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A GROUP OF BOTTLES FROM THE LATE ANTIQUE GLASS COLLECTION OF TOKAT MUSEUM[1]

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Abstract: Tokat is a city that stands out for its historical and cultural richness. It is located in the Black Sea Region of Turkey. The city, which has been home to many civilisations from ancient times to the present day, is among the ancient cities of our country, having hosted different civilisations such as Hittites, Phrygians, Romans and Ottomans. Although the city contains important architectural works, especially from the Seljuk and Ottoman periods, rich folkloric traditions, handicrafts and culinary culture are important elements that shape social life and economic structure.
The art of glass, which began to develop in the 3rd millennium BC, has always attracted attention with its unique forms and techniques. Glass bottles are among the important artefacts that reflect the aesthetic and technological innovations of the period in which they were used. Among the bottles that were widely used, especially in the late antique period, the group of funnel-mouthed bottles, which we will examine in this study, is a noteworthy example with their larger size compared to other bottles. The bottles, which are mostly undecorated, were especially used as liquid storage containers in daily life and as burial gifts in graves. This study will help us to understand the place of Tokat in the glass art and trade of the late antique period by analysing these glass bottles, which were acquired to the museum through both excavation and purchase in a culturally rich city like Tokat, in detail in terms of technique, decoration and usage.

Keywords: *Tokat Museum, Late Antiquity, Glass, Collection, Bottle.*

INTRODUCTION

Glass art is a historically and culturally important visual art branch that emerges through the shaping of glass with different techniques by using aesthetics and functionality together. When we look at the production of glass in ancient times, it had an important place both as an ornament and as a material for use in daily life. Thanks to the production techniques developed especially in Mesopotamia, Egypt and Roman civilisations, it also contributed to the increase in art and trade. In the developing process, it has led to the emergence of rich and varied forms of vessels that reflect the social and cultural structure of the period in terms of both aesthetics and functionality.

The aim of this study is to introduce the city of Tokat to the scientific world by examining its place in glass production and trade since antiquity in various aspects, and to evaluate these glass vessels by comparing them with their counterparts. The funnel-mouthed bottles, which have a noteworthy place among the glass artefacts preserved in the Tokat Museum, will be studied

[1] This study is an extended version of a part of a postgraduate thesis.

in the light of their form characteristics, production technique and place of origin in order to clarify whether the city of Tokat was among the centres of glass production or trade. The 13 funnel-mouthed bottles included in the scope of the study were inventoried in detail and dated using the analogy method. In the study, firstly, after obtaining the necessary permissions from the relevant museum, artefact photography and inventory recording procedures were carried out in the museum. Then, the backgrounds of the photographs taken were cleaned in the computer environment and made ready to be used in the publication. In the light of the inventory information, a catalogue study was carried out and the artefacts were turned into a table. Since the material used in the study was brought to the museum through both salvage excavation and purchase, dating was generally done by analogy. The artefacts recovered from the necropolis area were dated by comparing them with other finds from the area.

The funnel-mouthed bottles from Niksar-Leylekler Çeşmesi Mevkii, which the museum acquired through salvage excavations and purchase in 1982, were made in the free glass blowing technique and shaped with a tool. In this context, it will be useful to give information about the free blowing technique in order to understand the artefacts.

FREE BLOWING TECHNIQUE

The free-blowing technique was discovered in the middle of the 1st century BC as an epoch-making method in glass production and continued to develop throughout the Roman Imperial Period. It enabled the production of new forms by emphasising the special skills of glass masters. In the free blowing technique, which is the first applied form of the blowing technique, a 1.5–2 m long hollow glass blowing rod (pipe) with a heated tip is immersed in the vessel (crucible) where the glass is melted, and a sufficient amount of the molten glass paste is taken. In order to prevent the glass from sagging, it is constantly rotated and taken to the glass processing table. Here, the pipe is rounded, and the blowing process is continued on the one hand to shape the glass at the end of the pipe. During this process, the glass is heated repeatedly to prevent it from cooling down, and the desired shape is obtained without stopping the rotation process. Afterwards, in order to remove the glass container from the pipe, to process the mouth part and to attach handles and bases if necessary, a small amount of molten glass pellet is taken on the end of another iron rod (noble) and glued to the bottom of the form. The part of the glass that will be the mouth is cooled and hit with a small blow to break it without damaging the work, and the mouth is formed in the part where the opening remains. If necessary, handles and bases are added to the glass that takes the desired shape, if decoration is to be made, decorations are made, and it is carefully separated from the noble and kept in the annealing furnace for cooling[2] (Fig. 1).

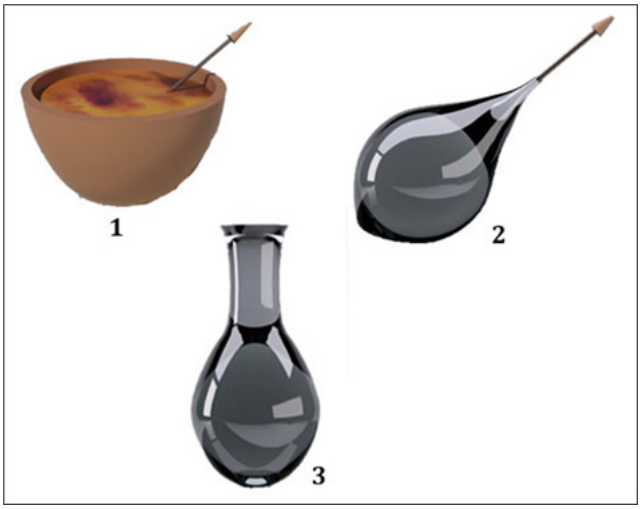

Fig. 1. Free Blowing Technique (designed by Kasım Eker in accordance with the definition of the technique).

A GROUP OF BOTTLES FROM THE LATE ANTIQUE GLASS COLLECTION OF TOKAT MUSEUM

Thirteen funnel-mouthed bottles in the collection of glass artefacts, which constitute a dense group in the Tokat Museum, were included in the study. These works were chosen because they are particularly characteristic in terms of colour and decoration and all of them are intact. Among the bottles detailed in Catalogue Nos. 1–13, five were recovered during the salvage excavations at the Niksar-Leylekler Çeşmesi Mevkii (Catalogue Nos. 1–3, 8, 10) and eight were acquired (Catalogue Nos. 4–7, 9, 11–13). It would be useful to give a brief history of Niksar and the rescue excavations at the Niksar-Leylekler Çeşmesi Mevkii, especially since the necropolis finds are the type of finds that we find more important for the glass production of the city.

Niksar was one of the important cities of the Roman Period, located on the banks of the Lykos (Kelkit) River. The city, which was founded after the collapse of the Persian Empire at the end of the 4th century BC, was called 'Kaberia' or 'Kabira', and Niksar, which was captured by the Roman commander Pompeius in the second half of the 1st century BC, was named "Neocaesarea", which means 'New Place of the Ruler'. The city, which came under the rule of the Pontus state in the 3rd century AD, was destroyed by a great earthquake in 344 AD[3]. The funnel-mouthed bottles among the artefacts unearthed during the rescue excavations in the necropolis area of the Roman Period at Niksar-Leylekler Çeşmesi Mevkii in 1982 under the direction of the Tokat Museum Directorate are within the scope of our study. During the rescue excavations, two different grave types as simple earth graves and chamber graves were uncovered. In addition to glass artefacts, terracotta artefacts and jewellery reflecting the characteristics of the period were also unearthed in these graves.

In both the eastern and western regions dominated by the Roman Empire, bottles were widely used between the 2nd and 5th centuries AD. The bottles, so named because of their inverted funnel-shaped neck, were usually cut flat and left

[2] BAYKAN/BAYKAN 2012, 32; CANAV ÖZGÜMÜŞ 2013, 13, 14; EKER/EKER 2016, Şekil 18; TAVUKÇU 2020, 35.

[3] LAFLI/PATACI 2012, 210.

as such, and sometimes the mouth was rounded with fire after cutting and softened. It can be seen from the density of the finds that the funnel-mouthed bottles, which we have seen since the Early Roman Empire period, continued to be produced and widely used in the Late Roman Empire period. The bottles, which we know that there are differences in the way they were used according to their contents, are generally containers where liquid materials were kept. There is not a wide range of colours in the bottles; green, bluish green and yellowish green colours were generally used. Although there are not many decorative elements on the bottles of late antiquity, the bottles with spherical bodies usually have line decorations made in a cut technique on the neck and body. Among the specimens from the Tokat Museum, all of which are intact, Catalogue Nos. 1–7 have a long funnel-shaped neck, a flat cut rim, a globular body and a slightly sunken base. Catalogue Nos. 6 and 7 have a flatter shoulder than the others and differ in this respect. In terms of colour, Catalogue Nos. 1–4 and 7 are made of yellowish green glass, while Catalogue Nos. 5 and 6 are made of blue glass. Unlike the other artefacts, the presence of horizontal decorations on the neck and body, created by the wheel-cutting technique, is noticeable on these artefacts. It is stated that cut decoration is applied especially in Anatolian examples in this type of bottle, where decoration is not usually seen[4]. As a result of the research and catalogue analyses, this information is supported by the dating of this type of bottles to the late periods. When we examine Catalogue No. 7, it is possible to see that the neck is longer and the body is shorter due to the more flattened shoulder. These spherical-bodied funnel-mouthed bottles, which we have examined in Catalogue Nos. 1–7 were produced from the early Roman period onwards and continued to be used intensively at the end of the period[5]. Isings dated this form, which he analysed in the 'Form 104b' group, and stated that it was produced from the second half of the 3rd century AD and was used intensively, especially in the 4th century AD. It is possible to see the similar ones in form and technique in many museums and excavations in and outside Anatolia. Similar examples from the Tire Museum[6], Eskişehir Museum[7], Kahramanmaraş Museum[8], Silifke Museum[9], Royal Ontario Museum[10], Corning Museum collections[11], Sardes[12] and Hungary[13] funnel mouths and spherical bodies have been dated to the 3rd and 4th centuries AD.

Two of the bottles examined in Catalogue Nos. 8–12 were acquired by the Niksar-Leylekler Çeşmesi Mevkii Salvage Excavation (Catalogue Nos. 8, 10), and three were acquired by purchase (Catalogue Nos. 9, 11, 12). In the works made in the free blowing technique, the details are shaped with a tool. When analysed in terms of form, they have a neck that narrows down from the mouth, which is first drawn out and then folded inwards, a knuckle at the junction of the neck and body, a pear-shaped body, and a slightly sunken base. The bottles without any decorative elements are made of yellowish-green glass. Catalogue No. 12 is slightly different from the others in that the neck is slightly longer and the body slightly narrower. Catalogue No. 12, one of these bottles with an arcuate shaped body, is made of light green glass. The shape of the body is similar to that of Bottle Type Xb (Catalogue No. 108) in the Kahramanmaraş Museum Collection[14]. When we look at the Bodrum examples, similar bottles with similar construction technique, form, colour and dimensions have been dated between the 3rd and 4th century AD[15]. Again, the Sardes[16], Yüksel Erimtan Collection[17] and the Limburg examples[18] are similar in terms of form and construction technique. When these artefacts are compared with their counterparts, they are dated to the 3rd–4th century AD.

The last piece of the study, Catalogue No. 13, was acquired by the museum through purchase. It was produced in the free-blowing technique and consists of an inverted funnel-shaped neck that narrows towards the body, a knuckle between the neck and the body made by compression with a tool, a high, cylindrical body and an inverted base. Although it resembles Catalogue No. 1 in the neck structure, it differs from the other pieces by the long and cylindrical body. The bottle made of yellowish green glass was shaped by the blowing technique, like the other artefacts. Like many vessels made in the blowing technique, it is possible to see the thin wall, which is one of the main features of the blowing technique, in this vessel. Therefore, it has a transparent structure. According to the researches, this form was not widely produced and it is understood that it was used intensively in the 4th century AD[19]. Similar examples are found in the cities of Hungary[20] and Israel[21] and the Knidos example in Anatolia. Although the Cnidus example, which dates to the 4th century AD and later, differs from the Tokat example with its rim, it has been compared especially with the resemblance of the body and neck. Although the artefact is not very common, it can be dated to the 4th–5th century AD since it shows late period characteristics.

CATALOGUE

Catalogue Number: 1

Museum Inventory Number: 2115, Arrival to the Museum: Niksar-Leylekler Çeşmesi Mevkii Rescue Excavation, Lo: 13,5cm A. Diameter: 3,5 cm Base Diameter: 3,8 cm, Technique: Free Blowing, Description: The bottle has a funnel-shaped rim flattened on the wheel, a neck narrowing towards the body, a flattened shoulder and a spherical body form. The bottle is decorated with wheel-formed transverse lines and has a sunken base. Source: Isings 1957, Form 104b;

[4] ERTEN 1999, 172, Fig. 7.
[5] STERN/YALE 1997, 14–17; WİNTER 2010, 101.
[6] GÜRLER 2000, 106.
[7] OLCAY 2001, 155.
[8] EKER 2017, 7.
[9] ERTEN 2018, 39.
[10] HAYES 1975, 111.
[11] WHITEHOUSE 1997, 178.
[12] SALDERN 1980, 117.
[13] BARKOCZI 1988, Pl. LXXXVI, no. 310.
[14] EKER 2014, 162, no. 105.
[15] ÖZET 1998, 143, no. 97.
[16] SALDERN 1980, 25, Pl. 9, no. 175.
[17] LİGHTFOOT/ARSLAN 1992, 195, no. 130.
[18] ISINGS 1971, 68, Fig. 16.
[19] BARAG 1970, 206, 207, Type 18, Fig. 45/1, 4.
[20] BARKOCZI 1988, Taf. LXXXVIII, no. 323.
[21] KATSNELSON 2010, 143–152, Fig. 4, No. 13, 14.

Hayes 1975, 111, no. 420, plt. 26; Whitehouse 1997, 178, no. 312, Eker 2016, Kat. No. Ş55. **MS 3.–4. yüzyıl**

Catalogue Number: 2

Museum Inventory Number: 6386, Presentation to the Museum: Niksar-Leylekler Çeşmesi Mevkii Rescue Excavation, Lo: 13 cm A. Diameter: 3,5 cm Base Diameter: 4,8 cm, Technique: Free Blowing, Description: The thin-walled bottle is transparent. It has a funnel-shaped rim rounded by fire. The neck tapering towards the body to a flattened shoulder, transverse lines on the spherical body made with a wheel, and a sunken base. The neck is particularly dulled. Source: Isings 1957, Form 104b; Hayes 1975, 111, no. 420, plt. 26; Whitehouse 1997, 178, no. 312, **MS 3.–4. yüzyıl**

Catalogue Number: 3

Museum Inventory Number: 5543, Received by the Museum: Niksar-Leylekler Çeşmesi Mevkii Rescue Excavation, Height: 15 cm, Mouth Diameter: 3 cm Base Diameter: 4,5 cm, Technique: Free Blowing, Description: The transparent, thin-walled bottle has a funnel-shaped neck and a distinct tool compression mark on the neck. The base of the bottle with spherical body is pointedly sunk inwards. Source: Harden 1936, no. 191, 193; Isings 1957, Form 104b; Hayes 1975, Plate 21, no. 310; Gürler 2000, no. 131, **MS 3–4.yüzyıl**

Catalogue Number: 4

Museum Inventory Number: 942, Arrival to the Museum: Purchase, Conservation. Height: 13.2 cm, Bottom Diameter: 3.5 cm, Technique: Free Blowing, Description: Broken rim, transition from funnel-shaped neck to flattened shoulder, inverted base at the end of the spherical body, some dulling on the surface, Source: Isings 1957, Form 104b; Hayes 1975, Plate 20, no. 310; Gürler 2000, no. 105, **MS 3–4.yüzyıl**

Catalogue Number: 5

Museum Inventory Number: 3021, Arrival to the Museum: Purchase, Height: 11,5 cm, Mouth Diameter: 2,5 cm Base Diameter: 3 cm, Technique: Free Blowing, Description: Funnel-shaped truncated rim, transition from funnel-shaped neck to spherical body, slightly sunken base, irregular surface, Source: Isings 1957, Form 104b; Gürler 2000, no. 105, Hayes 1975, Plate 20, no. 310, **MS 3–4.yüzyıl**

Catalogue Number: 6

Museum Inventory Number: 3269, Arrival to the Museum: Purchase, Height: 16 cm A. Diameter: 3 cm Base Diameter: 3,5 cm, Technique: Free Blowing, Description: Transparent, thin-walled. Truncated rim, funnel-shaped, transition from long neck to flattened shoulder, inverted base at the end of the globular body, intense matting on the irregular surface, Source: Hayes 1975, no. 289, 403, 420; Vessberg 1952, Taf. VII, no. 20, 21; Barkoczi 1988, Plate LXXXVI, no. 310, **MS 3–4.yüzyıl**

Catalogue Number: 7

Museum Inventory Number: 3268, Arrival to the Museum: Purchase, Height: 11cm Mouth Diameter: 2,5 cm Bottom Diameter: 2.9 cm, Technique: Free Blowing, Description: Fire-smoothed rim, funnel-shaped neck with traces of tool compression, flattened shoulder, globular body, noble mark on the sunken base, intense enamelling on the surface, Source: Isings 1957, Form 104b; Harden 1936, no. 191, 193; Gürler 2000, no. 131; Hayes 1975, Plate 21, no. 310, **MS 3–4.yüzyıl**

Catalogue Number: 8

Museum Inventory Number: 6346, Presentation to the Museum: Niksar-Leylekler Çeşmesi Mevkii Rescue Excavation, Lg: 14,5cm Mouth Diameter: 3 cm Base Diameter: 4,5 cm, Technique: Free Blowing, Description: Translucent and thin-walled structure, inwardly rounded rim, knuckle made by compression with a tool at the transition from the funnel-shaped neck to the body, pear-shaped body, inverted base. Source: Saldern 1980, 117; Atilla/Gürler 2009, Cat. No.274; Güneş 2009, 251, Fig. 3a-b, Cat. No. 3, **MS 3–4.yüzyıl**

Catalogue Number: 9

Museum Inventory Number: 3838, Arrival to the Museum: Purchase, Height: 18 cm, Mouth Diameter: 5.5 cm, Bottom Diameter: 4.5 cm, Technique: Free Blowing, Description: Fire-softened rim rounded inwards, tooled knuckle at the transition from the funnel-shaped neck to the body, pear-shaped body, slightly sunken base, irregular surface, Source: Güneş 2009, 251, Fig. 3a-b, Cat. No. 3; Atilla/Gürler 2009, Katalog No.274; Saldern 1980, 117, **MS 3–4.yüzyıl**

Catalogue Number: 10

Museum Inventory Number. 6359, Presentation to the Museum: Niksar-Leylekler Çeşmesi Mevkii Rescue Excavation, Height: 13 cm Mouth Diameter: 4.5 cm Base Diameter: 3.5 cm, Technique: Free Blowing, Description: Inwardly rounded rim, knuckle made with a tool at the transition from the funnel-shaped neck to the body, pear-shaped body, slightly sunken base, irregular surface, Source: Saldern 1980, 117; Güneş 2009, 251, Fig. 3a-b, Cat. No. 3; Atilla/Gürler 2009, Cat. No. 274, **MS 3–4.yüzyıl**

Catalogue Number: 11

Museum Inventory Number: 993, Type of Museum Acquisition: Purchase, Height: 14 cm, Bottom Diameter: 4.5 cm, Technique: Free Blowing, Description: Fracture in the inwardly rounded rim, knuckle made with a tool at the transition from the funnel-shaped neck to the body, pear-shaped body, dulling on the irregular surface, Source: Atilla/Gürler 2009, Cat. No.274; Güneş 2009, 251, Fig. 3a-b, Cat. No. 3, **MS 3–4.yüzyıl**

Catalogue Number: 12

Museum Inventory Number: 959, Type of Accession: Purchase, Height: 17 cm, Mouth Diameter: 3.5 cm, Bottom Diameter: 4 cm, Technique: Free Blowing, Description: Extruded and rounded funnel-shaped rim, cylindrical neck, pear-shaped body, inverted base, air bubble structure, Source: Barkoczi, 1988, Tafel LXXXVIII, no. 323; Saldern, 1980, Plate 9, no. 175, **MS 3.–4. Yüzyıl**

Catalogue Number: 13

Museum Inventory Number: 1243, Arrival to the Museum: Purchase, Height: 11,6 cm Mouth Diameter: 1,5 cm, Bottom Diameter: 3,3 cm, Technique: Free Blowing, Description: Folded inwards and rounded by fire, funnel-shaped neck, cylindrical body, sunken base, clean surface, Source: Katsnelson 2010, 149, Fig. 4, No. 13,14; Barkoczi 1988, Taf. LXXXVIII, no. 325, 327; Tozluca, 2024, Fig. 14, no. 106, **MS 4.–5. Yüzyıl**

Table 1. Tokat Museum Late Roman Funnel Bottle Examples.

 Catalogue Number 1 Env. No. 2115	 Catalogue Number 2 Env. No. 6386	 Catalogue Number 3 Env. No. 5543	 Catalogue Number 4 Env. No. 942
 Catalogue Number 5 Env. No. 3021	 Catalogue Number 6 Env. No. 3269	 Catalogue Number 7 Env. No. 3268	 Catalogue Number 8 Env. No. 6346
 Catalogue Number 9 Env. No. 3838	 Catalogue Number 10 Env. No. 6359	 Catalogue Number 11 Env. No. 993	 Catalogue Number 12 Env. No. 959
 Catalogue Number 13 Env. No. 1243			

CONCLUSION

In this study, which is thought to contribute to the level of glass production and use in the Late Roman Period in the Black Sea region, 13 glass bottles belonging to the Late Roman Period in the glass collection in the museum were analysed. These bottles were made in free blowing technique and shaped with tools. The bottles are generally undecorated, especially Catalogue Nos. 1 and 2, which have spherical bodies and wheel-made transverse line decorations on the body. The common feature of the bottles made without a base is the inverted funnel-shaped neck or rim, although they differ in some aspects. As a feature of the blowing technique, the thin-walled bottles are transparent and have a delicate structure. The bottles were brought to the museum as grave finds during the rescue excavations at Niksar-Leylekler Çeşmesi Mevkii (Catalogue Nos. 1–3, 8, 10) and through acquisition (Catalogue Nos. 4–7, 9, 11–13), where glass artefacts are commonly acquired in almost all museums. It is possible to see that the inverted funnel-shaped neck and mouth were widely used in bottles in the late Roman period. This type of bottle, which we encounter from the 3rd century AD onwards, was widely used, especially in the following century, as evidenced by the density of the finds. When all the glass artefacts in the museum are analysed and previous researches are considered, it is seen that Tokat and its surroundings had a rich culture and trade in the ancient period[22]. In the same publication, he states that this type of vessel was definitely produced in the

[22] KHRUŠKOVA 2009, 337.

Bosporus region and was not previously known outside the Northern Black Sea region.

It is known that there were glass production centres in many parts of Anatolia in the Late Roman Period, but when we consider the Black Sea region as the Black Sea region, it is possible to see that glass production in the Northern Black Sea region has existed since the 7th century BC and became more widespread in the Late Roman Period. The glass artefacts found in the tombs unearthed after the excavations in Ukraine, the glass production workshops, and waste glass prove that there was a glass production in the Northern Black Sea region[23]. Since the mentioned places are located in the Black Sea region, it is possible that they were brought to the coastal cities of the Black Sea by sea trade and distributed from there to the interior. When we look at the publication of Taştemür, who made a detailed research on where Anatolian glass production centres or glass furnaces were located, it is seen that the Black Sea region is missing in this regard[24]. However, it is thought that the excavations and other research carried out in the ancient city of Komana Pontika, Niksar Castle, and Sebastopolis Ancient City in Tokat will shed light on whether there was a glass workshop in the city or whether the city was a production centre in the Late Roman period.

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