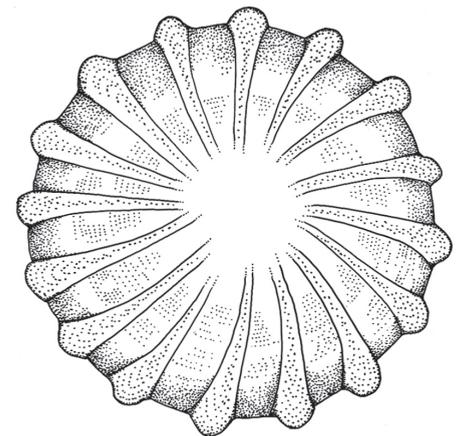
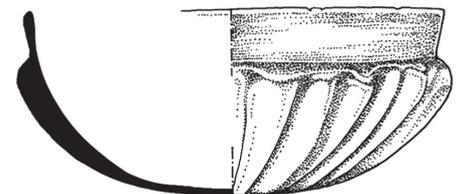
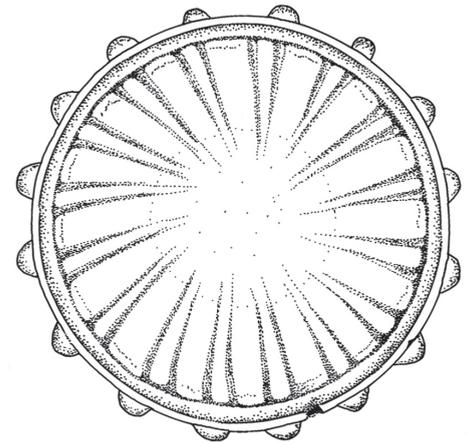


A coleção de vidros antigos, islâmicos e europeus no
Museu de Arqueologia e Etnologia da USP

Barbara Montecchi



Ancient, Islamic and European Glass in
the Museu de Arqueologia e Etnologia –
Universidade de São Paulo (MAE / USP)

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MAE-USP

2017

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Apresentação

Apresentamos, com muita satisfação, o catálogo “A coleção de vidros antigos, islâmicos e europeus no Museu de Arqueologia e Etnologia da USP”, que representa o resultado de excelente trabalho de pesquisa da Dra. Barbara Montecchi, da Universidade de Florença, ancorado nos planos acadêmicos do LABECA – Laboratório de Estudos sobre a Cidade Antiga voltados às pesquisas e difusão científico-educacional sobre a Antiguidade.

Esta iniciativa, que esteve sob a responsabilidade editorial no MAE da Profa. Maria Beatriz Borba Florenzano, contou com a colaboração de diversos profissionais do corpo técnico da instituição e foi possível em função do apoio da administração central da universidade, vindo ao encontro das intenções do museu referentes à ampliação do seu portfólio de publicações sobre as suas coleções e acervos.

Trata-se de singular estudo curatorial que prioriza a tecnologia como ponto de inflexão e inserção desses artefatos e fragmentos em novos circuitos de cultura material, articulando a coleção do MAE a outros conjuntos congêneres de instituições brasileiras e estrangeiras, permitindo a ampliação dos seus sentidos e significados acadêmicos e valorizando as ações de salvaguarda patrimonial características de um museu universitário.

Maria Cristina Oliveira Bruno

Diretora

Museu de Arqueologia e Etnologia – USP

2014-2018

Aum museu universitário cabe zelar por seus acervos, não apenas a sua conservação, mas, sobretudo, pensá-los como objetos da pesquisa científica, que verdadeiramente os colocará em sintonia e diálogo com seus similares de instituições científico-culturais.

Este catálogo é fruto de um programa especial promovido pelas Pró-Reitorias de Pesquisa, de Pós-Graduação e de Extensão Universitária da USP, na gestão 2010-2013, tendo como objetivo tornar os acervos acessíveis a pesquisas externas aos museus de forma a aumentar significativamente seu valor científico e cultural. Coube à Dra. Barbara Montecchi, da Universidade de Florença, Itália, aceitar o desafio de estabelecer as diretrizes curatoriais que permitiriam organizar e pesquisar o acervo de vidros do Mediterrâneo Antigo do MAE-USP, de forma a introduzi-lo entre aqueles que têm uma identificação determinada em outros museus e coleções no Brasil e no exterior.

Este acervo, formado a partir de coleções particulares sem proveniências precisas, tem características bastante comuns em muitas coleções museológicas. O material é extremamente heterogêneo e cobre um vasto período cronológico do século XIII a.C ao XI d.C. As várias formas das peças cobrem diferentes funções, desde recipientes, joias, placas, objetos de tocador a fragmentos de decoração arquitetônica. A árdua empreitada foi realizada com maestria pela Dra. Montecchi, que superou essas lacunas na busca dos dados confiáveis para a grande maioria das peças. Como resultado, além de apresentar a trajetória dessas coleções vítreas até sua aquisição pelo MAE-USP, ofereceu as linhas básicas para abordar a indústria do vidro através de uma síntese do desenvolvimento das técnicas de produção helenística e romana, sendo que esta última compõe o grosso do

acervo. Dessa forma apresentou informações relevantes sobre a técnica de fabricação e decoração do vidro nos vários períodos de sua produção. O arranjo do material sob este prisma tecnológico visou também satisfazer a uma das funções básicas de um museu universitário, que são seus propósitos didático-educativos, de forma que este amplo e variado horizonte possibilite o olhar para muitas produções de vidros diferentes.

Vidros Antigos, Islâmicos e Europeus no Museu de Arqueologia e Etnologia da USP é fruto de uma pesquisa científica de alto nível e, ao mesmo tempo, um estímulo a outras iniciativas à curadoria de acervos sem informações que os coloquem no circuito de conhecimento científico-cultural. São nossos votos que mais exemplos aconteçam.

Maria Isabel D'Agostino Fleming
Professora de Arqueologia Clássica (MAE-USP)

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Não poderia deixar de agradecer ao Dr. Giandomenico De Tommaso, da Università degli Studi di Firenze, por seus valiosos conselhos e comentários.

Minha é, obviamente, a responsabilidade por qualquer erro ou omissão.

Barbara Montecchi

Introduction: aims and methods

When I was offered to work with the glass housed in the Archaeological and Ethnographic Museum (MAE) of the University of São Paulo (USP) by the director, Prof. Maria Beatriz Borba Florenzano, I immediately realized that it might be a challenging opportunity. Firstly, because I am a specialist in Aegean archaeology and philology, for consequence glass is a class of material with which I had not been familiar yet; second, because I was aware of the high difficulties in studying materials as heterogeneous as glass collections are. Nevertheless, the willingness of broadening my cultural horizons and spending some time at the most renowned Brazilian University prevailed over concerns. When I arrived at the Museum and saw the quality and variety of the collection I got the definitive confirmation that I could not do anything but my best for studying and publishing it. The collection, in fact, includes examples of many decorative techniques and styles and provides a basis for broad insights into the history of ancient glass-working.

The purpose of this catalogue is double. First, to publish the vitreous materials housed in MAE (Museu de Arqueologia e Etnologia) and explain when and how they arrived here, and second to offer the basic guide lines for approaching the ancient glass industry, throughout a synthesis of the development of the Hellenistic and Roman production techniques. As far only a raw preliminary catalogue had been drawn up by Mônica Ieda Bertelle for her unpublished Master dissertation¹, for this reason my catalogue is primary aimed at let specialists, along with a wider public, know the glass housed in MAE and eventually improve it adding more precise information.

As I have already said, the material is extremely het-

erogeneous and includes also small fragments. We find vessels of various shapes (above all toilet bottles), jewellery (beads, three bracelets, two rings, and one medallion), plaques, three “stirring-rods”, one pestle, one fragment of architectural decoration, and other small objects. The bulk of the material is made up of Roman glass, but glass from various other geographical and/or chronological contexts is present too. The geographical range goes from Iran to Portugal, and the chronological range from the XIII cent. B.C. to the XI cent. A.D. and beyond. Moreover, the glass in MAE chiefly comes from private collections and precise provenances often lack. For the sake of completeness I decided to publish all the material and ordered it according with the different techniques of glass-making. This is, in fact, the most reliable datum that one can easily achieve for the large majority of our pieces (chronology and provenance, for example, are in many instances fair uncertain). Moreover, such an arrangement of the material is also aimed at satisfying didactic/educative purpose that an university museum has. The purposes of the archaeological museum of the University of São Paulo were, in fact, correctly stated from its birth as following: “Um Museu de Arqueologia deve ser um agente de cultura e um instrumento de pesquisa universitária, um centro de estudos arqueológicos a serviço dos alunos e pesquisadores da Universidade”². In this view, the pieces housed in MAE can be seen and used as examples of different techniques of glass-making and decorating: such a wide and variegated cultural horizon, in fact, permits us to have a glance at many different glass productions.

Therefore, in order to achieve both the scientific and educational purpose, the volume is divided in three

1 BERTELLE 2004, pp. 78-97 with attached cd-rom.

2 Abstract from DE MENESES 1965a, p. 20-21.

chapters. The first is articulated into four paragraphs aimed at illustrating the development of the ancient glass production in the Mediterranean, in order to put the decorative techniques and styles attested in the collection into a suitable frame. Nevertheless, it will be impossible to treat and discuss them with the same level of depth, therefore, we will focus specifically on the Hellenistic and Roman glass, trying to show how the glass industry developed in the Mediterranean area³.

The second chapter explores the circumstances that induced the formation of the collection of ancient glass vessels and objects in MAE.

The catalogue itself forms the third chapter, which is divided into two sections: the first devoted to the vessels, and the second to the other objects. Each of these sections is in turn divided into different paragraphs according to the different typologies and techniques attested, focusing in particular on core- and rod-formed glass, cast glass, blown glass, mould-blown glass. In each paragraph the material is arranged in typological and chronological order.

Each paragraph contains a short introduction aimed at placing the catalogued items in their historical and technological frame, discussing them as representative of the type or group to which each belongs. As far as the production areas are concerned, we must outline that understanding the provenance of glass is very problematic when we do not know where they were found. The same shapes, in fact, may be product in different geographical areas. Moreover, in case of fragments, the recognition of the shapes is problematic, because different vessel shapes may share the same

meaningful elements, for example the same type of lip or base.

All measures are given in centimetres and refer to the maximum preserved height, length and width if not differently indicated.

Acquisition refers to the modality in which the object entered MAE and to the name of the private or public collection that previously held the object.

Provenance refers to the location indicated in the museum register, but it doesn't necessarily correspond to the place of production of the object: it may correspond to the place where the object was found or just housed before the arrival in the museum.

The objects are described conventionally: first shape, then colour and decoration. Because the colour of a glass object depends on its degree of transparency, this is given on a descriptive scale referring to the current state of preservation: transparent, translucent, opaque. Since all material in the catalogue is hitherto unpublished, references are always intended only for comparisons and additional comments on shapes, types, and decorations.

Main abbreviations used in the catalogue:

Cat. No(s). = catalogue number(s)

Cent. = century

D = diameter

H = height

Inv. No(s). = inventory number(s)

L = length

W = width

Th = thickness

3 About the Islamic glass industry, which is represented by the MAE collection as well, see CARBONI – WHITEHOUSE 2001, pp. 46-67.

I. Ancient glass-production: an overview

I.1 Components of the glass and general organisation of the glass production in the Roman Period

Ancient glass is generally made from three primary ingredients⁴:

70% ca. Silica (SiO₂)

20% ca. Natron (lat. *nitrum*), a mineral composed of different sodium salts used as an alkali (natural soda), needed to act as a flux to lower the melting temperature point of the silica

10% ca. Lime (CaO), which served to stabilize the batch of ingredients, by making the glass more resistant and limiting the tendency to pitting and dull.

When these three basic components are heated and fused together to a temperature of about 1300° - 1500° C, they form glass.

In antiquity, glassmakers used sand found in riverbeds or along the seashore, and it often contained broken bits of shell from the crustaceans and molluscs living in the marine environment. These broken shells introduced lime into the batch of ingredients. Since every recipe for making glass includes these ingredients, it is nearly impossible to categorize glass vessels and objects by region or workshops based solely on an analysis of the chemical content⁵. Natural glass has a pale greenish, yellowish, or bluish tinge. In order to make glass of other colours, small amounts of minerals were added before the ingredients were heated and fused: copper and cobalt for green and blue glass, sulphur for amber glass, and manganese

for amethyst glass. The two commonest decolorizing agents in antiquity were antimony and manganese, which were added in small amounts for obtaining colourless (or almost colourless) glass.

In addition to glass made fresh from its primary ingredients, glass was also made by reheating recycled material. One of the benefits of adding broken glass to the batch to make new vessels was that the batch melted and fused at a lower temperature (about 750° C). Once heated and fused, the viscous liquid could be manipulated in a variety of ways using various tools, mould, and blowpipes.

Many ancient glass artefacts have survived exposure to the environment for much more than two millennia, but in many instances the degree of weathering is high. In most cases ancient glass surface is not only dull, but also covered by an iridescent film. Rainbow colours that often appear on the surface of ancient glass are not original, but due to the interference between rays of light reflected from thin alternating layers of air and weathered glass crusts⁶.

I.2 First productions and the core-forming technique

The early glass working developed from the older methods of working the same materials, but in different proportion, the so called quartz ceramics⁷. The first glass products were beads and small objects, produced by pouring melted glass powder around a rod or a core,

4 FRANK 1982, pp. 71-86.

5 About scientific analysis of glass remains see FRANK 1982, pp. 43-70.

6 For deterioration and conservation of glass see NEWTON - DAVISON 1989 and DAVISON 2003.

7 LIERKE 2009, p. 12-13.

or into a mould. In a similar way, after the sintering, i.e. the melting of glass powder with or without a binder, threads of melted glass were layered around a rod or clay core in order to produce glass vessels⁸. The need for constant reheating would have required many stages of production (fig. 1). Wall thickness and the smoothness of the vessel's surface might be controlled by rolling the glass-covered core across a flat surface (marvering). In order to decorate the vessel, different coloured trails were applied all around the vase and often dragged up and down either in a zig-zag or feathering festoon, and usually marvered into the surface, but sometimes left in relief. Handles and foot-rings were then added; at times, rim was trailed on and fashioned to shape by tooling⁹. Once the vessel was cooled, the rod was removed and core shattered.

The earliest rod- and core- formed vessels appear around the middle of the II millennium B.C. in Egypt, in Mesopotamia, and North-western Iran¹⁰. Approximately since the 8th century B.C. a new genera-

8 LIERKE 2009, p. 18.

9 MOOREY 1994, p. 204.

10 LIERKE 2009, p. 18. SEE OPPENHEIM – BRILL – BARAG – VON SALDERN 1970, for the edition and comment on the Cuneiform texts containing instructions for glassmakers.

tion of vessels has appeared around the Eastern Mediterranean, and spread over Rhodos and other areas (in particular, Southern Italy, the Syro-Palestinian region and Cyprus) from the mid 6th cent. B.C. to the early 1st cent. A.D. The most popular shapes are *alabstra*, *amphoriskoi*, *aryballoi* and *oinochoai*, with the *alabstron* that constantly dominates up to the 1st cent. A.D.¹¹ Especially remarkable are the gold-band *alabastra*, chiefly attested in the 1st cent. B.C. (No. 002). In order to produce such *alabastra*, the core was coated with straight stripes of molten glass which subsequently were fused and drawn together in waves¹².

I.3 Hellenistic and Roman moulded glass

In Hellenistic Period the production of core-formed vessels continues, but, starting from the III cent. B.C., a new shapes' repertoire of glass pressed into a mould develops. Mould-pressed glass is seldom attested also in the previous centuries, but its great value is shown by the rare and luxury contexts in which they are found. We find, for example, hemispherical cups in the palaces of Nimrud (Mesopotamia), dating back to the end of

11 LIERKE 2009, p. 24.

12 STERNINI 1995, pp. 107-108.

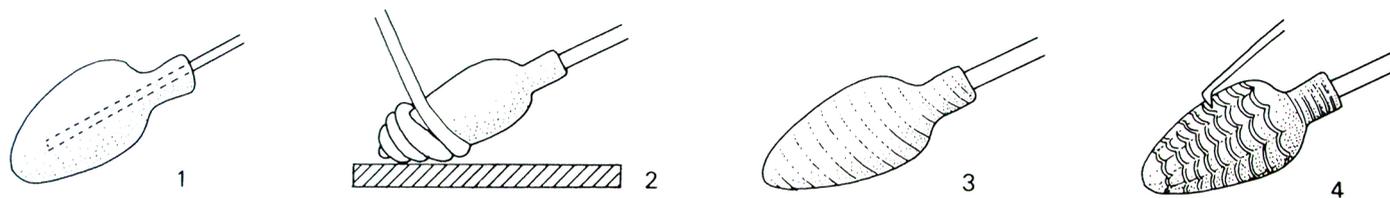


Fig. 1: Stages in the manufacture of a core-formed glass vessel (from GROSE 1989, p. 31, fig. 4)

the VIII – VII century B.C., and in the Achaemenid palace of Persepolis (end of the V – IV cent. B.C.), whose shape and decoration make us think of silver or bronze prototypes dating to the same period¹³.

Hellenistic glassworkers started to use a plain clay mould to define the shape of the glass vessel (chiefly bowls and dishes) from its interior¹⁴. Subsequent decoration with lathe-cut bands of grooves and ridges, and with cut reliefs on this base – invariably a star or rosette motif – indicate that these glass vessels probably drew inspiration from silver and clay prototypes. Casting mould of this kind was a small but significant step towards the ideas of mass-production that later would be central to the Roman glass industry¹⁵. The emergence of the moulded glass, which enables to fairly quickly produce vessels of even complex shapes, must be seen, in fact, under the light of the socio-economic changes of this period, since the expansion of the trade, the opening of new markets, along with the rising of middle classes, favour the spread of mass-production and glass production centres. Between the III and the II centuries B.C. some ten different vessel shapes, chiefly table ware (dishes, bowls, *kraters*, *skyphoi*, one type of amphora) are frequently attested in Greece, Near Eastern, Black sea, Italy (above all in Magna Graecia, Sicily and Etruria), and Cyrenaica. These types of vessels are traditionally referred to as “Canosa group”, because of the significant presence of these vessel types in rich tombs of this southern Italian site.

In most cases, glass is intentionally decolorized, but

there are also examples of very bright colours glass (blue, light green, purple) and painted decorative patterns, also with the use of gold (at times a very thin gold foil is put between two glass layers).

By the beginning of the 2nd century B.C., a brand new style of coloured glassware emerged, with bowls and dishes fashioned from a fused mosaic of composite glass canes. Mosaic particles are fused to become a circular flat cake or disk as exactly as possible, and then it is sagged over a mould¹⁶. The patterns within the canes were mostly limited to spirals (see Nos. 010 and 011) and “star-bursts”. Mosaic decoration developed in the 1st cent. B.C., adding also vessels imitating agate or onyx as well as the gold-band mosaic glass¹⁷. Also new was a delicate lace-work pattern which gave bowls the look of a coil-woven basket.

Between the end of the 2nd and the beginning of the 1st century B.C. we see a further simplification of the production systems and formal repertoire. Workshops of the Syro-Palestinian coast were responsible for such innovations: from archaeological excavations in this area, in fact, especially at Tel Anafa (Northern Galilee), come incredible concentrations of glass vases of very few different shapes dating to 125 – 80 B.C. They are conical and hemispherical bowls, either plain, or grooved or ribbed bowls (see Nos. 008-009 and 018-019), which spread over the whole Mediterranean and Near East. The way in which such bowls were produced was very easy and rapid: monochrome glass (usually colourless or natural pale green-blue-amber glass) was sagged and tooled over a half-mould on a slowly rotating potter’s wheel.

13 GROSE 1989, p. 80.

14 LIERKE 2009, p. 5-6, and 27.

15 FLEMING 1999, p. 8.

16 *Inter al.* STERNINI 1995, pp. 101-102.

17 *Inter al.* LIERKE 2009, pp. 42-43.

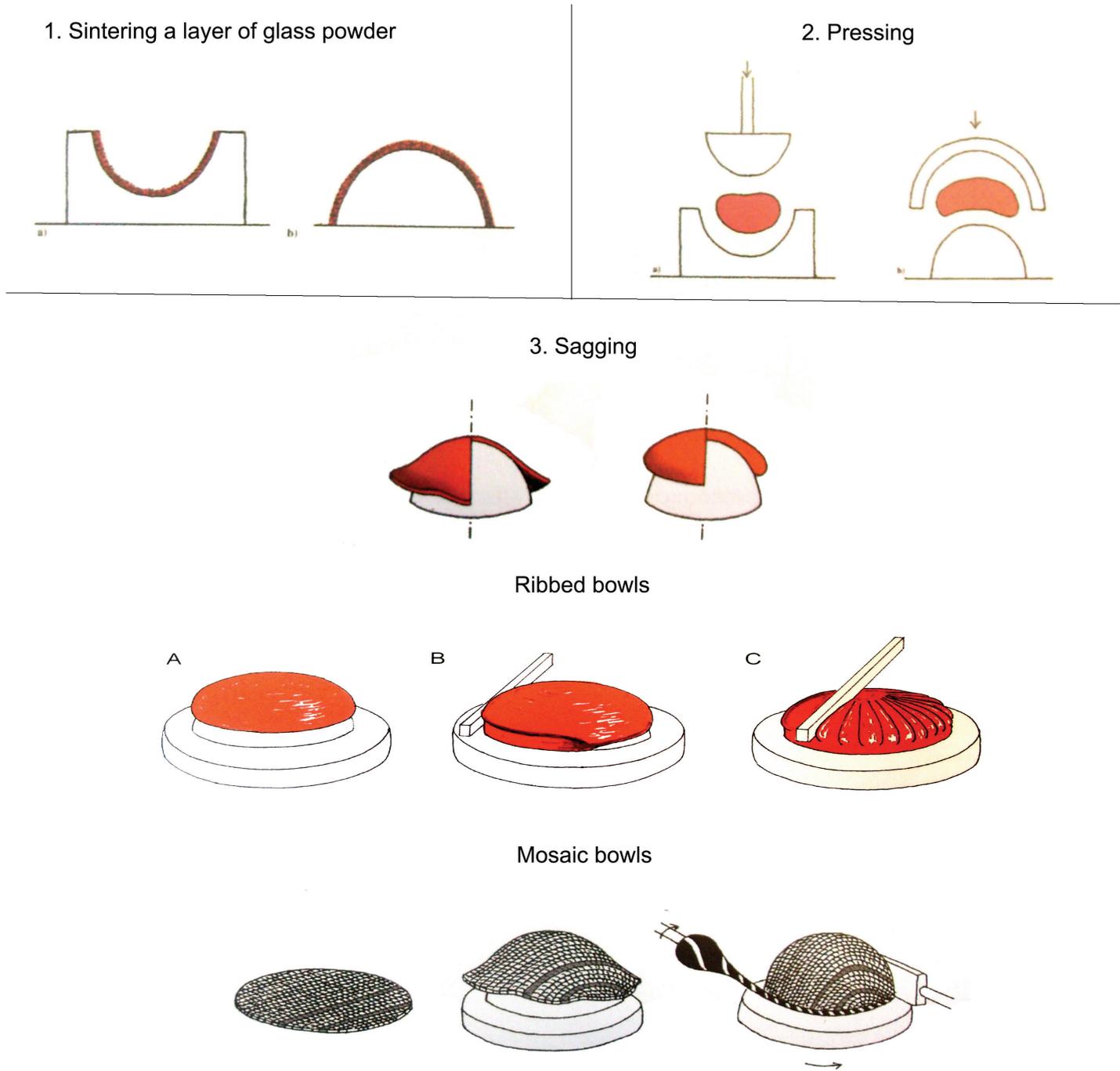


Fig. 2: Techniques for producing different types of mould pressed glass vessels (elaboration of the author from Lierke 2009, p. 5, 41 and 41).

Figure 2 illustrates different techniques for producing glass vessels before the glass blowing, in particular that for producing ribbed bowls (A) a thick glass cake is sagged, B) the rim is pressed flat, C) the interstices are indented), and mosaic bowls (a round cake made up by fused sections of different canes is sagged and then the rim is applied during turning).

In the first decades of the 1st century A.D. a fair homogeneous glassworking industry emerged. The most popular kinds of mould pressed plates and bowls tended to come in just two or three different sizes, and the choice of body and rim shapes was sufficiently limited as to suggest that some degree of standardisation was being imposed¹⁸. New colours and mosaic patterns were introduced during this period, with emerald green and peacock being most common, followed by dark blue and aquamarine. Sometimes just one cane pattern was used to make the entire vessel; other times, a couple of cane patterns were mixed together, along with simple bundles of single – or two-coloured strands.

Therefore the age of Augustus (end of the first century B.C. – beginning of the I cent. A.D.) marks a real turning point in the field of glass production. From this period Roman crafts and trade expand and glass becomes a good accessible to all social status, able to compete even with pottery¹⁹. Soon new glass workshops grow not only in Rome, but also in other Italian regions (above all in Campania) and provinces. Glass begins to be used not only for vessels, but also for plaques, both for decorative inlays, such as mosaic glass panels, and

for windows. During the age of Augustus is also invented the technique of glass blowing.

I.4 Roman blown and mould-blown glass

As we have just said, the technique of glass blowing was discovered during the age of Augustus, but will emerge definitively in the second half of the 1st century A.D. The discovery that a mass of molten glass could expand by simply blowing inside it was amazing. Both historical and archaeological evidence confirm that it happened probably by chances in Phoenicia during the first century B.C.

Pliny the Elder (23 - 79 A.D.) tells us such a story: once a ship belonging to some traders in natural soda docked at the mouth of *Belus* River and scattered along the shore to prepare a meal. Since, however, didn't find stones suitable for supporting their cauldrons, they used lumps of soda from their cargo. When these became heated and were completely mingled with the sand on the beach a strange translucent liquid flowed forth in streams; and this, it is said, was the origin of glass²⁰.

This story is not reliable from a technical point of view, because neither the temperature or the duration of this fortuitous open-air fusion would have been sufficient to make glass, but indeed reflects the important role played by the Syro-Palestinian region in the roman glass industry. Ancient glass was, in fact, made up by

18 FLEMING 1999, p. 18.

19 In this regard, compare the testimony of Cicero (1st cent. B.C., *Rab. P.*, 40), for whom glass is already a luxury good, with that of Strabo (second half of the 1st century B.C. beginning of the 1st century A.D., *Geog.*, 16.2.25).

20 *Nat. Hist.* XXXVI.192: "*Fama est adpulsa nave mercatorum nitri, cum sparsi per litus epulas pararent nec esset cortinis attollendis lapidum occasio, gleba nitri e nave subdidisse, quibus accensis, permixta harena litoris, tralucentes novi liquoris fluxisse rivis, et hanc fuisse originem vitri*". Pliny the Elder dedicates three paragraphs to glass: *Nat. Hist.* XXXVI.(LXV-LXVI), 190-192.

Egyptian *natron* and sand collected from the Syro-Palestinian coast, in particular at the mouth of river *Belus* (modern Nahr Naaman), that contained a proper percentage of *calcium*, in the form of tiny shells. Thus, it is not by chance that numerous primary workshops, where blocks of raw glass were produced, have been found in Egypt and in the Syro-Palestinian region²¹. Such glass blocks were then cut and traded to secondary workshops located all around the Roman Empire, in particular in Italy, where the glass was re-heated and cast and/or blow in order to produce vessel and other objects.

Such a production system will last until the ninth century A.D., when the *natron* trade from Egypt will stop, and the fudge will be derived from vegetal ashes. Since the sand of the *Belus* river was naturally rich of calcium, it could be used only with a soda as pure as the natural *natron* was. When *natron* was replaced with fudge derived from vegetal ashes, it was necessary to change also the sand and choose sands purer than that of the *Belus*. Therefore we can locate in the ninth century the end of the Roman glass production system²². Coming back to the beginning of the glass blowing technique, the oldest glass workshop in which archaeologists have found traces of a still primitive technique of glass blowing is located at Jerusalem and dates around mid-1st cent. B.C.²³ This technique consists in blowing inside straws of glass that were closed at one end and exposed to a heat source, in order to produce a bulb-shaped paraison, which was then separated from the

straw. With such a technology, only small containers with thick wall could be created, but in a few years, the iron blow pipe, very similar to the one still in use today, perhaps preceded by a thicker and shorter clay blow pipe, was introduced and, with the help of other tools like pontils and pliers, the glass-artisan could quickly produce vessels of various shapes and size. It has been suggested that a craftsman could produce about 100 vessels per day²⁴.

The work of two glassworkers at a furnace is shown on three roman clay lamps respectively found near Ferrara (Italy), Asseria (Croatia), and Spodnje Škofije (Slovenia), which are attributed to the second half of the I century A.D.²⁵ These three lamps were cast from the

24 SAGUI 2010, p. 47.

25 BALDONI 1987 AND LAZAR 2005.



Fig. 3: Drawing of the terracotta lamp with scene of glassblowing found in Slovenia (from LAZAR 2005, fig. 3a)

21 GORIN - ROSEN 2000.

22 SAGUI 2010, pp. 15-16.

23 ISRAELI 2005.

same mould and represent the earliest iconographical sources on Roman glass furnace structure, contemporary with the diffusion of the glass blowing technique (fig. 3). The furnace is small and dome-shaped with two openings²⁶. The exact purpose of each opening is not clear. The lower opening might be the working port or the stoking hole; the upper opening might be the working port or the annealing area. At the right a glass blower with a blowpipe is seated before the furnace. At the end of the short blowpipe can be seen the bulb-shaped paraison. At the left can be seen an assistant holding up an unidentified object.

Stages of free glass-blowing can be summarized as following: 1) the artisan collects a certain amount of glass from the crucible with the end of the pipe, and begins to blow; 2) while blowing, he stretches and model the paraison, being careful to prevent it from collapsing or deforming with many fast movements of the blowpipe (according to the size and shape of the object one wants to make, during this process the paraison can be re-introduced many times in the furnace for re-heating and melting glass); 3) the vessel, once more or less made at shape, is attached to a metal tool called pontil; 4) the vessel, sustained with the pontil, is removed from the blow-pipe and finished; 5) handles and foot are eventually applied.

26 For more information about the development of the furnace for glassmaking, from Mesopotamia to the Modern Period, through the Roman Period, see STERNINI 1995, pp. 47-68.

Several characteristics enable us to distinguish a free blown glass, even if fragmentary: 1) wall thin, smooth, generally shiny, and sinuous; 2) air bubbles elongated (produced in the paraison during the phase of stretching); 3) pontil mark on the bottom.

In addition to the free-blowing, at the beginning of the 1st century A.D. workshops of the Syro-Palestinian coast experience another technique, that of blowing glass into a mould²⁷. In this case, the glass paraison, located on the one end of the blowpipe, was blown into a two-piece mould in order to be shaped as the mould was. As a consequence, the external decoration of the vessels was in relief when it was sunken in the interior wall of the mould. It was necessary that the mould was made up of at least two attached parts, in order to easily remove the vessel, avoiding breaking it down, at the end of the blowing process. Vessels produced in this way are similar to embossed metal objects, sometimes shaped as human heads or fruits, like dates, and usually bear traces of the line of conjunction between the two parts of the mould.

This technique also spread in the western workshops, even if it was not very popular after the 1st century A.D. Second half of the 1st century A.D. was the most productive period for the Roman Western glass workshops: the variety of shapes, sizes, and functions will not be equal in any other period.

27 STERN 1995, pp. 45-48.

II. Formation of the collection in MAE

The Archaeological Museum of São Paulo was born on the 24th June 1964 and received the name of “Museu de Arte e Arqueologia da Universidade de São Paulo”, which changed in “MAE - Museu de Arqueologia e Etnologia” in 1972. Its first director was Prof. E. S. De Paula, but the first idea of a museum of art and archaeology in São Paulo came into the mind of Francisco Matarazzo Sobrinho, an Italo-Brazilian entrepreneur (São Paulo 1898 - São Paulo 1977) who was able to gather sufficient archaeological material from various Italian archaeological museums. He was, in fact, in contact with the Italian world of archaeology, also because he funded the “Fondazione Maria Raffaella Matarazzo in Caramiello - Pro Ercolano”, aimed at solving the problem of the inhabitants of Herculaneum, whose houses were expropriated for the excavation of the ancient site²⁸. He proposed the project of this new museum to the rector of the University, Prof. Antônio de Barros Ulhôa Cintra, who received the proposal with enthusiasm. Thus, the rector established a commission aimed at dealing with the Italian museums and institutions in order to obtain archaeological material of heterogeneous kind. Largely thanks to the mediation of P. C. Sestieri, director of the National Pre- and Proto-historic Museum of Rome “L Pigorini”, the following Italian museums positively answered to the Brazilian proposal and sent various items: “L Pigorini”, “Nazionale romano delle Terme” and “di Villa Giulia”, “degli scavi di Ostia”, “Palatino”, “di Antichità di Torino”, “Nazionale di Reggio Calabria”, “di Ancona”, “di Antichità dell’Emilia-Romagna, Bologna” “Archeologico Nazionale di Firenze”, “di Napoli”, di Palermo”, “di Salerno”, “di Trento”, “di Venezia e Padova”. As a consequence, as many as 536 pieces arrived in São Paulo

28 DE PAULA 1965.

from Italy and the complete list was immediately published in 1964 (Catálogo nº 1 of the Museu de Arte e Arqueologia da Universidade de São Paulo).

Archaeological and ethnographic materials, mostly from Amazonia, were sent in exchange from São Paulo to Italy, and were housed in the Museo Preistorico e Etnografico “L Pigorni” in Rome.

Many other donations and exchanges immediately followed this first collection, in particular from Greece and Cyprus²⁹. In addition to these first exchanges with European museums, the MAE collection continued to enrich of materials from Europe, Asia and Africa thanks to donations by private collectors.

As far as the glass is concerned, besides the first arrivals from three Italian Museums (“Museo di Ostia Antica”, “Museo di Antichità di Torino”, and “Museo Nazionale di Taranto”)³⁰, the bulk was donated by Edgardo Pires Ferreira in 1971 and 1973, by Prof. Ulpiano T. Bezerra de Menezes in 1975, and by Ernesto Wolf in 1992.

Ulpiano Bezerra de Menezes was professor of archaeology in the Department of History of the University of São Paulo, director of the MAE - USP for ten years (1968-78), and director of the Museu Paulista/USP (1989-1994).

Edgardo Pires Ferreira is a Brazilian archaeologist who partook to several archaeological missions in Israel, Mexico, Peru, Ecuador and Iran where he collected some archaeological material, in particular glass from Susa (Iran). From 1992 to 1994 he was the director of the Fundação Bienal de São Paulo.

29 DE MENESES 1965B.

30 CATÁLOGO Nº 1 OF THE MUSEU DE ARTE E ARQUEOLOGIA DA UNIVERSIDADE DE SÃO PAULO, 1964, pp. 20, 29-31, AND 66-68.

Finally, Ernesto Wolf (1918-2003) was a Brazilian textile industrialist of German origin. His glass collection was begun in the 1920's by his father, Alfred Wolf, in Stuttgart, Germany. The family fled Europe when the Nazis came to power, and resettled in South America -first in Buenos Aires and later in São Paulo. They resumed collecting at the end of the war, and after his father's death in 1952 Ernesto Wolf continued to pursue glass. His special interest in glass covers the entire history of glassmaking from its beginning in Mesopotamia and Egypt to Renaissance and Baroque decorated glass. The largest part of his collection is now housed in the Württembergischen Landesmuseum in Stuttgart and published in several volumes³¹. Therefore, it seems now time to publish also the pieces of his private glass collection, which he donated at the beginning of the '90ies to MAE.

31 See STERN - SCHLICK-NOLTE 1994 for glass dating from the 16th century B.C. to the first half of the 1st century A.D., STERN 2001 for glass dating from 10 B.C. to 700 A.D., and KLESSE-MAYR 1987 for European modern glass.

In addition to these major collections, a few glass pieces come from other collectors listed in table 1. The museum inventory number, applied to almost all pieces, is normally made up by the abbreviation of the year in which the piece entered the museum (for example 64/ for 1964) + the number indicating the collection + the number of the piece. As a result in most cases it is possible to get information about the acquisition and provenance of the collections by checking the museum registers related to the years and groups indicated by the inventory numbers. Unfortunately the records are very synthetic and most of the times they only provide information about the person or institution that gave the materials and, but not always, a generic provenance. In a few instances inventory numbers are missing (s/n = *sem número*) or replaced by non-useful indication that doesn't meet any correspondence in the registers (for example "caixa 14", which means "box number 14"). Table 1 shows the information about modalities of acquisition and provenances available in the Museum registers.

Inventory number	Year of arrival in MAA/MAE	Acquisition	Provenance
64/3.	1964	Exchange from “Museo di Ostia Antica” (Italy)	Italy (Ostia)
64/6.	1964	Exchange from the “Museo di Antichità” of Turin (Italy)	Italy
64/13.	1964	Exchange from the “Museo Nazionale” of Taranto (Italy)	Italy
66/1.	1966	Gift of Ana Maria Sepre	-
71/5.2	1971	Collection of Edgardo Pires Ferreira in deposit at the MAE	Iran (Susa)
71/5.24-28	1971	Gift of Edgardo Pires Ferreira	Palestine, Jordania
72/4.	1972	Collection of Edgardo Pires Ferreira in deposit at the MAE	Iran (Susa)
73/3.	1973	Gift of J. Mariano Carneiro da Cunha	Iran
73/9.	1973	Gift of Edgardo Pires Ferreira	Iran (Susa)
75/1.	1975	Gift of Ulpiano Bezerra De Meneses	Greece and Portugal (Conimbriga)*
75/9.	1975	Gift of F. E. H. Tapajós Hipp	-
92/4.	1992	Gift of Ernesto Wolf	Mediterranean, Egypt, Near and Middle East
* Only one glass bead and lens from Conimbriga are housed in MAE - USP. For glass vessels from Conimbriga see ALARCÃO 1965.			

Tab. 1: Table showing the years in which different glass collections arrived in MAE, the person or institution who delivered them, and the recorded provenance.

III. Catalogue

III.1 Vessels

III.1.1 Core-formed and rod-formed glass

In MAE this ancient technique is attested by one, possibly two complete vessels, which are a Hellenistic trefoil jug (No. 005) and a small jar of uncertain chronology (No. 006), and several fragments. Among these we can distinguish two fragments of *alabastra* dating back to the Hellenistic period (Nos. 001 and 002), and two other small fragments of possibly core-formed vessels (No. 003 and, perhaps, 004).

Fragment No. 002 belongs to the base of an *alabastron* with spiral-pattern decoration with polychrome bands. Rod-forming was a variation of the core-forming technique we have illustrated in chap. I, the difference is that the (metal) rod on which the object was made functioned as the removable clay core. Instead of modelling the interior of an object or vessel with core material, the glassworker either wound a local heated glass cane around the rod or spun a hot trail of glass around it³². The decoration of No. 002 implies the cane-making technique, in which a relatively compact mass of glass is stretched to become long and narrow³³. This *alabastron* was made from separate bands, including some with gold foil between layers of colourless glass. These were cast on a core, manipulated to give the way effect, and finally ground and polished.

Fragment No. 003 could belong to a bottle on the basis of the comparison with a Western Asiatic core-formed pointed bottle (mid VIII – VI cent. B.C.) from

the collection of Ernesto Wolf³⁴, who was the owner of our pieces as well, but our piece is too small to reach any valid conclusion.

Particularly interesting are complete vessels No. 005 and No. 006. The latter is a small jar of unknown provenance. Its chronology and technique of production are also problematic. The low rim with a folded flange finds comparisons in blown jars of Roman Period (see for example No. 066)³⁵, but the different technique seem to bring it back to earlier times. It might have been produced by winding a glass trail around a clay core, or pressing with a profiled plaster core, or even pressing the vessel in a plaster mould made after a wax model³⁶.

34 STERN – SCHLICK-NOLTE 1994, No. 21.

35 See for example the rims of small blown jars in HAYES 1975, Nos. 325-326.

36 LIERKE 2009, p. 26.

32 STERN – SCHLICK-NOLTE 1994, pp. 44-46.

33 TAIT 1991, pp. 217-218.

III.1.1 Core-formed and rod-formed glass

Cat. No. 001 Inv. No. 75/1.18e

Acquisition: Gift of Ulpiano Bezerra de Meneses

Provenance: Greece

Chronology: Hellenistic Period, probably late II - early I cent. B. C.

Description:

- Shape: wall fragment of *alabastron*
- Colour: translucent light woud with opaque white threads. The threads dragged upward to form a festoon pattern around the body. In the lower part one horizontal thread like those which usually decor the lower part of this type of *alabastron*.

State of preservation: Fragment.

Measures: H 4.50 cm; D max ext. 2.80 cm

References: GROSE 1989, No. 124; BARKÓCZI 1996, No. 7; NENNA 1998, No. A 21



III.1.1 Core-formed and rod-formed glass

Cat. No. 002 Inv. No. 75/1.18j

Acquisition: Gift of Ulpiano Bezerra de Meneses

Provenance: Greece

Chronology: I cent. B.C.

Description:

- Shape: bottom of *alabastron*
- Colour: gold-band mosaic glass: bluish green, cobalt blue, opaque white, amethyst coloured, and sandwich gold-glass.

State of preservation: Small fragment.

Measures: H 2.10 cm; D max 1.70 cm

References: BARAG 1985, No. 147; TAIT 1991, p. 57, fig. 66; STERN
- SCHLICK-NOLTE 1994, No. 88



III.1.1 Core-formed and rod-formed glass

Cat. No. 003 Inv. No. 73/9.62e

Acquisition: Gift of Edgardo Pires Ferreira

Provenance: Susa (Iran)

Chronology: Probably VI – IV cent. B.C.

Description:

- Shape: small fragment possibly of the wall and part of the base of a pointed vessel.
- Colour: translucent royal blue glass. Severe pitting, iridescence.

State of preservation: Fragment.

Measures: H 2.40 cm; L 2.80 cm

References: STERN – SCHLICK-NOLTE 1994, No. 21



III.1.1 Core-formed and rod-formed glass

Cat. No. 004 Inv. No. 92/4.9n

Acquisition: Gift of Ernesto Wolf

Provenance: Not recorded

Chronology: Mid VIII – I cent. B.C.

Description:

- Shape: triangular wall fragment. Slightly curved.
- Colour: translucent blue with applied opaque white threads. Iridescent surface with severe pitting.

State of preservation: Small fragment. Edges very smoothed, because of sea corrosion or possibly intentionally worked to create a medallion.

Measures: H 2.80 cm; L max 1.90 cm

References: STERN – SCHLICK-NOLTE 1994, No. 21



III.1.1 Core-formed and rod-formed glass

Cat. No. 005 Inv. No. 92/4.20

Acquisition: Gift of Ernesto Wolf

Provenance: Not recorded. Probably Eastern Mediterranean

Chronology: II cent. B.C. – early I cent. A.D.

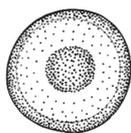
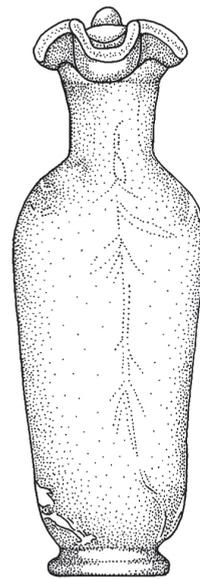
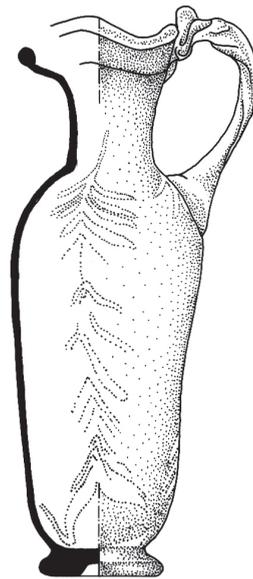
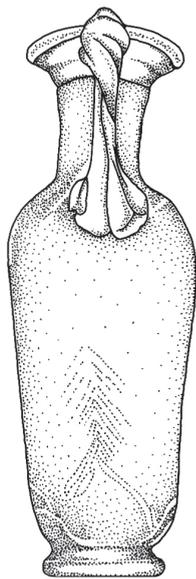
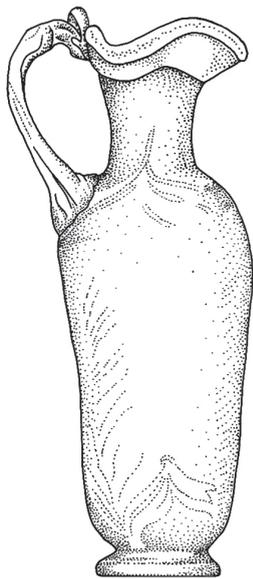
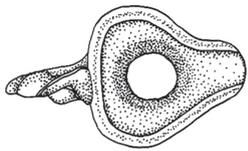
Description:

- Shape: jug with trefoil mouth. Applied trefoil rim-disk with the vertical lip of the jug visible within; cylindrical short neck with slight downward taper; thick-walled, ovoid body; coil handle applied from shoulder to the rim, excess glass drawn out and folded back on top of handle and pinched to form a short vertical projection; applied thick ring-base.
- Colour: translucent blue glass. Opaque white handle. On the body opaque white and pale green dragged up and down threads: shallow in upward direction, deep in downward direction.

State of preservation: Intact. Decoration highly corroded, incipient weathering. In the interior wall a pale brown layer of fine-grained material.

Measures: H 15.5 cm; base D 3.90 cm; shoulder D 5.70 cm

References: GROSE 1989, pp. 122-125



III.1.1 Core-formed and rod-formed glass

Cat. No. 006 Inv. No. 92/4.22

Acquisition: Gift of Ernesto Wolf

Provenance: Not recorded

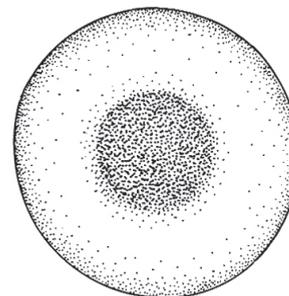
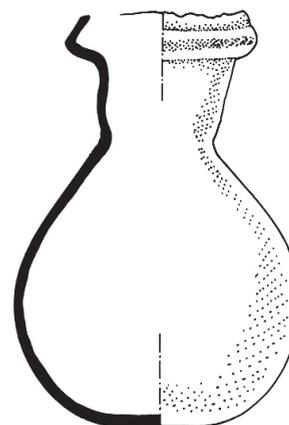
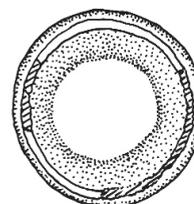
Chronology: From the II cent. B.C.

Description:

- Shape: Shape: jar. Globular body; short upright rim with rounded lip; cylindrical neck, wider at top than at bottom, with constriction at bottom; rounded base; no pontil mark.
- Colour: perhaps natural bluish green glass, but covered by a thick layer of light brown encrustation.

State of preservation: Complete; pitting, sandy brown weathering.

Measures: H 6.70 cm; rim D 2.35 cm; body D 4.00 cm





III.1.2 Moulded glass

The earliest moulded glass vessel housed in MAE seems to be a monochrome glass vessel from Susa (No. 007). It is an almost complete bottle that might have been produced with the so called “Cold-cutting technique”, that is the same technique also suggested for the famous “Sargon vase” (late VIII cent. B.C.)³⁷. First, the blank of the glass vessel was casted in a closed two-piece mould, by heating the mould and continuously adding crushed or powdered glass; then the blank was slow-cooled to avoid shattering, and removed from the two-piece mould; then it was worked as a stone *alabastron* would have been then, i.e. drilled, grinded, and finally polished.

Furthermore, in MAE we find interesting examples of different kind of mould pressed bowls: both plain, decorated either with cut grooves (Nos. 008 and 009) or mosaic patterns (Nos. 010-017), and ribbed bowls, two made from a monochrome blank (No. 018 and 019), and one from a polychrome blank assembled from sections of mosaic bars (No. 020).

Hellenistic and Roman mosaic glass is made from a polychrome blank assembled from sections of cane and segments of mosaic bars and then cast. With only a few exceptions, all the Hellenistic bowls of this type have applied rims formed of a “network” cane of spirally twisted white threads which gives a stripped effect (see Nos. 011 and 012)³⁸.

Ribbed bowls were sagged and tooled over a half-mould on a slowly rotating potter’s wheel. During the first turn of the wheel, the rim was squeezed flat and by this action at the same time chilled and stiffened. During a second turn of the wheel, the interstices were pressed with a tool that could have different profiles. This was a very fast manufacturing process, about ten minutes, and explains, at least in part, the great success of ribbed bowls³⁹.

39 LIERKE 2009, p. 54.

37 GOLDSTEIN 1979, p. 37; MOOREY 1994, p. 206.

38 Each phase of the production process is well illustrated in TAIT 1991, pp. 219-221. For Hellenistic – Roman moulded glass see also GROSE 1989, pp. 31-35; STERN – SCHLICK-NOLTE 1994, pp. 48-61; STERNINI 1995, 101-105; and LIERKE 2009, pp. 29 and 40-46.

III.1.2 Moulded glass

Cat. No. 007 **Inv. No. 72/4.9**

Acquisition: Edgardo Pires Ferreira collection

Provenance: Susa (Iran)

Chronology: From the VIII cent. B.C.

Description:

- Shape: bottle. Pear-shaped body; very thick wall; cylindrical neck; round plain base, slightly concave.
- Colour: translucent green/blue glass, covered by a thick film of sandy brown weathering.

State of preservation: Almost complete. Fragmentary neck, missing rim, large crack on body. Severe weathering.

Measures: H 8.20 cm; D max 6.35 cm; neck D 2.90 cm



III.1.2 Moulded glass

Cat. No. 008 Inv. No. 75/1.18a

Acquisition: Gift of Ulpiano B. de Meneses

Provenance: Greece

Chronology: Mid II cent. B.C. – early I cent. A.D.

Description:

- Shape: fragment of wall of linear-cut hemispherical bowl. Straight rim with round edge, sloping obliquely outward; straight sides, tapering downward. On the interior three horizontal grooves with a flat edge in between.
- Colour: translucent amber coloured glass. Large areas of rainbow iridescent film.

State of preservation: Fragment.

Measures: H max 5.30 cm; L max 7.10 cm; Th 0.40 - 0.10 cm

References: STERN – SCHLICK-NOLTE 1994, No.63; GROSE 1989, Nos. 212-221, and 243-249



III.1.2 Moulded glass

Cat. No. 009 Inv. No. 75/1.18c

Acquisition: Gift of Ulpiano B. de Meneses

Provenance: Greece

Chronology: Mid II cent. B.C. – early I cent. A.D.

Description:

- Shape: fragment of wall of Hellenistic or Roman linear-cut hemispherical or conical bowl. Sagged. Straight rim with round edge; straight sides. On the interior, just below the rim, three horizontal cut grooves: one thicker in the middle with one narrower above and below it, and narrow flat ridges between.
- Colour: translucent amber coloured glass. Patches of rainbow iridescent film on the exterior.

State of preservation: Fragment.

Measures: H max 3.50 cm; L max 2.40 cm; Th 0.50 cm

References: GROSE 1989, Nos. 212-221, and 243-249; STERN – SCHLICK-NOLTE 1994, Nos. 65, 79, 82, 83; TAIT 1991, p. 55



III.1.2 Moulded glass

Cat. No. 010 **Inv. No. 75/1.18h**

Acquisition: Gift of Ulpiano B. de Meneses

Provenance: Greece

Chronology: Probably late II cent. B.C.

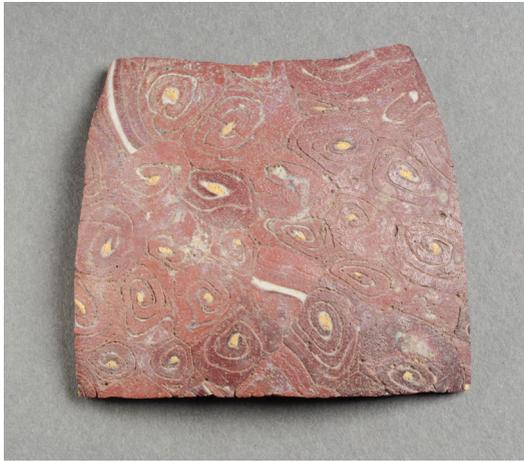
Description:

- Shape: fragment of the wall of a Hellenistic mosaic hemispherical bowl. Convex curving sides.
- Colour: Mosaic pattern formed from polygonal sections of a single round bar with opaque white spiral beginning from a circular opaque centre and encased in opaque dark reddish pale brown glass. A few shorts opaque white and brown threads.

State of preservation: Fragment.

Measures: H 4.70 cm; L 5.30 cm

References: ISINGS 1957 Form 1; STERN - SCHLICK-NOLTE 1994, No.75; TAIT 1991, p. 50, fig. 56



III.1.2 Moulded glass

Cat. No. 011 Inv. No. 75/1.18d.f

Acquisition: Gift of Ulpiano B. de Meneses

Provenance: Greece

Chronology: Probably late II cent. B.C.

Description:

- Shape: two non-joining fragments belonging to the same Hellenistic mosaic hemispherical bowl. Vertical rim with round edge; convex curving sides.
- Colour: Mosaic pattern formed from polygonal sections of a single round bar with opaque white spiral beginning from a circular opaque centre and encased in opaque dark purple glass. The rim is finished with an added *reticella* coil of dark purple glass twisted with opaque white threads.

State of preservation: Fragments.

Measures: d = H 2.40 cm; L 3.05 cm.
f = H 2.00 cm; L 1.50 cm

References: ISINGS 1957 Form 1; STERN - SCHLICK-NOLTE 1994, No.75; TAIT 1991, p. 50, fig. 56; NENNA 1998, No. B66



III.1.2 Moulded glass

Cat. No. 012 Inv. No. 75/1.18b

Acquisition: Gift of Ulpiano B. de Meneses

Provenance: Greece

Chronology: Probably late II – early I cent. A.D.

Description:

- Shape: fragment of the wall and rim of a Hellenistic mosaic hemispherical bowl. Vertical rim with round edge; convex curving sides.
- Colour: marbled mosaic pattern formed from polygonal sections of a single cane in a translucent blue ground with an opaque white spiral set obliquely in each section. The rim is finished with an added *reticella* coil of dark blue/purple glass twisted with opaque white threads.

State of preservation: Fragment.

Measures: H 3.80 cm; L 3.15 cm

References: ISINGS 1957 Form 1; NENNA 1998, Nos. B62 and B67



III.1.2 Moulded glass

Cat. No. 013 Inv. No. 73/9.62b

Acquisition: Gift of Edgardo Pires Ferreira

Provenance: Susa (Iran)

Chronology: Probably II – I cent. B.C.

Description:

- Shape: fragment of rim and side of bowl. Thick, vertical rim with rounded edge; thick-walled side curving obliquely inward and downward.
- Colour: composite mosaic pattern formed from polygonal sections of one cane: yellow ground with opaque white and blue lines radiating from a central red rod. Severe weathering covering almost all the fragment.

State of preservation: Fragment.

Measures: H 3.50 cm; L 5.40 cm; Th 0.30 cm

References: GROSE 1989, Nos. 188-190 and 200



III.1.2 Moulded glass

Cat. No. 014 Inv. No. 73/9.62c

Acquisition: Gift of Edgardo Pires Ferreira

Provenance: Susa (Iran)

Chronology: Probably II – I cent. B.C.

Description:

- Shape: fragment of rim and side, and basal angle of bowl or dish. Upright rim with rounded edge; short, fairly straight side proceeding diagonally downward, then curving inward toward the bottom; the basal angle suggests an almost flat bottom.
- Colour: composite mosaic pattern formed from polygonal sections and square segments of two canes: the first in a yellow ground with opaque white and blue lines radiating from a central red rod; the second, represented by a single square segment of green glass. Severe weathering.

State of preservation: Fragment.

Measures: H 2.30 cm; L 3.30 cm; Th 0.35 cm

References: GROSE 1989, Nos. 188-190 and 200



III.1.2 Moulded glass

Cat. No. 015 Inv. No. 92/4.91

Acquisition: Gift of Ernesto Wolf

Provenance: Not recorded, perhaps Italy

Chronology: Probably late I cent. B.C. – early I cent. A.D.

Description:

- Shape: fragment of the straight side of a large plate.
- Colour: composite mosaic pattern formed from polygonal sections of a single cane in a purple ground with opaque white rods surrounding a cluster of green rods, each outlined in opaque yellow, with an opaque red rod at the centre, which gives a flower effect.

State of preservation: Fragment.

Measures: H 4.30 cm; L 2.85 cm

References: GROSE 1989, No. 526; see also CLAIRMONT 1963, No. 125 (shallow bowl from Dura Europos, early II cent. A.D.)



III.1.2 Moulded glass

Cat. No. 016 Inv. No. 92/4.9f

Acquisition: Gift of Ernesto Wolf

Provenance: Not recorded. Probably Italy (Rome)

Chronology: Early to mid - I cent. A.D.

Description:

- Shape: fragment of wall of mosaic bowl or dish. Convex curving side.
- Colour: meandering mosaic pattern formed from serpentine lengths of possibly two canes. Translucent dark blue, golden-yellow, translucent emerald green, opaque white, translucent purple with streaks of opaque white, and translucent yellow. Pitting.

State of preservation: Fragment.

Measures: H 3.10 cm; L 3.20 cm

References: GROSE 1989, Nos. 367, 599-600



III.1.2 Moulded glass

Cat. No. 017 Inv. No. 92/4.9h

Acquisition: Gift of Ernesto Wolf

Provenance: Not recorded. Possibly Italy

Chronology: Late I cent. B.C. - I cent. A.D.

Description:

- Shape: fragment of the side of a probably carinated dish. Straight side with a slightly convex curve.
- Colour: composite mosaic pattern formed from polygonal sections of two different canes: the first in blue ground with a cluster of rods outlined in opaque dark blue surrounding an opaque white circle, in turn surrounding a central purple rod; and the second in a yellow ground with a cluster of rods outlined in opaque green surrounding a white circle, in turn surrounding a dark blue circle, in turn surrounding yellow rods.

State of preservation: Fragment.

Measures: H 4.40; L 2.80 cm

References: GROSE 1989, No. 439



III.1.2 Moulded glass

Cat. No. 018 Inv. No. 64/6.2

Acquisition: Exchange from “Museo di Antichità” of Turin (Italy)

Provenance: Italy

Chronology: I cent. A.D.

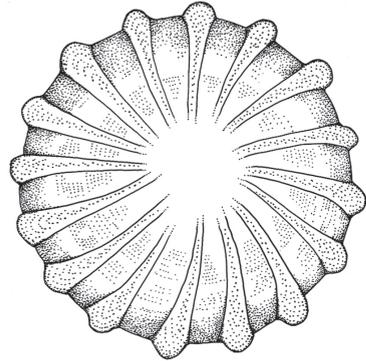
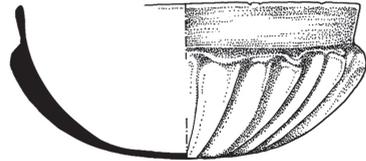
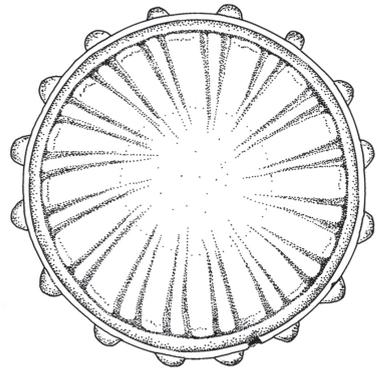
Description:

- Shape: shallow ribbed bowl. Straight upright rim with round edge; convex curving sides; flat bottom. On the exterior 16 long, pronounced ribs tapering down the side onto the base; all ribs curve gently from upper right to lower left and continue on the underside of the bottom where they vanish in the centre.
- Colour: translucent natural bluish green glass.

State of preservation: Complete.

Measures: H 4.40 cm; rim D 11.20 cm

References: ISINGS 1957 FORM 3a; GROSE 1989, NOS. 228-232;
STERN - SCHLICK-NOLTE 1994, No. 92; BARKÓCZI 1996, No.16



III.1.2 Moulded glass

Cat. No. 019 Inv. No. Caixa 14

Acquisition: Not recorded

Provenance: Not recorded. Probably made in Italy, possibly Syria/
Palestine

Chronology: I cent. A.D.

Description:

- Shape: ribbed bowl. Fragment of wall below the middle of the body. Convex curving side. Two pronounced ribs tapering down the side onto the base. On the interior, two narrow horizontal grooves.
- Colour: translucent dark blue glass.

State of preservation: Fragment.

Measures: H 2.20 cm ; L 2.80 cm

References: HARDEN 1987, No. 28; STERN – SCHLICK-NOLTE 1994,
Nos. 89-90



III.1.2 Moulded glass

Cat. No. 020 Inv. No. 73/9.62a

Acquisition: Gift of Edgardo Pires Ferreira

Provenance: Susa (Iran), but probably made in Italy

Chronology: Late I cent. B.C. - mid I cent. A.D.

Description:

- Shape: mosaic ribbed bowl. Convex curving wall fragment. Two thin ribs tapering down the side onto the base.
- Colour: marbled mosaic pattern formed from diagonally cut sections/lengths of a single cane: translucent amber with thin opaque white streaks.

State of preservation: Fragment.

Measures: H 4.50 cm; L 3.50 cm

References: GROSE 1989, No. 308; STERN - SCHLICK-NOLTE 1994, Nos. 93-95; FLEMING 1999, p. 23; TARRATS BOU - CARRERAS ROSSELL 2005, no. 92



III.1.3 Blown glass

Among the free-blown glass we can distinguish five groups: 1) Roman glass, dating from Early to Late Imperial Period (Nos. 021-068); 2) three colourless flasks from Susa (Iran) of doubtful chronology, ie. dating from the Late Antiquity to the Islamic Period (Nos. 069-071); 3) Early Islamic glass (072-089); 4) two handles (Nos. 090-091); 5) two pieces of uncertain identification (Nos. 092-093).

Roman glass chiefly consists of toilet bottles of various types, but we have also two cups and four small jars. Among the *unguentaria*, a particular note is due to No. 030, because it has not been easy to find precise comparisons for it. This mid-large size *unguentarium* has a perfect spherical body that resembles *unguentaria* dating to the I cent. A.D. (ISINGS Form 70), but its long tapering neck with rounded flattened rim fits better later types of perfume bottle. Remarkable are also two toilet bottles and two toilet jars with indented body (Nos. 061-064). Moreover, among the toilet bottles, in addition to many *unguentaria*, we have also two twin kohl tubes (Nos. 067-068). They are heavy walled tubular vessels with two chambers, and handles attached alongside (like in the two examples in MAE) and/or above the body's rim. Such tubular containers was used to store powdered galena, something that had always been popular in ancient world as an eye make-up, but more in vogue than ever in the IV and V cent. A.D. Galena is a toxic lead-based mineral but it was used like the kohl, a black powder, traditionally prepared from antimony, used in many parts of the Islamic world to darken the eyelids. The body of the vessel was free blown and the two chambers were created by squeezing an elongated bubble in such a way that the sides touched lengthwise. A shallow channel on one side of the finished vessel (the "back") corresponds to a deep

cleavage on the other side (the "front")⁴⁰. In several cases a bronze applicator (*spatula*) was found along with the container⁴¹. During the IV and V centuries A.D. they were one of the most common items among tomb goods in Syria and Judea⁴². Their popularity, however, never spread beyond the Eastern Mediterranean. Among the Early Islamic glass from Iran, we can pay attention on the miniature globular jar with a very common decoration with carved circles (No. 086), four fragmentary flasks of marvered glass (Nos. 072-075), and two fragments of dishes with incised decoration (nos. 088 and 089).

Bottles Nos. 072-074 are of a very characteristic type that seems to find its origin in the rod-formed square kohl bottles, which were already widely distributed in Achaemenid Persia from the five to the fourth centuries B.C.⁴³ Our pieces can be dating to the 7th - 8th cent. A.D. Fragment No. 075 is a narrow glass piece with rounded edges (No. 075), perhaps belonging to the bottom of another type of bottle of the same period. Typical Islamic glass with marvered trails were made by inflating a parison of translucent dark glass on the blowpipe and applying a continuous spiralling trail around the body. White or pale-yellow trails were marvered into the dark matrix, and subsequently

40 STERN 2001, p. 319.

41 See for example FLEMING 1999, pp. 104-106; STERN 2001, No.179.

42 GORIN-ROSEN 1998, pp. 26-30.

43 GOLDSTEIN 1979, Nos. 207-212; GROSE 1989, Nos. 31 e 32; CURTIS 2005, No. 197.

tooled with a pointed device into wavy, arcaded, festooned⁴⁴.

Fragments Nos. 088 and 089 meet good parallels in early Islamic glass with incised decoration⁴⁵. Wheel-cutting, which was practiced extensively by both the Romans and the Sasanians of Iran and Iraq, declined in the Mediterranean region after the fourth or fifth century, and engraving disappeared. Cutting continued, however, in Western Asia, and both cutting and engraving, by scratching the glass surface with a pointed tool, were once again prominent parts of the repertoire of glass-workers in the Islamic world.

Finally, small fragment No. 093 deserves a note. It is a fragment of free-blown enamelled glass that could be either Islamic or European: we can, in fact, rule out that it dates back to the Roman period (III-IV cent. A.D.) for stylistic reasons⁴⁶. Moreover, due to the small size and the unpolished back side, it remains unclear whether the latter is a vessel (cup or beaker?) or inlay fragment.

44 CARBONI 2001, pp. 291-293.

45 CARBONI – WHITEHOUSE 2001, pp. 155-161.

46 Good examples of painted Roman glass vessels in FREMERSDORF – POLÓNYI-FREMESDORF 1984, p. 123; HARDEN 1987, Nos. 147-151.

III.1.3 Blown glass

Cat. No. 021 Inv. No. 64/6.1

Acquisition: Exchange from “Museo di Antichità” of Turin (Italy)

Provenance: Italy

Chronology: I cent. A.D.

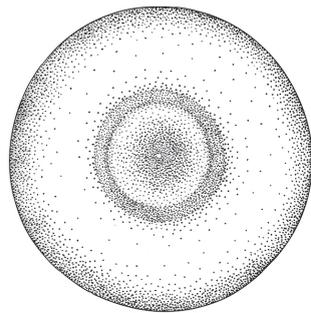
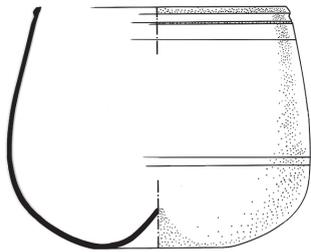
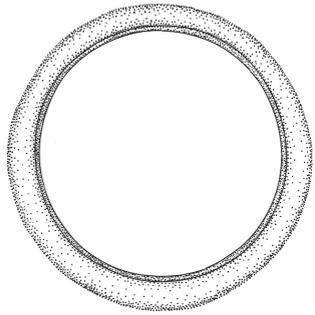
Description:

- Shape: hemispherical cup. Straight ground rim sloping inward; wall flares out from narrow base to low carination, above which the wall tapers upward; base pushed in to form a spikelike kick. Slightly above carination, two narrow wheel-cut horizontal grooves; slightly above the rim a narrow wheel-cut horizontal groove, and above it a deeper and wider wheel-cut horizontal groove.
- Colour: transparent light bluish green glass.

State of preservation: Complete.

Measures: H 7.50 cm; rim D 8.00 cm

References: ISINGS 1957 Form 12



III.1.3 Blown glass

Cat. No. 022 Inv. No. 92/4.21

Acquisition: Gift of Ernesto Wolf

Provenance: Italy

Chronology: I - II cent. A.D.

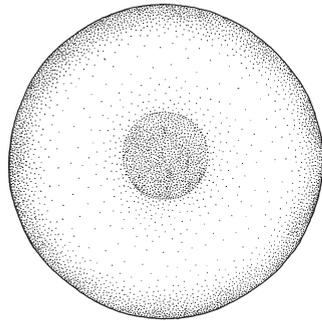
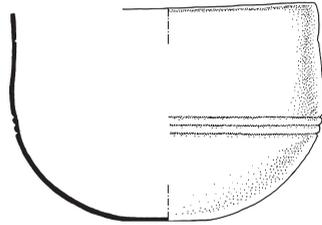
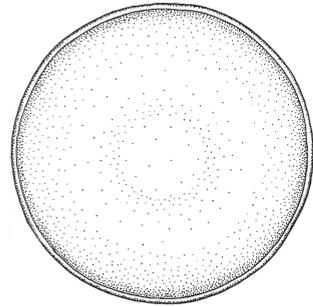
Description:

- Shape: hemispherical cup. Rim very slightly everted, with plain, rounded lip; wall flares slightly and then curves into bottom; plain base; neat annular pontil mark. Decorated with two horizontal wheel cut grooves: the first located 1.50 cm below the rim, the other 3.00 cm below the rim.
- Colour: transparent light bluish green glass.

State of preservation: Intact; dull, pitting, iridescent film, severe white and brown weathering.

Measures: H 6.10 cm; rim D 9.30 cm

References: ISINGS 1957 Form 12; WHITEHOUSE 1997, No. 96



III.1.3 Blown glass

Cat. No. 023 Inv. No. 92/4.16e

Acquisition: Gift of Ernesto Wolf

Provenance: Not recorded

Chronology: I cent. A.D.

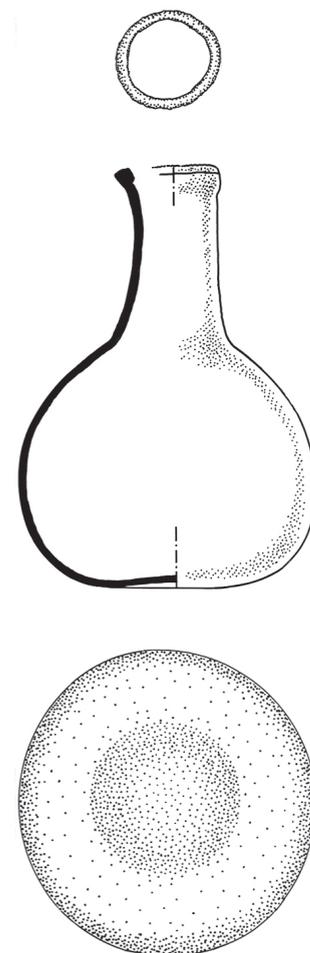
Description:

- Shape: bulbous *unguentarium*. Rounded pear-shaped body; narrow rim scarcely preserved, cylindrical neck; plain base.
- Colour: transparent yellowish amber glass, patches of iridescent film and brown weathering.

State of preservation: Almost complete, rim hardly corroded and partially missing. Dull, severe weathering.

Measures: H 8.40 cm; body D 5.80 cm; rim D 2.10 cm

References: ISINGS 1957 Form 6; DE TOMMASO 1990, type 8; BARKÓCZI 1996, No. 128





III.1.3 Blown glass

Cat. No. 024 Inv. No. 64/6.7

Acquisition: Exchange from “Museo di Antichità” of Turin (Italy)

Provenance: Italy

Chronology: I cent. A.D.

Description:

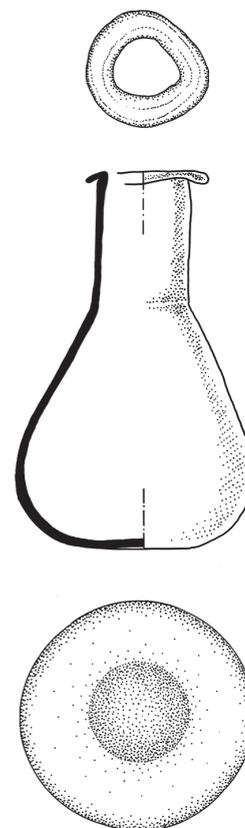
- Shape: *unguentarium*. Pear-shaped body; irregular rim outplayed, folded out, up, and in, and flattened; short cylindrical neck with slight constriction at the bottom; base round and plain; light pontil mark.

- Colour: transparent very pale greenish/bluish glass. Dull.

State of preservation: Complete. Little weathering.

Measures: H 6.70 cm; rim D 1.85 cm; D max 4.20 cm

References: ISINGS 1957 Form 26a; WHITEHOUSE 1997, Nos. 204-205





III.1.3 Blown glass

Cat. No. 025 Inv. No. 64/6.6

Acquisition: Exchange from “Museo di Antichità” of Turin (Italy)

Provenance: Italy

Chronology: I cent. A.D.

Description:

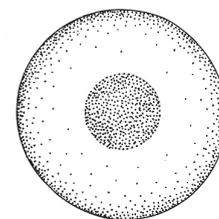
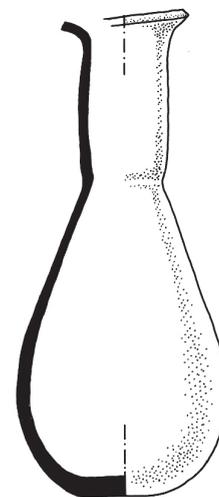
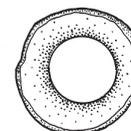
- Shape: *unguentarium*. Pear-shaped body; irregular rim everted; short cylindrical neck with slight constriction at the bottom; base round and plain; no pontil mark.

- Colour: transparent very pale greenish/bluish glass. Dull.

State of preservation: Complete, chipped rim. Patches of sandy brown weathering.

Measures: H 6.40 cm; rim D 1.50 cm; D max 2.75 cm

References: ISINGS 1957 Form 8; DE TOMMASO 1990, type 67;
WHITEHOUSE 1997, No. 227





III.1.3 Blown glass

Cat. No. 026 Inv. No. 64/6.8

Acquisition: Exchange from "Museo di Antichità" of Turin (Italy)

Provenance: Italy

Chronology: I cent. A.D.

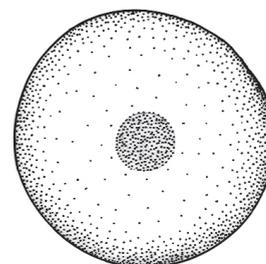
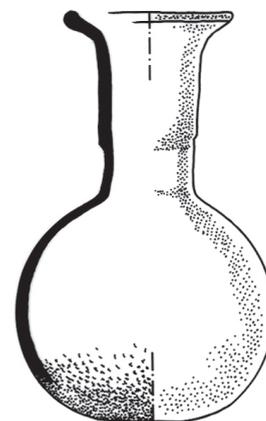
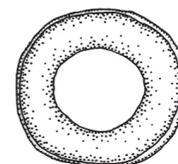
Description:

- Shape: *unguentarium*. Globular body, three-fifths of the total height; everted rim; neck tubular; base plain; no pontil mark.
- Colour: transparent very pale green. Dull.

State of preservation: Complete. Severe white and brown weathering, patches of iridescent film.

Measures: H 5.40 cm; rim D 2.20 cm; body D 3.40 cm

References: ISINGS 1957 Form 6/26a; DE TOMMASO 1990, types 7/12





III.1.3 Blown glass

Cat. No. 027 Inv. 71/2.15

Acquisition: Gift of Edgardo Pires Ferreira

Provenance: Not recorded. Probably Eastern Mediterranean

Chronology: I – early II cent. A.D.

Description:

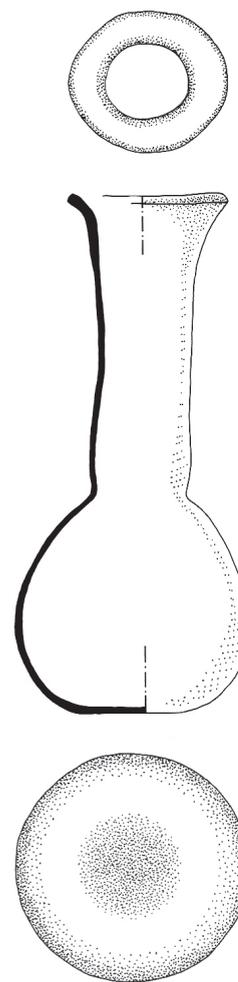
- Shape: *unguentarium*. Globular body, less than two-fifths of the total height; rim outsplayed, with rounded lip; tubular neck constricted at the bottom; plain base, only slightly concave; no pontil mark.

- Colour: transparent pale green glass.

State of preservation: Complete. Iridescent film and large patches of white sandy brown weathering.

Measures: H 7.50 cm; rim D 2.40 cm; body D 3.10 cm

References: ISINGS 1957 Form 6/28a; DE TOMMASO 1990, types 12/13; WHITEHOUSE 1997, No. 199





III.1.3 Blown glass

Cat. No. 028 Inv. No. 92/4.16p

Acquisition: Gift of Ernesto Wolf

Provenance: Not recorded

Chronology: I – early II cent. A.D.

Description:

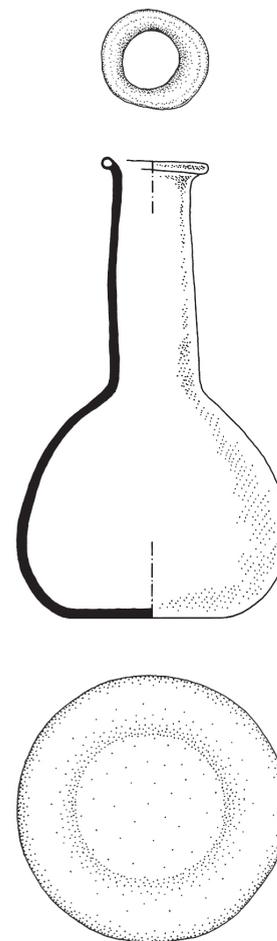
- Shape: *unguentarium*. Rounded pear-shaped body, almost one half of the total height; irregular rim folded up and in, and flattened; tubular neck; plain base, slightly concave; no pontil mark.

- Colour: transparent very pale green glass.

State of preservation: Complete. Iridescent film and weathering.

Measures: H 12.47 cm; body D 7.38 cm; rim D 2.80 cm

References: ISINGS 1957 Form 6/16/28a; DE TOMMASO 1990 type 18; BARKÓCZI 1996, Nos. 249 and 253





III.1.3 Blown glass

Cat. No. 029 Inv. No. 71/5.24

Acquisition: Gift of Edgardo Pires Ferreira)

Provenance: Palestina, Jordania

Chronology: I – early II cent. A.D.

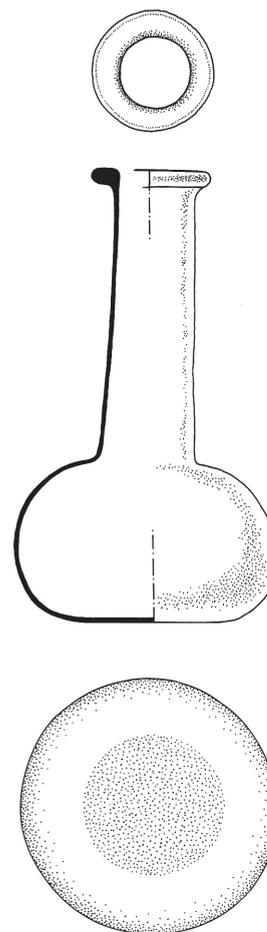
Description:

- Shape: *unguentarium*. Globular body, one-third of the total height; rim outsplayed, folded up and in, and flattened; neck tubular; base plain, no pontil mark.
- Colour: transparent very pale green glass.

State of preservation: Almost complete, body broken in several parts and repaired. Severe weathering.

Measures: H 12.30 cm; body D 7.00 cm; rim D 3.30 cm

References: ISINGS 1957 Form 6/28b; DE TOMMASO 1990 type 13; WHITEHOUSE 1997, 199-201





III.1.3 Blown glass

Cat. No. 030 Inv. No. 92/4.16o

Acquisition: Gift of Ernesto Wolf

Provenance: Not recorded

Chronology: Islamic Period.

Description:

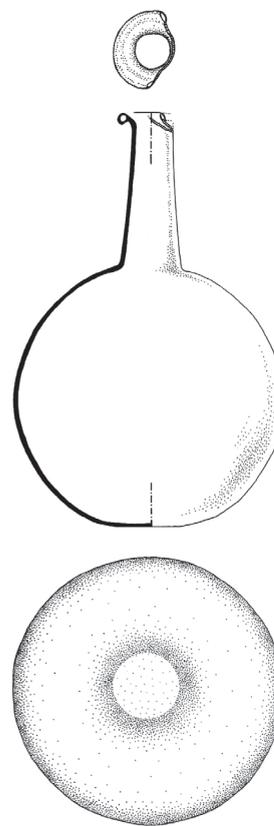
- Shape: globular *unguentarium*. Round rim outsplayed, folded out, up, and in; narrow cylindrical neck tapering upward and slightly constricted at the bottom; spherical body; plain narrow base; no pontil mark.

- Colour: transparent amber glass.

State of preservation: Almost complete, rim partially missing. Dull patches of iridescence, and white, gray and sandy brown weathering. In the interior balls of white powder.

Measures: H 11.10 cm; rim D 2.00 cm; body D 7.00 cm

References: Perfect spherical body resembles ISINGS 1957, Form 70, but its long tapering neck with round flattened rim fits better later types of perfume bottle





III.1.3 Blown glass

Cat. No. 031 Inv. No. 64/3.8

Acquisition: Exchange from "Museo di Antichità" of Turin (Italy)

Provenance: Ostia - Roma (Italy)

Chronology: Late I - II cent. A.D.

Description:

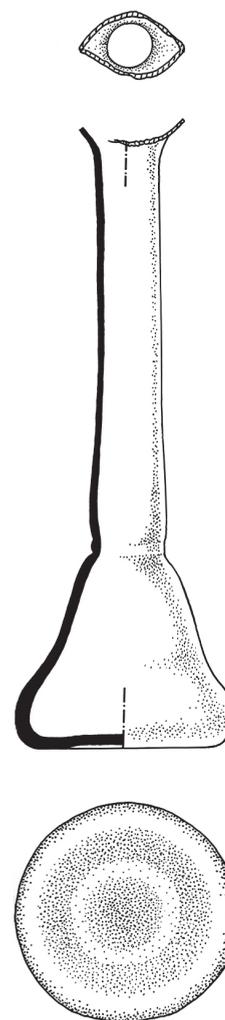
- Shape: *unguentarium*. Bell-shaped body; outsplayed rim; one third of the total height; outsplayed rim; tubular neck, with constriction at the bottom; wall curves in at bottom; plain base, slightly concave; no pontil mark.

- Colour: transparent pale greenish/bluish glass.

State of preservation: Almost complete, broken rim. Pitting, dull, patches of iridescent and brown weathering.

Measures: H 11.70 cm; base D 4.00 cm

References: ISINGS 1957 Form 28b; DE TOMMASO 1990, type 46; BARKÓCZI 1996, Nos. 175-176; WHITEHOUSE 1997, Nos. 253-256





III.1.3 Blown glass

Cat. No. 032 Inv. No. 64/3.9

Acquisition: Exchange from "Museo di Ostia Antica" (Italy)

Provenance: Ostia - Roma (Italy)

Chronology: Late I - II cent. A.D.

Description:

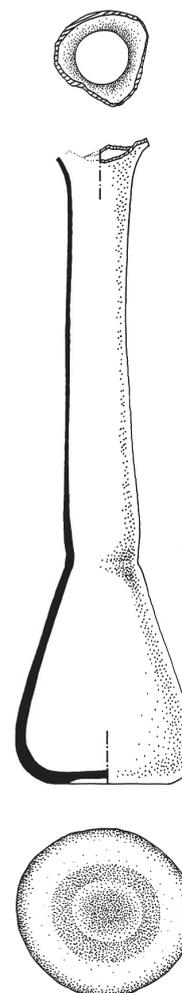
- Shape: *unguentarium*. Conical/bell shaped body, one third of the total height; outsplayed rim; tubular neck, with constriction at the bottom; wall curves in at bottom; plain base, slightly concave; no pontil mark.

- Colour: transparent pale greenish/bluish glass.

State of preservation: Almost complete, broken rim. Pitting and dull surface areas.

Measures: H 10.20 cm; base D 2.75 cm

References: ISINGS 1957 Form 28b; DE TOMMASO 1990, type 43; BARKÓCZI 1996, No. 176; WHITEHOUSE 1997, Nos. 253-254





III.1.3 Blown glass

Cat. No. 033 Inv. No. 64/6.9

Acquisition: Exchange from “Museo di Antichità” of Turin (Italy)

Provenance: Italy

Chronology: Late I – II cent. A.D.

Description:

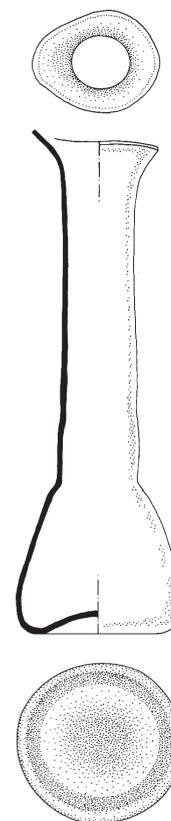
- Shape: *unguentarium*. Bell shaped body, one third of the total height; outsplayed rim; tubular neck, with constriction at the bottom; wall curves in at bottom; plain base, slightly concave; no pontil mark.

- Colour: transparent very pale greenish/bluish glass.

State of preservation: Almost complete, broken rim. Dull, pitting, small cracks and patches of pale iridescent weathering.

Measures: H 7.90 cm; base D 2.30 cm

References: ISINGS 1957 Form 28b; DE TOMMASO 1990, type 43; BARKÓCZI 1996, No. 176; WHITEHOUSE 1997, No. 254





III.1.3 Blown glass

Cat. No. 034 Inv. No. 92/4.16h

Acquisition: Gift of Ernesto Wolf

Provenance: Not recorded

Chronology: I – II cent. A.D.

Description:

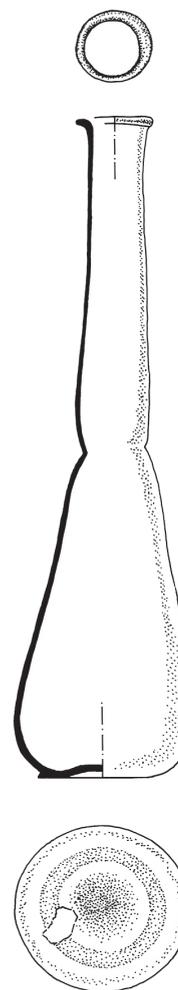
- Shape: *unguentarium*. Pear-shaped lopsided body, a bit less than half of the total height; rim folded out, up, and in, then flattened; tubular neck tapering upward, with constriction at bottom; plain base, with slight concavity; no pontil mark.

- Colour: transparent light bluish green glass.

State of preservation: Intact. Dull, pitting, rainbow iridescent. and brown patches of weathering.

Measures: H 10.60 cm; rim D 1.20 cm; body D 2.50 cm

References: ISINGS 1957 Form 8/28a; DE TOMMASO 1990, type 75; BARKÓCZI 1996, No. 157; WHITEHOUSE 1997, No. 241





III.1.3 Blown glass

Cat. No. 035 Inv. No. 92/4.16i

Acquisition: Gift of Ernesto Wolf

Provenance: Not recorded

Chronology: I – II cent. A.D.

Description:

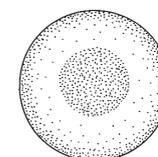
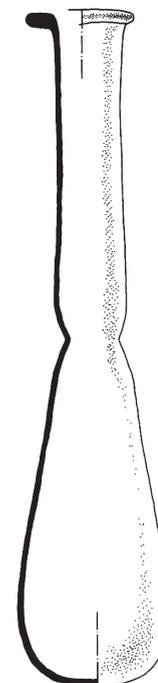
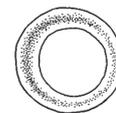
- Shape: *unguentarium*. Pear-shaped body, half of the total height; rim folded out, up, and in, then flattened; tubular neck, with constriction at bottom; plain base, with slight concavity; no pontil mark.

- Colour: transparent light bluish green glass.

State of preservation: Intact. Dull, pitting, rainbow iridescence.

Measures: H 10.60 cm; rim D 1.80 cm; body D 2.30 cm

References: ISINGS 1957 Form 8/28a; DE TOMMASO 1990, type 75; BARKÓCZI 1996, No. 157; WHITEHOUSE 1997, No. 241





III.1.3 Blown glass

Cat. No. 036 Inv. No. 92/4.16g

Acquisition: Gift of Ernesto Wolf

Provenance: Not recorded

Chronology: I - II cent. A.D.

Description:

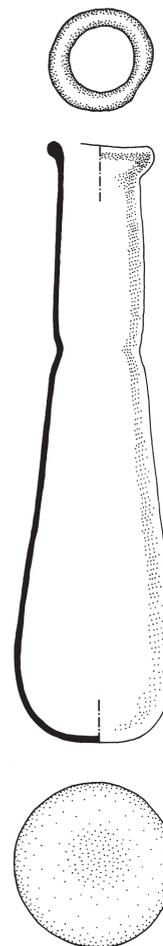
- Shape: *unguentarium*. Tubular body, two-thirds of the total height; rim everted, then folded up and in; cylindrical neck with constriction at the bottom; flattened base; no pontil mark.

- Colour: transparent pale bluish green.

State of preservation: Complete; pitting, rainbow iridescence, patches of white sand weathering.

Measures: H 11.60 cm; rim D 2.20 cm

References: ISINGS 1957 8/28A





III.1.3 Blown glass

Cat. No. 037 Inv. No. 92/4.16j

Acquisition: Gift of Ernesto Wolf

Provenance: Not recorded

Chronology: I – II cent. A.D.

Description:

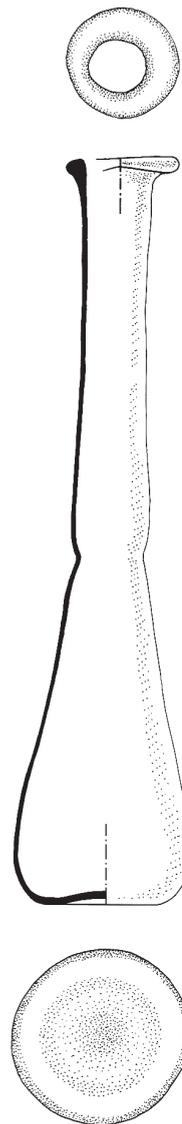
- Shape: *unguentarium*. Pear-shaped body, half of the total height; rim folded out, up, and in, then flattened; tubular neck, with constriction at bottom; plain base, with slight concavity; no pontil mark.

- Colour: transparent amber glass.

State of preservation: Intact. Dull, pitting, iridescent film, patches of brown weathering. In the interior many grains of sand or clay.

Measures: H 12.00 cm; rim D 1.80 cm; body D 2.80 cm

References: ISINGS 1957 Form 8/28a; DE TOMMASO 1990, type 75; WHITEHOUSE 1997, No. 241





III.1.3 Blown glass

Cat. No. 038 Inv. No. 64/6.3

Acquisition: Exchange from “Museo di Antichità” of Turin (Italy)

Provenance: Italy

Chronology: I – early II cent. A.D.

Description:

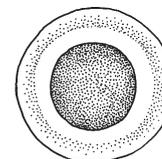
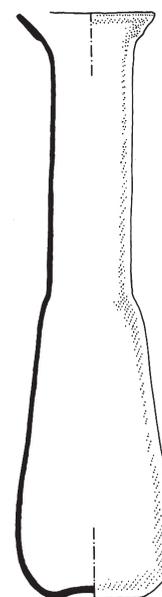
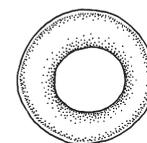
- Shape: *unguentarium*. Conical body, about a half of the total height; outsplayed rim with rather irregular rounded lip; tubular neck, with constriction at the bottom; wall curves in at bottom; plain base; no pontil mark.

- Colour: transparent very pale greenish/bluish glass.

State of preservation: Intact. Pitting, dull, patches of iridescent and sandy brown weathering.

Measures: H 9.20 cm; rim D 2.20 cm

References: ISINGS 1957 Form 8/28a; DE TOMMASO 1990, type 70; BARKÓCZI 1996, No. 157; WHITEHOUSE 1997, Nos. 232, 235, 242





III.1.3 Blown glass

Cat. No. 039 Inv. No. 64/6.4

Acquisition: Exchange from “Museo di Antichità” of Turin (Italy)

Provenance: Italy

Chronology: I – II cent. A.D.

Description:

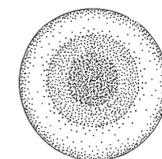
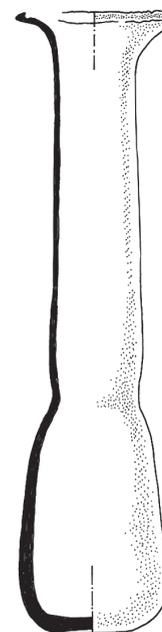
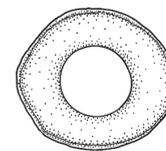
- Shape: *unguentarium*. Conical body, about two-fifths of the total height; outsplayed rim with rather irregular rounded lip; tubular neck, with constriction at the bottom; wall curves in at bottom; round and plain base; no pontil mark.

- Colour: transparent very pale greenish/bluish glass.

State of preservation: Intact. Pitting and dull surface areas.

Measures: H 9.70 cm; rim D 2.40 cm

References: ISINGS 1957 Form 8/28a; DE TOMMASO 1990, type 71; BARKÓCZI 1996, No. 156; WHITEHOUSE 1997, No. 229





III.1.3 Blown glass

Cat. No. 040 Inv. No. 64/6.5

Acquisition: Exchange from “Museo di Antichità” of Turin (Italy)

Provenance: Italy

Chronology: I – II cent. A.D.

Description:

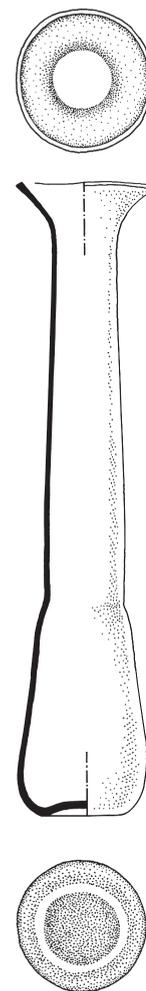
- Shape: *unguentarium*. Conical body, about one third of the total height; outsplayed rim with rather irregular rounded lip; tubular neck, with constriction at the bottom; wall curves in at bottom; plain base; no pontil mark.

- Colour: transparent very pale greenish/bluish glass.

State of preservation: Intact. Pitting and dull surface areas.

Measures: H 9.97 cm; rim D 2.20 cm

References: ISINGS 1957 Form 8; DE TOMMASO 1990, type 71;
BARKÓCZI 1996, No. 156; WHITEHOUSE 1997, No. 229





III.1.3 Blown glass

Cat. No. 041 Inv. No. 92/4.161

Acquisition: Gift of Ernesto Wolf

Provenance: Not recorded

Chronology: I cent. A.D.

Description:

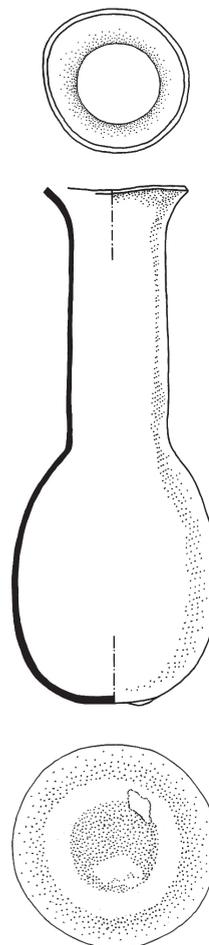
- Shape: bulbous tubular body, somewhat lopsided, almost half of total height; rim everted, with irregular rounded lip; cylindrical neck, with constriction at bottom; plain base, no pontil mark.

- Colour: very pale green glass.

State of preservation: Intact; dull, pitting, severe iridescent and brown weathering. On the bottom paper stick with inscription "301".

Measures: H 8.70 cm; rim D 2.30 cm; body D 3.50 cm

References: ISINGS Form 28A; DE TOMMASO 1990, type 12





III.1.3 Blown glass

Cat. No. 042 Inv. No. 64/3.11

Acquisition: Exchange from "Museo di Ostia Antica" (Italy)

Provenance: Ostia - Roma (Italy)

Chronology: I - II cent. A.D.

Description:

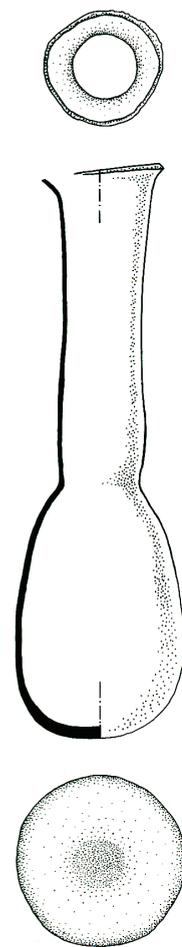
- Shape: *unguentarium*. Tubular body, a bit more than two-fifths of the total height; outsplayed rim; tubular neck, with constriction at the bottom; wall curves in at bottom; no pontil mark.

- Colour: transparent very pale greenish/bluish glass.

State of preservation: Almost complete, broken rim. Patches of iridescent weathering.

Measures: H 9.00 cm; rim D 2.00 cm

References: ISINGS 1957 Form 8; DE TOMMASO 1990, type 72; WHITEHOUSE 1997, No. 229





III.1.3 Blown glass

Cat. No. 043 Inv. No. 64/3.10

Acquisition: Exchange from "Museo di Ostia Antica" (Italy)

Provenance: Ostia - Roma (Italy)

Chronology: I - II cent. A.D.

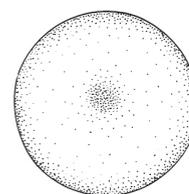
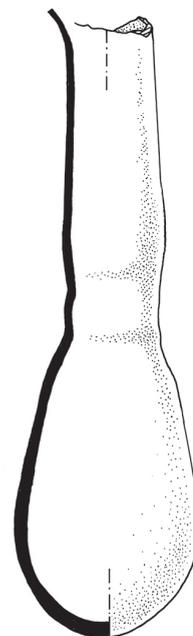
Description:

- Shape: *unguentarium*. Tubular body, a bit less than one half of the total height; tubular neck, with constriction at the bottom; thick wall curves in at bottom; no pontil mark.
- Colour: transparent very pale greenish/bluish glass.

State of preservation: Almost complete, missing rim. Dull, pitting, with patches of iridescent weathering.

Measures: H 10.50 cm; D max 3.00 cm

References: ISINGS 1957 Form 8; DE TOMMASO 1990, type 72; WHITEHOUSE 1997, No. 229





III.1.3 Blown glass

Cat. No. 044 Inv. No. 64/3.12

Acquisition: Exchange from “Museo di Ostia Antica” (Italy)

Provenance: Ostia (Italy)

Chronology: Mid I – early II cent. A.D.

Description:

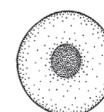
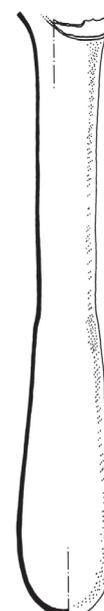
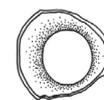
- Shape: *unguentarium*. Tubular body, about half of the total height; short everted rim with rounded lip; narrow tubular neck with constriction at bottom; wall bulges at bottom; rounded base; no pontil mark.

- Colour: very pale green glass.

State of preservation: Almost complete, rim partially missing.
Dull, pitting, iridescent, milky white and sandy brown weathering.

Measures: H 8.10 cm ; rim D 1.50 cm

References: ISINGS 1957 Form 8; DE TOMMASO 1990, types 70-72





III.1.3 Blown glass

Cat. No. 045 Inv. No. 66/1

Acquisition: Gift of Ana Maria Sepre

Provenance: Not recorded. Probably Italy

Chronology: I – II cent. A.D.

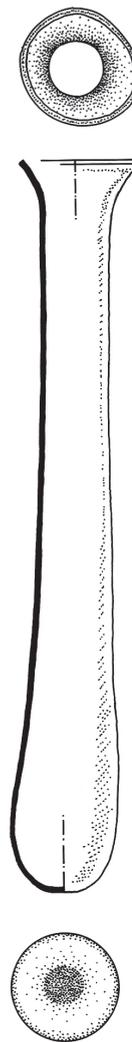
Description:

- Shape: *unguentarium*. Tubular body, about half of the total height; rim everted; tubular neck, with slight constriction at the bottom; wall bulges at bottom; rounded base; no pontil mark.
- Colour: transparent pale greenish/bluish glass.

State of preservation: Intact. Dull, pitting, with patches of iridescent weathering inside at bottom and outside at top.

Measures: H 12.40 cm; rim D 2.00 cm

References: ISINGS 1957 Form 8/27; DE TOMMASO 1990, type 71; WHITEHOUSE 1997, Nos. 222-229





III.1.3 Blown glass

Cat. No. 046 Inv. No. 64/13.1

Acquisition: Exchange from the “Museo Nazionale” of Taranto (Italy)

Provenance: Italy

Chronology: I – II cent. A.D.

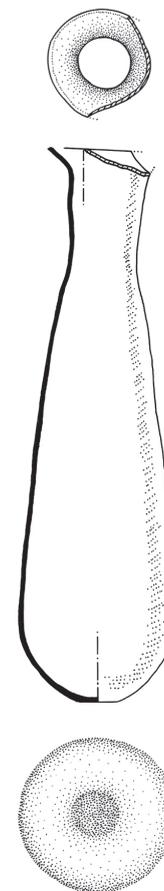
Description:

- Shape: *unguentarium*. Tubular body, three-quarters of the total height; rim everted; short cylindrical neck, with constriction at the bottom; wall bulges at bottom; rounded base; no pontil mark.
- Colour: transparent pale greenish/bluish glass.

State of preservation: Almost complete, rim partially missing. Dull, pitting, and severe iridescent weathering.

Measures: H 8.45 cm; body D max 2.50 cm

References: ISINGS 1957 Form 8; DE TOMMASO 1990, type 67;
WHITEHOUSE 1997, No. 225





III.1.3 Blown glass

Cat. No. 047 Inv. No. 92/4.19

Acquisition: Gift of Ernesto Wolf

Provenance: Not recorded

Chronology: Second half of the I cent. - II cent. A.D.

Description:

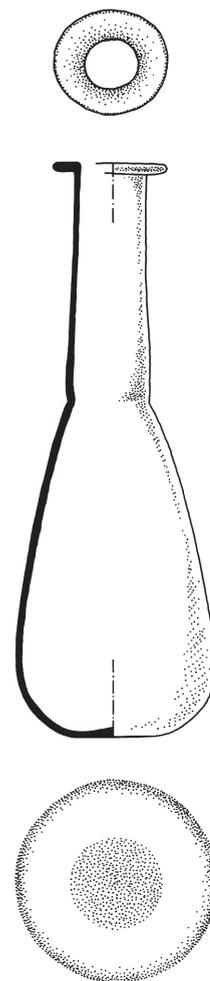
- Shape: *unguentarium*. Conical drop-shaped body, about one half of the total height; rim folded out, up, and in, then flattened; tubular neck splaying slightly above constriction at the bottom; base flat, no pontil mark.

- Colour: transparent pale amber glass with patches of iridescence.

State of preservation: Complete. Severe weathering.

Measures: H 16.80 cm; body D max 5.95 cm; rim D 3.40 cm

References: ISINGS 1957 Form 28a; DE TOMMASO, types 70/75; BARKÓCZI 1996, No. 166





III.1.3 Blown glass

Cat. No. 048 Inv. No. 71/5.26

Acquisition: Gift of Edgardo Pires Ferreira

Provenance: Palestine

Chronology: I – II cent. A.D.

Description:

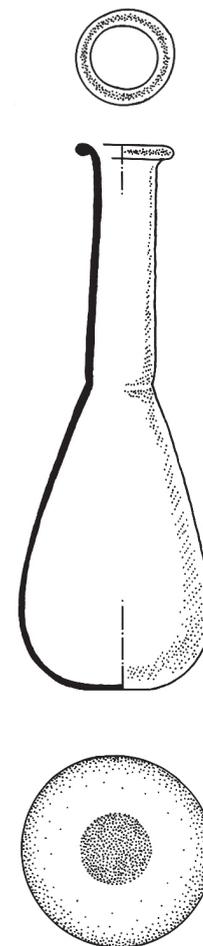
- Shape: *unguentarium*. Conical body, about one half of the total height; rim folded out, up, and in, then flattened to form narrow flange; narrow cylindrical neck with constriction at the bottom; plain base slightly concave; no pontil mark.

- Colour: transparent very pale green glass. Patches of iridescences.

State of preservation: Complete. Severe weathering.

Measures: H 12.44 cm; body D max 4.34 cm; rim D 2.10 cm

References: ISINGS 1957 Form 8/28a; WHITEHOUSE 1997, No. 242





III.1.3 Blown glass

Cat. No. 049 Inv. No. 92/4.16n

Acquisition: Gift of Ernesto Wolf

Provenance: Not recorded

Chronology: I – II cent. A.D.

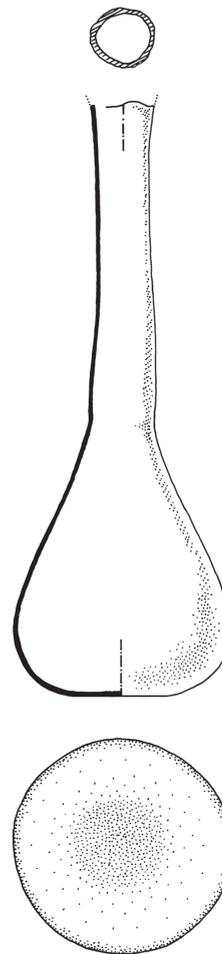
Description:

- Shape: *unguentarium*. Conical body; almost half of the total height; narrow tubular neck slightly tapering upward, with slight constriction at bottom; flat base; no pontil mark.

State of preservation: Incomplete, rim and the upper part of the neck missing. Pitting; rainbow iridescent film, thick patches of brown and pale gray weathering.

Measures: H 10.80 cm; body D 3.90 cm

References: ISINGS 1957 Form 28a; WHITEHOUSE 1997, No. 214





III.1.3 Blown glass

Cat. No. 050 Inv. No. 92/4.27a

Acquisition: Gift of Ernetsto Wolf

Provenance: Not recorded

Chronology: I – II cent. A.D.

Description:

- Shape: *unguentarium*. Conical body; plain base slightly concave; no pontil mark.
- Colour: pale green glass.

State of preservation: Fragmentary: upper part of body, neck and rim missing. Dull, on the exterior large patches of rainbow and milky iridescence; on the interior sandy brown weathering and dark incrustations.

Measures: H 3.80 cm; D max 2.50 cm

References: ISINGS 1957, Form 28; DE TOMMASO 1990, types 67/70



III.1.3 Blown glass

Cat. No. 051 Inv. No. 92/4.27b

Acquisition: Gift of Ernesto Wolf

Provenance: Not recorded

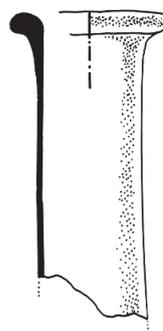
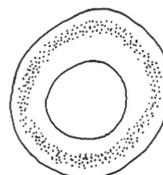
Chronology: I - II A.D.

Description:

- Shape: neck with rim of *unguentarium* (non identifiable type). Cylindrical neck, irregular round rim everted, then folded up and in.
- Colour: pale green glass.

State of preservation: Fragmentary: body and part of the neck missing. Dull, on the interior brown weathering, on the exterior patches of iridescent film.

Measures: H 3.70 cm; rim D 1.90 cm; neck D 1.25 cm





III.1.3 Blown glass

Cat. No. 052 Inv. No. 71/5.28; 72/4.31

Acquisition: Gift of Edgardo Pires Ferreira

Provenance: Palestine

Chronology: II - III cent. A.D.

Description:

- Shape: Fragments from one or two tube *unguentarium/a*. Tubular body; cylindrical neck with rim everted, then folded up and in, broken in five pieces; fragments of wall, rounded base; pontil mark.

- Colour: transparent light green glass.

State of preservation: Fragments. Dull, severe brownish weathering.

Measures: H min 7.70 cm; rim D 4.50 cm

References: ISINGS 1957 Form 27; BARKÓCZI 1996, No. 142



III.1.3 Blown glass

Cat. No. 053 Inv. No. 72/4.33; 72/4.42

Acquisition: Gift of Edgardo Pires Ferreira

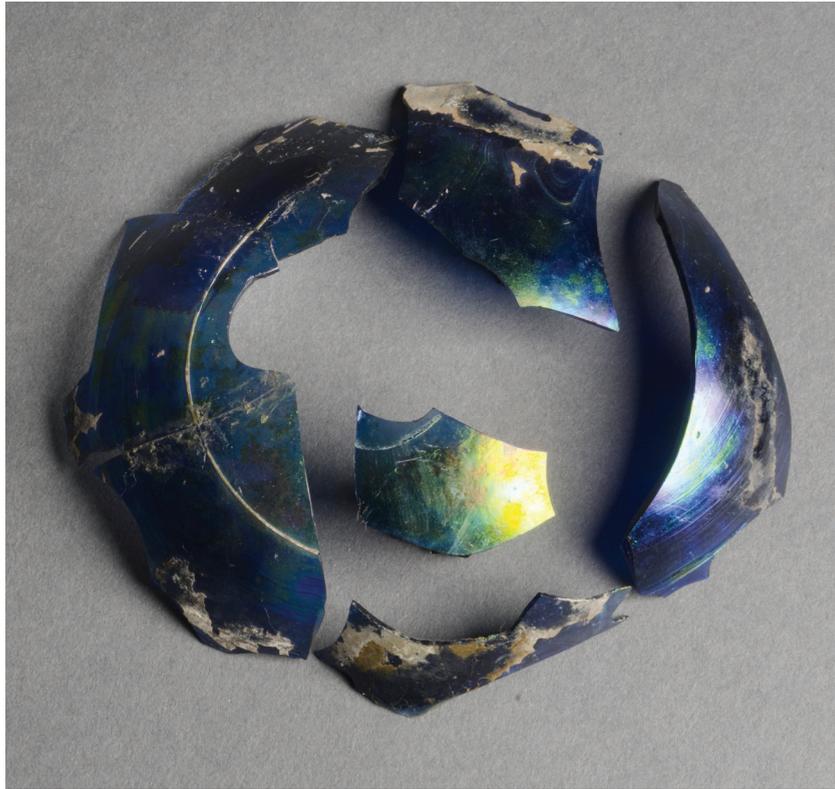
Provenance: Susa (Iran). Probably made in Eastern Mediterranean

Chronology: Perhaps I – II cent. A. D.

Description:

- Shape: Fragments from one or two *unguentarium/a* with spherical body and tubular neck.
- Colour: transparent blue glass with large patches of rainbow iridescence.

State of preservation: Fragments.



III.1.3 Blown glass

Cat. No. 054 Inv. No. 92/4.16d

Acquisition: Gift of Ernesto Wolf

Provenance: Not recorded

Chronology: Late I - III cent. A.D.

Description:

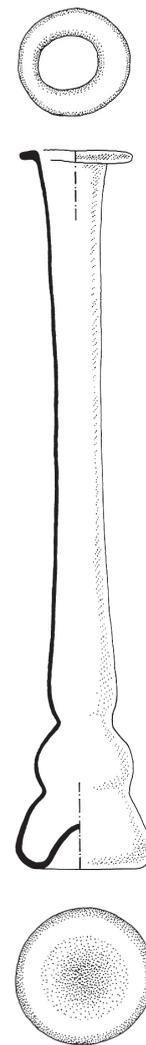
- Shape: “Candlestick” *unguentarium*. Double convex (“waisted”) conical body; about one-fifth of the total height; rim folded out, up, and in; long cylindrical neck with constriction at bottom; plain base, pushed in; no pontil mark.

- Colour: transparent, very pale greenglass.

State of preservation: Intact; dull, pitting, iridescent film, patches of milky white and sandy brown weathering.

Measures: H 13.00 cm; rim D 2.00 cm; base D 2.50 cm

References: ISINGS 1957 Form 82A1; BARKÓCZI 1996, Nos. 192-193, 195; WHITEHOUSE 1997, No. 250





III.1.3 Blown glass

Cat. No. 055 Inv. No. 92/4.16a

Acquisition: Gift of Ernesto Wolf

Provenance: Not recorded. Probably Italy

Chronology: II - III cent. A.D.

Description:

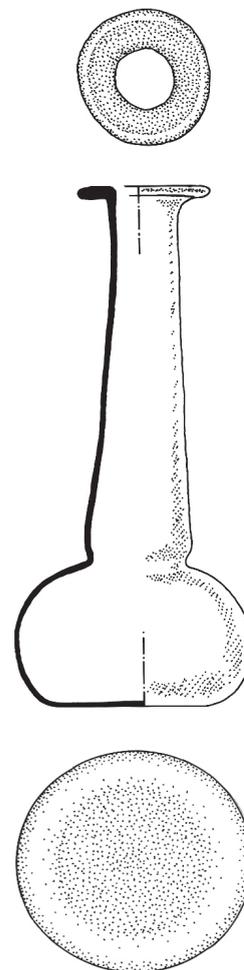
- Shape: "Candlestick" *unguentarium*. Bulbous body, about one fourth of the total height; long tubular neck tapering upward, with constriction at the bottom; rim outplayed, folded out, up, and in, and flattened; base flat, no pontil mark.

- Colour: transparent very pale green glass.

State of preservation: Complete. Weathering, patches of iridescences.

Measures: H 19.00 cm; body D 9.00 cm; rim D 5.20 cm

References: ISINGS 1957 Form 82A1; DE TOMMASO 1990, type 36





III.1.3 Blown glass

Cat. No. 056 Inv. No. 92/4.16q

Acquisition: Gift of Ernesto Wolf

Provenance: Not recorded. Probably Italy

Chronology: II - III cent. A.D.

Description:

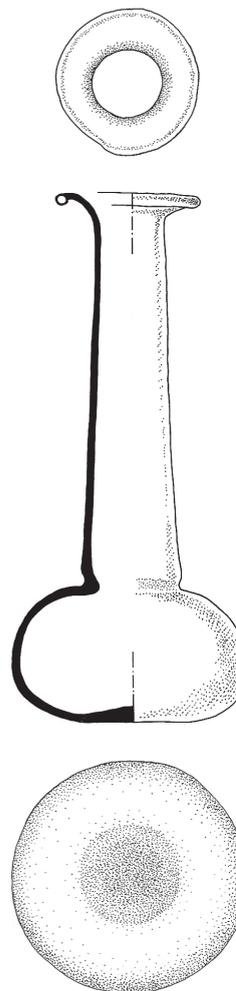
- Shape: "Candlestick" *unguentarium*. Bulbous body, about one fourth of the total height; rim folded out, up, and in, and flattened; cylindrical neck slightly tapering upward; flat base; no pontil mark.

- Colour: transparent pale green glass.

State of preservation: Complete. Severe weathering patches of iridescence.

Measures: H 18.75 cm; body D 8.50 cm; rim D 5.30 cm

References: ISINGS 1957 Form 28b; DE TOMMASO 1990, type 36





III.1.3 Blown glass

Cat. No. 057 Inv. No. 92/4.16r

Acquisition: Gift of Ernesto Wolf

Provenance: Not recorded. Probably Italy

Chronology: II - III cent. A.D.

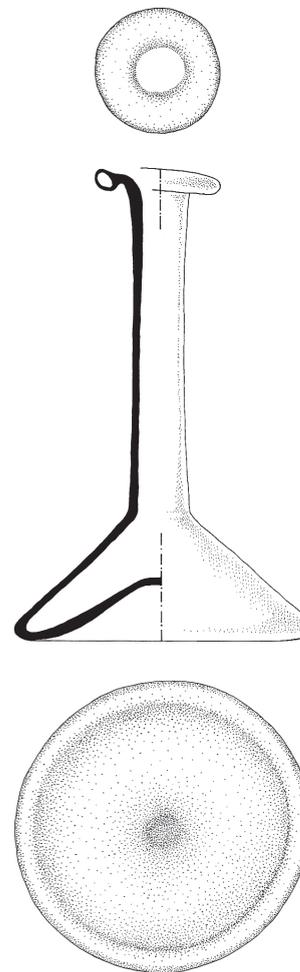
Description:

- Shape: "Candlestick" *unguentarium*. Conical body; long tubular narrow neck, with constriction at the bottom; rim folded out, up, and in, then flattened; concave base with kick.
- Colour: transparent pale green.

State of preservation: Complete. Weathering, on the interior matte iridescence, exterior dull and pitted.

Measures: H 18.20 cm; base D 10.50 cm; rim D 4.50 cm

References: ISINGS 1957 Form 82A2; DE TOMMASO 1990, type 45; WHITEHOUSE 1997, Nos. 264-265





III.1.3 Blown glass

Cat. No. 058 Inv. No. 72/4.40

Acquisition: Edgardo Pires Ferreira collection

Provenance: Susa (Iran)

Chronology: Roman Period, possibly III cent. A.D.

Description:

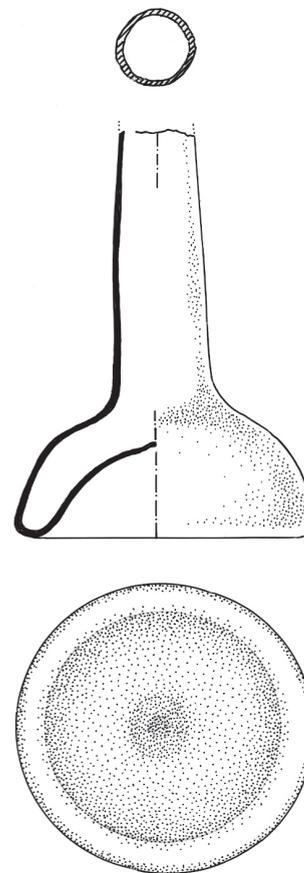
- Shape: “Candlestick” *unguentarium*. Tubular neck, tapering upward; shallow conical body probably one third of the original total height; shoulder almost flat; wall splays slightly and curves at bottom; plain base with sharp kick; no pontil mark.

- Colour: very pale greenish / colourless glass.

State of preservation: Incomplete: rim and part of the neck missing. Dull, pitting, patches of dark grey weathering on the exterior.

Measures: H 5.75 cm; base D 4.10 cm; neck D max 1.40 cm; neck D min 1.10 cm

References: DE TOMMASO 1990, type 37





III.1.3 Blown glass

Cat. No. 059 Inv. No. 72/4.41

Acquisition: Edgardo Pires Ferreira collection

Provenance: Susa (Iran)

Chronology: Roman Period, possibly III cent. A.D.

Description:

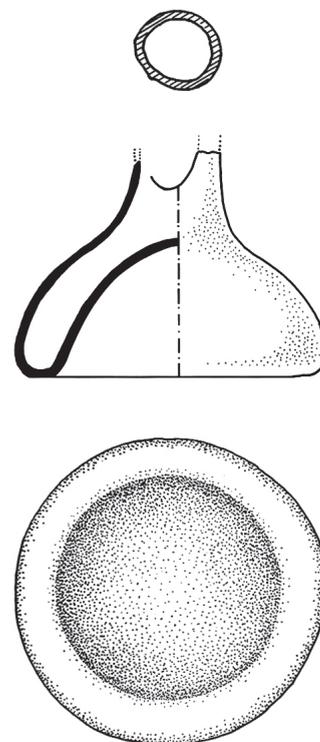
- Shape: “Candlestick” *unguentarium*. Tubular neck; shallow conical body probably one third of the original total height; shoulder almost flat; wall splays slightly and curves at bottom; plain base with sharp kick; no pontil mark.

- Colour: transparent very pale greenish glass.

State of preservation: Incomplete: rim and most of the neck missing. Surface almost completely covered by gray brown weathering, elsewhere iridescent film.

Measures: H 3.00 cm; base D 4.00 cm; neck D 1.20 cm

References: DE TOMMASO 1990, type 37





III.1.3 Blown glass

Cat. No. 060 Inv. No. 72/4.39

Acquisition: Edgardo Pires Ferreira collection

Provenance: Susa (Iran). Probably made in Eastern Mediterranean

Chronology: Possibly VI – VII cent. A.D. or later

Description:

- Shape: Fragments from an *unguentarium* with semiovoid body and tubular neck; plain base with conical kick and pontil mark.
- Colour: transparent bluish green glass, covered by a thick layer of gray weathering.

State of preservation: Fragments. Severe weathering.

Measures: D 3.50 cm

References: WHITEHOUSE 1997, No. 276



III.1.3 Blown glass

Cat. No. 061 Inv. No. 92/4.16f

Acquisition: Gift of Ernesto Wolf

Provenance: Not recorded

Chronology: Late II – III cent. A.D.

Description:

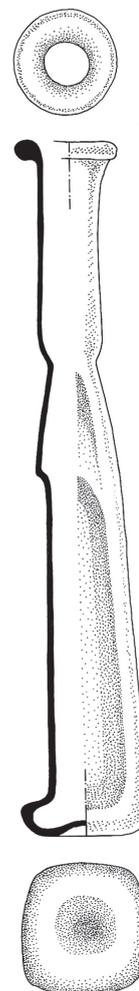
- Shape: *unguentarium* with indented body. Flattened base with square section. Tall tubular neck with constriction at bottom; rim everted, then folded up and in. No pontil mark.

- Colour: colourless with green tint.

State of preservation: Complete. Severe weathering.

Measures: H 12.20 cm; rim D 1.85 cm; base W 2.20 cm

References: RÜTTI 1991, vol. 1, pp. 173-174, Tav. 119.AR 139;
BARKÓCZI 1996, Nos. 89-91; FLEMING 1999, p. 76, pl. E.77





III.1.3 Blown glass

Cat. No. 062 Inv. No. 92/4.16b

Acquisition: Gift of Ernesto Wolf

Provenance: Not recorded. Possibly Cyprus

Chronology: Late II – III cent. A.D.

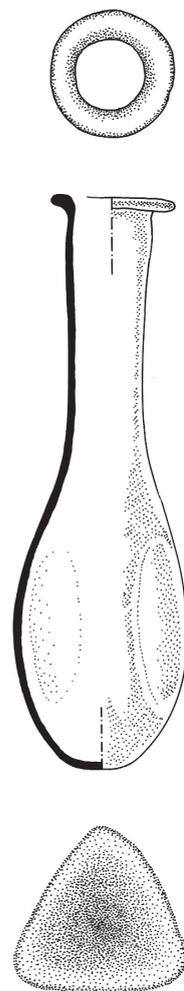
Description:

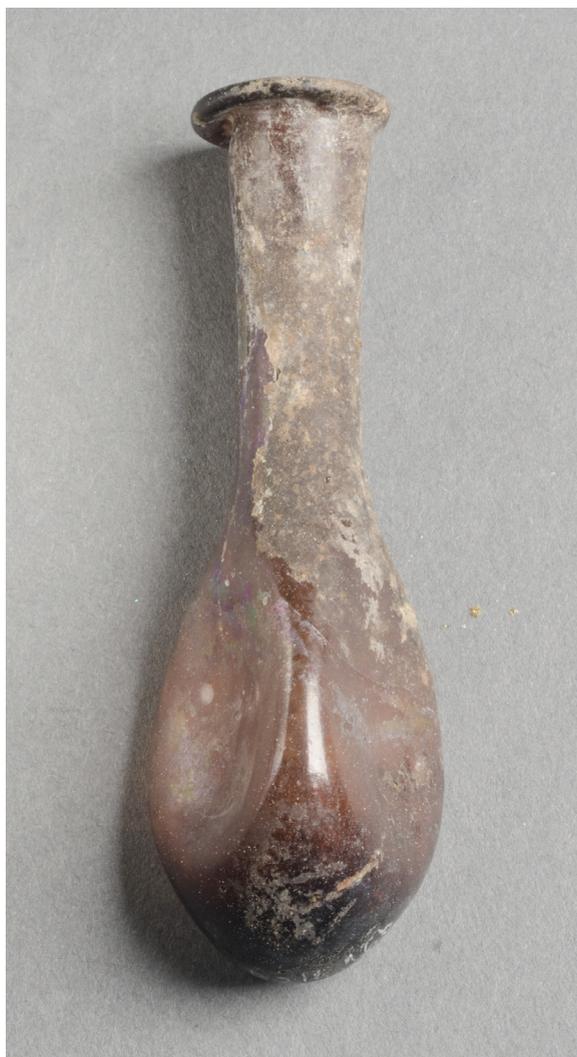
- Shape: *unguentarium* with indented body. Rounded base; tall tubular neck; rim everted, then folded up and in. No pontil mark.
- Colour: transparent purple glass. Incipient weathering and iridescence.

State of preservation: Complete.

Measures: H 7.90 cm; rim D 1.80 cm

References: VESSBERG – WESTHOLM 1956, p. 158 and 160, fig. 48.47; FLEMING 1999, p. 76, pl. E.77





III.1.3 Blown glass

Cat. No. 063 Inv. No. 92/4.24

Acquisition: Gift of Ernesto Wolf

Provenance: Not recorded. Possibly Syria

Chronology: III cent. A.D.

Description:

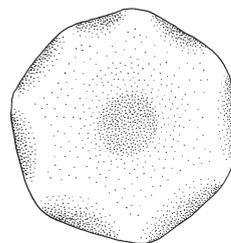
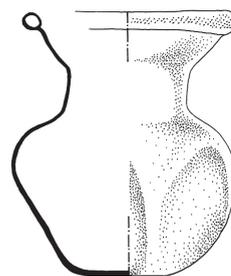
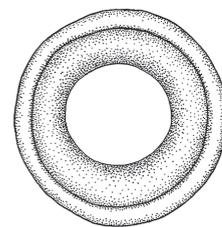
- Shape: jar. Globular indented body; rim outsplayed, folded up and in, with tubular lip; sloping shoulder; wall has seven equidistant circular indentations, base plain, with light pontil mark.

- Colour: transparent green glass, with large patches of grayish brown weathering and iridescence.

State of preservation: Complete. Severe weathering.

Measures: H 6.35 cm; shoulder D 5.30 cm; rim D 5.17 cm

References: HAYES 1975, No. 153; AUTH 1976, Nos. 465-466; BARKÓCZI 1996, Nos. 104-107; WHITEHOUSE 1997, No. 288





III.1.3 Blown glass

Cat. No. 064 Inv. No. 92/4.16m

Acquisition: Gift of Ernesto Wolf

Provenance: Not recorded.

Chronology: II - III cent. A.D.

Description:

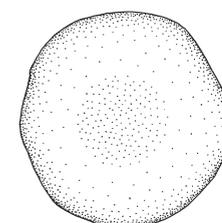
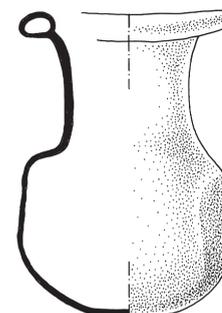
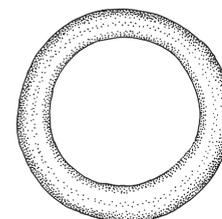
- Shape: jar. Globular indented body; rim outsplayed; cylindrical neck; wall has five or possibly six indentations, of which one is vestigial and another is hypothetical; narrow base, no pontil mark.

- Colour: transparent pale green glass, with rainbow iridescence film.

State of preservation: Incomplete. Cracks in wall. Severe weathering.

Measures: H 4.56 cm; body D 3.10 cm; rim D 3.20 cm

References: WHITEHOUSE 1997, No. 289





III.1.3 Blown glass

Cat. No. 065 Inv. No. 92/4.25

Acquisition: Gift of Ernesto Wolf

Provenance: Not recorded.

Chronology: Probably Mid III – IV cent. A.D. or later

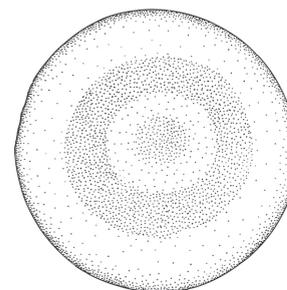
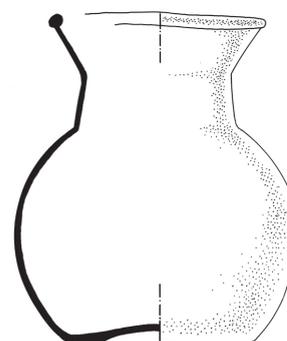
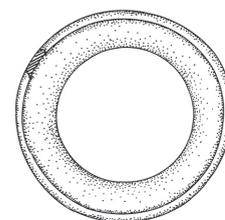
Description:

- Shape: jar. Roughly globular body; funnel mouth with tubular rim; cylindrical neck with constriction at top and bottom; plain base with kick; no pontil mark.
- Colour: almost colourless glass.

State of preservation: Almost complete, but with one crack and three small holes in wall. Covered with brown encrustation and some patches of iridescence.

Measures: H 7.80 cm; rim D 5.50; body D 7.00 cm

References: HAYES 1975, NO. 474; WHITEHOUSE 1997, No. 281





III.1.3 Blown glass

Cat. No. 066 Inv. No. 92/4.23

Acquisition: Gift of Ernesto Wolf

Provenance: Not recorded. Possibly made in Syro-Palestinian region.

Chronology: IV - V cent. A.D.

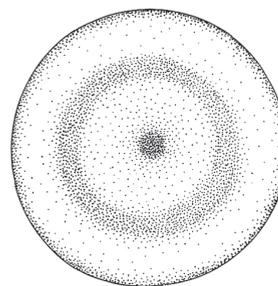
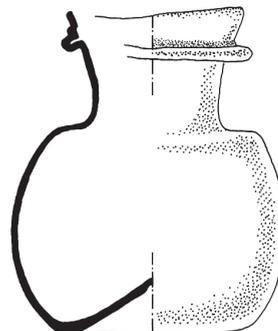
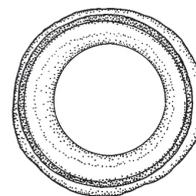
Description:

- Shape: jar. Globular body; rim upright, with rounded lip and tubular flange made by folding at junction with neck; short and funnel-shaped neck with constriction at the bottom; sloping shoulder; base plain, with kick and shallow protrusion at centre; pontil mark.
- Colour: transparent green glass covered on interior and exterior by large patches of brownish weathering.

State of preservation: Complete; large star-shaped crack in wall; severe weathering.

Measures: H 6.00 cm; body D 5.25 cm; rim D 3.68 cm

References: WHITEHOUSE 1997, No. 285





III.1.3 Blown glass

Cat. No. 067 Inv. No. 92/4.29

Acquisition: Gift of Ernesto Wolf

Provenance: Not recorded. Eastern Mediterranean, probably Palestine

Chronology: IV - early V A.D.

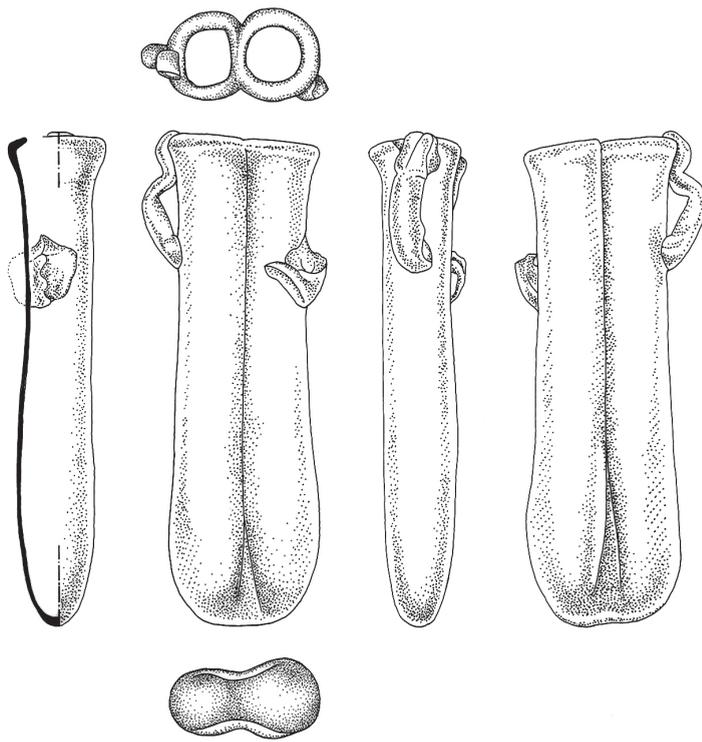
Description:

- Shape: double kohl tube. U-shaped tubular vessels with two compartments. Rim rounded in flame; two short coil handles, each applied to upper body and attached to edge of rim.
- Colour: transparent pale green glass. Large patches of iridescence.

State of preservation: Almost complete, right handle broken. Heavily weathered.

Measures: H 10.80 cm; L max 3.20 cm; rim D 0.35 cm

References: BARKÓCZI 1996, Nos. 68-70; TARRATS BOU - CARRERAS ROSSELL 2005, No. 149



III.1.3 Blown glass

Cat. No. 068 Inv. No. 92/4.30

Acquisition: Gift of Ernesto Wolf

Provenance: Not recorded. Eastern Mediterranean, probably Palestine

Chronology: IV - early V cent. A.D

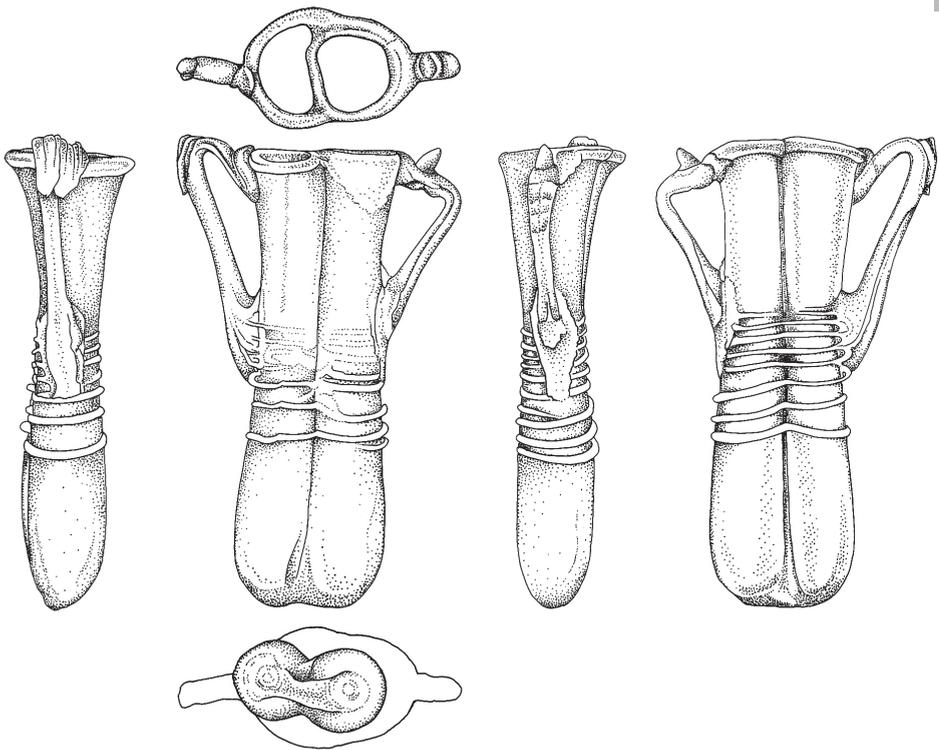
Description:

- Shape: double kohl tube. U-shaped tubular vessels with two compartments. Rim rounded in flame. Two angular coil handles, each applied to upper body and attached to edge of rim, excess glass drawn out thin, folded back on top of handle, and snapped off. One uninterrupted thread wound counter clockwise with seven revolutions, applied before the body was squeezed for creating the two compartments.
- Colour: transparent pale green glass. Large patches of iridescence.

State of preservation: Complete.

Measures: H 11.30 cm; L max 4.10 cm

References: BARKÓCZI 1996, Nos. 68-70



III.1.3 Blown glass

Cat. No. 069 Inv. No. 72/4.35

Acquisition: Edgardo Pires Ferreira collection

Provenance: Susa (Iran)

Chronology: After mid II cent. A.D. Possibly V – VII A.D. or early Islamic Period (around X cent. A.D.)

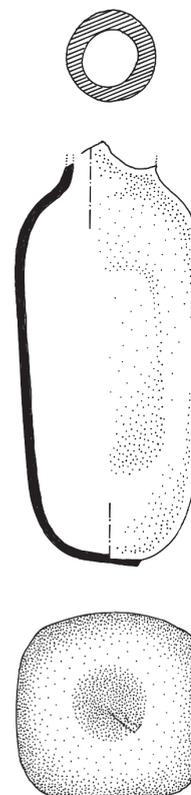
Description:

- Shape: perfume bottle. Cylindrical neck; rectangular four-sided body, tapering downward; wall vertical, curving in at bottom; rounded base; light round pontil mark.
- Colour: colourless glass.

State of preservation: Incomplete: neck and rim missing.
Pitting, dull, milky white and sandy brown weathering.

Measures: H 4.70 cm; L 1.90 cm; W 2.10 cm; neck D 1.00 cm

References: DE TOMMASO 1990, type 63; KRÖGER 1995, No. 96;
CARBONI 2001, pp. 155, Nos. 3.6a-b





III.1.3 Blown glass

Cat. No. 070 Inv. No. 72/4.36

Acquisition: Edgardo Pires Ferreira collection

Provenance: Susa (Iran)

Chronology: After mid II cent. A.D. Possibly V – VII A.D. or early Islamic Period (around X cent. A.D.)

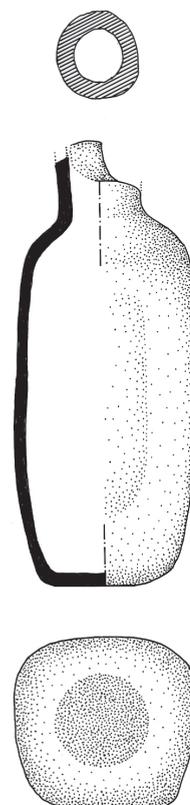
Description:

- Shape: perfume bottle. Cylindrical neck; rectangular four-sided body, tapering downward; wall vertical, curving in at bottom; rounded base; light round pontil mark.
- Colour: colourless glass.

State of preservation: Incomplete: part of the neck and rim missing. Pitting, dull, iridescent film, white and sandy gray incrustations.

Measures: H 5.60 cm; L 2.10 cm; W 2.00 cm; neck D 1.00 cm

References: DE TOMMASO 1990, type 63; CARBONI 2001, pp. 155, Nos. 3.6a-b





III.1.3 Blown glass

Cat. No. 071 Inv. No. 72/4.37

Acquisition: Edgardo Pires Ferreira collection

Provenance: Susa (Iran)

Chronology: After mid II cent. A.D. Possibly V – VII A.D. or early Islamic Period (around X cent. A.D.)

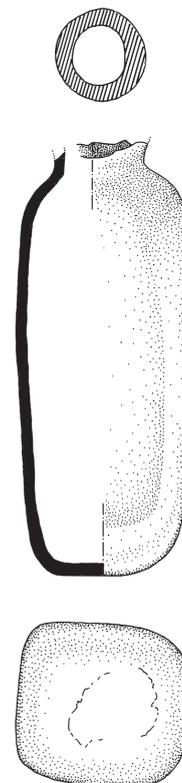
Description:

- Shape: perfume bottle. Cylindrical neck; rectangular four-sided body, tapering downward; wall vertical, curving in at bottom; narrow plain base; light round pontil mark.
- Colour: transparent very pale yellow glass.

State of preservation: Incomplete: neck and rim missing. Pitting, dull, milky white and dark gray weathering.

Measures: H 5.50 cm; L 2.10 cm; W 2.00 cm

References: DE TOMMASO 1990, type 63; CARBONI 2001, pp. 155, Nos. 3.6a-b





III.1.3 Blown glass

Cat. No. 072 Inv. No. 73/9.61b

Acquisition: Edgardo Pires Ferreira collection

Provenance: Susa (Iran)

Chronology: VII – VIII cent. A.D.

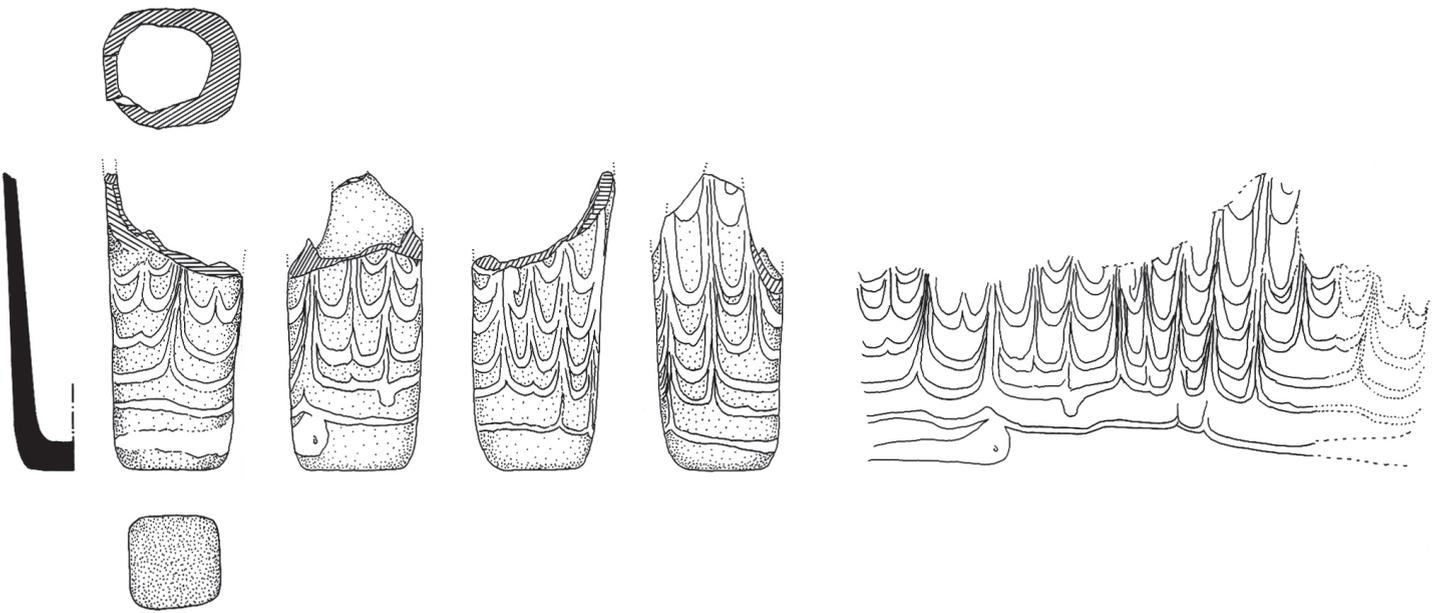
Description:

- Shape: base and part of wall of a kohl bottle. Square body tapering to the base.
- Colour: translucent dark blue/black, wound with an opaque yellowish white thread of irregular thickness. The thread pulled upward into a shallow festoon pattern.

State of preservation: Fragment.

Measures: H 4.40 cm; W min 1.80 cm, max 2.20 cm

References: CARBONI 2001, Nos. 3.59 and 3.63a



III.1.3 Blown glass

Cat. No. 073 Inv. No. 71/5.2

Acquisition: Edgardo Pires Ferreira collection

Provenance: Susa (Iran)

Chronology: VII – VIII cent. A.D.

Description:

- Shape: base and part of wall of a kohl bottle. Square body tapering to the base.
- Colour: translucent dark blue, with waving thread decoration in opaque yellowish white.

State of preservation: Fragment. The surface is highly damaged and covered by an opaque grey slip.

Measures: H 3.20 cm; W min 1.30 cm, max 1.50 cm

References: CARBONI 2001, Nos. 3.59 and 3.63a



III.1.3 Blown glass

Cat. No. 074 Inv. No. 73/9.61c

Acquisition: Edgardo Pires Ferreira collection

Provenance: Susa (Iran)

Chronology: VII – VIII cent. A.D.

Description:

- Shape: base and part of wall of a kohl bottle. Square body tapering to the base.
- Colour: opaque grey ground with an opaque yellowish white narrow thread. The thread pulled upward into an irregular shallow festoon pattern.

State of preservation: Fragment.

Measures: H 2.10 cm; W min 1.50 cm, max 1.80 cm

References: CARBONI 2001, Nos. 3.59 and 3.63a

III.1.3 Blown glass

Cat. No. 075 Inv. No. 73/9.61a

Acquisition: Edgardo Pires Ferreira collection

Provenance: Susa (Iran)

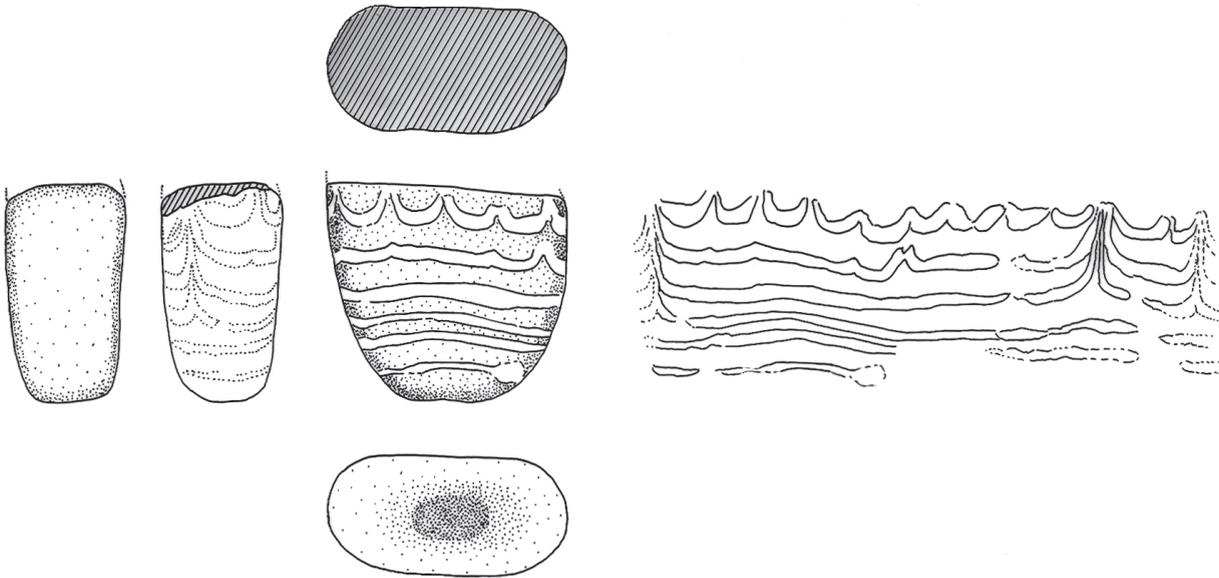
Chronology: VII – VIII cent. A.D.

Description:

- Shape: narrow rectangular base with rounded borders possibly of a small perfume bottle.
- Colour: opaque dark blue/black, wound with an opaque white thread. From the bottom, the thread goes spirally and irregularly around the body and at the top it pulled upward into a shallow festoon pattern.

State of preservation: Fragment.

Measures: H 2.20 cm; L 2.40 cm; Th 1.20 cm



III.1.3 Blown glass

Cat. No. 076 Inv. No. 73/9.60a

Acquisition: Gift of Edgardo Pires Ferreira

Provenance: Susa (Iran)

Chronology: Probably VIII – X cent. A.D., or possibly Roman period (around III cent. A.D.)

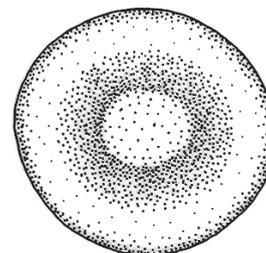
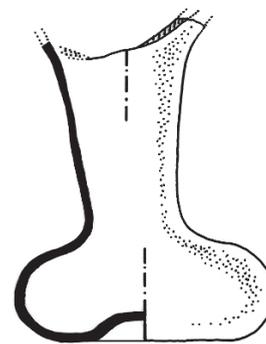
Description:

- Shape: miniature perfume bottle. Squat and irregular bulbous body; tooled (tool mark in centre of base); tall neck and splayed opening rim.
- Colour: translucent amber glass.

State of preservation: Almost complete, fragmentary rim. Light weathering.

Measures: H 3.00 cm; rim D 1.40 cm; body D 2.40 cm

References: RÜTTI 1991, vol. 2, No. 2367; WHITEHOUSE 1997, No. 273; KRÖGER 1995, No. 82





III.1.3 Blown glass

Cat. No. 077 Inv. No. 73/9.60c

Acquisition: Gift of Edgardo Pires Ferreira

Provenance: Susa (Iran)

Chronology: IX - X cent. A.D.

Description:

- Shape: miniature perfume bottle. Globular body. Short cylindrical neck, rounded rim.
- Colour: translucent colourless glass.

State of preservation: Almost complete. Incipient surface pitting, opaque white weathering.

Measures: H 2.70 cm; body D 2.75 cm; rim D 1.00 cm

References: KRÖGER 1995, Nos. 54-55, and 83



III.1.3 Blown glass

Cat. No. 078 Inv. No. 73/9.60m

Acquisition: Gift of Edgardo Pires Ferreira

Provenance: Susa (Iran)

Chronology: IX - X cent. A.D.

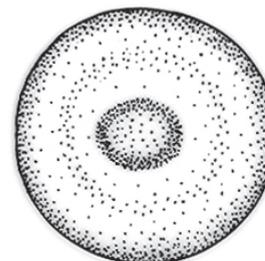
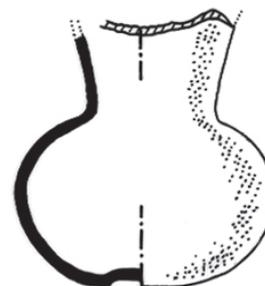
Description:

- Shape: miniature globular perfume bottle; cylindrical neck slightly flaring upward; plain base.
- Colour: translucent colourless glass, patches of opaque white weathering, partially covered by iridescence and corroded.

State of preservation: Complete body, fragmentary neck.
Severe pitting and white/iridescent weathering.

Measures: H 2.30 cm; body D 2.00 cm

References: KRÖGER 1995, No. 83





III.1.3 Blown glass

Cat. No. 079 Inv. No. 72/4.34

Acquisition: Edgardo Pires Ferreira collection

Provenance: Susa (Iran)

Chronology: IX - X cent. A.D.

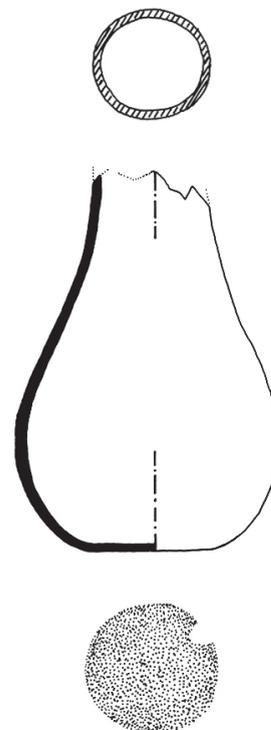
Description:

- Shape: miniature perfume bottle. Irregular pear-shaped body, lopsided; cylindrical neck.
- Colour: probably colourless glass, but completely covered of dull grey weathering.

State of preservation: Complete body, fragmentary neck.
Pitted, with slight iridescence.

Measures: H 3.20 cm; body D 2.10 cm

References: KRÖGER 1995, No. 61





III.1.3 Blown glass

Cat. No. 080 Inv. No. 73/9.60d

Acquisition: Gift of Edgardo Pires Ferreira

Provenance: Susa (Iran)

Chronology: IX - X cent. A.D.

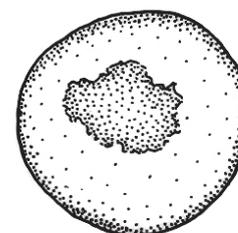
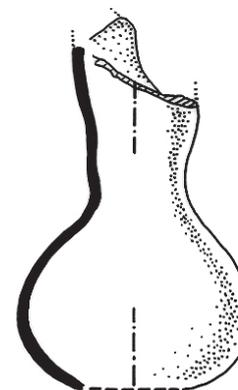
Description:

- Shape: miniature perfume bottle. Irregular pear-shaped body; with constriction at the bottom, splayed opening neck.
- Colour: probably colourless glass, but completely covered of dull grey weathering.

State of preservation: Complete body, fragmentary neck.
Pitting, iridescence.

Measures: H 2.80 cm; body D 1.80 cm

References: KRÖGER 1995, No. 70





III.1.3 Blown glass

Cat. No. 081 Inv. No. 73/9.60e

Acquisition: Gift of Edgardo Pires Ferreira

Provenance: Susa (Iran)

Chronology: IX - X cent. A.D.

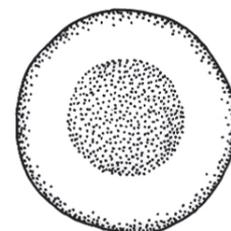
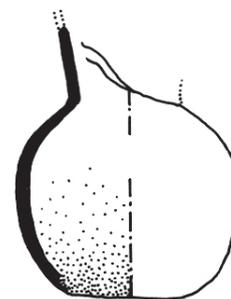
Description:

- Shape: miniature perfume bottle. Spherical body, flat base, cylindrical neck with constriction at the bottom.
- Colour: translucent green glass, with patches of dull grey weathering.

State of preservation: Complete body, fragmentary neck.
Severe weathering.

Measures: H 2.40 cm; body D 2.00 cm

References: KRÖGER 1995, Nos. 83, 85, 86





III.1.3 Blown glass

Cat. No. 082 Inv. No. 73/9.60f

Acquisition: Gift of Edgardo Pires Ferreira

Provenance: Susa (Iran)

Chronology: IX - X cent. A.D.

Description:

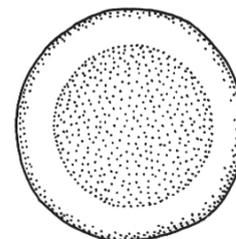
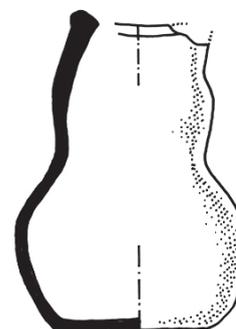
- Shape: miniature globular jar. Lopsided body, flat base, irregular cylindrical neck.
- Colour: translucent green glass completely covered by a deep gray-brown iridescent film.

State of preservation: Complete body, fragmentary neck.

Severe weathering.

Measures: H 2.90 cm; shoulder D 2.00 cm

References: KRÖGER 1995, Nos. 76, and 78-79





III.1.3 Blown glass

Cat. No. 083 Inv. No. 73/9.60g

Acquisition: Gift of Edgardo Pires Ferreira

Provenance: Susa (Iran)

Chronology: IX - X cent. A.D.

Description:

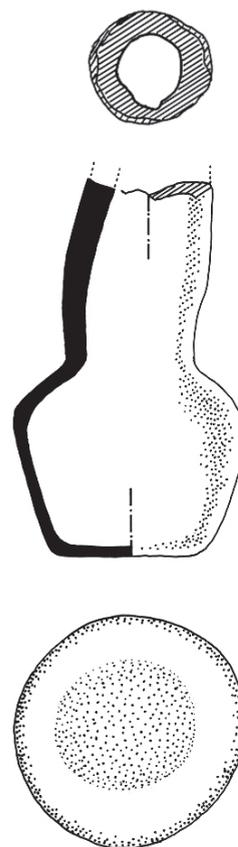
- Shape: miniature lopsided globular jar. Irregular cylindrical neck constricted at the bottom; flat shoulder; base plain.

- Colour: opaque green glass.

State of preservation: Complete body, fragmentary neck.
Patches of dark grey enamellike weathering.

Measures: H 3.70 cm; shoulder D 2.20 cm

References: KRÖGER 1995, Nos. 61-78





III.1.3 Blown glass

Cat. No. 084 Inv. No. 73/9.60n

Acquisition: Gift of Edgardo Pires Ferreira

Provenance: Susa (Iran)

Chronology: IX - X cent. A.D.

Description:

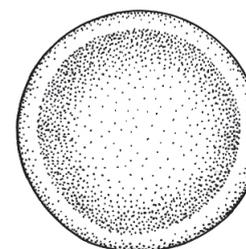
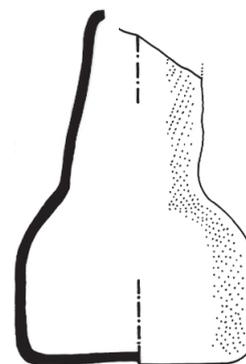
- Shape: miniature flask. Cylindrical body fairly distorted and slightly constricted at the middle; round shoulder; tubular high neck constricted at the bottom; plain base with pontil mark.

- Colour: probably colourless glass, but completely covered by dark grey enamellike weathering.

State of preservation: Complete body, fragmentary neck, rim missing. Severe weathering.

Measures: H 4.50 cm; D 2.90 cm

References: KRÖGER 1995, Nos. 61-78





III.1.3 Blown glass

Cat. No. 085 Inv. No. 73/9.60h

Acquisition: Gift of Edgardo Pires Ferreira

Provenance: Susa (Iran)

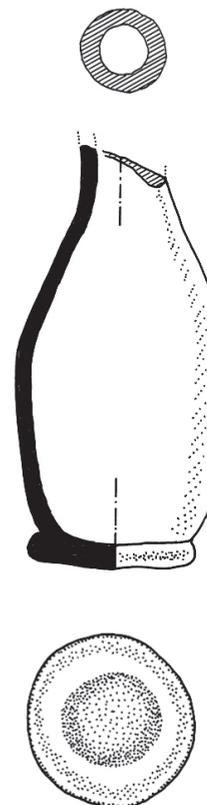
Chronology: IX - XI cent. A.D. or later

Description:

- Shape: small cylindrical bottle. Somewhat lopsided body, cylindrical narrow neck, ring base.
- Colour: glass completely covered by opaque dark grey enamellike weathering.

State of preservation: Complete body and foot, fragmentary neck. Severe weathering.

Measures: H 4.50 cm; shoulder D 2.10 cm





III.1.3 Blown glass

Cat. No. 086 Inv. No. 73/9.60b

Acquisition: Gift of Edgardo Pires Ferreira

Provenance: Susa (Iran)

Chronology: IX - X cent. A.D.

Description:

- Shape: miniature globular jar for scent, carved with four circles with bosses in relief, separated by short vertical lines. Originally with a very short circular neck.
- Colour: transparent colourless glass with greenish tinge.

State of preservation: Complete body, neck missing. Partially covered by iridescent silver layer.

Measures: H 1.60 cm; D max 2.00 cm

References: KRÖGER 1995, Nos. 175-176 and 178; CARBONI 2001, pp. 74-75 nos. 16c-d, pp. 110-111, nos. 2.6c-d; WHITEHOUSE 2010, Nos. 193, 215



III.1.3 Blown glass

Cat. No. 087 Inv. No. 71/5.27

Acquisition: Gift of Edgardo Pires Ferreira

Provenance: Susa (Iran)

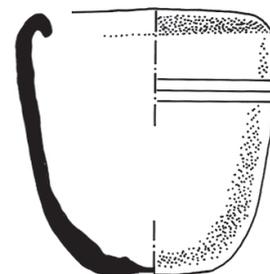
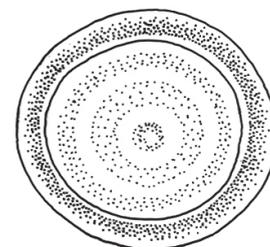
Chronology: Possibly Islamic period

Description:

- Shape: small cup. Conical body, narrower at the bottom; round rim leading inward; plain base with sharp pontil mark; on wall below the rim three parallel wheel-cut grooves.
- Colour: transparent yellowish amber glass, covered by large patches of rainbow and silver iridescence.

State of preservation: Complete.

Measures: H 4.00 cm; rim D 3.90 cm





III.1.3 Blown glass

Cat. No. 088 Inv. No. 92/4.9a

Acquisition: Gift of Ernesto Wolf

Provenance: Not recorded. Probably Iran or Iraq

Chronology: IX cent. A.D.

Description:

- Shape: irregular glass fragment curving downward/inward at about one third of the length, probably belonging to a plate. Engraved decoration with parallel lines, circles, waves, and triangles giving the impression of a mixed vegetal and geometric motif. Polished back side.
- Colour: translucent brown/amber glass.

State of preservation: Fragment.

Measures: H 2.85 cm; L 6.70 cm

References: KRÖGER 1995, Nos. 164; CARBONI 2001, No. 17c; CARBONI - WHITEHOUSE 2001, Nos. 68 and 70a-e; WHITEHOUSE 2010, Nos. 1-2



III.1.3 Blown glass

Cat. No. 089 Inv. No. 92/4.9b

Acquisition: Gift of Ernesto Wolf

Provenance: Not recorded. Probably Iran or Iraq

Chronology: IX cent. A.D.

Description:

- Shape: glass fragment with irregular thickness; tapering toward the up-right part. Probably a plate. Engraved decoration with two flowers surrounded by concatenated circles. Flat and polished back side.

- Colour: translucent amber glass.

State of preservation: Fragment.

Measures: H 3.00 cm; L 6.00 cm

References: KRÖGER 1995, Nos. 164; CARBONI 2001, No. 17c; CARBONI - WHITEHOUSE 2001, Nos. 68 and 70a-e; WHITEHOUSE 2010, Nos. 1-44



III.1.3 Blown glass

Cat. No. 090 Inv. No. 73/9.64

Acquisition: Gift of Edgardo Pires Ferreira

Provenance: Susa (Iran)

Chronology: Roman Period (II – V cent. A.D.)

Description:

- Shape: smooth strap handle originally applied to the shoulder of blown or mould-blown jug or amphora; tapering upward; on the top excess glass folded up and snapped off.
- Colour: translucent blue glass.

State of preservation: Fragment: handle and shoulder joint.
Severe pitting, rainbow iridescence and gray white weathering.

Measures: H 10.30 cm



III.1.3 Blown glass

Cat. No. 091 Inv. No. 72/4.43

Acquisition: Edgardo Pires Ferreira collection

Provenance: Susa (Iran)

Chronology: Possibly after VIII cent. A.D.

Description:

- Shape: handle of a non identified blown or mould-blown vessel (or possibly of another object). Tubular curved handle of molten glass tapering from a broken end, which was attached to a vessel (or other object), to the opposite end, which is shaped as round drop of glass, intact, not attached to anything. Both ends are individuated by a constriction.
- Colour: translucent green glass.

State of preservation: Fragment. Incipient pitting, large patches of dark grey weathering.

Measures: H 8.80 cm; L 8.50 cm; D max 1.90 cm; D min 0.80 cm



III.1.3 Blown glass

Cat. No. 092 Inv. No. 73/9.62d

Acquisition: Gift of Edgardo Pires Ferreira

Provenance: Susa (Iran)

Chronology: Possibly Islamic Period

Description:

- Shape: fragment of base and wall of shallow bowl or dish. Convex curving wall; slightly convex base; under the base three applied and/or tooled small curls of glass which seem circular feet.
- Colour: Transparent colourless glass with thin golden film.

State of preservation: Fragment. Pitting, iridescent and white weathering.

Measures: H max 5.80 cm; L max 3.00 cm



III.1.3 Blown glass

Cat. No. 093 Inv. No. 92/4.9m

Acquisition: Gift of Ernesto Wolf

Provenance: Not recorded. Possibly central / North-central Europe or Western Asia

Chronology: Possibly XV – XVIII cent. A.D.

Description:

- Shape: pentagonal fragment of enamelled glass. Thickness tapers from the lower left angle toward the opposite part. Back side surface coarse. Enamelled glass cups and tankard are well-known, but the unpolished, coarse back side might be better explained if the fragment belonged to a plaque or something like that.

- Colour: transparent amber brown glass enamelled with opaque white, yellow and red. Opaque white animal head and part of shoulders and leg, possibly a turtle, with red eye circled in yellow; above the head two yellow decorative patterns not identifiable. Pinprick bubbles.

State of preservation: Fragment. Edges very smoothed, possibly intentionally polished in contemporary period.

Measures: H 4.10 cm; L 4.20 cm; Th max 0.60 cm, Th min 0.35 cm

References: KLEIN – LLOYD 1984, pp. 67-98; CROUCH 1997; WARD 1998; CIAPPI 2006, pp. 54-55



III.1.4 Mould-blown glass

Among the mould-blown glass we find two complete jugs of late Roman Period (Nos. 094 and 095), one small fragment of a bowl, or possibly a dish, with an interesting decoration in low relief, but of uncertain chronology (No. 096), and fourteen small early Islamic vessels (Nos. 097-110).

Among small Islamic bottles intended for scent, we can easily distinguish at least four “molar flasks”, which are small perfume bottles with four very short feet resembling the roots of a tooth (Nos. 103-106). This type of container is one of the most common perfume or essence bottle among the early Islamic glass. They were probably blown into a mould in order to produce the square section of the body, and then heavily cut⁴⁷. The neck was then usually carved with hexagonal facets (none preserved in MAE collection), and the body carved in relief with a linear or polygonal or even oval pattern⁴⁸. This technique is called wheel-cutting and is the most sophisticated, giving a wide range of effects from simple linear patterns via deep relief cut designs to the “bevelled” style, with complex interlocking motifs (not attested in MAE collection)⁴⁹. Carving hard stones such as rock-crystal or agate probably inspired the wheel-cut work. The matt surface of some examples is possibly the results of abrasion during cleaning.

47 CARBONI 2001, pp. 99-100.

48 TAIT 1991, pp. 114-117.

49 WATSON 1997, pp. 29-30.

III.1.4 Mould-blown glass

Cat. No. 094 Inv. No. 92/4.18

Acquisition: Gift of Ernesto Wolf

Provenance: Not recorded.

Chronology: IV cent. A.D.

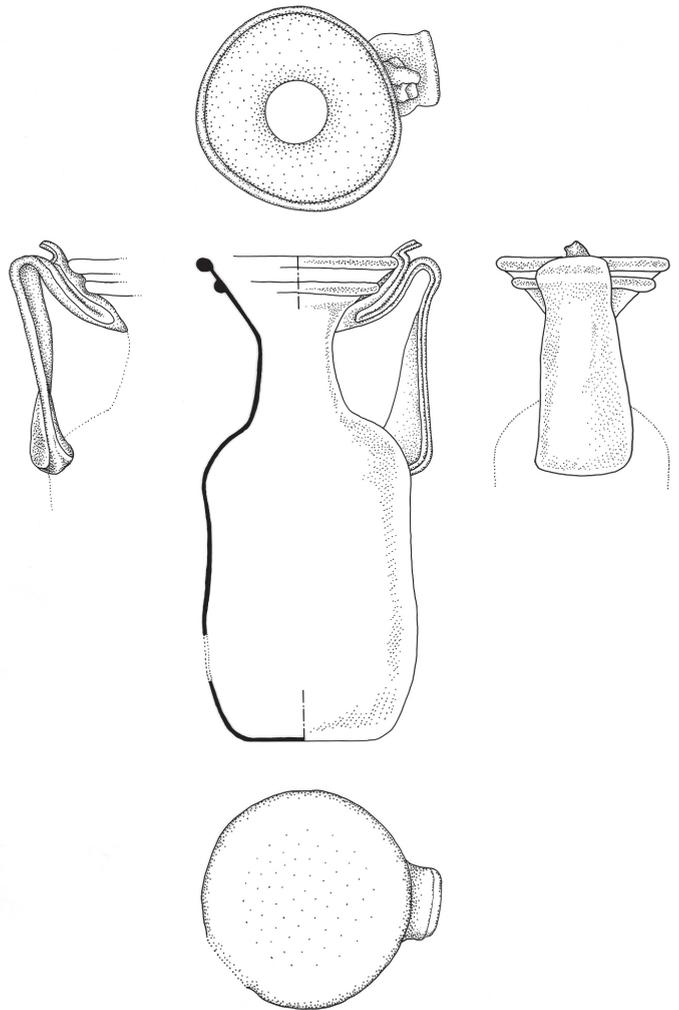
Description:

- Shape: cylindrical jug. Rim rounded in flame; applied rim coil; flaring round mouth; neck tapering upward; cylindrical body slightly concave at the middle, blown in full-size mould; facets polished; one reeded handle, applied to shoulder, pulled up straight, angled sharply, and attached to neck, excess glass folded up and down against the upper part of neck; slightly concave base.
- Colour: transparent pale yellow glass.

State of preservation: Almost complete, a fair large fragment of the body missing. On exterior iridescent film; on the interior of the rim silver iridescence.

Measures: H 13.74 cm; body D 6.25 cm; rim D 5.70 cm

References: ISINGS 1957 Form 126; HAYES 1975, No. 285; WHITEHOUSE 1997, No. 329; WHITEHOUSE 2001, No. 717



III.1.4 Mould-blown glass

Cat. No. 095 Inv. No. 92/4.26

Acquisition: Gift of Ernesto Wolf

Provenance: Not recorded. Probably Eastern Mediterranean

Chronology: IV – V cent. A.D.

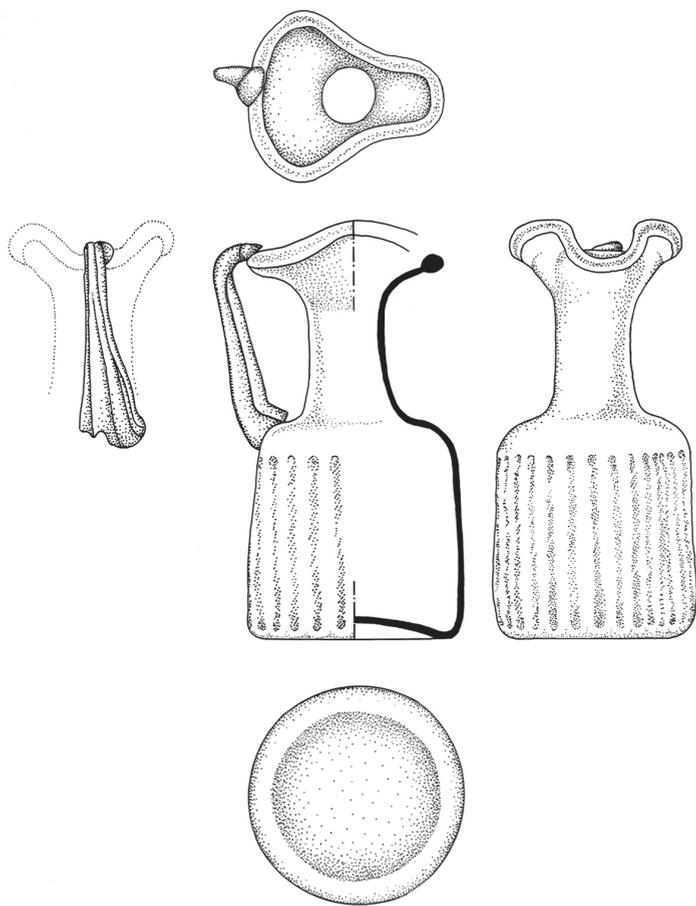
Description:

- Shape: cylindrical jug with trefoil mouth. Cylindrical body with slight upward taper; ribbed side-wall (shallow narrow vertical ribs); rim rounded in flame; flaring trefoil mouth; tall tubular neck; applied handle to shoulder and attached to edge of mouth; base slightly concave.
- Colour: body: transparent near colourless glass (appearing yellow), handle: transparent pale bluish green glass. On exterior iridescent film, on interior silver iridescence.

State of preservation: Complete, deep crack in shoulder and part of the body under the handle. Incipient surface pitting.

Measures: H 10.40 cm; D 5.10 cm

References: ISINGS 1957 Form 126; HAYES 1975, No. 428



III.1.4 Mould-blown glass

Cat. No. 096 Inv. No. 92/4.9i

Acquisition: Gift of Ernesto Wolf

Provenance: Not recorded.

Chronology: From the IV cent. A.D.

Description:

- Shape: side fragment of hemispherical bowl. Decoration in low relief with thin petals going upward from the bottom (like “palmette” frieze). Above petals a narrow band with a spiral pattern running leftward, in turn surmounted by a band with triangles pattern.
- Colour: translucent dark purple glass. Patches of iridescence and incipient weathering.

State of preservation: Fragment.

Measures: H 3.35 cm; L 3.30 cm



III.1.4 Mould-blown glass

Cat. No. 097 Inv. No. 92/4.28

Acquisition: Gift of Ernesto Wolf

Provenance: Not recorded. Probably Syria or Palestine

Chronology: VII – VIII cent. A.D.

Description:

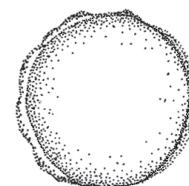
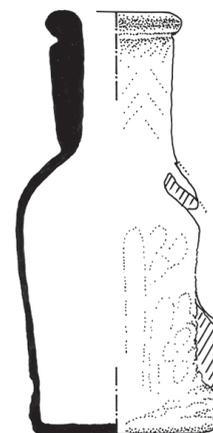
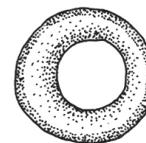
- Shape: hexagonal bottle with sunken relief with unassigned symbols. Cylindrical neck; ring moulding at rim; rounded shoulder; flat rounded base. On the body six decorated rectangular panels with designs in intaglio. Due to the corrosion and *lacuna*, detecting decorative motifs is problematic, but at least one panel bears an x-shaped motif surmounted by curved lines, perhaps a stylized tree, with dots.

- Colour: opaque blue glass.

State of preservation: Fragmentary. Part of the body missing, surface corroded.

Measures: H 5.80 cm; shoulder D 3.00 cm; rim D 1.80 cm

References: JENKINS 1986, Nos. 11-12; STERN 1995, No. 176





III.1.4 Mould-blown glass

Cat. No. 098 Inv. No. 92/4.16c

Acquisition: Gift of Ernesto Wolf

Provenance: Not recorded. Probably Western Asia

Chronology: IX - X cent. A.D.

Description:

- Shape: cylindrical bottle; rounded rim made by folding in and down; neck tapers; flat base; light pontil mark; body decorated with isosceles alternatively facing downward and upward. Probably blown in a mould, less probably free blown with body decorated by tooling.

- Colour: transparent pale amber glass.

State of preservation: Intact. Dull, some brown incrustations above all on the interior.

Measures: H 11.00 cm; rim D 2.00 cm; shoulder D 3.00 cm

References: CARBONI 2001, p. 244, Nos. 3.31a-b





III.1.4 Mould-blown glass

Cat. No. 099 Inv. No. 92/4.15d

Acquisition: Gift of Ernesto Wolf

Provenance: Not recorded. Egypt or Western Asia

Chronology: IX - X cent. A.D.

Description:

- Shape: cylindrical perfume bottle, with geometric wheel-cut decoration. Neck cylindrical at bottom; flat shoulder, with rounded edge; vertical wall; plain base, slightly splayed; no pontil mark. Wall is completely covered with decoration: at top, continuous horizontal band of six contiguous squarish facets; below, under a single deep horizontal groove, frieze with four hollow facets shaped like upright or inverted Vs.

- Colour: translucent colourless glass.

State of preservation: Complete body, neck poorly preserved, rim missing.

Measures: H 3.80 cm; D ext 1.90 cm

References: WHITEHOUSE 2010, No. 92



III.1.4 Mould-blown glass

Cat. No. 100 Inv. No. 92/4.15e

Acquisition: Gift of Ernesto Wolf

Provenance: Not recorded. Probably Egypt or Western Asia

Chronology: IX - X cent. A.D.

Description:

- Shape: cylindrical perfume bottle, with geometric wheel-cut decoration. Neck cylindrical at bottom; flat shoulder, with rounded edge; vertical wall; plain base, slightly splayed; no pontil mark. Wall is completely covered with decoration: at top, continuous horizontal band of six contiguous squarish facets; below, under a single deep horizontal groove, frieze with hollow facets shaped like Vs each with a crescent inside, at the top.
- Colour: translucent colourless glass.

State of preservation: Almost complete, part of the neck and rim missing.

Measures: H 3.70 cm; D ext 1.70 cm

References: WHITEHOUSE 2010, No. 92



III.1.4 Mould-blown glass

Cat. No. 101 Inv. No. 73/9.601

Acquisition: Gift of Edgardo Pires Ferreira

Provenance: Susa (Iran)

Chronology: IX - XI cent. A.D.

Description:

- Shape: square perfume flask. Tall body, straight vertical walls, flat base, small circular neck. Each side of the body carved with one rhombus. Although no traces of feet can be now detected, taking into consideration the high degree of corrosion, it is possible that it originally was a “molar flask”.

- Colour: translucent colourless glass.

State of preservation: Almost complete, neck and rim partially missing. Surface highly corroded.

Measures: H 3.50 cm; L 2.10 cm; W 1.70 cm

References: CARBONI 2001, p. 131, No. 2.34a; WHITEHOUSE 2010, No. 110



III.1.4 Mould-blown glass

Cat. No. 102 Inv. No. 73/9.60i

Acquisition: Gift of Edgardo Pires Ferreira

Provenance: Susa (Iran)

Chronology: IX - XI cent. A.D.

Description:

- Shape: square perfume flask. Tall body, straight vertical walls, flat base, circular neck now missing. Each side of the body carved with one rhombus.
- Colour: translucent colourless glass. Although no traces of feet can be now detected, taking into consideration the high degree of corrosion, it is possible that it originally was a “molar flask”.

State of preservation: Almost complete, neck missing. Surface highly corroded with a thick iridescent layer.

Measures: H 3.20 cm; L 2.20 cm; W 2.10 cm

References: CARBONI 2001, p. 131, No. 2.34a; WHITEHOUSE 2010, No. 110



III.1.4 Mould-blown glass

Cat. No. 103 Inv. No. 92/4.15a

Acquisition: Gift of Ernesto Wolf

Provenance: Not recorded. Egypt or Western Asia

Chronology: IX - XI cent. A.D.

Description:

- Shape: “molar flask”. Small square perfume bottle with four very short feet, one at each corner. Bottom of neck with circular section; narrow shoulder, vertical sides; square cross section. Originally it should have straight, tapering neck and four pointing feet (now broken). Geometric wheel-cut decoration, with horizontal groove above midpoint.
- Colour: transparent colourless glass.

State of preservation: Complete body, feet and neck missing.

Measures: H 3.60 cm; W 1.90 cm

References: CARBONI 2001, pp. 98-99, No. 27a, and 124-126, Nos. 2.28p; WHITEHOUSE 2010, Nos. 107, 139



III.1.4 Mould-blown glass

Cat. No. 104 Inv. No. 92/4.15b

Acquisition: Gift of Ernesto Wolf

Provenance: Not recorded. Egypt or Western Asia

Chronology: IX - XI cent. A.D.

Description:

- Shape: “molar flask”, small square perfume bottle with four short pointed feet, one at each corner. Bottom of neck with circular section; flat shoulder; vertical wall. Wheel-cut decoration with one rhombus in relief on each side. Rhombuses were formed by cutting away most of tops and bottoms of all four edges, leaving small triangular facets at top and bottom of body.
- Colour: translucent colourless glass.

State of preservation: Complete body, almost complete feet, neck missing.

Measures: H 4.10 cm; W 1.90 cm

References: CARBONI 2001, pp. 124-126, Nos. 2.28c; WHITEHOUSE 2010, No. 110



III.1.4 Mould-blown glass

Cat. No. 105 Inv. No. 92/4.15f

Acquisition: Gift of Ernesto Wolf

Provenance: Not recorded. Egypt or Western Asia

Chronology: IX - XI cent. A.D.

Description:

- Shape: “molar flask”, small square perfume bottle with four pointed feet, one at each corner. Bottom of neck with circular section; flat shoulder; vertical wall. Wheel-cut decoration with one pointing-down isosceles triangle in relief on each side, obtained by cutting off pointing-up isosceles triangles on each edge.
- Colour: transparent colourless glass.

State of preservation: Complete body, three feet almost complete feet, one foot missing, neck missing.

Measures: H 3.90 cm; W 1.90 cm

References: CARBONI 2001, pp. 124-126, Nos. 2.28f;
WHITEHOUSE 2010, Nos. 110 and 235



III.1.4 Mould-blown glass

Cat. No. 106 Inv. No. 92/4.15g

Acquisition: Gift of Ernesto Wolf

Provenance: Not recorded. Probably Egypt or Western Asia

Chronology: IX - XI cent. A.D.

Description:

- Shape: “molar flask”, small cylindrical perfume bottle with four very short pointed feet. Bottom of neck with circular section; body tall, with rounded shoulder, vertical sides. Wheel-cut decoration with wall carved in four vertical ovals separated by vertical grooves, and containing a horizontal pointed oval each in the middle.
- Colour: translucent colourless glass.

State of preservation: Body and feet almost complete; neck missing.

Measures: H 3.30 cm; W 1.90 cm

References: WHITEHOUSE 2010, No. 94



III.1.4 Mould-blown glass

Cat. No. 107 Inv. No. 72/4.38

Acquisition: Edgardo Pires Ferreira collection

Provenance: Susa (Iran)

Chronology: IX - XI cent. A.D.

Description:

- Shape: little narrow bottle, probably intended for scent. Body tall, polygonal section with rounded shoulder, four straight vertical sides separated by fair deep grooves; at the bottom evidence for four short pointed feet, one at each square side's end. Linear wheel-cut decoration.
- Colour: opaque colourless glass.

State of preservation: Complete body, but severe corrosion.
Missing neck and feet.

Measures: H 4.00 cm; shoulder D 1.40 cm, bottom D 1.30 cm

References: CARBONI 2001, pp. 124-126, Nos. 2.28h; WHITEHOUSE 2010, No. 283



III.1.4 Mould-blown glass

Cat. No. 108 Inv. No. 92/4.15c

Acquisition: Gift of Ernesto Wolf

Provenance: Not recorded. Western Asia

Chronology: X - XII cent. A.D.

Description:

- Shape: fish-shaped container, small narrow bottle probably intended for scent. Body tall, with rounded shoulder, two broad, straight vertical sides, and two narrow, rounded sides; square cross section; two very short pointed feet, one at each narrow side's end. Wheel-cut decoration with curved grooves.
- Colour: translucent bluish green glass. Incrustation bubbles.

State of preservation: Complete body and feet, neck only partially preserved.

Measures: H 4.20 cm; L 1.80 cm; W 1.10 cm

References: TAIT 1991, p. 117, fig. 142 left; CARBONI 2001, p. 134-35, No. 2.40d-e; WHITEHOUSE 2010, No. 218



III.1.4 Mould-blown glass

Cat. No. 109 Inv. No. 92/4.15i

Acquisition: Gift of Ernesto Wolf

Provenance: Not recorded. Egypt or Western Asia

Chronology: IX - X cent. A.D.

Description:

- Shape: miniature narrow bottle, probably intended for scent. Square section, rounded shoulder, two opposite wider vertical sides, and two opposite narrower vertical sides; flat base. Wheel-cut decoration with two narrow opposite sides carved in relief with a small horizontal pointed oval, and two broad sides with a larger horizontal pointed oval.

- Colour: translucent colourless glass.

State of preservation: Body almost complete, neck partially preserved. Sandy weathering.

Measures: H 2.20 cm; L 1.80 cm; W 1.00 cm

References: TAIT 1991, p. 117, fig, 142 left



III.1.4 Mould-blown glass

Cat. No. 110 Inv. No. 92/4.15h

Acquisition: Gift of Ernesto Wolf

Provenance: Not recorded. Islamic culture

Chronology: IX - X cent. A.D.

Description:

- Shape: little rounded flask, probably intended for scent. Rounded shoulder, flat based incised with a cross, circular neck. Wheel-cut decoration with four panels corresponding to the four triangle sections of the crossed base, in the middle of each panel, one horizontal pointed oval alternates with a vertical pointed oval.
- Colour: translucent green glass.

State of preservation: Complete body, neck partially preserved. Sandy weathering.

Measures: H 2.40 cm; D max 2.30 cm

References: TAIT 1991, p. 117, fig, 142 right



III.2 Other Objects/ III.2.1 Rod-formed glass

One fragment of a little rod-formed tube (No. 111), one miniature pitcher (No. 112), and many beads (Nos. 113-135) are present in MAE collection. No. 111 was clearly made by winding a bluish glass cane around a cylindrical rod; over this an opaque white thread is wound spirally to the left. Fragments from objects like this may be either neckpieces from tall and narrow vessels, or personal adornments⁵⁰, or, as in our case, architectural decorations. In the register of the museum such a fragment is said to come from Choga Zanbil, the famous ancient Elamite religious complex in the Khuzesten (Iran) and in a note wrote for the exhibition housed in MAE in 1978, it is said to be part of the decoration of the door of Temple B of that Ziggurat. This information is confirmed by the comparison with the fragmentary core-formed architectural rods from Choga Zanbil housed in the Corning Museum of Glass in New York⁵¹. The Ziggurat of Choga Zanbil was built around the mid XIII cent. B.C. and is one of the few existent Ziggurat outside of Mesopotamia as well as one of the best preserved⁵².

Miniature juglet No. 112 was probably made by winding glass on the tip of a pointed mandril; over this a thin white thread was wound spirally. We have decided to classify it among the objects because, for its small size, it couldn't be used as a vessel by any means, but as an ornament.

50 See for example STERN – SCHLICK-NOLTE 1994, No. 8, and GROSE 1989, No. 35.

51 GOLDSTEIN 1979, Nos. 5-7; GROSE 1989, p. 47, fig. 18; WIGHT 2011, p. 32, figs. 17-18.

52 POTTS 1999, pp. 222-230.

All beads which were formed by using either a rod, or a wire, or a mandril have been here grouped into "rod-formed glass". Nevertheless, according to the different way in which the glass was manipulated and tools implied they can be further subdivided into: 1) "wire-wound beads", 2) "cane beads", 3) "double strip beads"⁵³, and 4) beads wound on mandril. In the first case, a thin stick of molten glass was wound round a wire. In this kind of bead the hole is usually narrow and shows impressed traces left by the thread. In the second, a thick strip of molten glass was folded round a rod and the edges fused together so as to make a cane. This could be used as a bead without any further work on it, or finished by either grinding to shape or reheating. Such a technique is very old, since the 15th century B.C. long cylindrical glass beads were being made at Nuzi in northern Mesopotamia by winding a locally heated glass cane around a removable copper-containing rod. In the third case, two strips of molten glass were taken and placed on the top of each other with a rod between them; they were then pressed together and cut off at the correct length to form the diameter of the bead, which was finished by rounding it to shape by pressure. Finally, in some more recent instances, the rod may be replaced by a sharp tool called mandril.

As far as the decoration is concerned, several varieties of decorative patterns are present in MAE. No. 133 is a simple crumb glass bead, made by pressing into the matrix of the bead small crumbs of different coloured glass. Nos. 115, 116, and 134 are ring and dot beads: here the technique is the same as the previous, but crumbs have dot and circle shapes and are placed in order to produce an eye effect. Instead, eye bead

53 BECK 1973, pp. 59-62.

No. 117 shows insets of two different cane sections into the matrix⁵⁴. Another way of decorating beads is to superimpose one coloured glass on another and then level down to the surface of the matrix (stratified decoration). This technique is attested from antiquity until today. Good examples are feather mosaic bead Nos. 127, 131, 132, and 135. In the first example, decoration is obtained by applying a continuous spiralling polychrome trail around the bead and then marvering it into the brick red matrix. In the other two examples, the feather pattern was obtained by impressing respectively a white and a light blue thread into the matrix, and then a pink thread into the white/pale blue threads. Finally, in No. 135 five circular eyes were obtained by impressing a white spot of glass into a red matrix, and then a green spot into the centre of the first spot, and finally a yellow spot into the previous one. A more precious technique is that of the mosaic beads, which are obtained by fusing cross sections of cane with concentric radiating, star, flower, feather or checkerboard layers and winding these glass tiles onto themselves, around a rod, to form the bead, but unfortunately no mosaic eye bead is present in MAE⁵⁵. Beads are easily transportable and widely widespread, therefore it is extremely problematic to suggest the provenance of beads when we lack specific information. On the other hand, we are well informed about Venetian glass of the early Renaissance and the so-called “golden age” of Venetian glass in the 16th and 17th centuries. In this Period Venice had become the political and economic superpower of the Mediterra-

nean. Thanks to technical and economic conditions, beadmaking became one of the most important branches of glassmaking in Venice and Murano (a small island in the Venetian lagoon), during the 15th century. Mass production was made possible by fast glass drawing techniques that relied on large furnaces and the industrial organization of the workshops, while the powerful Venetian fleet ensured access to expansive trade networks that transported beads all over the world. In this regard, it is noteworthy that in 1497, the Portuguese navigator Vasco da Gama found Venetian beads at Calicut in India, where they circulated as currency⁵⁶. Some good examples of Venetian beads are present also in MAE, such as the chevron beads Nos. 128-130.

56 BRUHN 1995, p. 17.

54 For the preparation of glass cane and bars see *supra* p. 14-15.

55 For mosaic eye bead see PANINI 2007, pp. 51-61.

III.2 Other Objects/ III.2.1 Rod-formed glass

Cat. No. 111 Inv. No 73/3.11.

Acquisition: Gift of J. Mariano Carneiro da Cunha

Provenance: Choga Zanbil in Elam (Iran)

Chronology: 2nd half of the XIII cent. B.C.

Description:

- Shape: hollow cylindrical glass rod.
- Colour: translucent deep blue wound spirally with an opaque wide white thread.

State of preservation: Fragment.

Measures: L 5.50 cm; D ext 1.70 cm; D int 0.70 cm

References: GOLDSTEIN 1979, Nos. 5-7; BARAG 1985, Nos. 19 and 19A; GROSE 1989, p. 47, fig. 18; WIGHT 2011, p. 32, figs. 17-18



III.2 Other Objects/ III.2.1 Rod-formed glass

Cat. No. 112 Inv. No. 92/4.17

Acquisition: Gift of Ernesto Wolf

Provenance: Not recorded. Possibly Eastern Mediterranean

Chronology: Late Antiquity, perhaps mid IV – early V cent. A.D.

Description:

- Shape: miniature pitcher with applied handle and ring foot. It rests on a modern wooden pedestal.
- Colour: opaque deep blue wound with thin opaque threads.

State of preservation: Complete.

Measures: H 2.60 cm (without wooden base)

References: STERN 2001, Nos. 209 and 210; GORIN-ROSEN 1998, p. 32; BIANCHI – SCHLICK-NOLTE – BERNHEIMER – BARAG 2002, p. 78



III.2 Other Objects/ III.2.1 Rod-formed glass

Cat. No. 113 **Inv. No. s/n**

Acquisition: Not recorded

Provenance: Not recorded. Probably Egypt

Chronology: Possibly mid VI – early IV cent. B.C., or later
(Ptolemaic or Roman Period)

Description:

- Shape: bi-conical bead. Engraved decoration with two udjat-eyes (also called “eyes of Horus”) alternated with an arrow pattern.
- Colour: Opaque purple glass.

State of preservation: Complete. Patches of white and green weathering.

Measures: L 5.30 cm; D max 2.20 cm; D min 1.00 cm



III.2 Other Objects/ III.2.1 Rod-formed glass

Cat. No. 114 Inv. No. 75/1.18g

Acquisition: Gift of Ulpiano B. de Meneses

Provenance: Greece

Chronology: Probably Hellenistic Period

Description:

- Shape: bi-conical bead. Possibly wire-wound bead.
- Colour: translucent blue glass.

State of preservation: Complete. Pitting, patches of iridescent weathering.

Measures: L 3.40 cm; D max 0.90 cm



III.2 Other Objects/ III.2.1 Rod-formed glass

Cat. No. 115 Inv. No. 75/1.21

Acquisition: Gift of Ulpiano B. de Meneses

Provenance: Delos (Greece)

Chronology: II - I cent. B.C.

Description:

- Shape: string of two globular eye beads (a-c), three conical beads (d-f), and one ring bead (g).

- Colour:

a: very light opaque blue with eyes made up of concentric and alternating yellow rings (two) and dark blue rings (two) with one blue dot in the centre;

b: very light opaque blue with eyes made up of concentric and alternating blue ring and white ring with one blue dot in the centre;

c: opaque blue with eyes made up of two concentric yellow rings with a dark blue ring in between, and one blue dot in the centre;

d-f: opaque brick red;

g: pale blue.

State of preservation: Complete, pitting.

Measures:

a = L 2.10 cm, D 2.50 cm

b = L 0.70 cm, D 1.00 cm

c = L 0.75 cm, D 1.00 cm

d-f = L 0.40 cm; D max 0.90 cm

g = L 0.40 cm; D 0.60 cm

References: NENNA 1998, Nos. E1-38; BIANCHI- SCHLICK-NOLTE - BERNHEIMER - BARAG 2002, pp. 333-334, VA.4



III.2 Other Objects/ III.2.1 Rod-formed glass

Cat. No. 116 Inv. No. 92/4.5GIVa

Acquisition: Gift of Ernesto Wolf

Provenance: Not recorded

Chronology: II - I B.C.

Description:

- Shape: ring eye bead.
- Colour: opaque sandy brown with seven "eyes" made up of one blue circle, one white circle and one blue dot in the centre.

State of preservation: Complete, pitting.

Measures: L 1.00 cm; D 1.50 cm

References: BARKÓCZI 1996, Nos. 356-358; NENNA 1998, Nos. E 28-29; BIANCHI- SCHLICK-NOLTE - BERNHEIMER - BARAG 2002, pp. 333-334, VA-4



III.2 Other Objects/ III.2.1 Rod-formed glass

Cat. No. 117 Inv. No. 92/4.5GIVb

Acquisition: Gift of Ernesto Wolf

Provenance: Not recorded

Chronology: Roman Period

Description:

- Shape: short circular bead, with eye decoration obtained by impressing eight sections of two canes into the matrix of the bead.
- Colour: opaque deep blue glass with five sections of a cane of translucent white and blue glass, and three sections of a cane of opaque golden and translucent blue glass.

State of preservation: Intact, pitting, one scratch.

Measures: H 1.50 cm; D 2.25 cm

References: CZURDA - RUTH 1979, No. 2061



III.2 Other Objects/ III.2.1 Rod-formed glass

Cat. No. 118 Inv. No. 92/4.5GIVe

Acquisition: Gift of Ernesto Wolf

Provenance: Not recorded

Chronology: VI - I cent. B.C. (possibly II - I cent. B.C.)

Description:

- Shape: short truncated bi-conical glass bead with linear and eye decoration.
- Colour: opaque dark blue glass with golden yellow thread wounding the bead up and down the side, and three stratified eyes realised with golden yellow circles and dots.

State of preservation: Complete, chipped.

Measures: L 1.50 cm; D 1.80 cm

References: STERN - SCHLICK-NOLTE 1994, No. 41



III.2 Other Objects/ III.2.1 Rod-formed glass

Cat. No. 119 Inv. No. 92/4.5GIVg

Acquisition: Gift of Ernesto Wolf

Provenance: Not recorded. Probably Germany

Chronology: Merovingian Period. Probably VII cent. A.D.

Description:

- Shape: standard truncated convex bi-cone bead with single transverse wavy and linear trail.
- Colour: opaque brick red glass with one opaque white wavy and six transparent light blue straight lines upon it.

State of preservation: Complete, chipped.

Measures: L 1.70 cm; D 1.90 cm

References: KOCH 2015, pp. 107 and 109, fig. 111



III.2 Other Objects/ III.2.1 Rod-formed glass

Cat. No. 120 Inv. No. 92/4.5GIIIa-e

Acquisition: Gift of Ernesto Wolf

Provenance: Not recorded. Probably Germany

Chronology: Merovingian Period. Probably VI cent. A.D.

Description:

- Shape: five cylindrical beads.
- Colour: a-d: opaque brick red glass wound with thick opaque yellow thread dragged up and down; e: translucent very pale olive glass with opaque yellow zigzag from edge to edge and straight thread along one edge.

State of preservation:

a = intact

b = complete, chipped near edge of one thread hole

c = intact

d = complete, chipped near edge of one thread hole

e = complete, slightly chipped near edge of thread holes

Measures:

a = H 1.40 cm; D 1.40 cm

b = H 1.20 cm; D 1.40 cm

c = H 1.15 cm; D 1.25 cm

d = H 1.00 cm; D 1.20 cm

e = H 1.00 cm; D 1.25 cm

References: STERN 2001, No. 222 G-J



III.2 Other Objects/ III.2.1 Rod-formed glass

Cat. No. 121 Inv. No. 92/4.5GIIa-d

Acquisition: Gift of Ernesto Wolf

Provenance: Not recorded. Probably Germany

Chronology: Merovingian Period. VI-VII cent. A.D.

Description:

- Shape: four thick-walled cylindrical beads.
- Colour: Opaque brick red glass with four to six revolutions of opaque white thread dragged up and down into zigzags and/or feathering, and straight opaque yellow thread along both edges.

State of preservation:

a = intact, yellow thread on edges partially missing

b = intact, yellow thread on edges partially missing

c = intact

d = intact, yellow thread on edges scarcely preserved

Measures:

a = H 1.45 cm; D 2.00 cm

b = H 1.30 cm; D 2.00 cm

c = H 1.20 cm; D 1.90 cm

d = H 1.40 cm; D 1.90 cm

References: STERN 2001, No. 222 K-N; KOCH 2015, pp. 107-109, fig. 111



III.2 Other Objects/ III.2.1 Rod-formed glass

Cat. No. 122 Inv. No. 92/4.7

Acquisition: Gift of Ernesto Wolf

Provenance: Not recorded. Probably Germany.

Chronology: Merovingian Period. Probably VI cent. A.D.

Description:

- Shape: thick-walled cylindrical bead.
- Colour: Opaque brick red glass with four to six revolutions of opaque white thread dragged up and down into zigzags and/or feathering, and straight opaque yellow thread along both edges.

State of preservation: Broken into two pieces, chipped. Yellow thread on edges scarcely preserved.

Measures: H 1.45 cm; D 1.70 cm ca.

References: STERN 2001, No. 222 KN; KOCH 2015, pp. 107-109, figs. 110-111



III.2 Other Objects/ III.2.1 Rod-formed glass

Cat. No. 123 Inv. No. 92/4.5GIVf

Acquisition: Gift of Ernesto Wolf

Provenance: Not recorded. Probably Germany

Chronology: Probably Merovingian Period, VII cent. A.D.

Description:

- Shape: short truncated bi-conical bead with transverse wavy decoration.
- Colour: opaque light brick red glass with opaque white wavy thread and one opaque yellow thread on each edge.

State of preservation: Intact.

Measures: L 1.30 cm; D 1.80 cm

References: STIAFFINI 1999, pp. 130-131, fig. 135



III.2 Other Objects/ III.2.1 Rod-formed glass

Cat. No. 124 Inv. No. 92/4.5GIVI

Acquisition: Gift of Ernesto Wolf

Provenance: Not recorded

Chronology: Possibly VII – X cent. A.D. or later

Description:

- Shape: truncated convex conical bead, tapering toward one end, with feather trails.
- Colour: dark green glass with opaque white threads.

State of preservation: Complete, chipped on one end.

Measures: L 2.90 cm; D max 2.00 cm; D min 1.65 cm

References: STIAFFINI 1999, pp. 130-135



III.2 Other Objects/ III.2.1 Rod-formed glass

Cat. No. 125 Inv. No. 92/4.5GIVk

Acquisition: Gift of Ernesto Wolf

Provenance: Not recorded

Chronology: Possibly VI – X cent. A.D.

Description:

- Shape: standard circular barrel bead with four revolutions of straight thread, which is then dragged up and down into zigzags in the middle of the bead and finally dragged again into four revolutions.

- Colour: opaque very dark blue glass (appearing black) with opaque white thread.

State of preservation: Complete, pitting.

Measures: L 2.65 cm; D 2.90 cm

References: STIAFFINI 1999, pp. 130-131, fig. 135



III.2 Other Objects/ III.2.1 Rod-formed glass

Cat. No. 126 Inv. No. 92/4.5GIVn

Acquisition: Gift of Ernesto Wolf

Provenance: Not recorded

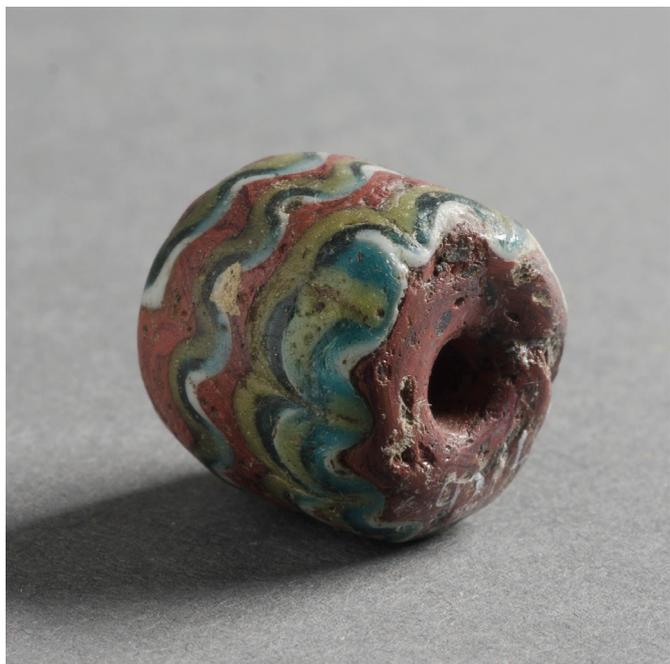
Chronology: Possibly early Islamic

Description:

- Shape: cylindrical bead with transverse feather trails.
- Colour: opaque brick red glass bead with three revolutions of opaque white, translucent light blue, translucent dark blue, and opaque light green glass cane section.

State of preservation: Complete, chipped on one edge.

Measures: L 1.60 cm; D 1.70 cm



III.2 Other Objects/ III.2.1 Rod-formed glass

Cat. No. 127 Inv. No. 92/4.5GIVi

Acquisition: Gift of Ernesto Wolf

Provenance: Not recorded. Possibly Middle East

Chronology: Uncertain. Possibly XV - XVI cent. A.D.

Description:

- Shape: standard truncated convex bi-cone bead with feather mosaic decoration.
- Colour: opaque white, opaque very pale blue, opaque red, opaque very pale purple, opaque dark blue (appearing black).

State of preservation: Intact, dirty.

Measures: L 1.80 cm; D max 1.85 cm

References: BRUHN 1995, p. 17, fig. 17.9; PANINI 2007, p. 74-75, figs. 149 and 160



III.2 Other Objects/ III.2.1 Rod-formed glass

Cat. No. 128 Inv. No. 92/4.5a

Acquisition: Gift of Ernesto Wolf

Provenance: Not recorded. Probably Venice

Chronology: Probably XV - XVI cent. A.D.

Description:

- Shape: cane chevron bead. Truncated bi-cone with circular section. The cane had concentric zigzag layers of different coloured glass.
- Colour: colourless matrix with impressed opaque red, opaque white and translucent blue canes of glass.

State of preservation: Complete. Pitting.

Measures: L 3.70 cm; D max 3.30 cm

References: KISA 1908, p. 64; ENGLE 1990, p. 18-19, fig. 3; BRUHN 1995, p. 17, fig. 17.5; PANINI 2007, p. 261 and 292



III.2 Other Objects/ III.2.1 Rod-formed glass

Cat. No. 129 Inv. No. 92/4.5b

Acquisition: Gift of Ernesto Wolf

Provenance: Not recorded

Chronology: Probably XV - XVI cent. A.D.

Description:

- Shape: cane chevron bead. Truncated bi-cone with circular section. The cane had concentric zigzag layers of different coloured glass.
- Colour: colourless matrix with impressed opaque red, opaque white and translucent blue canes of glass.

State of preservation: Complete. Pitting, some areas of sandy brown weathering.

Measures: L 3.35 cm; D max 2.50 cm

References: KISA 1908, p. 64; ENGLE 1990, p. 18-19, fig. 3; BRUHN 1995, p. 17, fig. 17.4; PANINI 2007, p. 261 and 292



III.2 Other Objects/ III.2.1 Rod-formed glass

Cat. No. 130 Inv. No. 92/4.5c

Acquisition: Gift of Ernesto Wolf

Provenance: Not recorded

Chronology: Probably XV - XVI cent. A.D.

Description:

- Shape: cane chevron bead. Truncated bi-cone with circular section. The cane had concentric zigzag layers of different coloured glass.
- Colour: colourless matrix with impressed opaque red, opaque white and translucent blue canes of glass.

State of preservation: Complete. Severe pitting.

Measures: L 2.80 cm; D max 1.65 cm

References: KISA 1908, p. 64; ENGLE 1990, p. 18-19, fig. 3; BRUHN 1995, p. 17, fig. 17.4; PANINI 2007, p. 261 and 292



III.2 Other Objects/ III.2.1 Rod-formed glass

Cat. No. 131 Inv. No. 92/4.5GIVc

Acquisition: Gift of Ernesto Wolf

Provenance: Not recorded. Possibly Venice or Middle East

Chronology: Possibly XIX cent. A.D.

Description:

- Shape: Lamp bead with transverse feather trails.
- Colour: translucent deep orange glass with opaque pink and white threads.

State of preservation: Complete, chipped in two places, dirty (brown incrustations).

Measures: H 1.40 cm; D 1.65 cm

References: NEUBURG 1949, pl. XXXII.111; PANINI 2007, pp. 189 (figs. 240 and 241) and 268



III.2 Other Objects/ III.2.1 Rod-formed glass

Cat. No. 132 Inv. No. 92/4.5GIVd

Acquisition: Gift of Ernesto Wolf

Provenance: Not recorded. Possibly Venice or Middle East

Chronology: Possibly XIX cent. A.D.

Description:

- Shape: Lamp bead with transverse feather trails.
- Colour: opaque deep blue / black glass with opaque pink and very pale blue threads.

State of preservation: Complete, chipped, dirty.

Measures: H 1.40 cm; D 1.60 cm

References: PANINI 2007, pp. 189 (figs. 240 and 241) and 268



III.2 Other Objects/ III.2.1 Rod-formed glass

Cat. No. 133 Inv. No. 92/4.5GIVh

Acquisition: Gift of Ernesto Wolf

Provenance: Not recorded

Chronology: Uncertain

Description:

- Shape: regular circular bead.
- Colour: opaque white glass with crumbles of translucent green glass and opaque brick red glass.

State of preservation: Intact.

Measures: H 1.65 cm; D 2.00 cm



III.2 Other Objects/ III.2.1 Rod-formed glass

Cat. No. 134 Inv. No. 92/4.5GIVj

Acquisition: Gift of Ernesto Wolf

Provenance: Not recorded

Chronology: Uncertain

Description:

- Shape: thick-walled standard circular bead, somewhat lopsided.
- Colour: opaque turquoise blue glass with five opaque dark blue circles with one opaque dark blue dot in the centre of each circle.

State of preservation: Complete, chipped.

Measures: H max 2.10 cm; H min 1.70 cm; D 2.50 cm



III.2 Other Objects/ III.2.1 Rod-formed glass

Cat. No. 135 Inv. No. 92/4.5GIVm

Acquisition: Gift of Ernesto Wolf

Provenance: Not recorded. Probably Germany

Chronology: Merovingian Period. VI -VII cent. A.D.

Description:

- Shape: standard cylindrical bead with wave and eye decoration.
- Colour: opaque brick red glass with opaque white thread dragged up and down on side and one end of the bead to get a wavy decoration that appears as four circles. On this thread eleven translucent light blue dots; inside each pseudo-circle one “eye” realised with an opaque white disc with translucent light blue dot inside and translucent yellow dot in the centre.

State of preservation: Intact, chipped.

Measures: L 1.50 cm; D 2.00 cm

References: KOCH 2015, p. 119, fig. 111



III.2 Other Objects/ III.2.2 Moulded glass

Among the glass objects cast into a mould we recognise one ring (No. 136), three *astragaloï* (Nos. 137-139), a small head pendant (No. 140), four beads (Nos. 141-144), one “checker” (No. 146), three globular or semi-globular “game” pieces (No. 147-149), and one convex disc (No. 145).

Ring No. 136 was probably cast in a one-piece open mould and then joined when the glass was still soft, as the line of joint is visible, while the *astragaloï*, or at least the largest (No. 137), were cast in a two-pieces mould. *Astragaloï* (knucklebones) were used in ancient oracles and in various games, serving as dice with different value assigned to each side. The first mention of a game with *astragaloï* is in Homer, *Iliad* XIII.88. In MAE is also present a bone pierced *astragalos* (Inv. No. 75/1.17a; measures: L 2.3 cm, W 1.1 cm, H 1.4 cm). Knucklebones pierced and filled with lead in order to make them fall on a predetermined side have been found at Delos, but some pierced knucklebones found in tombs might have been amulets⁵⁷.

The head pendant (No. 140) resembles the Phoenician and Carthaginian rod-formed head pendants⁵⁸, especially for the applied details: globular eyes, nose and mouth. Nevertheless, in our piece the rod hole lacks. Therefore the face was probably made by pressing a small chunk of molten glass into an open one-piece mould, and the details added later above open fire. Finding a precise comparison for this head is fair difficult; as a consequence, the chronological frame in which we suggest to punt the object is based on the

hypothesis that it represents a late imitation of Phoenician/Carthaginian head pendants.

Among the beads, No. 142 is especially remarkable for its decoration. It is a swirled glass bead, obtained by melting two glasses of different colour and stirring together to a slight extent and then moulded⁵⁹. This gave the effect of wavy lines of different colours bending in and out in a quite irregular manner.

Finally, as far as the function of convex disc No. 145 is concerned, at the first sight, it might be classified as gaming piece, but a note in the Museum register states that it deals with a decorative element: “*elemento de cabeça de cones decorativos*” (“top part of decorative cones”). We were not able to find any precise comparison to better prove such a function.

59 BECK 1973, pp. 59-60.

57 STERN 1978, p. 36, n. 19.

58 GROSE 1989, pp. 71-72; TAIT 1991, p. 216; STERN – SCHLICK-NOLTE 1994, Nos. 30-34; BIANCHI – SCHLICK-NOLTE – BERNHEIMER – BARAG 2002, pp. 179-281.

III.2 Other Objects/ III.2.2 Moulded glass

Cat. No. 136 Inv. No. 92/4.13a

Acquisition: Gift of Ernesto Wolf

Provenance: Not recorded

Chronology: Roman Period, possibly III – IV cent. A.D.

Description:

- Shape: ring. Hoop ring with notched surface and flattened drop at the top as pseudo-bracelet-stone. Line of joint visible.
- Colour: opaque dark blue.

State of preservation: Complete, small chip missing from at the joint.

Measures: D 2.50 cm

References: BARKÓCKI 1996, No. 369.1-4



III.2 Other Objects/ III.2.2 Moulded glass

Cat. No. 137 Inv. No. 75/1.17b

Acquisition: Gift of Ulpiano B. de Meneses

Provenance: Greece

Chronology: II - I cent. B.C.

Description:

- Shape: *astragalos*, imitating the knucklebone of a goat or sheep. Cast in a closed two-piece mould, seam lengthwise on flat sides and edges of short ends.
- Colour: transparent colourless glass, probably decolorized with a greenish gray tinge.

State of preservation: Complete.

Measures: H 0.90 cm; L 1.50 cm; Th 0.80 cm

References: STERN - SCHLICK-NOLTE 1994, No. 104; NENNA 1998, Nos. E204-212; TARRATS BOU - CARRERAS ROSSELL 2005, Nos. 52-55



III.2 Other Objects/ III.2.2 Moulded glass

Cat. No. 138 Inv. No. 75/1.17c

Acquisition: Gift of Ulpiano B. de Meneses

Provenance: Greece

Chronology: II - I cent. B.C.

Description:

- Shape: small bead roughly shaped as *astragalos*.
- Colour: transparent colourless glass, probably decolorized with a greenish gray tinge.

State of preservation: Complete.

Measures: H 0.70 cm; L 0.90 cm; Th max 0.45 cm

References: STERN - SCHLICK-NOLTE 1994, No. 104; NENNA 1998, No. E 77; TARRATS BOU - CARRERAS ROSSELL 2005, Nos. 52-55



III.2 Other Objects/ III.2.2 Moulded glass

Cat. No. 139 Inv. No. 75/1.17d

Acquisition: Gift of Ulpiano B. de Meneses

Provenance: Greece

Chronology: II - I cent. B.C.

Description:

- Shape: small bead roughly shaped as *astragalos*.
- Colour: transparent colourless glass probably decolorized with a greenish gray tinge.

State of preservation: Complete.

Measures: H 0.75 cm; L 0.90 cm; Th 0.50 cm

References: STERN - SCHLICK-NOLTE 1994, No. 104; NENNA 1998, No. E 77; TARRATS BOU - CARRERAS ROSSELL 2005, Nos. 52-55



III.2 Other Objects/ III.2.2 Moulded glass

Cat. No. 140 Inv. No. 92/4.6

Acquisition: Gift of Ernesto Wolf

Provenance: Carthaginian or Eastern Mediterranean

Chronology: Uncertain. Possibly I cent. B.C. or later

Description:

- Shape: small human head pendant. The applied suspension ring is lost but the hollow is visible on the top of the back side. Applied round eyes, nose, and straight linear mouth.

- Colour: opaque striped mosaic: yellow, orange, dark amethyst, pale blue, white, and red. Pale blue eyes, blue nose, and red mouth.

State of preservation: Fragment.

Measures: H 2.50 cm; L max 1.40 cm; Th max 1.20 cm



III.2 Other Objects/ III.2.2 Moulded glass

Cat. No. 141 Inv. No. 92/4.5GIVo

Acquisition: Gift of Ernesto Wolf

Provenance: Not recorded

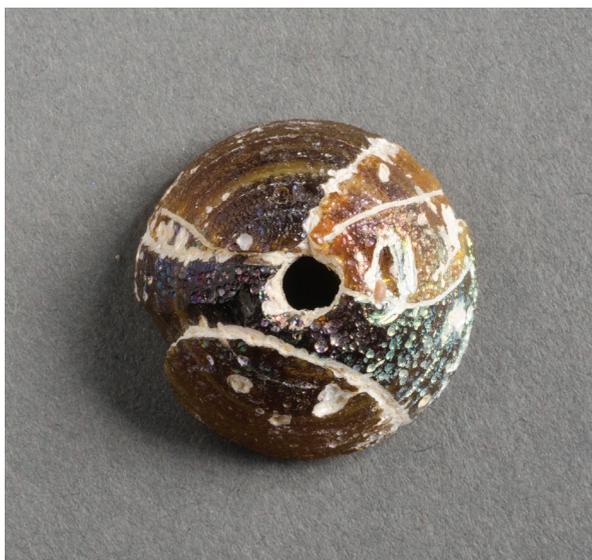
Chronology: Uncertain

Description:

- Shape: bead. Short truncated convex cone made by pressing a piece of plastic glass into a mould.
- Colour: translucent amber glass.

State of preservation: Complete, pitting, chipped, many deep scratches, iridescent weathering.

Measures: H 1.20 cm; D max 2.45 cm



III.2 Other Objects/ III.2.2 Moulded glass

Cat. No. 142 Inv. No. 92/4.5GIIe

Acquisition: Gift of Ernesto Wolf

Provenance: Not recorded. Probably Germany or possibly Middle East

Chronology: Uncertain. Possibly Merovingian Period (VII cent. A.D.)

Description:

- Shape: standard circular bead with swirled decoration.
- Colour: opaque brick red and opaque white threads, and straight opaque yellow thread along both edges.

State of preservation: Intact.

Measures: L 1.60 cm; D 2.00 cm



III.2 Other Objects/ III.2.2 Moulded glass

Cat. No. 143 Inv. No. 92/4.10

Acquisition: Gift of Ernesto Wolf

Provenance: Not recorded

Chronology: Uncertain

Description:

- Shape: oval bead, with one convex side and one flat side.
- Colour: Mosaic decoration: translucent purple, translucent amber, opaque white.

State of preservation: Intact, chipped on the flat side.

Measures: H 2.50 cm; L 2.90 cm



III.2 Other Objects/ III.2.2 Moulded glass

Cat. No. 144 Inv. No. 92/4.5GIVp

Acquisition: Gift of Ernesto Wolf

Provenance: Uncertain

Chronology: Uncertain. Perhaps Islamic

Description:

- Shape: cube bead with cut off corners.
- Colour: translucent emerald green glass.

State of preservation: Complete, pitting.

Measures: H 1.60 cm; L 1.75 cm

References: Islamic Glass: JENKINS 1986, pp. 54-55; Merovingian Glass: KOCH 2015, p. 59, fig. 45 on the bottom, p. 109, fig. 111



III.2 Other Objects/ III.2.2 Moulded glass

Cat. No. 145 Inv. No. 73/9.59

Acquisition: Gift of Edgardo Pires Ferreira

Provenance: Susa (Iran)

Chronology: Achaemenid Period (2nd half of VI – first half of IV cent. B.C.)

Description:

- Shape: glass disc with one flat side and one slightly convex side. Probably top part of a decorative cone, or perhaps gaming piece / game of chess.

- Colour: translucent dark blue glass.

State of preservation: Fragment, thick layer of milky white weathering.

Measures: D 2.50 cm



III.2 Other Objects/ III.2.2 Moulded glass

Cat. No. 146 Inv. No. 92/4.11

Acquisition: Gift of Ernesto Wolf

Provenance: Not recorded. Possibly Egypt

Chronology: Uncertain. III – I cent. B.C. or Islamic Period (IX cent. A.D.)?

Description:

- Shape: irregularly circular section of mosaic cane. Top side convex and lower side flat.
- Colour: checkerboard pattern composed of tiny square rods of opaque white, opaque yellow, opaque red, blue, opaque turquoise blue, and opaque dark blue (appearing black).

State of preservation: Complete.

Measures: D 1.60 cm; Th 0.65 cm

References: GROSE 1989, No. 634; PANINI 2007, No. 137



III.2 Other Objects/ III.2.2 Moulded glass

Cat. No. 147 Inv. No. 92/4.8b

Acquisition: Gift of Ernesto Wolf

Provenance: Not recorded

Chronology: Possibly Imperial Roman Period

Description:

- Shape: globular gaming piece, with flat base.
- Colour: opaque dark blue (appearing black) glass with four inserted opaque white threads and five incised little stars.

State of preservation: Intact, dull.

Measures: D 1.90 cm

References: TAIT 1991, p. 59-60, fig. 71



III.2 Other Objects/ III.2.2 Moulded glass

Cat. No. 148 Inv. No. 92/4.8a

Acquisition: Gift of Ernesto Wolf

Provenance: Not recorded

Chronology: Uncertain

Description:

- Shape: globular counter or gaming piece with mosaic decoration.
- Colour: opaque pale green glass with section of translucent dark green, translucent light green, and opaque yellow bars of glass.

State of preservation: Complete, pitting, chipped.

Measures: D 2.40 cm



III.2 Other Objects/ III.2.2 Moulded glass

Cat. No. 149 Inv. No. 92/4.8c

Acquisition: Gift of Ernesto Wolf

Provenance: Not recorded

Chronology: Uncertain

Description:

- Shape: globular counter or gaming piece, with flat base and mosaic decoration.
- Colour: translucent white, dark grey, light grey, light blue, red and light red glass.

State of preservation: Complete, hardly chipped.

Measures: D 2.50 cm



III.2.3 Tooled molten glass

Among the objects made of tooled molten glass, we can distinguish one small pestle (No. 150), four twisted rods of molten glass (Nos. 151-154), three bracelets (Nos. 155-157), one ring (No. 158).

All rods are twisted in one direction only, as most Roman glass rods, with a series of close, bulging spiral ribs. This can be achieved by simply twisting a slightly flattened, thick glass trail or cane. The twisting serves not only a decorative purpose, it also strengthens the glass. Small bars of molten glass are widely diffused in the Roman world, and the majority dates from the first and second century A.D. Their use is unclear. Some of them, might be used as cosmetic applicators or stirrers, especially those with one or two flattened disk-shaped ends or with one pointed end; while those with a terminal ring might have been used either as distaffs, or tools for straightening and smoothing wool fibres, or even as pointers for reading a papyrus scroll⁶⁰. Moreover, twisted rods were also popular as edgings for pilasters, as well as border decoration in wall or vault mosaics. These architectural ornaments are tightly twisted and generally lack the pointed or flattened ends, but most of them are fragments⁶¹.

All twisted rods in MAE are fragmentary, but since they do not show any trace that might make us think they were originally applied to something, the use as architectural ornaments is very unlikely, but it remains difficult to choose between stirrers and cosmetic appli-

cators. Nos. 151-152 probably had two flattened ends, as comparisons suggest⁶².

Finally, ring No. 158 has a strikingly modern appearance, nevertheless, as far as both technique and decoration style are concerned, the closest parallel I was able to find is an Egyptian ring possibly dated from the Ptolemaic to the Early Roman Period, kept in the third showcase of the sixth hall of the Egyptian and Near Eastern Collection of the Kunsthistorisches Museum at Vienna. Therefore it remains doubtful whether no. 158 is a truly ancient piece or rather a modern piece imitating ancient models.

62 HAYES 1975, No. 656A.

60 BIAGGIO SIMONA 1991, vol. I, pp. 220-226; STERN 2001, pp. 365-366, and 396-397, No. 228.

61 GROSE 1989, p. 358.

III.2.3 Tooled molten glass

Cat. No. 150 Inv. No. 73/9.63

Acquisition: Gift of Edgardo Pires Ferreira

Provenance: Iran (Susa)

Chronology: From the Achaemenid Period (2nd half of VI – first half of IV cent. B.C.) onward

Description:

- Shape: pestle. Conical body slightly lopsided, with globular top end, which is the handle but eventually suitable for grinding with rotator movement, and slightly convex lower end, suitable both for crushing and grinding.
- Colour: translucent black glass.

State of preservation: Complete, but chipped on the top. Pitting, white weathering, patches of iridescent film.

Measures: H 5.80 cm; D max 1.85; D min 0.90 cm



III.2.3 Tooled molten glass

Cat. No. 151 Inv. No. 64/6.10

Acquisition: Exchange from “Museo di Antichità” of Turin (Italy)

Provenance: Not recorded

Chronology: I – II cent. A.D.

Description:

- Shape: twisted rod with one flattened end, the other is missing. Taper toward the missing end.
- Colour: translucent orange-brown, wound spirally with two white threads, one narrow and one wide.

State of preservation: Fragment.

Measures: L 14.40 cm; D max 0.90, min 0.50 cm*

References: ISINGS 1957 Form 79; HAYES 1975, No. 656A; BIAGGIO SIMONA 1991, No. 176.2.122

* Diameter refers to the rod itself, not to the flattened end.



III.2.3 Tooled molten glass

Cat. No. 152 Inv. No. 64/6.11

Acquisition: Change from the “Museo di Antichità”
of Turin (Italy)

Provenance: Not recorded

Chronology: I – II cent. A.D.

Description:

- Shape: twisted rod with one flattened end. Originally both ends were probably flattened.
- Colour: translucent blue wound spirally with a narrow white thread.

State of preservation: Fragment.

Measures: L 12.70 cm; D 0.60 cm

References: ISINGS 1957 Form 79; HAYES 1975, No. 656A; BIAGGIO
SIMONA 1991, No. 000.1.063; BARKÓCZI 1996, No. 340



III.2.3 Tooled molten glass

Cat. No. 153 Inv. No. 75/1.18i

Acquisition: Gift of Ulpiano B. de Meneses

Provenance: Greece

Chronology: I – II cent. A.D.

Description:

- Shape: twisted rod. Both ends are missing.
- Colour: translucent golden, wound spirally with a narrow white thread.

State of preservation: Fragment.

Measures: L 4.50 cm; D 0.54 cm

References: ISINGS 1957 Form 79; GROSE 1989, No. 670



III.2.3 Tooled molten glass

Cat. No. 154 Inv. No. 75/1.18k

Acquisition: Gift of Ulpiano B. de Meneses

Provenance: Greece

Chronology: I - II cent. A.D.

Description:

- Shape: twisted rod. Only one end partially preserved: oval end with very thin incised threads.
- Colour: colourless, translucent and partially covered by flaking rainbow iridescence.

State of preservation: Fragment.

Measures: L 3.55 cm; D 0.75 cm



III.2.3 Tooled molten glass

Cat. No. 155 Inv. No. 92/4.14

Acquisition: Gift of Ernesto Wolf

Provenance: Not recorded

Chronology: Possibly I cent. A.D.

Description:

- Shape: bracelet. Simple hoop bracelet, circular in cross section. Flattened surface at the top as pseudo-bracelet-stone.
- Colour: translucent dark violet glass.

State of preservation: Intact.

Measures: D ext 6.00 cm; D int 4.85 cm

References: STERN 2001, No. 204



III.2.3 Tooled molten glass

Cat. No. 156 Inv. No. 92/4.12

Acquisition: Gift of Ernesto Wolf

Provenance: Not recorded

Chronology: Roman Period, possibly III – IV cent. A.D.

Description:

- Shape: bracelet. Simple hoop bracelet, irregularly circular in cross section.
- Colour: Opaque blue glass. Glossy surface. Rainbow iridescence with areas of sandy brown weathering.

State of preservation: Complete. Severe surface pitting.

Measures: D ext 5.80 cm; D int 5.15 cm

References: BARKÓCKI 1996, No. 370; TARRATS BOU – CARRERAS
ROSSELL 2005, No. 135



III.2.3 Tooled molten glass

Cat. No. 157 Inv. No. 73/9.65

Acquisition: Gift of Edgardo Pires Ferreira

Provenance: Susa (Iran)

Chronology: Uncertain, possibly II – VI sec. A.D.

Description:

- Shape: bracelet. Simple hoop bracelet, irregularly circular in cross section.
- Colour: Opaque green glass. Glossy surface. Areas of sandy brown weathering.

State of preservation: Complete.

Measures: D ext 4.90 cm; D int 4.25 cm

References: TARRATS BOU – CARRERAS ROSSELL 2005, No. 135



III.2.3 Tooled molten glass

Cat. No. 158 Inv. No. 92/4.13b

Acquisition: Gift of Ernesto Wolf

Provenance: Not recorded

Chronology: Uncertain. Modern?

Description:

- Shape: Ring. Circular cross section. Thread of molten glass probably tooled with a mandril with two revolutions. At the top, applied flattened disk with five small applied drops of glass as pseudo-ring-stone.
- Colour: transparent colourless with two threads inside, transparent blue and opaque white. At the top, pale green disk with applied yellow dots.

State of preservation: Intact. Numerous pinprick and small bubbles.

Measures: D ext 2.20 cm; D int 1.55 cm

References: SEE p. 333.



III.2.4 Plaques and mosaic glass panels

Apart from two mosaic glass fragments, which probably are parts of revetment plaques (Nos. 159 and 160), two very interesting Roman inlays are housed in MAE: a small fragment of a plaque (medallion) and a good example of mosaic glass panel (Nos. 161 and 162). Glass plaques were made by preparing a mould with the design in negative. The mould was filled with crushed or molten glass, usually in more than one layer, and heated until the glass melted⁶³. Small plaques of this type may have been used as inlays either in furniture or jewelleries. Due to the small size, oval shape and subject represented, Egyptian god Bes, who was widely represented on amulets for his apothropaic power, our piece No. 161 was likely part of an amulet or charm.

No. 162 was part of one of those mosaic panels which, like *opus sectile* panels and paintings, often adorned walls of sumptuous Roman residences.

Such mosaics consist of pieces of glass embedded in glass matrix when the latter is still soft, that is hot. In all probability, the craftsman first arranged the pre-formed birds and the other elements of the mosaic in the desired pattern. The next stage of the operation may have been to hold the elements in place by painting them with glue and backing them with fabric. When the glue was dry, a worker turned over the mosaic so that the fabric was face down, and covered the elements with hot glass. Since it is unlikely that Romans were able to achieve the high temperature necessary to make the glass liquid, they couldn't simply pour molten glass over the mosaic until it formed a pool of the required thickness. Therefore, they may have been compelled to manipulate the viscous material, in effect

pushing it into position⁶⁴. The final stage in the process would have consisted of dissolving the glue and removing the remains of the fabric.

Finally, we have two flat glass fragments (Nos. 163 and 164) which are so flat to make one think of pieces of two plaques, but it has not been possible to find any precise comparison and suggest any precise function or chronological frame.

64 WHITEHOUSE 1997, pp. 36-38.

63 WHITEHOUSE 1997, p. 13.

III.2.4 Plaques and mosaic glass panels

Cat. No. 159 Inv. No. 92/4.9c

Acquisition: Gift of Ernesto Wolf

Provenance: Not recorded. Probably Italy

Chronology: Late I cent. B.C. - early I cent. A.D.

Description:

- Shape: flattened broadly rectangular fragment of mosaic glass. Irregular thickness. Probably fragment of a revetment plaque.
- Colour: composite mosaic pattern formed from circular sections of a single cane embedded in an opaque dark purple ground with concentric circles of translucent dark purple and opaque white surrounding a central translucent purple rod. One of the two long edges is regular and seems to be intentionally cut. The back side surface is coarse. Scratches on both sides.

State of preservation: Fragment.

Measures: H 2.50 cm; L 6.00 cm; Th max 0.50 cm, Th min 0.40 cm

References: GROSE 1989, No. 663



III.2.4 Plaques and mosaic glass panels

Cat. No. 160 Inv. No. 92/4.9p

Acquisition: Gift of Ernesto Wolf

Provenance: Not recorded. Probably Italy

Chronology: Last I cent. B.C. – early I cent. A.D.

Description:

- Shape: flattened broadly rectangular fragment of mosaic glass. Probably fragment of a revetment plaque.
- Colour: composite mosaic pattern formed from circular sections of a single cane in an opaque dark purple ground with concentric circles of translucent dark purple and opaque white surrounding a central translucent purple rod. One of the two long edges and one of the two short edges are regular and may be intentionally cut. Scratches on both sides, especially on the back non polished side.

State of preservation: Fragment.

Measures: H 2.50 cm; L 6.00 cm; Th 0.20 cm

References: GROSE 1989, No. 663



III.2.4 Plaques and mosaic glass panels

Cat. No. 161 Inv. No. 92/4.9o

Acquisition: Gift of Ernesto Wolf

Provenance: Not recorded. Possibly Italy

Chronology: Possibly I cent. A.D.

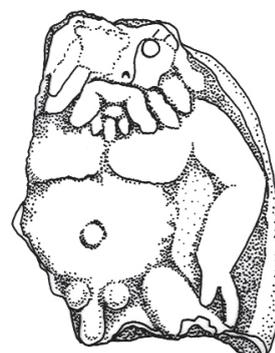
Description:

- Shape: fragment of a small oval medallion representing the Egyptian god Bes. As usual, this god is represented naked, in a frontal position, with open legs and hands on them.

- Colour: semi-opaque light blue glass covered with white glass matte.

State of preservation: Fragment, right edge partially preserved.
Pale grey/brown weathering.

Measures: H 1.70 cm; L 1.30 cm; Th 0.40 cm





III.2.4 Plaques and mosaic glass panels

Cat. No. 162 Inv. No. 92/4.9e

Acquisition: Gift of Ernesto Wolf

Provenance: Not recorded. Possibly Rome

Chronology: II - IV cent. A.D.

Description:

- Section of one rectangular mosaic inlay with bird. Pale grey / opaque white bird with blue outline, red beak and claws, possibly a pigeon, facing left.
- Colour: opaque yellow matrix with opaque red, blue, white and pale brown inlays; extensively pitted, with patches of bluish brown weathering.

State of preservation: Three attaching fragments.

Measures: H 5.90 cm; L 3.00 cm; Th 0.55 cm

References: HARDEN 1987, No. 10; WHITEHOUSE 1997, No 33



III.2.4 Plaques and mosaic glass panels

Cat. No. 163 Inv. No. 92/4.9j

Acquisition: Gift of Ernesto Wolf

Provenance: Not recorded

Chronology: Possibly late I cent. B.C. – I cent. A.D.

Description:

- Shape: flat straight fragment of irregular shape formed from lengths of glass bars of different colours covered by a glass feather pattern.
- Colour: interior, green, blue, colourless and purple glass bars; exterior, feather pattern obtained mingling alternating opaque red, white, yellow and pale blue threads.

State of preservation: Fragment.

Measures: H 3.05 cm; L 3.30 cm; Th 0.30 cm

References: GOLDSTEIN 1979; Nos. 729-757



III.2.4 Plaques and mosaic glass panels

Cat. No. 164 Inv. No. 92/4.9g

Acquisition: Gift of Ernesto Wolf

Provenance: Not recorded

Chronology: Possibly Roman Empire

Description:

- Shape: straight flattened fragment of glass plaque.
- Colour: two different mosaic patterns, one for each side of the fragment, embedded in a translucent blue glass. On the first side, pattern formed from sections of one polychrome cane, light blue, opaque white, dark blue, narrow white thread, narrow dark green thread, yellow, opaque white, red, pale green, opaque white, dark blue, white. On the other side, sections of different canes: one flower shaped with opaque white centre and petals ranging from translucent red to pale pink to yellow toward the centre; lengths of red strips embedded in yellow, two concentric opaque blue circles embedded in opaque white.

State of preservation: Fragment.

Measures: H 2.80 cm; L 1.90 cm; Th 0.45 cm

References: GOLDSTEIN 1979, No. 758



III.2.5 Faience

The term faience comes from a kind of brightly-coloured glazed earthenware developed during the Renaissance in France and Italy. The word is derived from Faenza, a town in Italy.

Ancient faience is a siliceous vitrified and glossed ceramic, made of a body of fine ground quartz or sand, coated with an alkaline-lime-silica glaze. It was used in jewellery throughout Egypt and the Near East beginning about 3500 BC. Forms of faience are found throughout the Bronze Age Mediterranean, and faience objects have been recovered from archaeological sites of the Indus, Mesopotamian, Minoan, and Egyptian civilizations. Faience continued as a production method throughout the Roman period into the first century BC.

The technological leap in glass making called faience is essentially a modelling compound made of crushed quartz or silica sand, mixed with *natron* and salt, and fired.

In MAE we find three fragmentary pendants in the form of an udjat-eye, or “eye of Horus” from Susa (Nos. 165-166). According to Egyptian mythology the god Horus lost his eye in a struggle with the rival god Seth. Goddess Hathor intervened and healed the eye. This conveniently restored eye thus became a symbol of miraculous healing, was retrieved and used as powerful protective amulet. Examples are often found in Egyptian coffins and mummy-wrappings, and the oldest date back to the XXIII Egyptian Dynasty, and, like amulets of Bes, eye-of-Horus pendants became common in the popular art of the Achaemenid Empire, i.e. from the second half of the VI cent. B.C. to first half of the IV cent. B.C.⁶⁵. (fig. 4)



Fig. 4: Faience pendant shaped as udjat-eye from Persia (from RAZMJOU 2005, p. 172, no. 264)

65 RAZMJOU 2005, p. 172.

III.2.5 Faience

Cat. No. 165 Inv. No. 73/9.66a

Acquisition: Gift of Edgardo Pires Ferreira

Provenance: Susa (Iran)

Chronology: VI - early IV cent. B.C.

Description:

- Shape: pendant in the form of the udjat-eye; horizontal hole towards the top for suspension.
- Colour: light green faience.

State of preservation: Fragment. Right end in the shape of eye missing. Pitting, incipient sand incrustations especially on the top.

Measures: H 4.10 cm; L 4.00 cm; Th 0.80 cm

References: RAZMJOU 2005, No. 264



III.2.5 Faience

Cat. No. 166 **Inv. No. 73/9.66b**

Acquisition: Gift of Edgardo Pires Ferreira

Provenance: Susa (Iran)

Chronology: VI - early IV cent. B.C.

Description:

- Shape: pendant in the form of an udjat-eye; horizontal hole towards the top for suspension.
- Colour: light green faience.

State of preservation: Fragment. Right end in the shape of eye missing. Sand incrustations and scratches.

Measures: H 4.20 cm; L 3.80 cm; Th 0.80 cm

References: RAZMJOU 2005, No. 264



III.2.5 Faience

Cat. No. 167 Inv. No. 73/9.66c

Acquisition: Gift of Edgardo Pires Ferreira

Provenance: Susa (Iran)

Chronology: VI - early IV cent. B.C.

Description:

- Shape: pendant in the form of an udjat-eye; horizontal hole towards the top for suspension.
- Colour: light green faience.

State of preservation: Fragment. Right end and right-bottom in the shape of eye missing. Pitting, a few sand incrustations.

Measures: H 3.80 cm; L 3.30 cm; Th 0.70 cm

References: RAZMJOU 2005, No. 264



III.2.6 Glass gems and lens

Thirteen glass gems, which are oval or round small monochrome glass pieces, with convex top surface and flat lower surface, and one lens probably made by cut crystal rock, are housed in MAE. As far as the gems' function is concerned, we must remind that coloured glass pieces of this type were found in many houses at Pompei. They have been possibly identified as "*latrunculi*", pieces used in game similar to modern chess, which were moved on the so called "*tabula lusoria*". Game pieces of this kind are known from the Hellenistic age, but became widespread during the 1st and 2nd cent. A.D. and remained in use until Late Antiquity⁶⁶. Nevertheless we cannot rule out that our glass gems were used as inlays for jewellery⁶⁷.

66 BERETTA – DI PASQUALE 2004, p. 210.

67 For coloured glass inlays for jewellery of Roman Period, see for example COONEY 1976, p. 75.

III.2.6 Glass gems and lens

Cat. No. 168 Inv. No. 75/1.19a-k and 75/1.19m-n

Acquisition: Gift of Ulpiano B. de Meneses

Provenance: Conimbriga (Portugal)

Chronology: I – IV A.D. (possibly II cent. A.D.)

Description:

- Shape/Colour: 13 glass beads without hole, with a top convex side and a flat lower side. Probably used as gaming pieces or possibly as inlays in jewellery:

a = irregularly circular, colourless glass

b = ovoid, transparent pale green glass

c = circular, transparent amber glass

d = circular, colourless glass

e = ovoid, colourless glass

f = irregularly circular, transparent very pale yellow glass

g = circular, transparent amber glass

h = circular, transparent blue glass

i = irregularly circular, transparent amber glass

j = irregularly circular, transparent amber glass

k = circular, transparent yellow glass

m = circular, colourless glass

n = circular, transparent yellow glass

State of preservation: Intact, dull, pitting, iridescent, weathering.

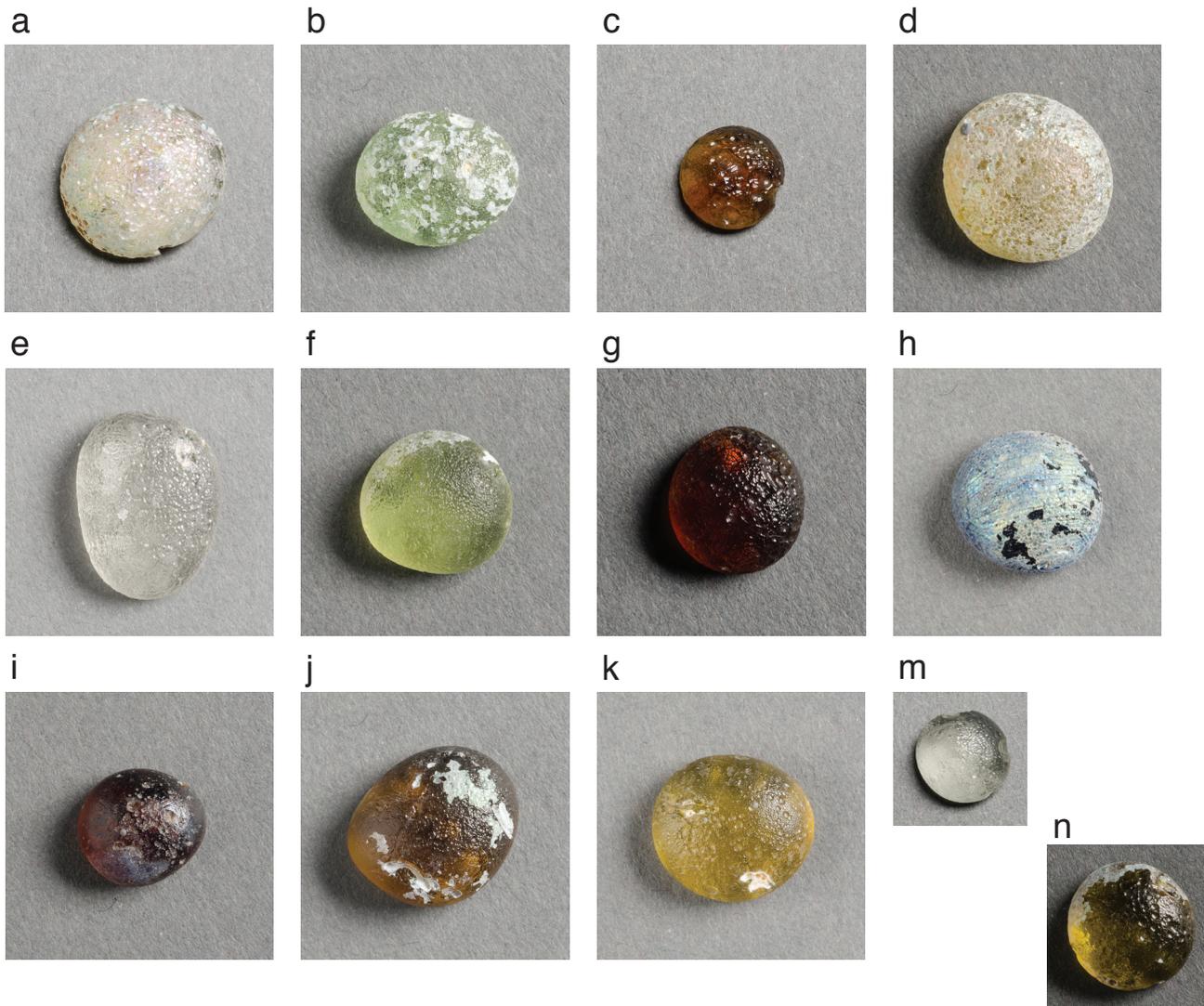
Measures: **a** = D 1.35 cm; **b** = L 1.30 cm; **c** = D 0.85 cm

d = D 1.35 cm; **e** = L 1.50 cm; **f** = D 1.20 cm; **g** = D 1.10 cm;

h = D 1.20 cm; **i** = D 1.00 cm; **j** = D 1.35 cm; **k** = D 1.30 cm;

m = D 0.75 cm; **n** = D 1.00 cm

References: FREMERSDORF 1975, Nos. 328-374; BARKÓCZI 1996, No. 335; BERETTA – DI PASQUALE 2004, Nos. 1.30 and 4.68



III.2.6 Glass gems and lens

Cat. No. 169 Inv. No. 75/1.191

Acquisition: Gift of Ulpiano T. Bezerra De Menezes

Provenance: Conimbriga (Portugal)

Chronology: I – IV A.D. (possibly II cent. A.D.)

Description:

- Shape: oval lens. Oval shape, top side convex, lower side concave. Probably used as magnifying glass.
- Colour: colourless rock crystal or transparent colourless glass.

State of preservation: Intact.

Measures: H 1.20 cm; L 1.60 cm; Th 0.30 cm

References: BERETTA – DI PASQUALE 2004, Nos. 4.9 and 4.13



III.2.7 Waste pieces

Knock-offs from blowpipes and pontils (blobs, drops, and threads of glass) are commonly found on the floor of every glass factory where blowing was practiced⁶⁸. Two examples are present in MAE (Nos. 170 and 171).

68 WEINBERG 1988, p. 35-37, Colour Plate 3.A, B/W Plate 3-5.

III.2.7 Waste pieces

Cat. No. 170 **Inv. No. s/n**

Acquisition: Not recorded

Provenance: Not recorded

Chronology: Uncertain

Description:

- Shape: little heart-shaped piece of glass with tool marks.
- Colour: opaque deep blue glass.

State of preservation: Fragment; pitting.

Measures: H 1.00 cm; L 1.40 cm; Th 0.55 cm

References: STERN – SCHLICK-NOLTE 1994, p. 26, fig. 174



III.2.7 Waste pieces

Cat. No. 171 **Inv. No. s/n**

Acquisition: Not recorded

Provenance: Not recorded

Chronology: Uncertain

Description:

- Shape: glass drop with trail, probably knock-off from blowpipe.
- Colour: Translucent amber glass.

State of preservation: Fragment; pitting.

Measures: H 2.50 cm; L 1.90 cm; Th min 0.2 cm; Th max 0.50 cm

References: STERN – SCHLICK-NOLTE 1994, p. 26, fig. 174



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