

Late antique glass assemblage from *Serdica* *Poznoantično stekleno gradivo iz Serdike*

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Abstract

An assemblage of more than thirty individual glass vessels was found inside a water well during the 2012 archaeological research of the Western Gate of Serdica site in present day Sofia, Bulgaria. Conical and hemispherical vessels, lamps and jugs/flasks are among the identified shapes. The finds illustrate different finishing and decorating (both hot- and cold-working) techniques. The well went out of use and was filled with debris in the course of the 5th century. Based on the listed parallels, the glass finds could be dated between the 4th and the 6th centuries. Such relatively long time span could owe to the not entirely certain initial period of using the facility as a dump site and also to the attested building activities in the area during the 6th century, which might have disrupted the deposit's stratigraphy.

Keywords: *Serdica*, Late Antiquity, glass assemblage, lamps, hemispherical bowls

Izvleček

Skupina več kot trideset posamičnih steklenih posod je bila odkrita v vodnjaku, ki je bil raziskan leta 2012 ob zahodnih vratih rimskega mesta *Serdica*, današnja Sofija v Bolgariji. Med gradivom so bile prepoznane oblike kot so konične in polkroglaste posode, svetilke in stekleničke oz. vrči, ki so bile obdelane in okrašene v toplem in ohlajenem stanju. Vodnjak je bil opuščen in zapolnjen z odpadom v teku 5. stoletja. Na osnovi primerjav lahko stekleno posodje datiramo v čas med 4. in 6. stoletjem. Relativno širok časovni razpon je posledica nepoznavanja začetnega datuma odlaganja odpadkov in tudi dokumentirane gradbene aktivnosti v 6. stoletju, ki je morda poškodovala stratigrafijo najdišča.

Ključne besede: *Serdica*, pozna antika, stekleno gradivo, svetilke, polkroglaste skodele

Introduction

The archaeological research at the Western Gate of Serdica, present-day Sofia, Bulgaria, was carried out in two separate campaigns, the first between 1974 and 1980 and the second in 2011 – 2014 (Borisova-Katsarova and Barfonchovska 2018). As a result, a significant amount of new archaeological data regarding the town's Roman and Early Byzantine fortifications and urban structure has been acquired.

A considerable number of glass fragments were discovered in an abandoned well, more than 3 m deep, excavated during the 2012 archaeological campaign within the studied area (Fig. 1). According to the stratigraphic situation, it is assumed that it went out of use and was filled with debris most likely in the 5th century. Fragments of more than thirty individual glass vessels were identified, along with window glass, two entirely preserved ceramic jugs, pottery sherds and animal bones (Dr Borisova-Katsarova, pers. comm.). This contribution aims to pres-

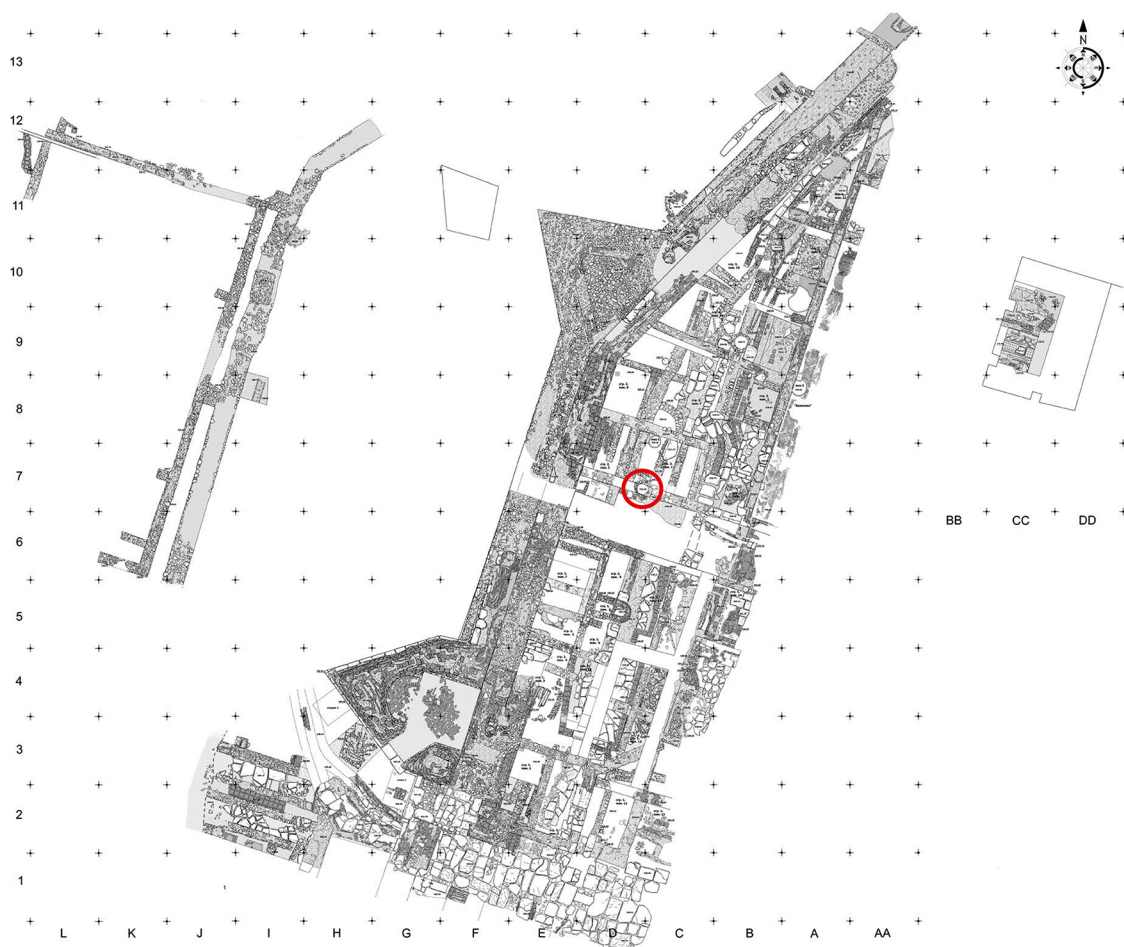


Figure 1: General plan of "The Western Gate of Serdica" site with the exact location of the well highlighted in red (after Borisova-Katsarova and Barfonchovska 2018, modified by the author).

ent the assemblage and, at the same time, illustrate some of the commonly used glass vessel shapes during the late antique period in Serdica.

The glass assemblage

All of the vessels are free-blown. The material's quality varies from clear gas bubbles and impurities with a shiny surface to bubbly, with rough surface and weathering. The range of colours is typical for the period - light blue, light green, yellow-green and nearly colourless with slight yellow or green tint (Table I). The decoration is rarely attested, but when present, it is made using both techniques: hot-working – in the form of applied self-coloured, dark blue or dark green

glass trails, and on one occasion, cold-working – abraded/engraved geometric motifs. The finds will be presented in several groups, according to their morphology and, when possible to be determined, their function.

Conical vessels

Most of the finds are included in this group (Fig. 2; Table I.1-32). The reconstruction of three vessel profiles (Fig. 2.1-3) made it easier for the rest of the fragments (both rims and bases) to be more surely assigned to it (Fig. 2; Table I.1-32). Although morphologically, these glass finds are comparable to Isings form 106b1 (Isings 1957,

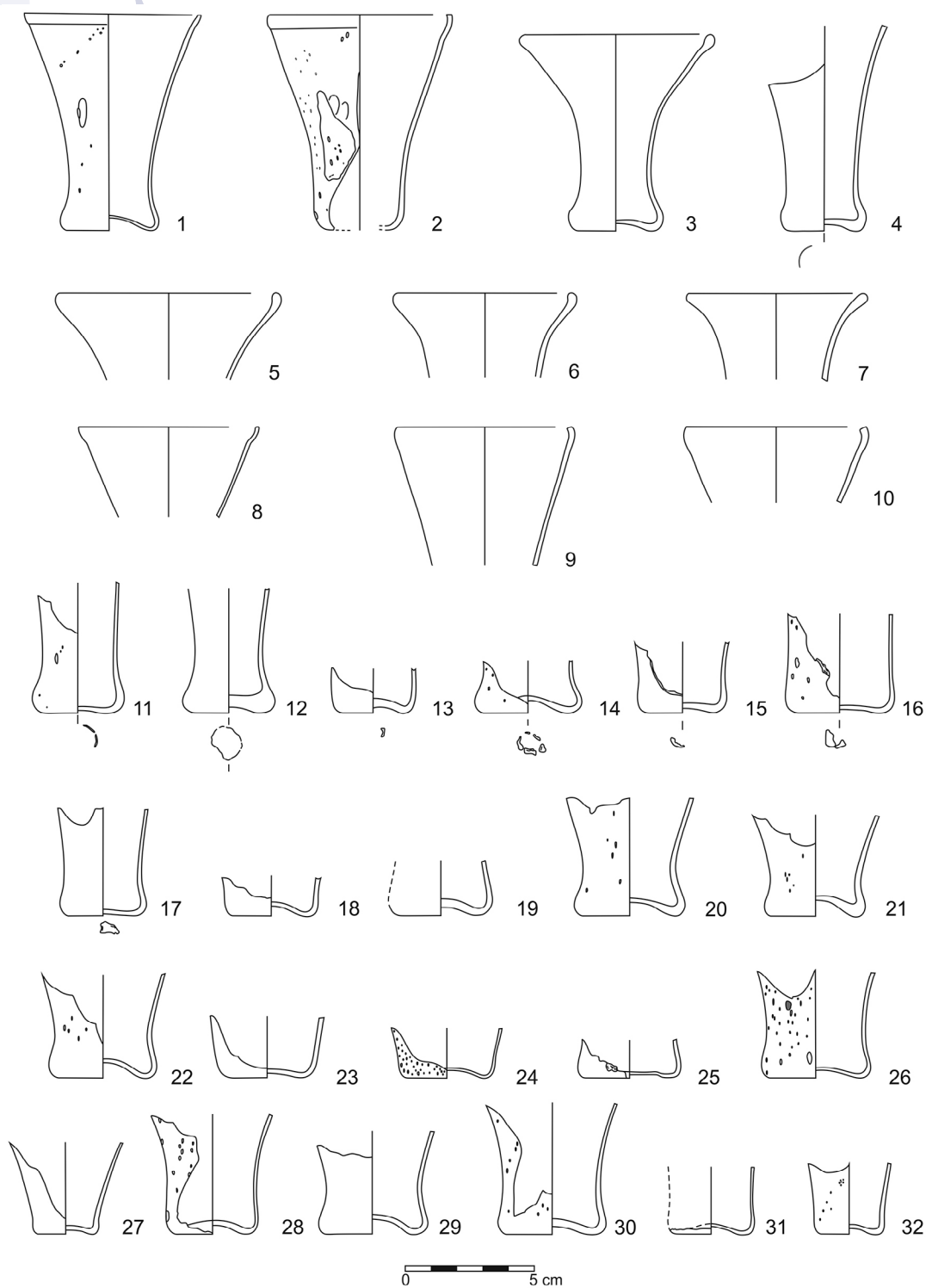


Figure 2: Group of conical vessels (drawings by the author).

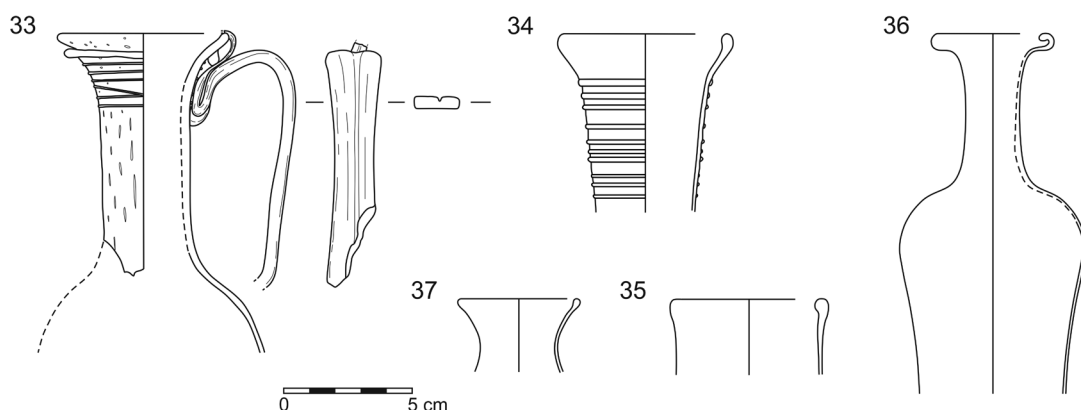


Figure 3 Group of jugs/flasks (drawings by the author).

127), some distinctive features should be pointed out.

According to the techniques of vessel finishing, the finds could be divided in two subgroups. The first one comprises one nearly complete vessel (Fig. 2.3; Table I.3), along with several rim fragments with fire-rounded edges¹ (Fig. 2.5-7; Table I.5-7) and bases with marks on the underside (Fig. 2.4, 11-19; Table I.4, 11-19) that certainly indicate the use of pontil for their manufacture. The reconstructed shape has a plain, slightly concave (sometimes nearly flat) base with a constriction of the walls, just above the bottom, cylindrical lower and conical upper body parts, with out-turned or slightly in-turned rim (Fig. 2.3-7, 11-19).

The second subgroup consists of two nearly complete vessels (Fig. 2.1-2; Table I.1-2), several cracked-off rim fragments (Fig. 2.8-10; Table I.8-10) and plain concave bases (Fig. 2.20-32; Table I.20-32), all suggesting that pontil was not involved in the manufacturing process. Characteristic of the reconstructed shape are the out-turned or slightly in-turned rims, almost straight sides with slight, less distinctive constriction of the walls above the base and more or less pronounced widening towards the rim (Fig. 2.8-10,

20-32). In addition, the particular concave profile of some of the bases could be explained using a former (Jennings 2006, 118-119).

Jugs and flasks

This group comprises five vessels (Fig. 3; Table I.33-37). One of them is a jug with a double ribbed handle, a plain flaring rim with a rounded edge and a decoration of self-coloured glass trail in relief, applied just below the edge (Fig. 3.33; Table I.33). The rest of the finds (Fig. 3.34-37; Table I.34-37) could be collectively referred to as flasks. None of them carries any scars of missing handles on the preserved parts of their bodies, and only one (Fig. 3.34) has a self-coloured glass trail in relief applied under the rim, similarly to the already described jug (Fig. 3.33).

Lamps

Five vessels could be surely assigned to the present group (Fig. 4; Table I.38-42). The first one is identified as a lamp with the base knob, although in this particular case, the knob is missing (Fig. 4.38). A feature worth noting is the pontil scar at the lower part of the preserved glass piece, just above the pointed base.

Three fragments from different parts of the body most certainly belong to a single vessel, according to the characteristics of the glass. A form reconstruction represents a hemispherical cup

¹ Although the study includes a selected number of rim fragments (both fire-rounded and cracked-off), assigned to the conical vessels, the examples illustrate the variety of the group in terms of finishing and morphological characteristics.

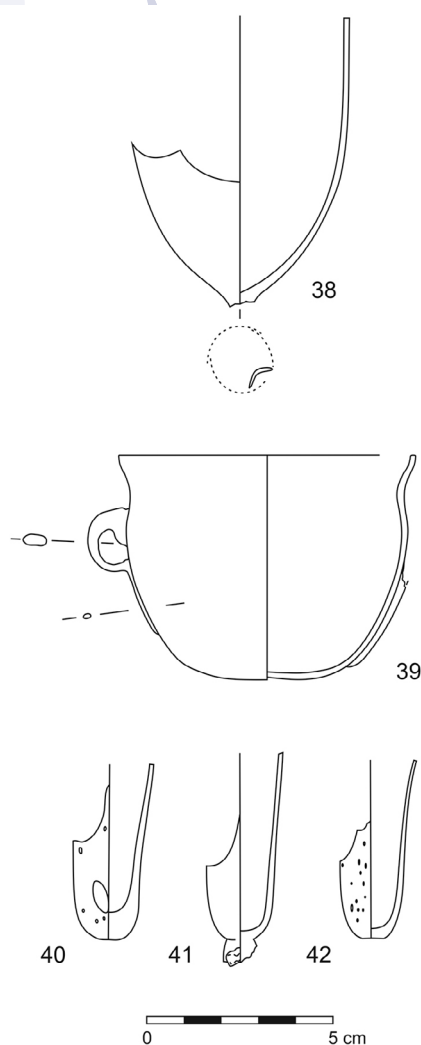


Figure 4: Group of lamps (drawings by the author).

with three vertical suspension handles applied to its body (Fig. 4.39; Table I.39).

The last examples included here are lamps with tubular bases or stemmed lamps (Fig. 4.40-42; Table I.40-42). All three base fragments have marks of pontil attachment, including unremoved glass (Fig. 4.41), indicating that the vessels had fire-rounded rims. Unfortunately, none of the preserved rim fragments from the assemblage could be related to this particular form (Olczak 1995, 51, typ II; Băjenaru, Băltac 2000-2001, Pl. I-III, 497-499; Cholakova, Rehren and Freestone 2016, Fig. 2, 627).

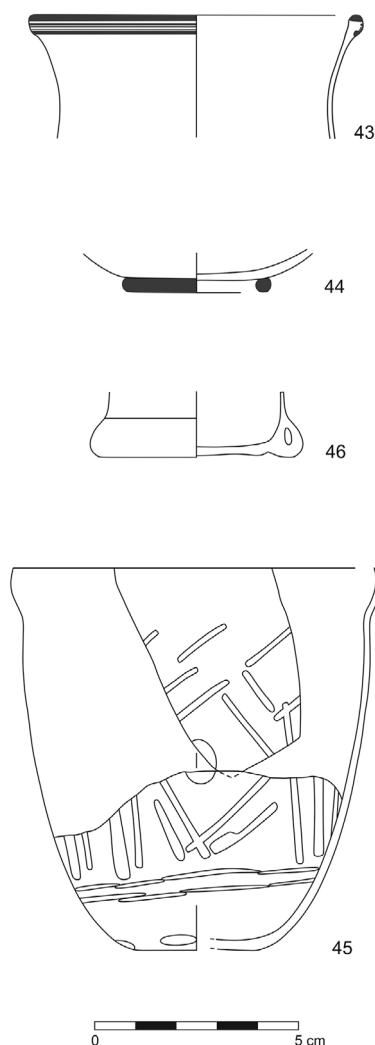


Figure 5: *Varia* Group (drawings by the author).

Varia

The remaining finds (Fig. 5.43-46; Table I. 43-47) – sherds of four vessels and a window pane fragment, are presented here as they cannot be certainly attributed to either of the other groups.

Two rim fragments have a fire-rounded rim with dark blue trails applied on edge and below it, marvered into the wall (Fig. 5.43; Table I.43). Although the preserved parts cannot give enough evidence for the complete reconstruction of the shape, they most likely belong to the same vessel (a beaker or a lamp).

The use of coloured glass is attested on another fragment – base with an applied ring of dark green glass and no traces of pontil on the glass surface, probably from a cup/beaker (Fig. 5.44; Table I.44).

The assemblage also includes four fragments – two cracked-off rims, a partially preserved, slightly concave, nearly flat base, and a wall sherd, that even though not joining, certainly belong to a single vessel and allow identification of the shape – Isings 96/107 (Isings 1957, 114–116, 133). It stands out with its abraded/free-hand engraved decoration arranged in horizontal bands of geometric motifs (Fig. 5.45; Table I.45).

A fragment of a tubular base ring (formed together with the body) is also included in the present group (Fig. 5.46; Table I.46). Its size and plausible reconstruction make it comparable to form Isings 109a/c (Isings 1957, 136–138).

The last find (Table I.47), also the only one of its kind from the assemblage, is a windowpane fragment with preserved part of one of the edges (not illustrated).

Discussion

The identified vessel forms of the Serdica glass assemblage have their close analogies discovered at different archaeological sites. The conical vessels (Fig. 2) find similarities in published examples from Nicopolis and Istrum (Shepherd 1999, Fig. 11.16, nos. 555–562, 349–350), “Gradishtëto” near Dichin (Cholakova 2009, cat. nos. 68, 69, 274, tabl. IX/10, 11, 296) and in other published material (Ružić 1994, 50, tabl. XXXVI-II/1,2,5,7–10; Sternini 2001, 31, Fig. 17, no. 185, 65; Jennings 2006, 118, Fig. 5.32; Leljak 2011, 151, cat. nos. 4–6, 9–12). The finds from the present group have been identified both as beakers and lamps (Lazar 2003, 198–199, Fig. 52, 9.1.3; Leljak 2011, 151, cat. nos. 4–6, 9–12). In this case, it is difficult to determine their exact function, considering only the context of discovery. Therefore, considering different characteristics of vessel finishing (for example, fire-rounded or cracked-off rim edge) or quality of the glass and manu-

facture could be helpful as criteria for further interpretation.

The jugs/flasks (Fig. 3) resemble typical for the period forms of tableware/containers for cosmetic substances and decoration – applied glass trails. These vessels are comparable to examples from published late antique glass assemblages (Sternini 1989, 106, Fig. 9, 109; Jennings 2006, 110–111, Fig. 5.24; Cholakova 2009, cat. nos. 101, 102, 279–280, tabl. XII/1, 2, 299).

Parallels to the first identified type of oil lamp from the assemblage, the one with the base knob (Fig. 4.38), are attested at other archaeological sites and provide good analogies for this example (Sternini 1989, 109, Fig. 7, nos. 36, 37; Ružić 1994, 55–56, tabl. XLIII/5,7–9; Ubaldi 1995, 116–120; Jennings 2006, 137–138, Figs. 6.10.11–14; Cholakova 2009, cat. nos. 91–93, 278, tabl. XI/1–3, 298). The variety of the popular for the period hemispherical cup with the concave base that includes applied small loop handles (Fig. 4.39) is usually also identified as a type of lighting device (Gomolka 1979, 154, tabl. 61, no. 32; Turno 1989, 166–167, Fig. 2, no. 4; Cherneva-Tilkian 1995, 77, Fig. II.17; Olczak 1995, 51, typ III; Băjenaru, Băltac 2000–2001, 479–483, tabl. X, 506). The lower part of the bodies of the tubular oil lamps (Fig. 4.40–42) makes them easy to be identified and assigned to their actual form due to abundant parallels illustrating the slight varieties and details of the shape (Olczak 1995, 51, typ II, 55–58; Băjenaru, Băltac 2000–2001, Pl. I–III, 497–499; Jennings 2006, 142–143, Fig. 6.16; Cholakova, Rehren and Freestone 2016, Fig. 2, 627).

Decoration of applied coloured glass trails can be seen on different vessel forms (both closed and open), and it is quite distinctive of this period's glass repertoire (Jennings 2006, 155, Figs. 7.1–7.9; Cholakova 2009, tabl. VII, 294). The example described here (Fig. 5.43) is comparable to similar vessels discovered in well-dated contexts at other archaeological sites, including from Serdica (Cholakova 2009, tabl. VII.6–9, 294; Cholakova, Rehren 2018, 56, Fig. 3.1).

Similar (but not identical) to the base with an applied ring of coloured glass trail (Fig. 5.44) are finds from other sites in Serdica, as well as from more distant ones like Beirut (Jennings 2006, 163–165, Figs. 7.8, 7.10; Cholakova, Rehren 2018, 56, Fig. 3.1).

The reconstructed cup (Fig. 5.45) is resembling partially the decoration on vessels discovered, for instance, in Mainz and Bonn (Harter 1999, Taf. 16, no. 348; Fünfschilling 2015, 336, Abb. 425, 35), while morphologically it is more closely related to form Isings 96/107 (Isings 1957, 114–116, 133).

Assuming that the tubular base fragment (Fig. 5.46) belongs to the widespread form Isings 109a/c, it could be associated with finds from numerous sites².

Conclusion

According to the stratigraphic observations of the researchers and preliminary examination of the discovered materials, it is presumed that the well went out of use and was filled with debris, most likely in the 5th century. The attested construction activities during the 6th c., when a new building was erected in the area, and the setting of one of its walls over the well, in particular, is considered a definite terminus ante quem for the exploitation of the abandoned facility³.

Concerning the chronological distribution of the listed parallels, the vessels from the assemblage could be broadly dated between the 4th and the 6th century. The conical beakers/lamps, along with the single fragment with tubular base ring and the cup with engraved/abraded decoration, could be regarded as some of the earliest examples⁴. Their presence in the well might be related to the initial phase of its repurposing as a dump site. Of course, there is also the possibility (at least for some of them) of accidental dropping while the water facility was still in use. At

the same time, the occurrence of some of the other examples in the assemblage (the tubular oil lamps in particular) is a bit peculiar, considering their later date, based on analogous finds⁵. A possible explanation for this could be found in the abovementioned construction activities during the 6th c. Furthermore, digging the trenches for the foundations of the wall in question might have caused later material to enter the deposit.

Because of the studied material's fragmentary state, it was impossible for all the finds to be ascribed with certainty to a particular vessel form/type or to a specific function. Nonetheless, the short review of the present assemblage illustrates well enough some of the glass vessel groups popular during the late antique period in *Serdica*.

Acknowledgments

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Summary

The archaeological research at the Western Gate of Serdica, present-day Sofia, Bulgaria, was carried out in two separate campaigns, between 1974 and 1980 and 2011–2014. A deposit comprising a considerable number of glass fragments was discovered inside abandoned water well during the 2012 excavations. Conical vessels, lamps and jugs/flasks are the identified glass vessels' shapes. The decoration is rarely attested.

According to the stratigraphic situation and the finds, the well went out of use and was filled with debris, most likely in the 5th century. However, based on the listed parallels, the glass finds could be dated between the 4th and the 6th centuries. The earliest vessels in the assemblage might be related to the initial phase of the well's repurposing as a dump site or to the possibility that some of them could have been dropped there by accident before it was abandoned. Furthermore, a possible explana-

2 For a number of analogous finds see Antonaras 2017, 79–80.

3 Dr. Borisova-Katsarova, pers. comm.

4 For the conical vessels see Antonaras 2017, 77–80; for the cup with abraded/engraved decoration see Harter 1999, 71 and Fünfschilling 2015, 336.

5 For well-dated examples see Cholakova, Rehren and Freestone 2016, Fig. 2, 627.

tion for the discovery of the latest glass artefacts in the same complex could owe to a probable disturbance of its stratigraphy due to the construction of a new building in the area during the 6th century. The setting of one of its walls over the well serves as a definite terminus ante quem for the accumulation of the deposit.

Povzetek

Arheološke raziskave ob zahodnih vratih mesta *Serdica*, današnje Sofije v Bolgariji, so potekala v dveh kampanjah, med letoma 1974 in 1980 in med letoma 2011 do 2014. V opuščenem vodnjaku so med raziskavami leta 2012 odkrili depozit s precejšnjim številom steklenega gradiva. Opredeliti je bilo mogoče oblike kot so konične čaše, svetilke, stekleničke in vrči, posode so bile obdelane in okrašene v toplem in ohlajenem stanju.

Glede na stratigrafijo in odkrito gradivo je bil vodnjak najverjetneje opuščen in napolnjen z odpadom v teku 5. stoletja. Na osnovi primerjav pa lahko stekleno gradivo datiramo v čas med 4. in 6. stoletjem. Starejše gradivo je verjetno ostanek zgodnje faze uporabe opuščenega vodnjaka kot odpadne jame, najmlajše najdbe pa bi lahko povezali z mešanjem plasti, ki so verjetno posledica gradnje novega objekta na tem območju v 6. stoletju. Postavitev enega od njegovih zidov preko vodnjaka služi kot *terminus ante quem* za nalaganje depozita.

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Table I: Description of the glass finds.

Nº	Form	Description	Colour and quality of the glass	Illustration
1	conical vessel	entire profile, rough unfinished cracked-off rim	light green glass, small amount of gas bubbles of different size and shape	Fig. 2.1
2	conical vessel	entire profile, rough unfinished cracked-off rim	nearly colourless glass with slight greenish tint and significant amount of gas bubbles of different size and shape	Fig. 2.2
3	conical vessel	entire profile, fire-rounded rim	light green glass, small amount of gas bubbles	Fig. 2.3
4	conical vessel	nearly entire profile, missing rim, probably fire-rounded, considering the pontil mark on the underside	yellow-green glass, small amount of elongated gas bubbles and contamination of a single metal? particle right above the base area	Fig. 2.4
5	conical vessel	fire-rounded rim fragment	nearly colourless glass with slight greenish tint and only a few gas bubbles, contamination due to a couple of tiny metal? particles affecting the colouration of the glass	Fig. 2.5
6	conical vessel	fire-rounded rim fragment	light blue glass with only a few gas bubbles	Fig. 2.6
7	conical vessel	fire-rounded rim fragment	the colour of the glass varies from light green to yellow-green, small amount of gas bubbles and a tiny metal? particle inclusion	Fig. 2.7
8	conical vessel	cracked-off rim fragment	nearly colourless glass with slight greenish tint and a few gas bubbles	Fig. 2.8
9	conical vessel	cracked-off rim fragment	nearly colourless glass with greenish tint and gas bubbles of different size and shape	Fig. 2.9
10	conical vessel	cracked-off rim fragment	nearly colourless glass with slight greenish tint	Fig. 2.10

Nº	Form	Description	Colour and quality of the glass	Illustration
11	conical vessel	the lower part of entirely preserved slightly concave/almost flat base with pontil scar	light blue glass of noticeably good quality, with only a few gas bubbles	Fig. 2.11
12	conical vessel	the lower part of entirely preserved slightly concave base with a pontil scar	light blue glass of distinctly good quality, with only a few gas bubbles but contaminated due to several metal? particle inclusions (one of them more noticeable)	Fig. 2.12
13	conical vessel	partly preserved base with pontil mark	nearly colourless glass with yellowish tint	Fig. 2.13
14	conical vessel	almost entirely preserved base with pontil mark	nearly colourless glass with yellowish tint and gas bubbles	Fig. 2.14
15	conical vessel	partly preserved base, slightly concave/ almost flat with pontil mark	nearly colourless glass with greenish tint	Fig. 2.15
16	conical vessel	the lower part of the body and almost entirely preserved concave base with pontil mark	nearly colourless glass with slight greenish tint, significant amount of gas bubbles of different size and shape and a metal? particle inclusion	Fig. 2.16
17	conical vessel	the lower part of the body and entirely preserved slightly concave/ almost flat base with unremoved glass from the attachment of the pontil	nearly colourless glass with greenish tint	Fig. 2.17
18	conical vessel	the lower part of the body and entirely preserved concave base with a hardly noticeable pontil mark	nearly colourless glass with slight yellowish tint and gas bubbles of different size and shape	Fig. 2.18
19	conical vessel	partly preserved base with pontil mark?	nearly colourless glass with yellowish tint	Fig. 2.19
20	conical vessel	the lower part of the body and entirely preserved concave base	nearly colourless glass with greenish tint and gas bubbles of different size and shape, a couple of metal? particle inclusions	Fig. 2.20
21	conical vessel	the lower part of the body and entirely preserved concave base	nearly colourless glass with greenish tint and significant amount of gas bubbles of different size and shape	Fig. 2.21
22	conical vessel	the lower part of the body and entirely preserved concave base	nearly colourless glass with greenish tint, gas bubbles and a couple of tiny metal? particle inclusions	Fig. 2.22
23	conical vessel	the lower part of the body and entirely preserved concave base	light green glass with gas bubbles of different size and shape	Fig. 2.23
24	conical vessel	the lower part of the body and almost entirely preserved slightly concave/flat base	nearly colourless glass with slight yellowish tint and significant amount of gas bubbles of different size and shape	Fig. 2.24
25	conical vessel	partly preserved base, concave (particular profile probably achieved by the use of a former)	light green glass with significant amount of gas bubbles of different size and shape	Fig. 2.25
26	conical vessel	the lower part of the body and entirely preserved concave base	nearly colourless glass with greenish tint and significant amount of gas bubbles of different size and shape, a few particle inclusions	Fig. 2.26
27	conical vessel	partly preserved base, slightly concave/almost flat	nearly colourless glass with slight yellowish tint and gas bubbles	Fig. 2.27

Nº	Form	Description	Colour and quality of the glass	Illustration
28	conical vessel	the lower part of the body and partly preserved concave base	light green glass with significant amount of gas bubbles of different size and shape and contaminated due to a particle inclusion	Fig. 2.28
29	conical vessel	the lower part of the body and entirely preserved concave base	nearly colourless glass with greenish tint and significant amount of gas bubbles of different size and shape	Fig. 2.29
30	conical vessel	the lower part of the body and a concave base	nearly colourless glass with yellowish tint and gas bubbles of different size and shape	Fig. 2.30
31	conical vessel	partly preserved base	nearly colourless glass with yellowish tint and significant amount of gas bubbles of different size and shape	Fig. 2.31
32	conical vessel	the lower part of the body and entirely preserved concave base	light green glass with small amount of gas bubbles	Fig. 2.32
33	jug	the upper part of the body with double ribbed handle; decoration of self-coloured glass trail in relief applied below the rim and around 1/3 down the neck of the vessel	glass of light green colour with multiple gas bubbles and metal? particle inclusions	Fig. 3.33
34	flask?	rim and neck; decoration of applied self-coloured glass trail in relief, starting below the rim and going down the preserved neck part of the vessel	glass of light blue-green colour	Fig. 3.34
35	flask?	rim and part of the neck	nearly colourless glass with slight yellowish tint, small amount of gas bubbles and matt white iridescence	Fig. 3.35
36	flask?	folded-in rim, neck and partly preserved shoulders	nearly colourless glass with yellowish tint and small amount of gas bubbles	Fig. 3.36
37	flask?	fire-rounded rim and neck	light blue-green glass with small amount of gas bubbles	Fig. 3.37
38	conical lamp with solid knob	the lower part of the body, missing knob; there is a pontil scar on the wall, just above the pointing base	nearly colourless glass with light blue-green tint	Fig. 4.38
39	hemispherical cup/lamp	three fragments (not joining) – a cracked-off rim, a wall with preserved loop handle and a base with partially preserved trails of two other handles (missing)	nearly colourless glass with greenish tint and significantly small amount of gas bubbles	Fig. 4.39
40	lamp with tubular base	the lower part of the body; small pontil mark on the base	light yellow-green glass with numerous elongated gas bubbles and yellowish-white iridescence	Fig. 4.40
41	lamp with tubular base	the lower part of the body; unrecovered glass from the attachment of the pontil	light yellow-green glass with elongated gas bubbles and yellowish-white iridescence	Fig. 4.41
42	lamp with tubular base	the lower part of the body; small pontil mark on the base	light yellow-green glass with elongated gas bubbles and yellowish-white iridescence	Fig. 4.42
43	beaker/lamp?	two rim fragments (not joining) with dark blue trails, applied directly on the rim and below it, marvered into the wall	the vessel is made of nearly colourless glass with slight yellowish tint	Fig. 5.43

Nº	Form	Description	Colour and quality of the glass	Illustration
44	cup/beaker?	base fragment with not evenly applied ring	ring of green glass; the main body of the vessel is made of nearly colourless glass with yellowish-green tint; the green glass trail is full of gas bubbles	Fig. 5.44
45	hemispherical cup	four fragments (not joining) – a cracked-off, slightly polished rim, two wall fragments and a slightly concave, almost flat base; decoration of abraded/free-hand engraved lines, circles and grain-shaped facets, forming geometric patterns in horizontally arranged bands	nearly colourless glass with a slight yellowish tint	Fig. 5.45
46	conical beaker?	base fragment with tubular ring	light green glass	Fig. 5.46
47	window pane	fragment with partly preserved side edge	green glass with multiple gas bubbles of various size and shape	–