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## The glass from Hegra (Madâ'in Sâlih, Soudi Arabia)

Marie-Dominique Nenna

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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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pour l'HISTOIRE du VERRE

İstanbul 2018

*Editor*

Orhan Sevindik

*Editorial Committee*

Erdoğan Köse

Üzlifat Özgümüş

Ergün Laflı

Ömür Bakırer

Ömür Dünya Çakmaklı

İSTANBUL 2021

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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>BROCHAT 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>COUITSINAS 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**

*TOPIC 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**

NENNA Marie-Dominique

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

Hegra was occupied roughly from the fifth century BC to the fifth century AD, although graves dating from the Bronze Age have been discovered there though without any traces of an associated settlement. The site, which covers more than 1,000 hectares, was inhabited by the Nabataeans mainly between the first century BC and the beginning of the second century AD. These wealthy merchants largely controlled the long-distance caravan trade of incense, myrrh and spices, which were transported by camel from *Arabia Felix* to Mediterranean ports such as Gaza, before being shipped to Greece and Rome. At its largest, the Nabataean kingdom, of which Petra was the northern capital and Hegra the southern, covered all of southern Syria, Jordan, the northern Arabian Peninsula, part of the Negev and possibly the Sinai deserts. After it was annexed by the Romans in 106 AD, this society disappeared as an autonomous political entity.

The residential area of Hegra spreads over 52 hectares in a wide plain located roughly at the centre of the site, and was surrounded by a 3 km mud-brick rampart with several gates. The city was home to both clusters of dwellings and larger buildings (Areas 1, 2, 7, 8, 9), less densely built up zones and possibly markets, squares and gardens. The excavations revealed at the summit of the rock massif IGN 132 a monumental complex, part of which certainly had a religious function. The large edifice (at least 85 m × 65 m; Area 34) adjoining the southern section of the rampart housed the Roman legion that was stationed in Hegra at the beginning of the second century. The hundred or so monumental tombs carved into the sandstone cliffs are one of the most spectacular features left by the Nabataean civilization in Hegra.

It should first be noted that the glass material is not abundant but is present in most of the excavation areas. During the eight exca-

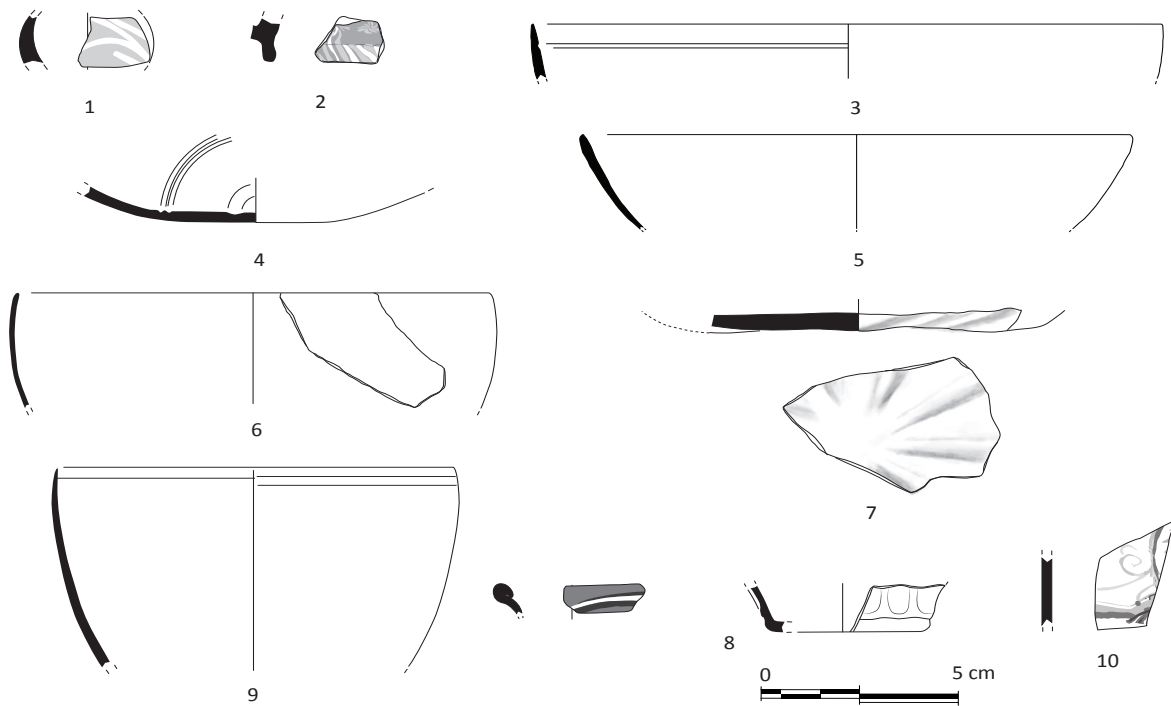


Fig. 1: Glass vessels attested in contexts dated between 50 BC and 70 AD. © Saudi-French Archaeological Mission of Madâ'in Sâlih. Drawings: R. Douaud, A. Ilioglou.

vation seasons of the Saudi-French Mission, only 269 items have been recorded: 182 glass vessel shards, 69 ornaments (beads, bangles and bezels), and three small objects (gaming pieces and toilet utensils). In terms of chronology, the most ancient piece is a fragment of a core-formed alabastra or amphoriskos of a kind produced in the first century BC; the most recent glass vessels are dated to the fourth/beginning of the fifth century AD.

## 1. Glass vessels

### 1.1 Manufacturing techniques

The bulk of the material is free blown (95.05%). Only one piece is a core-formed container with deep blue body and white decoration (Fig. 1.1).<sup>1</sup> Among the moulded pieces, one should note one mosaic small

bowl (Fig. 1.2),<sup>2</sup> one marble (blue cane with white spirals) ribbed bowl<sup>3</sup> and two linear-cut bowls (Fig. 1.3-4), all dating back to the Augustan–Tiberian period (30 BC–AD 40),<sup>4</sup> as well as two monochrome linear-cut bowls (Fig. 1.5-6), produced in the second half of the first century BC and till AD 70<sup>5</sup> and three moulded monochrome ribbed bowls (Fig. 1.7).<sup>6</sup> Only one piece is of violet mould-blown glass; a rim of violet glass from the same context decorated with marbled threads of yellow and red glass is tentatively assigned to the same small bottle (Fig. 1.8)<sup>7</sup>.

1 See for one example in Petra, KELLER 2006, 34-35, fig. 9, no. 313 and 200, type VI.1.

2 Applied base formed by a green thread with a yellow and white spiralling decor and part of the body constituted with violet floral canes with white petals and colourless floral canes with yellow petals. Max. dim. 1.5 cm.

3 JENNINGS 2004–2005, 40–42, no. 14, fig. 2.13.

4 JENNINGS 2004–2005, 42–47, group 6.

5 JENNINGS 2004–2005, 46, 48–49, group 7.

6 JENNINGS 2004–2005, 38.

7 For Petra, see KELLER 2006, 49, fig. 3, no. 88 and 196, type III.6 and O'HEA 2017, 260.

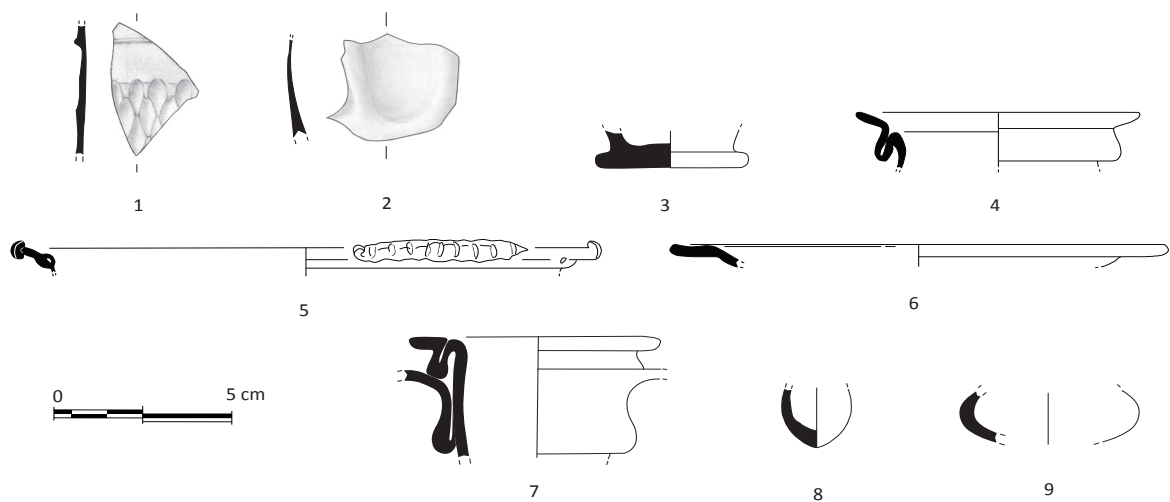


Fig. 2: Glass vessels attested in contexts dated from 70 AD and during the second century AD. © Saudi-French Archaeological Mission of Madā'in Sālih. Drawings: R. Douaud, A. Ilioglou.

## 1.2 Chronology

If we look at the pieces which can be identified and dated (around 100 objects) using external criteria combined with the data provided by the excavators in their reports, we can see that less than fifteen objects can be dated before AD 70 (Fig. 1). To the pieces listed above by manufacturing technique should be added three small free-blown bowls (Fig. 1.9),<sup>8</sup> one of which bears a painted decoration (Fig. 1.10).<sup>9</sup>

Around twenty objects belong to forms that begin to be attested in AD 70 and last until the end of the second century AD (Fig. 2). Three types of tall goblets in colourless glass are attested mainly in funerary contexts:

– facet-cut beaker (Fig. 2.1)<sup>10</sup> ;

– goblet with tooled depressions (Fig. 2.2)<sup>11</sup> ;  
– goblet with abraded and incised lines<sup>12</sup>.

Another type of goblet should be added, one with a solid base in blue green or deep blue glass, retrieved from surface layers (Fig. 2.3).

It is also by AD 70 that small bowls with annular base made by glass folding and a complex folded rim (Fig. 2.4)<sup>13</sup>, as well as plates with folded base and rim and applied and tooled thread (Fig. 2.5)<sup>14</sup>, become frequent in the Levant and are attested in ancient Hegra. The plates and bowls in moulded colourless glass with a wide flat rim of a more luxurious category (Fig. 2.6) also appear at this period<sup>15</sup>. Typical of the near eastern Mediterranean are

<sup>8</sup> JENNINGS 2004–2005, p. 61, fig. 3.4.1–11.

<sup>9</sup> Rinceau of vines of red and yellow colour from which come yellow tigels ending in a volute at the top, part of a bird (yellow and red tail), or part of the plant. For this category of painted glass see NENNA 2008; for Flavian painted beakers in Petra, see O'HEA 2017, 266–268, fig. 14.7–8.

<sup>10</sup> In Petra, KELLER 2006, 45–50, fig. 12, no. 65; 194, Type II.10a; O'HEA 2017, 265, fig. 14.10.

<sup>11</sup> KELLER 2006, 45–50, fig. 12, nos. 895 and 901; 214, Type VII.25d.

<sup>12</sup> KELLER 2006, 45–50; fig. 12 nos. 740 and 828; 214–215; type VII.22b and VII.25d.

<sup>13</sup> ARVEILLER-DULONG and NENNA 2005, 27 and 36 no. 5.

<sup>14</sup> In Petra, KELLER 2006, 51; fig. 15, no. 692; 210; Type VII.19b; O'HEA 2017, 262, fig. 14.9; nos. TS130 and TS79. See also ARVEILLER-DULONG and NENNA 2005, 182 and 190–191, no. 522–525; pl. 36.

<sup>15</sup> In Petra KELLER 2006, 192; type II.9a; O'HEA 2017, 264–265, fig. 14.9, nos. TS87 and TS90.

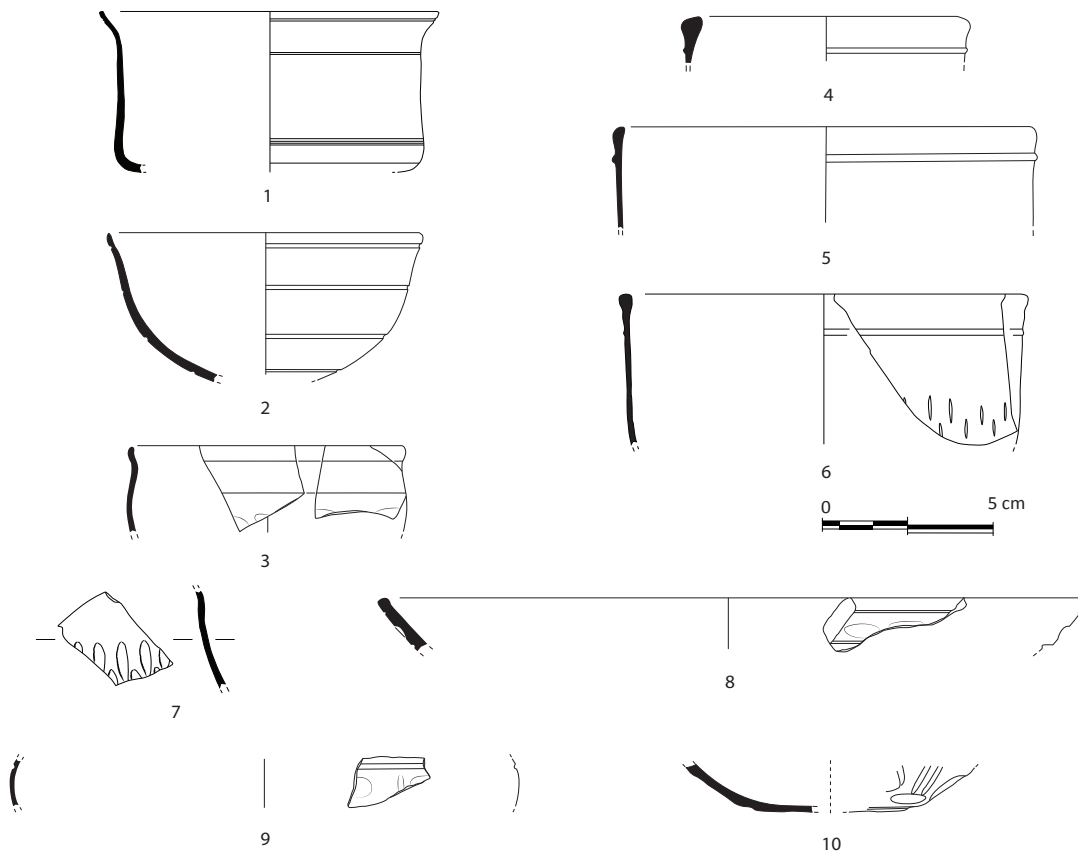


Fig. 3: Bowls attested in contexts dated between the second and the third century AD.  
 © Saudi-French Archaeological Mission of Madâ'in Sâlih. Drawings: R. Douaud, A. Ilioglou.

the blue-green closed vases with complex mushroom lip (Fig. 2.7),<sup>16</sup> equivalent of the square bottles of the western provinces. They are attested in the tomb IGN 117, with at least two examples. Another jug in blue-green glass is attested and is tentatively dated to this period.

An ampulla and two spherical body small flasks (Fig. 2.8-9) belong to the toilet bottle category. Other, larger series also exist by AD 70 but the fragments are too small to be sure of their early chronology. They are therefore dealt with in the next paragraph.

A little more than fifty objects belong to forms that appear during the second century and last until the end of the third. The drinking vessels in colourless glass are the most numerous (Fig. 3). The bowls with cut rim show two main forms: hemispherical and cylindrical. The engraved decoration is composed of engraved lines or engraved lines combined with facets: cylindrical bowl with everted and cut rim with engraved lines on the body (Fig. 3.1)<sup>17</sup>; hemispherical bowl with everted and cut rim with engraved lines on the body (Fig. 3.2) or with concave rim with engraved lines and facets on the body (Fig. 3.3).

16 KELLER 2006, 49, fig. 13, no. 292; 199, type IV.4a; for the variety of the forms of the body, see ARVEILLER-DULONG and NENNA 2005, 184, no. 559.

17 KELLER 2006, 57, fig. 18, no. 410; but in bluish glass; with a later chronology in the mid 4th century.

In the mid second century, a new category of drinking vessel appears: thin colourless glass vases with rounded rim, applied thread under the rim and base with applied thread. It lasts until the third quarter of the third century. Slender goblets are attested in Hegra (Fig. 3.4)<sup>18</sup>; cylindrical bowls are more numerous (Fig. 3.5)<sup>19</sup>. Some of these bowls receive an engraved decoration of rows of alternating thin rice grains (Fig. 3.6).

Other engraved decorations of various techniques are attested on different kinds of bowls in contexts belonging to the same period:<sup>20</sup>

- hemispherical bowl with band of vertical rice grain facets (Fig. 3.7);
- wide shallow bowl with horizontal rice grain facet framed by thin engraved lines (Fig. 3.8);
- spherical bowl with cut rim, engraved lines on the upper part of the body and a row of circular facets on the body (Fig. 3.9);
- spherical bowl with a flat bottom. On the lower part of the body, a row of circular facets alternating with double short dashes ending top and bottom with a slender horizontal facet (Fig. 3.10);
- spherical bowl with row of circular facets alternating with short vertical dashes.

Colourless jugs are attested through rim fragments with an applied thread as well as through neck fragments with applied thread and big ribbed handles. Few colourless flasks appear: one fragment belongs probably to a spherical flask with a cylindrical neck and a rounded rim. Body and base fragments may be

related to this category. A lion applique in colourless glass may be dated either to the end of the third century or to the fourth century.<sup>21</sup>

Toilet bottles are split between blue-green glass unguentaria with folded rim, long neck and conical body and smaller size containers. Less than ten unguentaria were identified. To these medium size containers should be added three aryballoi. Smaller containers are attested mainly in the tomb IGN 20 in blue-green or colourless glass.

Five vases can be dated to the fourth century by external criteria or by their context:

- goblets with a wide thread base of the same greenish colour as the vase;
- small bowl with out folding rim in yellowish-green glass;
- body fragment of a conical goblet in yellowish glass with a blue drop;
- plate with annular base.

### 1.3 Function and contexts

Tableware, and more specifically vessels connected with drinking come first in all periods. Before AD 70, we counted twelve bowls, shallow moulded ones in the tradition of the Hellenistic period, as well as small blown bowls; only two small toilet bottles were found. For the forms attested from AD 70 to the end of the second century, the pattern is slightly different, with high beakers (seven), small bowls (one) and jugs (three), but also tableware for presenting food (at least seven plates and only three toilet bottles). Tableware is also dominant for the pieces dated to the second and third

18 KELLER 2006, 57, fig. 18; no. 410; but in bluish glass; with a later chronology in the mid 4th century.

19 BRUN 2011, 220, nos. 95–105.

20 NENNA 2003.

21 ARVEILLER-DULONG and NENNA 2005, 429 and 439, nos. 1223–1226.



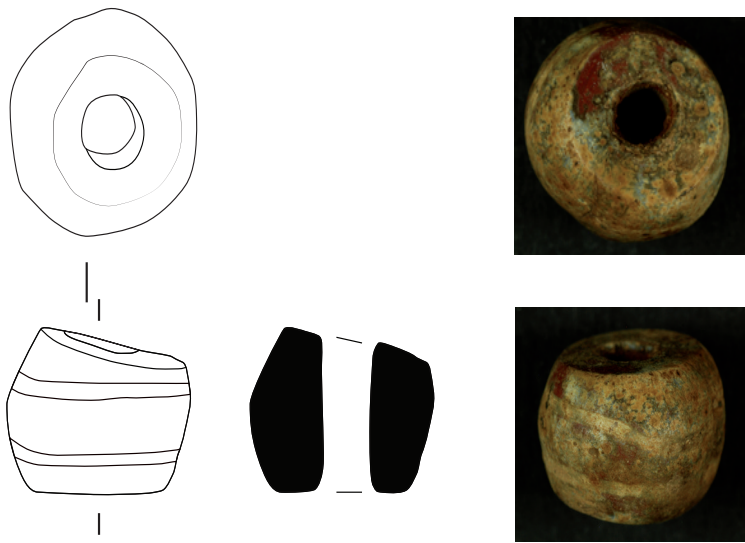


Fig. 4. Spherico-annular bead (excavation no. 10181-G01).  
© Saudi-French Archaeological Mission of Madâ'in Sâlih. Drawing: R. Douaud, A. Ilioglou, Scale 1:1.

centuries: eleven big jugs and flasks, fifteen beakers and cylindrical bowls with applied decoration and in one case an engraved decoration, six bowls with facet decoration. The toilet bottles are represented by six containers of small size in colourless or blue-green glass, ten blue-green medium size unguentaria with high cylindrical neck, three aryballoi. Three beakers and bowls, one plate and a conical lamp can be assigned to the fourth century

In terms of context, the toilet bottles are better represented in tombs than in residential units. Moreover, in the residential units as well as in the funerary and religious contexts, the vessel glass is of upper quality, with the absolute predominance of colourless glass from the end of the first to the end of the third century, except for the unguentaria in blue-green glass, traded for their contents.

#### 1.4 Origin

Most of the shards were imported to Hegra from the Syro-Palestine region and from Egypt. It is difficult to be more specific

when the repertoire of tableware forms is common to the Levant and to the Mediterranean world. Nevertheless, some specific shards can be assigned to Egyptian productions, such as the painted glass bowl or the jug, to which belongs the lion head applique. Also, the colourless tableware and the engraved ware of the second–third centuries may well be of Egyptian provenance. The small mosaic glass bowl, as well as the marbled ribbed bowl, are probably imports from Rome.

#### 2. Ornaments and small objects

The ornaments comprise eight bangles, fifty-seven beads and two necklaces, as well as three bezels, one of which is still in place in the iron ring. The bangles are in deep blue glass or glass appearing black, with no decoration or ribbed decoration, and are dated to the fourth century AD.<sup>22</sup> They are resistant and most of them come from surface layers. In Areas 1 and 6, however, they were found in occupation layers dated to the fourth century. The bezels and ring with bezel belong to the early Roman period (first–second century AD).

Fifty-seven isolated beads and pendants were found in the various excavation areas, very often in surface or mixed layers. To them should be added the necklace discovered in the tomb IGN 103, composed of thirty-two miniature beads, and the necklace of the tomb IGN 116.1 which is composed, apart from faience and stone beads, of fourteen glass

<sup>22</sup> ARVEILLER-DULONG and NENNA 2011, 249–260.

beads (two of which with checkerboard pattern).<sup>23</sup> These two necklaces are important because they are dated to the first century AD by their context and thus provide a good chronological marker.

The bulk of the material comes from two periods: the first century AD – even if one does not take into account the two necklaces from the tombs – and the fourth century AD. Some types of beads can be dated relatively precisely on the basis of internal and external criteria. This is the case of the mosaic beads and of the monochrome beads of special shapes (aryballos, flower, coffee bean, triangular), which belong to the first century AD and earlier. One type of bead – the big spherico-annular bead the extremities of which show a sharp cut – can be dated, thanks to stratigraphic contexts, to the fourth century (Fig. 4). One is struck by the lack of beads in the mid-second and third century context, which is the time when vessel glass is the most abundant in Hegra.

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<sup>23</sup> ARVEILLER-DULONG and NENNA 2011, 177–178; FONTAINE-HODIAMONT and WOUTERS 2014.

Small objects are represented by only a few pieces, two of which are gaming pieces: a glass ball and a small glass disk. One belongs to a cosmetic stick or a spindle<sup>24</sup>, which can be dated, on external criteria, to the first century BC–first century AD.

The study of the small assemblage of glass from Hegra confirms that the bulk of the glass used in Nabatene in the Flavian period came predominantly from Egypt, as already proposed by M. O'Hea in her study of the glass from the Petra Great Temple.<sup>25</sup> This is true also of the new generation of drinking vessels appearing in mid-second century, well evidenced now in this region by the Hegra finds. High quality glass was used by the Nabateans in domestic contexts as shown by the Ez-Zantur excavations in Petra, in cultic contexts as evidenced by Petra Great Temple finds, as well as by the finds from the IGN 132 monumental complex in Hegra, but also in funerary contexts as shown by the rich material unearthed in Hegra tombs.

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<sup>24</sup> ARVEILLER-DULONG and NENNA 2011, 330–331.  
<sup>25</sup> O'HEA 2017, p. 257.

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