



İSTANBUL UNIVERSITY  
CERRAHPAŞA

# ANNALES

du 21<sup>e</sup> CONGRÈS de l'ASSOCIATION  
INTERNATIONALE pour l'HISTOIRE du VERRE

3-7 Septembre 2018, Istanbul



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İstanbul 2018

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Üzlifat Özgümüş

Ergün Laflı

Ömür Bakırer

Ömür Dünya Çakmaklı

İSTANBUL 2021

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*Cover image: Roman handle applique found in the Marmaray-Metro  
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*in memoriam*  
YOKO SHINDO

## CONTENTS

PREFACE- Sylvia FÜNFSCHILLING .....	11
PRÉFACE- Sylvia FÜNFSCHILLING .....	13
VORWORT- Sylvia FÜNFSCHILLING .....	15
<b>2<sup>nd</sup> - 1<sup>st</sup> Millenium BC/Bronze Age/Iron Age/ Archaic/Late Classical Glass</b>	
<i>HENDERSON Julian, CHENERY Simon, MATSUMURAKI Kimiyoshi, EVANS Jane, OMURA Sachihiro</i>	
<b>DID THE HITTITES MAKE GLASS? .....</b>	<b>17</b>
<i>ENGİN Atilla, ATİK Şeniz, ÖZER Ali</i>	
<b>MIDDLE BRONZE AGE VITREOUS MATERIAL OF OYLUM HÖYÜK AND NEW FINDINGS.....</b>	<b>35</b>
<i>BROSCHAT Katja</i>	
<b>GLAS AUS DEM GRAB DES TUTANCHAMUN .....</b>	<b>49</b>
<i>ŞENYURT Yücel, ERTEN Emel</i>	
<b>A GLASS HORSE RHYTON FROM AŞAĞI SALAT MOUND IN DİYARBAKIR, TURKEY .....</b>	<b>61</b>
<i>JONES Janet, MARSH Ben</i>	
<b>A GLASS-BASED HISTORY OF GORDION .....</b>	<b>69</b>
<i>KOLESNYCHENKO Anzhelika, KIOSAK Dmytro</i>	
<b>THE ANCIENT GLASS-WORKSHOP OF YAHORLYK SETTLEMENT IN THE NORTHERN PONTIC REGION .....</b>	<b>81</b>
<i>IGNATIADOU Despina</i>	
<b>THE FACES ON THE PENDANTS .....</b>	<b>95</b>

## Roman Glass

*LIGHTFOOT Christopher*

**ANCIENT GLASS IN ROMAN ITALY BEFORE THE INVENTION OF BLOWING: CAST MOSAIC GLASS..... 109**

*ŠTEFANAC Berislav*

**ROMAN NON-BLOWN GLASS FROM ZADAR (CROATIA)..... 119**

*NENNA Marie-Dominique*

**THE GLASS FROM HEGRA (MADÂ'IN SÂLIH, SAUDI ARABIA)..... 133**

*DIANI Maria Grazia, REBAJOLI Francesca*

**CONTRIBUTION TO THE MAP OF DISTRIBUTION OF HEAD-SHAPED VESSELS IN ITALY: AN UNCONVENTIONAL BEAKER FROM VERCELLI (PIEDMONT)..... 141**

*LAZAR Irena*

**NEW FINDS OF ROMAN HIGH QUALITY GLASS FROM ROMULA (PANNONIA) ..... 149**

*ERTEN Emel*

**GLASS FROM OLBA IN ROUGH CILICIA..... 161**

*STERRET-KRAUSE Allison*

**RECONSTRUCTING LIFE FROM THE LITTER IN POMPEII'S SOUTHWEST CORNER: GLASS FROM THE EXCAVATIONS OF THE POMPEII ARCHAEOLOGICAL RESEARCH PROJECT: PORTA STABIA..... 171**

*HANAR Elif*

**MOLD-BLOWN GLASS VESSELS IN DİYARBAKIR MUSEUM ..... 183**

*ZACHARIAS Nikolaos, OIKONOMOU Artemios, ARAPOGIANNI Xenia*

**TECHNOLOGY AND USE OF GLASS DURING THE CLASSICAL - HELLENISTIC TIMES:A CASE STUDY OF GLASS KNUCKLEBONES ..... 195**

*IVANOV Mario, CHOLAKOVA Anastasia, GRATUZE Bernard*

**GLASS FURNACES FROM SERDICA - AN EXAMPLE OF ROMAN PRACTICE OF GLASS MIXING ..... 207**

*ÇELİKBAŞ Ersin, KELEŞ Vedat*

**GLASS FINDS FROM LATE ROMAN HOUSE IN PAPHLAGONIAN HADRIANOPOLIS ..... 221**

*BULJEVIĆ Zrinka*

**MOULD-BLOWN GLASS VESSELS FROM SALONA ..... 233**

*AKKUŞ KOÇAK Emine*

**GLASS WORKSHOPS AND GLASS PRODUCTION IN METROPOLIS (IONIA) ..... 245**

*TRAVIGLIA Arianna, PANIGHELLO Serena, MORETTO Ligia, ORSEGA Emilio Francesco,  
BERNARDONI Anna, FLOREANI Stefi, MORO Giulia, MANDRUZZATO Luciana*

**PICKING UP THE HINT: RAW GLASS CHUNKS AND GLASS WASTES FROM  
PLOUGHSOIL COLLECTION IN AQUILEIA (ITALY)..... 255**

*GRÜNEWALD Martin*

**GLÄSERNE GRABFUNDE SPÄTANTIKER ZEIT AUS DEM RHEINISCHEN  
BRAUNKOHLEREVIER (DEUTSCHLAND)..... 265**

### **Late Roman/Byzantine /Early Islamic/Medieval Glass**

*ŽIVANOVIĆ Miloš*

**GLASS WORKING ACTIVITIES IN LATE ROMAN DOCLEA (MONTENEGRO)..... 283**

*COSYNS Peter, CEGLIA Andrea, THIENPONT Hugo, von WARTBURG Marie-Louise*

**A LATE ANTIQUE GLASS WORKSHOP AT THE APHRODITE SANCTUARY OF  
PALAEPAPHOS, KOUKLIA (CYPRUS) ..... 291**

*SCHINTLMEISTER Luise*

**GLASS OF A LATE ANTIQUE-MEDIEVAL URBAN QUARTER IN EPHEOS/TURKEY  
(4<sup>TH</sup>/5<sup>TH</sup>–12<sup>TH</sup> CENTURIES CE) - PRELIMINARY REPORT ..... 307**

*GORIN ROSEN Yael*

**SECONDARY GLASS PRODUCTION IN ISRAEL - BRIEF SUMMARY  
OF THE FINDS AND NEW DISCOVERIES ..... 319**

*RUMYANTSEVA Olga, YUBITCHEV Mikhail, PETRAUSKAS Oleg,*

*CHERVYAKOVSKAYA Maria, KHANIN Dmitry, TRIFONOV Alexander*

**‘BARBARIAN’ BEAKERS WITH FACET CUT DECORATION: COMPOSITION,  
ORIGIN, SOCIAL AND CULTURAL CONTEXT ..... 333**

*BAYBO Selda*

**EIN ÜBERBLICK ÜBER DIE GLASFUNDE VON LIMYRA (1969-2012)  
UND DIE BEFUNDE ZUR GLASPRODUKTION AUS DEN OSTTORGRABUNGEN ..... 349**

*STERN E. Marianne Stern*

**GLASS FROM THREE BYZANTINE CHURCHES AT ANCIENT ANEMURIUM (TR) . 363**

*GENÇ Deniz, AKYOL Ali Akın*

**ARCHAEOLOGICAL INVESTIGATIONS OF THE EARLY BYZANTINE  
SITE SIDE GLASS FINDS..... 375**

<i>CHINNI Tania, FERRERI Debora, CIRELLI Enrico</i> <b>GLASSWORKING IN CLASSE: WORKING DEBRIS FROM THE SOUTHERN DISTRICT</b> .....	389
<i>COUSINAS Nadia</i> <b>NEW LIGHT ON THE EARLY BYZANTINE GLASS FROM ELEUTHERNA PYRGI (CRETE)</b> .....	399
<i>TAŞTEMUR Emre, DİNÇ Münteha</i> <b>GLASS OBJECTS FOUND IN AKMONIA CITY SURFACE RESEARCH</b> .....	417
<i>STORCHAN Benyamin, GANOR Adrienne</i> <b>GLASS, POTTERY, PLASTER AND IRON: PRELIMINARY TECHNOLOGICAL INSIGHTS FROM THE WINDOWS AT THE CHURCH OF THE GLORIOUS MARTYR IN THE HOLY LAND</b> .....	433
<i>NOBACK Andreas, GROBE Lars O, LANG Franziska</i> <b>MODELLING THE EFFECTS OF DAYLIGHT SCATTERING BY WINDOW GLASS: THE CASE OF SIXTH CENTURY HAGIA SOPHIA IN ISTANBUL</b> .....	443
<i>BAKIRER Ömür, ERCİYAS D. Burcu</i> <b>MEDIEVAL GLASS FINDS FROM THE KOMANA EXCAVATIONS NEAR TOKAT, TURKEY</b> .....	457
<i>DE JUAN ARES Jorge, SCHIBILLE Nadine</i> <b>LATE ROMAN AND EARLY ISLAMIC GLASS IN SPAIN: PRODUCTION AND CONSUMPTION</b> .....	471
<i>WINTER Tamar</i> <b>OPULENCE ON THE DESERT FRINGES? GLASS ASSEMBLAGES OF THE EARLY ISLAMIC PERIOD FROM THE NORTHEASTERN NEGEV, ISRAEL</b> .....	485
<i>KÜRTÖSI Brigitta Maria</i> <b>A DIVERSE PRODUCTION METHOD OF GOLD GLASS MOSAIC TESSERAЕ FROM MEDIEVAL HUNGARY, ROYAL BASILICA OF ALBA REGIA/SZÉKESFEHÉRVÁR</b> .....	497
<i>STOLYAROVA Ekaterina</i> <b>MEDIAEVAL GLASS BRACELETS IN RUS' (ACCORDING TO THE FINDS IN THE TOWNS OF THE NORTH-EAST OF RUS')</b> .....	507
<b>Islamic Glass</b>	
<i>VALIULINA Svetlana</i> <b>ISLAMIC GLASS OF BILYAR: IMPORT AND PRODUCTION</b> .....	521

*ARVEILLER-DULONG Véronique*

**LES VERRES ISLAMIQUES D'ANTINOÉ (MOYENNE-ÉGYPTE)  
CONSERVÉS AU LOUVRE: UN APERÇU ..... 529**

*GEYİK Gül*

**ISLAMIC GLASS IN SOME ANATOLIAN MUSEUMS ..... 539**

*ÖZAKIN Rabia, CANAV-ÖZGÜMÜŞ Üzlifat, KANYAK Serra, ÇELİK İzzet Umut*

**DECORATIVE WINDOW GLASS FROM SOME OTTOMAN TOMBS IN ISTANBUL .. 549**

### **European Glass**

*TOPIĆ Nikolina*

**LATE MEDIEVAL GLASS LAMPS FROM DUBROVNIK ..... 559**

*MEDICI Teresa*

**A NOTE ON LATE MEDIEVAL AND EARLY MODERN  
OPAQUE RED GLASS VESSELS ..... 569**

*JARGSTORF Sibylle*

**FICHTELGEBIRGSGLAS ..... 579**

*FONTAINE-HODIAMONT Chantal, WOUTERS Helena, LEFRANCQ Janette*

**LE VERRE VÉNITIEN SOUFLÉ-MOULÉ AUX ARMES D'ANVERS, DEUXIÈME  
MOITIÉ DU XVI<sup>e</sup> SIÈCLE. APPROCHE TYPOLOGIQUE, ANALYTIQUE  
ET HISTORIQUE ..... 587**

*LIKHTER Ju. A.*

**GLASS FAÇON DE VENISE FROM THE EXCAVATIONS IN MOSCOW  
AND OTHER CITIES (VYAZMA, MANGAZEYA) ..... 597**

*JOVIĆ GAZIĆ Vedrana*

**MAPPING OF THE 17TH CENTURY GLASS LAMPS ON THE EASTERN  
ADRIATIC COAST - CESENDELLO TYPE (HANGING LAMP) ..... 609**

*ANTONARAS Anastassios*

**OTTOMAN-ERA (17TH AND 19TH-CENTURY), GLASS LAMPS FROM  
CHURCH A' IN PLATAMONAS CASTLE ..... 621**

*KOS Mateja*

**GEORG FRANZ KREYBICH AND HIS TRAVEL TO LJUBLJANA  
(LAIBACH IN KRAIN) IN 1681 ..... 629**

*COSYNS Peter, DE VOS Annemie, CEGLIA Andrea, WARMENBOL Eugène*  
**THE ALEXANDER MEDALLION OF THE MAS, ANTWERP  
(BELGIUM) RECONSIDERED ..... 637**

**General Themes**

*ŠTEFANAC Marko, ŠTEFANAC Berislav*  
**EXPERIMENTAL APPROACH TO MAKING EARLY ROMAN  
FREE-BLOWN GLASS FORMS..... 649**

*LARSON Katherine A.*  
**BUILDING A COLLECTION: RAY WINFIELD SMITH AND  
THE CORNING MUSEUM OF GLASS ..... 657**

**INDEX OF AUTHORS..... 669**

**PHOTOGRAPHS ..... 671**

HANAR Elif

## **MOLD-BLOWN GLASS VESSELS IN DİYARBAKIR MUSEUM**

The city of Diyarbakir, located in the heart of Mesopotamia and close to the trade routes in Syria and the Mediterranean basin, has hosted many civilizations from the Early Ages to the present. Its strategic position, which enriches the cultural structure of the city, has caused it to interact with the Syrian and Mediterranean cultures. This interaction has affected every aspect of life and also glass production. Therefore, many different forms of glass vessels produced by using different techniques that were obtained from the province of Diyarbakir and its surroundings, and especially the mold-blown ones, should be considered as clear evidences of this interaction.

In the collections of Diyarbakir Museum, there are 583 glass vessels, most of which are unpublished examples. This study focuses on only 55 of these glass vessels produced by the mold- blowing technique. They com-

prise 1 date-shaped bottle, 2 grape-shaped bottles, 9 head-shaped bottles, 21 ribbed bottles, 13 sprinklers, 4 jugs and 2 amphoriskoi. 54 of these glass vessels were acquired through purchases, confiscations, transfers, excavations and grants. However, only one of these examples (Fig. 48) was found in a rock tomb that was discovered on an agricultural land belonging to Salihli village in Ergani during a salvage excavation carried out by the Diyarbakir Museum. Moreover, only one of these glass vessels (Fig.51-52) was cited in a previously published article<sup>1</sup>.

### **Date-Shaped Bottle**

The mold-blowing technique enables glass workers to produce glass vessels in the shape of many different objects<sup>2</sup>. It is generally believed that date-shaped glass vessels were produced in the glass workshops

---

1 BARIN 2007.

2 GROSSMANN 2002, 34.



Fig. 1:  
Date Shaped  
Bottle. 9,4 cm.



Fig. 2:  
Grape Shaped  
Bottle. 8,3 cm.



Fig. 3:  
Grape Shaped  
Bottle. 8,6 cm.

in Syria and Palestine. They were one of the most widely produced vessels all along the Mediterranean Coast<sup>3</sup>. These date-shaped or pine cone-shaped glass vessels<sup>4</sup> were used to preserve medicine and perfume.

The unique date-shaped bottle (Fig.1) in the collection of Diyarbakır Museum was acquired through purchase. It has a thick-walled, outwardly rounded rim, a short cylindrical neck, a date shaped body and a flat bottom. When compared with similar examples<sup>5</sup>, it can be dated back to 1<sup>st</sup>–2<sup>nd</sup> CE. in terms of both the form and decorative characteristics.

### Grape-Shaped Bottles

Produced in the form of a bunch of grapes<sup>6</sup> in the period from the end of the 1<sup>st</sup> CE. to the 3<sup>rd</sup> CE., these glass vessels were sometimes made as a joint of grapes in a bunch and sometimes in three bunches. They are made of brown glass in general and have purple and green colored examples resembling the real grape colors<sup>7</sup>.

The two grape-shaped brown glass vessels (Fig. 2–3) in the museum are partially thick-walled and similar in terms of color, form, decoration, and size. They have folded rims, short cylindrical necks, grape bunch shaped bodies and rounded bottoms. When



Fig. 4:  
Grape Shaped  
Bottle. 10,6 cm.



Fig. 5:  
Grape Shaped  
Bottle. 9,5 cm.

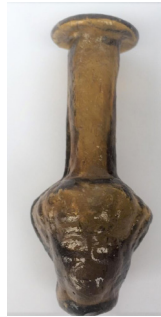


Fig. 6:  
Grape Shaped  
Bottle. 5,5 cm.



Fig. 7:  
Grape Shaped  
Bottle. 5,8 cm.



Fig. 8:  
Grape Shaped  
Bottle. 9 cm.



Fig. 9:  
Grape Shaped  
Bottle. 8,1 cm.

3 LIGHTFOOT 1989, 75.

4 ENGLE 1978, 90.

5 ISINGS 1957, 94, Form 78/D; MATHESON 1980, 60, Fig.140; HAYES 1975, 33, Fig.89; CANAV 1985, 36, Fig.17; OLIVER 1980, 64, Fig.60; GROSSMANN 2002, 34, Fig.34; TAIT 1991, 73, Fig.93; YURTSEVEN 2006, 107, Fig.38; ISRAELI 2003, 140, Fig.150; ANTONARAS 2006, 76, Fig.117; SMITH 1982, Fig.6, No.57; ÖZET 1987, 604, Fig.10; LUCKNER 1994, 89, Fig.64; LIGHTFOOT 2017, 58, Cat.27; BERNET 1979, 54, Fig.73; STERN 1995, 117, Fig.99; WHITEHOUSE 2001, 47, Fig.519; BARAG 1985, PL.14, No.119.

6 ISINGS 1957, 94.

7 GROSSMANN 2002, 35.

compared to similar examples<sup>8</sup>, the grape-shaped bottles can be considered as the products of the 2<sup>nd</sup> – 3<sup>rd</sup> CE.

### Head-Shaped Bottles

The earliest examples of head-shaped bottles are from the Archaic Period. In this period, molds made of terracotta and bronze materials were used for the production of head shaped vessels. These vessels are considered as the prototypes of the glass ones that were commonly produced in the Roman period<sup>9</sup>.

These bottles are known to have been produced with a single head (faced) in the first half of the 1st CE. while they gained double or more heads from the 2<sup>nd</sup> CE. and on<sup>10</sup>. The distinctive and rare examples of these long cylindrical-necked, head shaped, and flat-bottomed bottles can be dated back to 3<sup>rd</sup> CE.<sup>11</sup>

The 9 human head-shaped bottles in the museum have all wide rims, cylindrical necks and flat bottoms and must be categorized according to the number of heads on their body. The bodies of two of these bottles are in the form of a single human head (Fig. 4–9); two of them are in the form of two human heads (Fig. 10–11), and one of them is in the form of three human heads (Fig. 12).

Isings<sup>12</sup> has defined the bottles decorated with a single human head as Form 78/A and with two human heads as Form 78/B, dating them to the 2<sup>nd</sup> CE. In addition, in some stud-



Fig. 10:  
Grape Shaped  
Bottle. 10,8 cm.



Fig. 11:  
Grape Shaped  
Bottle. 9,7 cm.



Fig. 12:  
Ribbed Flask.  
6,7 cm



Fig. 13:  
Ribbed Flask.  
6,8 cm



Fig. 14:  
Ribbed Flask.  
10 cm



Fig. 15:  
Ribbed Flask.  
6,3 cm



Fig. 16:  
Ribbed Flask.  
6,2 cm



Fig. 17:  
Ribbed Flask.  
5,7 cm



Fig. 18:  
Ribbed Flask.  
5,7 cm



Fig. 19:  
Ribbed Flask.  
6,6 cm



Fig. 20:  
Ribbed Flask.  
6,3 cm



Fig. 21:  
Ribbed Flask.  
4,5 cm.

8 ISINGS 1957, 94, Form 78/E; HONEY 1946, 26, Kat.5/C; STERN 1995, 181-190, Fig.111-119; TAIT 1991, 73, Fig.93; BERNET 1979, 54, Fig.75; ANTONARAS 2006, 76, Fig.3/118; SMITH 1982, Fig.6, No.71; GROSSMANN 2002, 35, Fig.35; HORICHT 1991, 83, Fig.17/C.

9 GROSSMANN 2002, 30.

10 GROSSMANN 2002, 30; GURLER 2000, 71.

11 HAYES 1975, 33.

12 ISINGS 1957, 93, Form 78/B.



Fig. 22:  
Ribbed Flask.  
5,9 cm



Fig. 23:  
Ribbed Flask.  
5,8 cm



Fig. 24:  
Ribbed Flask.  
5,2 cm



Fig. 25:  
Ribbed Flask.  
5,9 cm



Fig. 26:  
Ribbed Flask.  
7,8 cm



Fig. 27:  
Ribbed Flask.  
8,2 cm



Fig. 28:  
Ribbed Flask.  
6,6 cm



Fig. 29:  
Ribbed Flask.  
7,7 cm



Fig. 30:  
Ribbed Flask.  
4,9 cm



Fig. 31:  
Ribbed Flask.  
7 cm



Fig. 32:  
Ribbed Flask.  
5,2 cm



Fig. 33:  
Ribbed Flask.  
5,3 cm

ies<sup>13</sup>, the head-shaped bottles are mentioned to have been produced in 2<sup>nd</sup>–3<sup>rd</sup> CE. Similarly, the head-shaped bottles evaluated in the previous studies and the bottles in the museum collection were found to be similar in terms of form and decoration characteristics. This similarity can lead us to date the Diyarbakır samples to 2<sup>nd</sup>–3<sup>rd</sup> CE.

### Ribbed Flasks

It is known that the glass vessels which were produced in the 3<sup>rd</sup> CE. are decorated with ribs. These vessel examples, which have both onion bodies and conical bodies, are considered to be typical for the 3<sup>rd</sup> CE. The bottoms and necks of some of these samples are similar to bottles and unguentaria from earlier periods<sup>14</sup>.

Since the form and decoration in the production of ribbed flasks are different than the examples of flasks mentioned above, the 26 ribbed flasks in the collection of Diyarbakır Museum should be divided into sub-categories among themselves. For example, the ribbed and single-handled flask presented in Fig.13 has a handle and short cylindrical neck, spherical body and a slightly concave bottom. We can compare this flask to the 1st CE. Sidonian parallels<sup>15</sup>. It is necessary to consider them as a similar production to the Syrian-Palestinian bottles of eastern Mediterranean origin. The reason is that although samples of ribbed bottles with the shape of

13 KUNINA 1997, 283, Fig.154; GROSSMANN 2002, 30, Fig.30; OLIVER 1980, 64, Fig.61; HONEY 1946, 26, Kat.516; LIGHTFOOT 2017, 59, Cat.28, BERNET 1979, 72, Fig.118; ISRAELI 2003, 221, Fig.2723; AKAD, FIRATLI and KOCABAŞ 1984, 19, Fig.47, FLEMING 1999, 16, Fig.4, WEINBERG and MCCLELLAN 1992, 127, Fig.100; HAYES 1975, 50, Fig.94; GÜRLER 2000, 72, Fig.91, OZET 1987, 604, Fig.11.

14 ISINGS 1957, 119.

15 ÖZGÜMÜŞ 1989, 41, Fig.4; CANAV 1985, 37, Fig.18.

a melon or pumpkin were recovered from many graves, dating from the 1<sup>st</sup> CE., they were not recorded in the western settlements. As a result, they are thought to be imported from the region of Syria-Palestine<sup>16</sup>.

Another ribbed flask presented in Fig.14 has an outward splaying rim, concave neck that was squeezed by a tool, oval body and round bottom. Its form and decoration are closely similar to the one from Afyon Museum which dates back to 1<sup>st</sup> CE.<sup>17</sup>

The ribbed body and single-handled flask in Fig.15 has a rim with a drain. The rim was first dragged outward and then folded inward. It has a cylindrical neck, cylindrical body with a slightly diminishing shoulder, and flat bottom. The examples<sup>18</sup> which have similar formal or decorative characteristics are dated to the second half of the 3<sup>rd</sup> CE. and lead us to date the Diyarbakır example back to the 3<sup>rd</sup>-4<sup>th</sup> CE.

There are 21 miniature ribbed flasks given in figures from 16 to 36. The upper parts of the rims of these thick walled and green-colored flasks were rounded after being folded downwards, upwards and inwards. They have short cylindrical necks narrowing towards the body, an apparent tool mark on the neck, spherical bodies and round bottoms. While all these vessels are of approximately the same size, the depth and the shape of the ribs on their bodies differ from each other. In addition to the deep and distinct rib patterns, there are also superficial ones. When published sources are reviewed,



Fig. 34:  
Ribbed Flask.  
5,1 cm



Fig. 35:



Fig. 36:  
Ribbed Flask.  
5,5 cm



Fig. 37:  
Gutturium.  
7,3 cm



Fig. 38:  
Gutturium.  
7,7 cm



Fig. 39:  
Gutturium.  
8,2 cm



Fig. 40:  
Gutturium.  
8,5 cm



Fig. 41:  
Gutturium.  
7,7 cm



Fig. 42:  
Gutturium.  
8,5 cm



Fig. 43:  
Gutturium.  
7,9 cm



Fig. 44:  
Gutturium.  
8,6 cm



Fig. 45:  
Gutturium.  
4,9 cm

16 STERN 1995, Cat.50-51,149-150.

17 LIGHTFOOT, 1989, 78, PL.3, Fig.4.

18 ISINGS 1957, 118, Form 98. OLIVER 1980, 125, Fig.220. VESSBERG 1952, PL.6, No.8; ISRAELI 2008, 378, Fig.99; HAYES 1975, 113, Fig.428; BERNET 1979, 139, Fig.249.



Fig. 46:  
Gutturium.  
9,1 cm



Fig. 47:  
Gutturium.  
9,1 cm



Fig. 48:  
Gutturium.  
7,5 cm



Fig. 49:  
Gutturium.  
10,4 cm



Fig. 50:  
Square Bottle.  
10,5 cm



Fig. 51:  
Octagonal  
Bottle. 17,7 cm

it can be concluded that the ribbed miniature flasks<sup>19</sup> were produced between 3<sup>rd</sup>–4<sup>th</sup> CE.

### Gutturium

These vessels, also known as sprinklers (gutturium), can be wide rimmed, long-necked, sometimes with bulbous-bodied and sometimes with conical-bodied. In some examples of these vessels, as seen in the early bottles and unguentaria, there is a slimming down in the inner part of the neck, where it joins the body. There are also samples without this kind of a slimming on the inner part of the neck<sup>20</sup>.

In the museum, there are 13 vessels of this kind, also known as sprinklers. They

get narrower along the inner side of their neck in the form of a set of circular glass with a hole on its center which slows down the flow of liquid in it. Furthermore, they are decorated with embossed zigzags, intersecting diamonds and concentric circle motifs.

9 green sprinklers (from Fig. 37 to Fig. 45) are similar in terms of form, decoration and size. For example, their rims are pulled outward, folded inward, and rounded on the upper part. Besides, they have wide, graded inner sections, slightly inclined rims, long cylindrical necks, spherical bodies with slightly compressed shoulders (Fig. 44 conical) and flat bottoms. They have bodies embossed with zigzags.

The bodies of 2 other sprinklers are decorated with intersecting diamonds (Fig. 46–47). While the rim of Fig. 46 is wide and its inner part is slightly inclined, the rim of Fig. 47 is pulled outward, folded inward, and rounded on the upper part. However, both vessels have long cylindrical necks, tool mark on the necks, spherical bodies and flat bottoms.

One of the last two sprinklers was found in a rock tomb during a salvage excavation carried out by Diyarbakır Museum in Salihli Village (Fig. 48). The rim of this sprinkler is pulled outward, folded inward, and rounded on the upper part. It has a partially wide and slightly inclined rim that is slanted on the interior. It has a cylindrical neck, tool marks on its neck, spherical body, and a slightly concave bottom. Moreover, it has embossed concentric and circular motifs on its body. Another sprinkler, which was brought to the museum collection through purchase, is similar to the one found in Salihli but its body is onion-shaped (Fig. 49).

19 ISINGS 1957, 119, Form 101; ÖZTÜRK 2013, 120, Fig. 62; WHITEHOUSE 2001, 158, Fig. 678; STERN 1995, 196, Fig. 132; HAYES 1975, 266, Fig. 294; SIMPSON 2003, 147, Fig. 12.

20 ISINGS 1957, 120.

These sprinklers were found widely in 3<sup>rd</sup>-4<sup>th</sup> CE. contexts<sup>21</sup>. It is clear that the sprinklers described in detail above are the production of the same period.

### Bottles

In order to serve users's varying needs and meet the demand of the new products, some of the glass workshops worked with a special glass production technology which usually addressed the industry and trade<sup>22</sup> of this material. In the 2<sup>nd</sup> CE., different and new vessel forms were produced by the mold-blowing technique. In addition to being decorative, square, large and small glass vessels which were remarkable for their functional qualities started to be produced<sup>23</sup>.

Prismatic vessels were preferred because they were more functional in the trade of liquids due to the easy packaging compared to cylindrical glass vessels<sup>24</sup>. Their thick walls were a major protection to prevent easy breakage. Merchants preferred secure and large-sized glass vessels to transport perishable products such as oil and wine. Moreover, the glass vessels produced in the same mold provided the merchants with the opportunity<sup>25</sup> to transport large quantities of products as well as the convenience for packing their goods<sup>26</sup>.

The glass vessels offer the advantages of keeping the smell and taste of the material

stored in the glass unchanged and facilitating the visibility of the material contained therein. Some of the square-bodied glass vessels produced by the mold-blowing technique, which had been designed probably by glass workshops and served as certain trademarks, were used by traders<sup>27</sup>. The bottom of some bottles were often embossed with geometric patterns such as a rosette in a ring<sup>28</sup>.

In Diyarbakir Museum, there are 4 bottles which can be categorized according to their forms:

**Square Bottle:** Both the free blowing and the mold blowing techniques were used in the production of square bottles. However, mold-blown examples are quite high. Free-blown ones are generally seen around the Mediterranean. Examples produced by them old blowing technique are generally thin-walled, bluish-green in color and their bottoms are stamped<sup>29</sup>.

The unique square bottle in the museum (Fig. 50) is a thick-walled and green colored vessel. It has a slightly rounded rim, a short cylindrical neck, a square body compressed on the shoulder and a flat bottom. The vessel has a handle that starts from the neck and ends on the shoulder and has a grooved ribbon on its upper part. Scholarly sources have asserted that square bottles similar to Diyarbakır example were widely produced in the 1<sup>st</sup>-2<sup>nd</sup> CE.<sup>30</sup>

21 ISINGS 1957, 119, Form 101. HAYES 1975, 78, Fig.282; OLIVER 1980, 120, Fig.208; BERNET 1979, 59, Fig.89; AKAD, FIRATLI and KOCABAŞ 1984, 33, Fig.113; ÖZTÜRK 2013, 117, Fig.59; ÖZET 1987, 604, Fig.9; MATHESON 1980, 79, Fig.207; BARKOCZI 1960, 54, Fig.123; CANAV1985, 40, Fig.27; STERN 1995, 196-197, Fig.129-132; LIGHTFOOT and ARSLAN 1992, 29, Fig.94; LIGHTFOOT 1989, 124-125, Fig.303.  
22 GROSSMANN 2002, 22.  
23 TAIT 1991, 81.  
24 MEYER 1992, 31.  
25 GROSSMANN 2002, 22; ISINGS 1957, 63.  
26 OLIVER 1980, 23.

27 GROSSMANN 2002, 22.  
28 GROSSMANN 2002, 23; ISINGS 1957, 64.  
29 ISINGS 1957, 63-64.  
30 ISINGS 1957, 63, Form 51/A; TAIT 1991, 82, Fig.100; WEINBERG and MCCLELLAN 1992, 68, Fig.89; CHARLESWORTH 1966, 27, Fig.2; KUNINA 1997, 285, Fig.169; ASTROM 1965,137, Fig.795; MEYER 1992, 31, Fig.229; LIGHTFOOT 2017,61-62,Cat.31-32; BERNET 1979,139, Fig.254; LIGHTFOOT and ARSLAN 1992, 110, Fig.59.



Fig. 52.  
Octagonal  
Bottle. 18,4 cm



Fig. 53.  
Square Bottle  
without handle.  
12,4 cm



Fig. 54.  
Amphoriskoi.  
8,2 cm.



Fig. 55.  
Amphoriskoi.  
5,2 cm.

Octagonal bottles: The rims of these bottles are sometimes wide but generally flat. One characteristic of the glass vessels in this group is that the rim was first curled, then pulled downward and upward, then this process was repeated, and the rim was given a graded form. The large handle of the bottles is in the form of thin and thick strips<sup>31</sup>. Natural colors such as greenish or bluish green were preferred. Sometimes air bubbles appear on the surface of these vessels<sup>32</sup>. On the bottom of some of these vessel examples, there are stamped geometric patterns, such as badges often placed in a ring<sup>33</sup>. In the museum, there are 2 octagonal jugs (Fig. 51–52), which are parallel to this form. Their rims are two-staged which is pulled outward, folded inward, flattened, and widened; and they also

31 HAYES 1975, 37.

32 MEYER 1992, 31.

33 GROSSMANN 2002, 23; MEYER 1992, 31.

have an octagonal body and long cylindrical neck which gets wider towards the body. There is a rosette-shaped decoration on their bottoms and their handles are stripped.

It is known that those glass items were produced extensively in the late 2<sup>nd</sup> CE<sup>34</sup>. Moreover, examples of octagonal glass vessels dated to 2<sup>nd</sup>–3<sup>rd</sup> CE. have been cited in many sources<sup>35</sup>. The formal similarity of the octagonal glasses in the museum and the examples described above reveal that they date back to the same period.

Square bottle without handle: In the museum, there is a square glass vessel with a rectangular body shown in Fig. 53. The rim of this bottle was rounded on the upper part after being dragged outward and folded inward. It has a wide rim, a short concave neck and a concave base. When compared to similar examples<sup>36</sup>, the Diyarbakır bottle should be dated to 3<sup>rd</sup> – 4<sup>th</sup> CE.

### Amphoriskoi

Since two amphoriskoi in Diyarbakır Museum have different body forms and decorative elements, they must be evaluated separately. The amphoriskoi in Fig. 54 has a wide rim that is dragged outward and folded inward, a short cylindrical neck, a light spherical body, and a flat bottom. Furthermore, it has stamped embossed decorations on its body that are not easily visible. When compared, it can be seen that the Diyarbakır

34 ISINGS 1957,66, Form 50/B.

35 BARKOCZI 1996, 94, Fig.295; KUNINA 1997, 285, Fig.168; ISRAELI 2003,256, Fig.330; MEYER 1992, 31, Fig.244.

36 BARKOCZI 1996,49, Fig.102; VESSBERG 1952, PL.7, Fig.40; LANCEL 1967, 31, Fig.8; HAYES 1975, 58, Fig.143; WEINBERG and STERN 2009, 133, Fig.297; ANTONARAS 2006, 306, Fig.5; AKAD, FIRATLI and KOCABAŞ 1984, 37, Fig.133.

example and the other examples<sup>37</sup> from the 1<sup>st</sup> CE. have parallel forms and decoration elements. Therefore, the Diyarbakir example must be dated back to the 1<sup>st</sup> CE.

The amphoriskoi in Fig. 55 has a slightly inclined rim that was rounded after being pulled outward and folded inward, short cylindrical neck, oval body squeezed on its edges, and pointed bottom. The lower part of the body has grooves that were shaped by mold-blowing. Compared to parallel examples<sup>38</sup>, it is possible to date the pointed-bottomed amphoriskoi in Diyarbakir Museum to 2<sup>nd</sup>-3<sup>rd</sup> C.

## SUMMARY

Due to the lack of studies in the field of glassmaking throughout the region, there is insufficient data to claim that the examples of glass in the Diyarbakir Museum were produced locally. These glasses, which were brought to the Museum by means of exca-

vations, purchases, confiscations, grants and transfers, have a similar structure with the glasses of Eastern Mediterranean origin. However, the proximity of Diyarbakir to Syria and the trade relations in the Roman Empire period made it interact with Mediterranean cultures. Therefore, it is possible to see the most obvious reflections of this interaction in glass vessels in the museum collection.

In order to determine the origin of these vessels generally acquired to the museum collection by means of the aforementioned ways, which make it difficult to date them, the available scientific publications and the data obtained from the scientific excavations so far were investigated in order to determine their provenance. The glass vessels in the museum collection were compared with others on the basis of their production technique, form and decoration elements. The comparisons revealed that these glasses are similar to those of Eastern Mediterranean origin. This finding leads us to conclude that the glass vessels of the Diyarbakir Museum are either produced in the workshops in these centers or are local productions under the influence of these workshops.

37 ISINGS 1957, 32, Form 15; OLIVER 1980, 62, Fig.56; LIGHTFOOT 1989, PL.8, Fig.6; SMITH 1982, Fig.4, No.21; VESSBERG 1952, PL.6, No.22; ISRAELI 2003, 260, Fig.337; STERN 1995,153, Fig.56; CANAV 1985, 37, Fig.18; WEINBERG and MCCLELLAN 1992, 126, Fig.99. LIGHTFOOT and ARSLAN 1992, 62, Fig.23.

38 ISINGS 1957, 77-78, Form 60; OLIVER 1980,66, Fig.56; STERN 1995,158, Fig.65.

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