = 2.3 mm, R.T. = 3.7 mm. Archaeological context: Romula 2023, C12, Gr. CA1, -0.50 m. S.I. 21533A. Chronology: mid-3rd century AD.
9. Vessel. Fragment from the top. Ovoid body with outsplayed rim. Clear glass. Technical data: M.D. = 60 mm, P.H. = 20 mm, W.T. = 1 mm, B.T. = 2 mm. Archaeological context: Romula 2023, C9, Gr. B2, -1.80 m. S.I. 23067A. Chronology: secondary position, 2nd-3rd centuries AD.
10. Vessel. Fragment from the top. Ovoid body with outsplayed rim. Clear glass. Technical data: W.T. = 1 mm, R.T. = 1 mm. Archaeological context: Romula 2023, C8, Gr. G3, -0.10 m. S.I. 19107. Chronology: vegetation layer, 2nd-3rd centuries AD.
11. Vessel. Conical body, with a thickened rim in the continuation of the walls. Clear glass. Technical data: M.D. = 55 mm, P.H. = 22 mm, R.T. = 2.6 mm, W.T. = 2.0 mm. Archaeological context: Romula 2023, C12, Gr. A1, -0.50 m. S.I. 21533B. Chronology: mid-3rd century AD.
12. Footed vessel. Fragment from the lower part. Bulged body, concave base with partially preserved support ring. Clear glass. Technical data: B.D. = 26 mm, P.H. = 28 mm, W.T. = 1.84 mm, B.T. = 2 mm. Archaeological context: C10, Gr. B1, -1.35 m. S.I. 21737. Chronology: mid-3rd century AD.
13. Vessel. Fragment from the top. Bulging body, with wide horizontal rim. Clear glass. Technical data: M.D. = 40 mm, P.H. = 13 mm, W.T. = 1 mm, R.T. = 4 mm. Archaeological context: Romula 2022, C4, Gr. G1, -1.22 m. S.I. 18203. Chronology: the last decade of the second century the first third of the third century AD.
14. Vessel with cylindrical neck and bulged body. Vessel small handle with parallelogram-shaped section. Clear glass. Technical data: P.H. = 37 mm, H.T. = 6.5 mm, W.T. = 1 mm. Archaeological context: Romula 2023, C9, Gr. B2, -1.80 m. S.I. 23067B. Chronology: disturbed in the modern period, 2nd-3rd centuries AD.
15. Vas. Vessel small handle with flat section. Clear glass. Technical data: P.H. = 34 mm, H.T. = 7 mm. Archaeological context: Romula 2023, C12, Gr. A2, -0.89 m. S.I. 21552. Chronology: mid-3rd century AD.
16. Vessel. Fragment from the top with a narrow cylindrical neck and an outsplayed rim, with a triangular profile. Container lip, M.D. = 30 m, W.T. = 2.2

mm, R.T. = 5 mm. Archaeological context: Romula 2022, C1, Gr. B1, -0.94 m. S.I. 18175. Chronology: second half of the second century first third of the third century AD.

17. Vessel. Fragment from the top. Body with cylindrical neck and wide, horizontally everted rim. Clear glass. Technical data: M.D. = 50 mm, P.H. = 11 mm, W.T. = 3 mm, R.T. = 5 mm. Archaeological context: Romula 2022, C3, Gr. F1, -1.55 m. S.I. 19078. Chronology: the second half of the second century AD, to the last decade.

18. Tall vessel with cylindrical neck. Fragment from the top. The everted mouth is curved on the outside. Clear glass. Technical data: M.D. = 45 mm, P.H. = 38 mm, W.T. = 1.8 mm, R.T. = 4.3 mm. Archaeological context: Romula 2023, C9, Gr. A1, -0.80 m. S.I. 21621. Chronology: mid-3rd century AD.

19. Vessel. Fragment from the lower part. Concave base with support ring. Clear glass. Technical data: B.D. = 40 mm, P.H. = 0.8 mm, B.T. = 3 mm. Archaeological context: Romula, C9, Gr. B2, -1.10 m. Without S.I. Chronology: disturbed, 2nd-3rd centuries AD.

20. Footed vessel. Fragment from the lower part. The base is concave, thickened with a rounded edge on the outside. An oblique wall starts from it. Clear glass. Technical data: M.D. = 50 mm, P.H. = 12 mm, W.T. = 5.1 mm, R.T. = 2.2 mm. Archaeological context: Romula 2023, C1, Gr. B1, -1.13 m. S. I. 21620. Chronology: mid-3rd century AD.

21. Vessel. Fragment from the lower part. Thick, concave base with support ring. Clear glass. Technical data: B.D. = 30 mm, P.H. = 11 mm, W.T. = 1.5 mm, R.T. = 5 mm. Archaeological context: Romula 2022, C4, Gr. B2, -1.13 m. S.I. 18191. Chronology: secondary position, 2nd-3rd centuries AD.

22. Vessel. Fragment from the lower part. Thick, concave base with support ring. Clear glass. Technical data: M.D. = 50 mm, P.H. = 11 mm, W.T. = 3.3 mm, B.T. = 8.8 mm. Archaeological context: Romula 2023, C2, Gr. A1, -0.56 m. S.I. 21564. Chronology: the second half of the third century, possibly the beginning of the fourth century AD.

Other glass objects

23. Tubular object. Long cylindrical body. Clear glass. Technical data: P.L. = 56 mm, Max.D. = 6 mm, Min.D. = 5 mm. Archaeological context: Romula 2022, C3, Gr. F1, -1.27 m. S.I. 18245. Chronology: second half of the second century AD. to the penultimate decade.

24. Tubular object. Long cylindrical body. Clear glass. Technical data: P.L. = 32 mm, Max.D. = 7 mm, Min.D. = 6 mm. Archaeological context: Romula 2022, C4, Gr. H2, -0.98 m. S.I. 18100. Chronology: mid-3rd century AD.

25. Tubular object. Long cylindrical body. Clear glass. Technical data: P.L. = 59 mm, Max.D. = 8 mm, Min.D. = 6 mm. Archaeological context: Romula 2023, C10, Gr. B2, -1.08 m. S.I. 21682A. Chronology: The second half of the second century AD to the penultimate decade.

26. Tubular object. Long cylindrical body. Clear glass. Technical data: W.P. = 54 mm, Max.D. = 7 mm, Min.D. = 3 mm. Archaeological context: Romula 2023, C10, Gr. B2, -1.08 m. S.I. 21682B. Chronology: The second half of the second century AD to the penultimate decade.

Conclusions

Romula was one of the few centres for melting and processing of glass in the Roman provinces of Dacia, north of the Lower Danube. The discovery of two kilns for melting and processing glass are indications of the existence of a local market, which supported these products through demand.

Research on glass containers is still quite timid at the level of the northern Danube provinces of the Roman Empire.

The fragility and small dimensions of some fragments of glass objects are causes for the restraints which archaeologists have for the research, because they are difficult to investigate, to fit into existing typological series. Hence the small number of studies and articles.

This article aims to shed light on this category of archaeological materials, which occupy a marginal place in publications, perhaps also due to their fragility, often being found in the form of small and very small fragments.

Contrary to the classic typologies, we wanted to start from open dishes to closed dishes, from those for dining, continuing with storage dishes and ending with toilet bowls.

On the technical approach, apart from the usual measurements of the diameters of the mouth, the base and the maximum diameter, we considered it useful to put the thicknesses of the rim and the wall, because there was a connection, in most cases, between them and the shape, respectively the functionality of the glass containers.

Although the batch of fragments of glass objects comes from only two archaeological research campaigns, we observe the diversity of the identified forms and their chronological framing from the middle of the second century to the middle of the third century, in the current stage of research.

Certainly, future archaeological research will bring new materials and additional information regarding the production and circulation of glass objects, a special aspect of economic and commercial life in Romula.

Plate 1. Location of the archaeological site (1) and the area of discoveries (2)

Plate 2. Glass containers (1-13)

Plate 3. Containers (13-22) and glass objects (23-26)

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