Roman Glass from Serdica

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Abstract: The article presents unpublished glass finds, dated to the 1st – early 3rd c. AD, discovered during the 2010 archaeological campaign in Serdica (present-day Sofia, Bulgaria). The fragments are arranged in groups according to the technique of manufacture. Their dating is then examined in the context of the chronological distribution of the forms, to which they have been assigned, referring to published parallels from sites both in the modern territory of Bulgaria and throughout the Empire.

Key words: glass vessels, Roman period, Serdica, Bulgaria.

INTRODUCTION

The large-scale excavations conducted over the last several years on the site of the Roman town of Serdica (present-day Sofia, Bulgaria) provided a significant amount of new archaeological data. The current study includes unpublished glass finds that belong to well-defined vessel types, manufactured using a range of glass-working techniques, thus, demonstrating the distribution of particular Roman glass vessels in this part of Thrace.

The archaeological site

During the rescue investigations, carried out between 2010-2012 and 2015, several urban insulae from the 2nd – 6th c. AD were uncovered, while the earliest contexts were related to the earth and timber period of the site, dated to the 1st c. AD. The great amount of finds associated with the first two centuries of occupation in the area included imported pottery and glass vessels, as well as other luxurious items (Иванов 2013a; Иванов 2013b).

The glass assemblage

The article presents a selected part of the glass assemblage uncovered during the 2010 campaign. The fragments are arranged in groups according to specific technique of production and, in cases when possible, are assigned to certain forms referring to the classification of Clasina Isings (1957).

Mould-formed glass vessels

Developed originally in the Hellenistic period, the technique of transforming heated disk or hot cake of glass into a vessel by using convex formers is still quite popular during the last decades of the 1st c. BC – 1st c. AD (Grose 1989, 195, 244-246; Weinberg / Stern 2009, 33). One of the most common forms manufactured using this technique is the ribbed bowl – Isings form 3. The Roman varieties of this pre-Roman vessel form have an improved and standardized appearance, although the irregularities characteristic of the Hellenistic tradition can often be

1 All the data regarding the date of the contexts along with other relevant information needed was kindly provided by the director of the site Dr. Mario Ivanov, NAIM-BAS.
found in some later examples, as well (Weinberg / Stern 2009, 34). There are different theories about the exact method used to produce these vessels. It is generally assumed that the initial stage of the process includes sagging heated glass disk onto a convex mould. There is an ongoing discussion regarding the part that follows, but the most recent theory suggests that the former is placed on a wheel and the glass is tooled with a metal rod while it flows down. If accepted, such a reconstruction would explain the above stated irregularities that involve uneven size and shape of the ribs with their tips pointing to one side sometimes, tool marks, etc. (Grose 1989, 246; Lierke 2009, 52-55; Weinberg / Stern 2009, 33-36). The early examples of the ribbed bowls, part of the Roman traditions of manufacture, made in either bichrome / polychrome or monochrome strongly-coloured glass become progressively rare by the Flavian period after which the form is represented mostly by its naturally coloured (blue-green) version (Cool 2016, 104). All of the examples listed below fall into the group of naturally coloured ribbed bowls (fig. 1/1-6).

1. Ribbed bowl / Rippenschale; upright rim fragment with parts of two ribs remaining on upper body; wheel-polished interior and the exterior of the rim area; blue-green glass.
   Date of the context: Late Flavian – Trajanic period.

2. Ribbed bowl / Rippenschale; upright rim fragment with part of one rib remaining on the upper body; wheel-polished interior and the exterior of the rim area; blue-green glass.
   Date of the context: Late Flavian – Trajanic period.

3. Ribbed bowl / Rippenschale; upright rim fragment with part of one rib remaining on the upper body; wheel-polished interior and the exterior of the rim area; blue-green glass.
   Date of the context: Late Trajanic – Hadrianic period.

4. Ribbed bowl / Rippenschale; wall fragment with part of one rib; wheel-polished and two wheel-cut lines on interior; blue-green glass.
   Date of the context: Late Flavian – Trajanic period.

5. Ribbed bowl / Rippenschale; wall fragment with part of one rib; wheel-polished and two wheel-cut lines on interior; blue-green glass.
   Date of the context: Late Hadrianic – Early Marcus Aurelius period.

6. Ribbed bowl / Rippenschale; base fragment with parts of seven narrow ribs running to centre; wheel-polished interior; blue-green glass.
   Date of the context: Late Trajanic – Hadrianic period.

Another technique, also popular in the Hellenistic period but rather characteristic of the Roman glass production, involves the use of prefabricated polychrome canes cut into small pieces and arranged in a desired pattern that, when heated, form a multi-coloured glass disk ready to be finally shaped. The early Roman examples appear during the last quarter of the 1st c. BC (Cool 2016, 109). The bowl fragment from Serdica (fig. 2/7) represents a specific floral pattern – *millefiori*, achieved by the combination of rosette-forming / shaping slices of coloured glass rods.

7. Shallow bowl; two joining rim fragments; polychrome floral patterns (millefiori) – dark brown background with large opaque orange spots surrounded by 2 rings of opaque yellow specks combined with dark green-blue background with
5/6-petalled opaque yellow and blue-green flowers with central opaque orange spot.

Date of the context: middle – third quarter of the 2nd c. AD.

Blown glass vessels

The invention of glassblowing is generally placed ca. 50 BC, in accordance with the earliest archaeological evidence from a workshop in Jerusalem (Israeli 1991, 46-55). The technique quickly becomes popular but it is not until the Augustan / Tiberian period when its use is attested by considerable quantities of blown fragments found in archaeological contexts (Stern 1999, 441-484). The different stages in the development of the new technique, regarding tube-blowing, chunk gathering, the use of a blowpipe and later on of a pontil rod, along with the impact that it has on the Roman glass industry in general, have been discussed in detail by M. Stern (1995, 37-44; 1999, 442-454).

Mould-blown glass vessels

According to the dated finds, it is usually assumed that mould blowing developed during the early 1st c. AD either on the Syro-Palestinian coast, or in the West, probably Italy (Stern 1995, 65-66; Price 1991, 64, 71). The technique involves the use of two- or multi-part mould and allows obtaining specific shape and vessel decoration. Only three examples belong to this group (fig. 3/8, 9), all parts of conical beakers with decoration of almond-shaped bosses in relief – Isings form 31. Two of the fragments, made of yellow-brown glass, most probably belong to one and the same vessel. The third example is from a naturally coloured beaker, slightly bigger in size than the previously mentioned one.

8. Cylindrical beaker; two joining wall fragments with preserved
parts of three rows of almond-shaped bosses; blue-green glass.

Date of the context: Late Flavian – Trajanic period.

9. Cylindrical beaker; two wall fragments with preserved one almost complete and half of another almond-shaped bosses; yellow-brown glass.

Date of the context: second quarter of the 2nd c. AD.

Free-blown glass vessels

The free-blown glass group from the Serdica assemblage includes nine examples representing not only plain vessels such as the toilet / unguent bottle (fig. 4/14) but also tableware decorated with “hot” (forming of ribs and indents) or “cold” (wheel-cutting, facet-cutting) glass working techniques.

The blown variety of the ribbed bowl, decorated with sharp pinched out ribs, also known as zarte Rippenschale – Isings form 17, is one of the earliest shapes manufactured by this technique, with suggested appearance in the Augusto-Tiberian period and most commonly found in contexts of Tiberian or Claudian-Neronian date (Rütti 1991a, 43, AR 28). Although the vessels are more often made in bright colours with additional decoration of opaque white glass trail, the naturally coloured variety is also found, along with monochrome brightly coloured examples, lacking the applied decorative trail, as evidenced by the bowl from Serdica (fig. 4/10).

10. Small ribbed bowl / zarte Rippenschale; rim fragment with parts of three ribs remaining on upper body; cobalt blue glass.

Date of the context: Claudian – Late Flavian period.

The indented beakers / Faltenbechern are represented in the 2010 assemblage by rim fragments of two vessels (fig. 4/11, 12), discovered along with wall fragments from different parts of their bodies (not included). They most probably belong to the variant with concave base – Isings form 32. The next example might also be related to the same vessel shape (fig. 4/13) – small round concave base made of yellow-brown glass, transforming into a four-sided body in its upper part (Isings 1957, 46).

11. Indented beaker / Faltenbecher; upper body fragment with fire-rounded rim; naturally coloured / almost colourless glass with slight blue-green tint.

Date of the context: Late Flavian – Trajanic period.
12. Indented beaker / *Faltenbecher*; upper body fragment with and fire-rounded rim; naturally coloured / almost colourless glass with slight blue-green tint.
   Date of the context: Late Flavian – Trajanic period.

13. Indented beaker / small toilet bottle; small round concave base with parts of the lower four-sided body; yellow-brown glass; a pontil scar on the base.
   Date of the context: second quarter of the 2nd c. AD.

   The glass *unguentaria* are represented here by only one example – Isings form 28/82 A2, made of saturated green glass that most probably belongs to the earlier development of the type\(^2\).

14. *Unguentarium*; almost entirely preserved lower part of the body with slightly concave base; dark green glass.
   Date of the context: second quarter of the 2nd c. AD.

   Colourless glass became quite popular around AD 70 and combined with the new technique of cold-processing of the material – facet-cutting, defines the appearance of a new group of high-quality tableware (Weinberg / Stern 2009, 51, 87). The earliest drinking vessels decorated with this technique are the conical beakers Isings form 21 common from the Flavian period until the early 2nd c. AD (Oliver 1984, 35-58). The example present in the Serdica assemblage (fig. 5/15) belongs to the thin-walled variety of the form with separate elongated shallow facets (on the technique see Oliver 1984, 35-58; Lierke 2009, 75).

Another group of vessels made of colourless glass with zoned facet-cutting and wheel-cutting are the hemispherical bowls – Isings form 96\(^3\). The different decorative patterns of the vessels consist of various shapes and combinations of the facets. In the case of # 16 they are either rice-shaped or circular, or both (fig. 5/16). The last example from the assemblage and the present group (fig. 5/17) has less complicated decorative design.

15. Conical beaker; upper body fragment with curved rim, edge cracked-off and ground; two horizontal wheel-cut lines below the rim edge forming a rib; two horizontal wheel-cut lines separating the plain area below the rim from two rows of

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\(^2\) On the dating of the forms in general see Isings 1957, 41-43; 97-98.

\(^3\) For comments on the earliest examples see Isings 1957, 104.
vertical separate elongated shallow facets; all other surfaces (inside and out) are left as blown, without additional manipulation; colourless glass.

Date of the context: middle – second half of the 3rd c. AD.

16. Small hemispherical bowl; a fragment representing the entire profile of the vessel; cracked-off and slightly ground rim; two horizontal wheel-cut lines below the rim edge; on the body: a zone of vertical rice-shaped facets followed by one with circular facets, both framed/separated by horizontal wheel-cut lines; on the slightly concave base: central circular facet surrounded by alternating circular and horizontal rice-shaped facets; colourless glass.

Date of the context: late 2nd – beginning of the 3rd c. AD.

17. Bowl; upper body fragment with cracked-off and slightly ground rim; horizontal wheel-cut lines right below the rim edge and on the body; colourless glass.

Date of the context: late 2nd – beginning of the 3rd c. AD.

**Discussion**

The first technological group, of mould-formed glass vessels, includes seven examples, six of which belong to the naturally coloured variety of the ribbed bowl that becomes more common around the middle – second half of the 1st c. AD, but it is also found in 2nd c. AD contexts. These vessels are quite common for the early Roman glass production and their wide distribution is very well attested in many archaeological sites in different parts of the Empire. To mention but a few – Augusta Raurica (Rütti 1991a, 31, Abb. 11, 12; Rütti 1991b, 15-31), Colchester (Cool / Price 1995, 15-26), Nijmegen (Isings 1980, 299-301, fig. 10, 11), Pompeii (Cool 2016, 104-109, fig. 5/3), the Athenian Agora (Weinberg / Stern 2009, 33-36). Dated finds from Bulgaria are known from the legionary camps of Novae – pre-Flavian context,
(Генчева 2002, 47, кат. # 304, 305, 337, табл. XLVIII/2-4) and Oescus – Flavian period / second half of the 1st c. AD (Кабакчиева 2000, 42, кат. # 8-10, табл. V/8-10), but are also found as grave goods in closed complexes, dated to the first three quarters of the 2nd c. AD (see Чолакова 2006, 210-212). The ribbed bowls from the Serdica assemblage appear on the site mainly in Late Flavian – Trajanic contexts (fig. 1/1, 2, 4), however there are examples found in layers dated up to the Late Hadrianic – Early Marcus Aurelius period (fig. 1/5).

The last glass find included in this group is the rim fragment of a mosaic bowl with polychrome floral patterns (fig. 2/7) discovered in a context dated to the middle – third quarter of the 2nd c. AD. Other published parallels from Bulgaria are known from Philippopolis, Oescus and Novae (Чернева-Тилкиян 1993, 98, 100, обр. 6, кат. # 5; Кабакчиева 2000, 40-41, кат. # 1, табл. V/1; Генчева 2002, 47, # 336, табл. XLVIII/1). Although the vessels manufactured with this technique have been considered characteristic of the early Roman glass production for many years and the date of the Serdica millefiori find might appear a bit later (disturbed context?), nowadays there are good examples, securely dated to the period in question (and later), demonstrating the later development and distribution of the technique (Rütti 1991a, 121-134; Nenna 2002, 153-158).

The conical beakers Isings form 31, dated to the second half of the 1st c. AD and characteristic of the Flavian period, are represented here by two examples included in the group of blown vessels, or mould-blown glass in particular. All of the published examples from Bulgaria fall into the same time span (Чолакова 2006, 213). One of the finds from the Serdica assemblage is discovered in Late Flavian – Trajanic context (fig. 3/8) and the other one made of yellow-brown glass is found in context dated to the second quarter of the 2nd c. AD (fig. 3/9). A fragment of the same shape and colour is known from the sanctuary at Telerig, Dobrich region (Belivanova 1999, 38, fig. 14; Чолакова 2006, 216). The distribution of the form throughout the Empire is confirmed by the published finds from different sites (Isings 1980, 292-293, fig. 7; Weinberg / Stern 2009, 67-68; Stern 1995, 103-104).

The blown ribbed bowl – zarte Rippenschale, is one of the good examples characteristic of the early Roman glass production. Popular during the second and the third quarters of the 1st c. AD, the chronological distribution of the form in Bulgaria (Кабакчиева 2000, 41, кат. # Г 3; Belivanova 1999, 39, fig. 17), including the find in question (fig. 4/10), coincides with the one confirmed by dated finds from other parts of the Empire (Weinberg / Stern 2009, 45-46; Rütti 1991a, 33, Abb. 16; Rütti 1991b, 46-47; Cool 2016, 131-133). The bowl from the Serdica assemblage differs from the two already published examples from Bulgaria not only by the colour of the glass (cobalt blue), but also by the fact that it belongs to the monochrome variety of the form, in contrast to the vessels from Oescus and the sanctuary at Telerig, Dobrich region – yellow-brown with opaque white trails (Кабакчиева 2000, 41, кат. # Г 3; Belivanova 1999, 39, fig. 17).

Another group of early Roman free-blown vessels is represented here by two, possibly three finds (fig. 4/11, 12, 13) – the beakers with indented decoration (Isings form 32)4. Published examples are known from different sites in Bulgaria, all dated to the 1st – the middle of the 2nd c. AD (see Чолакова 2006, 224), similarly to the finds from

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4 Although the shape of the vessels (fig. 4/11-12) is not fully reconstructed, the preserved fragments (not included) allow the supposition that they most probably belong to the variant of the form without a base ring.
Serdica. These beakers are found on many sites throughout the Empire (Isings 1980, 298, fig. 9, 10; Cool / Price 1995, 69-71; Lazar 2003, 98; Weinberg / Stern 2009, 47-49).

The *unguentarium* (fig. 4/14) belongs to Isings forms 28/82 A1, both commonly found on different sites in Bulgaria, either by their early or later varieties, but generally dated to the 1st – 3rd c. AD (Чолакова 2006, 231-232, обр. VII). Considering the specifics of the shape and glass colour of the vessel, as well as the date of the context (the second quarter of the 2nd c. AD), the Serdica example could most probably be compared to the *unguentaria* from Brezovo and Tulovo, dated to the 1st – 2nd c. AD (Чернева-Тилкиян 1997, 48-49, кат. ## 7, 21, 22; Табакова-Цанова / Гевтов 1969, 31-32, обр. 7).

The last technological group included in the present study and belonging to the colourless glass vessels decorated by techniques of cold-working features one example of the conical beaker Isings form 21 popular during the Flavian – Trajanic period (fig. 5/15). Published artefacts from Bulgaria are known from Oescus, Nicopolis ad Istrum, Philippopolis, the sanctuary at Telerig, Madrets, Stara Zagora region, the latter found in a grave dated to the late 1st – early 2nd c. AD (Кабакчиева 2000, 43, кат. ## Г. 14-16; Shepherd 1999, 359, # 11, 314; Belivanova 1999, 39, fig. 19, 21, 18). The Serdica example belongs to the thin-walled variety of the beakers, with shallow facets and both surfaces left as blown (Oliver 1984, 42-43). Despite that these vessels are occasionally considered representatives of the later development of the vessel type, the date of the context of the find from Serdica is still noticeably later – the middle – second half of the 3rd c. AD (re-deposited?). Dated examples of Isings form 21 are known from all over the Roman Empire (Harden 1936, 149, # 409, pls. IV, XV; Davidson 1952, 81, # 641, fig. 8, 101; Oliver 1984, 43).

The same decorative technique can be seen on the bowl Isings form 96 (fig. 5/16), however associated with the later development of the decorative patterns. Although usually related to finds of a later date, as pointed out by C. Isings (1957, 104, examples included), there are vessels representing the early characteristics of the form (Davidson 1952, 93-95, # 592, fig. 6). One of the early examples of the form, discovered in Bulgaria, is supposedly originating from Butovo, Veliko Tarnovo region (Беливанова 1998, 118-120, обр. 1, 125). Vessels that are more closely comparable to the one from Serdica, regarding their size and decorative pattern, are the bowls from Augusta Raurica (Рюти 1991b, 68, # 1335, 272, Taf. 60), Nicopolis ad Istrum, dated to the second half of the 2nd – 3rd c. AD (Shepherd 1999, 359-360, # 12, 315), and the one from Mlekarevo, located near the town of Nova Zagora, found in a grave dated to the 2nd – 3rd c. AD (Велков 1996, 128, # 3, табл. II/1).

The last representative of this technological group is also a bowl fragment (fig. 5/17) that falls into the category of colourless vessels with less complicated decorative pattern. Similar finds are known from Dura-Europos and Nicopolis ad Istrum (Clairmont 1963, 96, ## 426, 427, pl. X; Shepherd 1999, 368, # 113, 325).

**Conclusion**

Although this article is focused on selected finds from the 2010 glass assemblage, the artefacts cover the range of glass manufacture techniques characteristic of the period under discussion. Despite their
fragmentary state, they can be assigned with certainty to well-defined vessel types or at least to a particular technological group. The new data from Serdica enriches the number of already published examples of luxurious imports, typical of the 1st and the 2nd c. AD, discovered on different archaeological sites in Bulgaria and at the same time demonstrates their distribution as a group, evidenced so far mostly in the legionary camps of Oescus and Novae.

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