

DOI: 10.53737/2713-2021.2024.86.55.015

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## A GROUP OF GLASS VESSELS IN SAMSUN MUSEUM\*

Glass, which has evolved continuously since its discovery, was initially used by the wealthy classes, but over time, with advancements in construction technologies and increased production speed, it became widely adopted across all levels of society. Glass vessels used in daily life became an important part of societal life. The collections of the Samsun Museum contain a large number of glass vessels. The items under study in this publication were acquired through purchase, donation, or confiscation. The fact that most artifacts are well-preserved suggests that they likely originate from burial contexts. Evaluating these items is crucial for understanding the political, commercial, and cultural organization of the period in which they were used, as well as their geographical distribution. Additionally, detailed analysis can provide insights into the place of production of the vessels. The glass artifacts from the Samsun Museum collections represent common forms, with similar examples identified in various regions. The study results indicate that Eastern Mediterranean culture had a broad distribution, extending throughout Anatolia. Glass vessels were produced in similar forms across the extensive territory governed by the Roman Empire, reflecting the dominant cultural norms of the period. Therefore, precise information on the origin of the vessels is difficult to establish. This challenge is also compounded by the lack of evidence for glassmaking furnaces in the region. Thus, it may be hypothesized that these vessels could be of imported origin. Nevertheless, it should be considered that Amisos and Neoklaudiopolis — important cities in the region — would have been unlikely to ignore the production or trade of glass as a valuable commercial resource.

**Key words:** Glass, Glass Production, Samsun, Samsun Museum, Ancient Glass.

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## ГРУППА СТЕКЛЯННОЙ ПОСУДЫ В МУЗЕЕ САМСУНА

Стекло, которое непрерывно развивалось с того момента, когда было изобретено, изначально использовалось зажиточным населением, но со временем, по мере совершенствования строительных технологий и производства — стало доступно различным слоям общества. Стеклянные сосуды, используемые повсеместно, стали важной частью жизни населения. В фондах музея г. Самсуна сосредоточено большое количество стеклянных сосудов. Экземпляры, ставшие предметом исследования настоящей публикации, появились в музее в результате покупки, дарения или конфискации. Большинство сосудов из стекла хорошей сохранности, что позволяет предположить их происхождение из захоронений. Оценка этих предметов очень важна с точки зрения определения как политического, экономического и культурного аспектов жизни общества, так и их распространения. Кроме того, тщательный анализ позволяет получить данные о месте производства сосудов. Формы стеклянных изделий из фондов музея г. Самсуна, довольно распространённые, обнаруживают аналогии в разных районах побережья Средиземного моря. В результате исследования выявлено, что культура региона имела широкое распространение, в том числе на Восточное Средиземноморье и Анатолию. Выявлено, что стеклянные сосуды близких форм изготавливались на широкой территории, находящейся под властью Римской империи. Поэтому очень сложно установить точное

\* Статья поступила в номер 23 мая 2024 г.

Принята к печати 5 июля 2024 г.

место производства конкретных сосудов. Трудность также заключается в том, что еще не обнаружены остатки печей, предназначавшихся для производства стекла в регионе. Таким образом, можно предположить, что сосуды из г. Самсуна импортного происхождения. Однако следует принять во внимание, что Амисос и Неоклаудиополис — важные и крупные города в регионе, которые могли быть центрами производства или торговли стеклом.

**Ключевые слова:** стекло, стекольное производство, Самсун, Самсунский музей, античное стекло.

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## Introduction

As a result of the development process it has undergone since its discovery, glass has become one of the most preferred materials in the production of both architectural and small vessels in daily life. In line with these characteristics, glass vessels are frequently encountered in almost every field that has an archaeological character. The acquisition of these vessels to the museum inventory takes place in various ways such as archaeological excavation, purchase, or confiscation. Samsun Museum has a large number of glass vessels. In this study, 15 vessels, which were brought to the museum inventory through confiscation and purchase, were analyzed under six different headings according to their form characteristics<sup>1</sup>. In the literature, these forms are defined as trulla, amphoriskos, aryballos, bird-shaped vessel/guttus/askos, oinochoe/khous and beaker, and most of these forms are represented by single specimens in the museum inventory. The beaker form, which is more numerous than the others, has been subdivided into conical, indented and carinated forms according to their types. The artifacts were manufactured by free-blown technique. Each vessel is analyzed in detail under different headings and information about the definition, function and historical development of the forms is given. In addition, the vessels were dated by comparing them with their counterparts in the literature in terms of form and technical characteristics.

### 1. Trulla

The trulla, one of the open-mouthed vessels, is a vessel form with a long, single handle (Akkurnaz 2016: 108). It has two different forms: shallow and deep (Isings 1957: 92). It is a typical example of early metal ladles (Kunina 1997: 294) and is also called “pan” or “patera” by researchers (Whitehouse 1997: 198). In antiquity, they were used to scoop wine from large-sized vessels, with perforated types speculated to function as sieve-shaped ladles (Tekcam 2011: 234). Widely employed in the Roman world, trullas served multiple purposes, including as drinking vessels, libation vessels, or ritual objects in religious ceremonies (Whitehouse 1997: 198). Furthermore, it has also been suggested that they may have been used during bathing (Whitehouse 1997: 198).

The deep trulla-shaped glass vessels (cat. no. 1—2), acquired by the Samsun Museum through confiscation, have thick walls, a wide ring rim with a two-stepped and tubular profile, two sides/ears protruding upwards at the junction with the rim, horizontal, wide, long and concave single handles, semi-globular bodies, low bases and concave bottoms. However, the handle of cat. no. 2 is broken. One of the specimens (cat. no. 1) is turquoise and the other (cat. no. 2) is yellowish green. These specimens vary in height, measuring between 6.5 and 7.2 cm, with walls ranging from 0.2 to 0.3 cm in thickness and rim diameters spanning 10.7 to 11 cm. Isings notes that this type,

<sup>1</sup> The drawings of the vessels were made by C. Gizem Tırıl-Özbilgin. Thank you for your contributions.

which he identifies as “form 75b”, was widely used in the 1<sup>st</sup> c. CE and that decorated examples were found in the later period (Isings 1957: 92, form 75b).

A comparable sample in the collection of the Royal Ontario Museum is dated to the 2<sup>nd</sup> c. CE (Hayes 1975: 59, no. 148). A sample in the collection of the Türkiye Şişe Cam Fabrikaları (Canav 1985: 84, cat. no. 135) and a similar sample in the collection of the Hermitage are dated to the 1<sup>st</sup> c. CE (Kunina 1997: 294—296, cat. no. 202). Moreover, a sample in the collection of the Corning Museum is dated to the 1<sup>st</sup> — 2<sup>nd</sup> cc. CE however, an alternative dating suggests it may also belong to the 4<sup>th</sup> c. CE (Whitehouse 1997: 198, no. 346).

Notably, specimens of this type of vessel are generally dated to 50 and 150 CE, however decorated or metal specimens can be dated to later periods (Whitehouse 1997: 198, no. 346). These specimens are almost identical in terms of technical and formal characteristics to the vessels in the museum inventory. For this reason, the trulla specimens in this study are dated to the 1<sup>st</sup> — 2<sup>nd</sup> cc. CE.

## 2. Amphoriskos

Amphoriskos, meaning small-sized amphora, is a two-handled vessel form with a lip, narrow neck, wide body and a pointed, button, knob or cone-shaped bottom (Akkurnaz 2016: 162). The ovoit-bodied specimens originated from the Near East and Italy, whereas those with bulbous-shaped bodies were manufactured in western regions, likely to be dated to a later time period (Isings 1957: 77). Because of their compact dimensions, it is likely that amphora were employed for cosmetic functions, such as containing fragrances or oils, rather than serving storage or preservation purposes like amphorae (Sparkes et al. 1970: 155).

The amphoriskos (cat. no. 3), which was acquired by the Samsun Museum through confiscation, features a wide ring-shaped rim, a short-narrow cylindrical neck and a globular body with a slightly concave bottom. Two thin handles were subsequently applied vertically to the upper section of the neck and the shoulder of the amphoriskos. The vessel exhibits a yellowish-brown hue, adorned with patches of dark brown mottling in certain areas. It stands at a height of 8.7 cm, with a wall thickness of 0.1 cm and a rim diameter measuring 3.1 cm.

Isings states that amphoriskos of different types, which he classifies as “form 15 and form 60”, started being manufactured through the blowing technique in the initial half of the 1<sup>st</sup> c. CE, and later became one of the most prevalent and utilized forms by the middle of the c. (Isings 1957: 32). Two similar specimens in the Hermitage collection are dated to the 1<sup>st</sup> c. CE (Kunina 1997: 204, 321—322, cat. nos. 341—342), while two similarly shaped specimens in the Royal Ontario Museum collection, identified as Aryballos, are dated to the second half of the 1<sup>st</sup> c. CE and early 2<sup>nd</sup> c. CE (Hayes 1975: 54, 195, cat. nos. 119—120, plt. 9/119—120). Considering the similarities in technical and formal characteristics of the specimens, the specimen in the Samsun Museum is dated to the 1<sup>st</sup> — 2<sup>nd</sup> cc. CE.

## 3. Aryballos

Aryballos-shaped vessels originating from the late 7<sup>th</sup> c. BCE are characterized as diminutive, featuring short, narrow, or thick necks and exhibiting spherical or ovoit bodies. These vessels are typically round or flat-bottomed, lacking pedestals, and are equipped with two small ring-shaped handles affixed to the neck. They were primarily utilized for holding scent and oil (Tekcam 2011: 23; Akkurnaz 2016: 164). The name Aryballos is of Greek origin and its Latin equivalent is “ampulla” (Whitehouse 1997: 201). Glass aryballoi, one of the most common cosmetic vessels, are imitations of those made of metal or ceramic (Isings 1957: 78, form 61). Although mostly two-handled, there are also examples with three or four handles (Isings 1957: 79). The crafting of these vessels, utilizing various techniques before the Roman Period, transformed into a widely adopted form during the Roman Empire, particularly flourishing during the Flavian Period due to the introduction of the blowing technique (Isings 1957: 79; Whitehouse 1997: 201), and they remained in use until the 3<sup>rd</sup> c. CE

(Whitehouse 1997: 201). Functionally, these vessels were employed in baths to transport perfume, ointment, or oil (Whitehouse 1997: 201). It is believed that this particular form, favored by athletes, was fastened to the wall or the athletes' wrists using a rope. The vessels were crafted in various sizes, adapted to different periods, ensuring ease of carrying, particularly in smaller dimensions. Additionally, these vessels were utilized as grave gifts (Akkurnaz 2016: 165).

The aryballos (cat. no. 4), obtained by the Samsun Museum through confiscation, features a rim that is thickened and mushroom-shaped, a short and narrow cylindrical neck, and a globular body with a slightly concave bottom. It has two handles, subsequently applied vertically to the neck and shoulder. The predominant color of the body is black, adorned with brown mottling. Its dimensions include a height of 7.1 cm, a wall thickness of 0.2 cm, and a rim diameter of 2.8 cm.

Isings states that this vessel form, which he refers to as “form 61”, was widely used by the 1<sup>st</sup> c. CE and began to decline in the 4<sup>th</sup> c. CE (Isings 1957: 78—81, form 61). In another study, Isings (Isings 1971: 14, no. 28) noted that types with mushroom-shaped rims were widely used from the second half of the 1<sup>st</sup> c. CE to the 2<sup>nd</sup> c. CE (Isings 1971: 14, no. 28). A comparable sample in the collection of Hüseyin Kocabaş is dated to the 2<sup>nd</sup> c. CE (Akat et al. 1984: 65, 34, no. 117b). No specific date is suggested for a sample in the collection of the Türkiye Şişe Cam Fabrikaları (Canav 1985: 38, cat. no. 22). Based on similar specimens and the information provided, the vessel is dated to the 1<sup>st</sup> — 2<sup>nd</sup> cc. CE.

#### 4. Bird Shaped Vessel/Guttus/Askos

Bird-shaped vessels exhibit a zoomorphic form. In general, they have a lip, a narrow, cylindrical, short or long neck, a globular or semi-globular body and a tail-shaped spout. Typologically, these vessels lack a specific terminology but are functionally described as askos, guttus, or feeding bottles (Whitehouse 1997: 122; Lightfoot 2017: 161). While the precise place of production remains unknown, this common form was manufactured both in the east and the west (Antonaras 2010: 302). These vessels were utilized for pouring oil into oil lamps or for mixing wine during sacrificial ceremonies or baths (Whitehouse 1997: 122; Antonaras 2010: 302; Lightfoot 2017: 161). Additionally, they served as cosmetic vessels, often referred to as askos or guttus (Akkurnaz 2016: 93—94).

There are two bird-shaped vessels (cat. no. 5—6) in the Samsun Museum acquired through purchase. One of the vessels (cat. no. 5) is characterized by a ring-shaped spout, a short-narrow neck, a sack-shaped splayed body, and a spout attached to the bottom. This vessel displays a greenish color with brownish mottling. Its dimensions include a height of 7.1 cm, a wall thickness of 0.1 cm, and a rim diameter of 2.9 cm. The second vessel (cat. no. 6) is characterized by a ring-shaped rim, a narrow and long neck, an bulbous-shaped body, and a spout attached to the center of the body, although a portion of the spout is damaged. It features a greenish-cream color with some brown mottling. The dimensions include a height of 8.5 cm, a wall thickness of 0.2 cm, and a rim diameter of 3.4 cm.

Isings identifies this vessel form as “form 11”, indicating that it emerged in the first half of the 1<sup>st</sup> c. CE and was crafted using the blowing technique (Isings 1957: 27, form 11). A similar specimen in the collection of the Royal Ontario Museum is dated to 50—150 CE (Hayes 1975: 54, 195, cat. no. 118), a specimen in the collection of the Carnegie Museum is dated to the 1<sup>st</sup> c. CE (Oliver 1980: 57, cat. no. 44), a similar specimen in the collection of Hüseyin Kocabaş is dated to the 3<sup>rd</sup> c. CE (Akat et al. 1984: 66, 35, cat. no. 124), a specimen in the collection of the Türkiye Şişe Cam Fabrikaları (Canav 1985: 39, cat. no. 23) and an example in the Hermitage collection (Kunina 1997: 328—329, cat. no. 380) are dated to the 1<sup>st</sup> c. CE, two specimens in the Corning Museum catalog are dated to the 1<sup>st</sup> — 3<sup>rd</sup> cc. CE (Whitehouse 1997: 122, cat. no. 188—189), similar specimens unearthed in the Thessalonike excavations are dated to the mid-2<sup>nd</sup> to 3<sup>rd</sup> cc. CE (Antonaras 2010: 302, fig. 2), a comparable specimen in the Sivas Museum is dated to the 1<sup>st</sup> — 3<sup>rd</sup> cc. CE (Atila 2015: 162, 169, cat. nos. 5, 6, fig. 2: 5, 6), and finally, similar specimens in the Cesnola collection are generally dated to the 1<sup>st</sup> — 3<sup>rd</sup> cc. CE, although with different dates (Lightfoot 2017: 160—162, cat. nos. 182—185). Furthermore, Antonaras asserts that the production

and utilization of this particular vessel form persisted into the 4<sup>th</sup> c. CE (Antonaras 2010: 302). Generally, there is a widespread understanding that bird-shaped vessels were in extensive use over a long period of time. However, considering the similarities in form and the information provided, the first vessel (cat. no. 5) is dated to the 1<sup>st</sup> — 2<sup>nd</sup> cc. CE, while the second vessel (cat. no. 6) is dated to the mid-2<sup>nd</sup> c. CE — 3<sup>rd</sup> c. CE, based on the form characteristics as well as the fact that the Thessalonike specimens are excavation finds and provide a specific stratigraphy.

## 5. Oinochoe/Khous

This vessel form, holding a prominent position as one of the extensively utilized early vessels (Sparkes et al. 1970: 58), are commonly referred to as oinochoe or khous (Akkurnaz 2016: 96—97, 102—104). Different base samples with varying forms can be observed: with globular or conical body; flat, beak or trefoil rim according to the rim types; high (arched) or low handles placed vertically on the shoulder or body according to the handle structure (Akkurnaz 2016: 103). There are also types with trefoil rim, short cylindrical neck, single handle and globular body (Tekcam 2011: 117, 155; Akkurnaz 2016: 103). Functioning as a vessel for daily use, it served the purpose of transporting various liquids (Sparkes et al. 1970: 58). The shape of the rim was designed for easy pouring of liquid and it was mostly preferred for wine service (Akkurnaz 2016: 103). Functionally, it was also widely used for measuring liquids in relation to its size and volume (Tekcam 2011: 117; Akkurnaz 2016: 96, 103—104).

There is one vessel with a trefoil rim (cat. no. 7) that was acquired by the Samsun Museum through purchase. The vessel features a trefoil rim, a long, narrow and cylindrical neck, a globular body and a simple, vertical single handle. It has an opaque blue color. The vessel measures 10.8 cm in height, 0.2 cm in wall thickness and 4.5 cm in rim diameter.

Isings states that this vessel form, which he identifies as “form 88b”, was developed from the vessel form he identifies as “form 56” (Isings 1957: 104). He also notes that the vessels he identified as “form 56” and “form 88b” began to be produced in the second half of the 1<sup>st</sup> c. CE using the blowing technique and that the earliest sample of the form 88b dates to the 2<sup>nd</sup> c. CE (Isings 1957: 74, 105, form 56, form 88b). Three mold-blown specimens in the Hermitage Collection (Kunina 1997: 38, 115, 276—277, cat. nos. 123—125) and one free-blown specimen in the collection of the İzmir Ticaret Tarihi Museum (Gürler 2000: 90, env. no. 9) are dated to the second half of the 1<sup>st</sup> c. CE, and one specimen in the Cesnola Collection is dated to the mid-1<sup>st</sup> to the 2<sup>nd</sup> c. CE (Lightfoot 2017: 131, cat. no. 136). Based on comparable specimens and the information provided, the specimen in the Samsun Museum is dated between the 1<sup>st</sup> and 2<sup>nd</sup> cc. CE.

## 6. Beakers

Beakers, among the various forms crafted for storing or serving liquids in ancient daily life, exhibit diverse developments aligned with their functions and the prevailing fashion trends of the period (Akkurnaz 2016: 111). The Samsun Museum possesses eight beakers (cat. no. 8—15) in its inventory, acquired through either confiscation or purchase. Some of these beakers exhibit intricate decorations carved through the wheel-cutting technique. The majority of them are green, variations in colour such as yellowish green and turquoise are also evident. These beakers present a range of dimensions, with heights spanning 7.3—11 cm, wall thickness between 0.1—0.3 cm, and rim diameters ranging from 6.4—8 cm. Due to their distinct form characteristics, these vessels are analyzed under three separate headings.

## 6.1. Conical Beakers

There are five conical beakers in the Samsun Museum. Two of these beakers are with bases, the others without bases. They are divided into three different types according to their form characteristics.

Type A (Cat. No. 8): Isings, who examines conical beakers as well, categorizes this particular type as "form 29" (Isings 1957: 44, form 29). The specimen in the Samsun Museum features a flat rim crafted flat by the cutting technique, a cylindrical, slightly convex conical body, a rounded base and a slightly concave bottom. The body is decorated with sequential groove and fluted decoration in wheel-cutting technique. The vessel is green in color, with a height of 7.3 cm, a thickness of 0.1 cm and a rim diameter of 6.4 cm.

Isings states that this form dates back to the second half of the 1<sup>st</sup> c. CE, that it is similar to "form 12", that it can be cylindrical, ovoid or conical with a trimmed top, that there are molded examples from Pompeii, and that the blown ones have an average height of 15 cm. He observes that late samples of this type are not universally distributed but are exclusive to Cyprus, assigning a timeframe for this type to the 1<sup>st</sup> to early 3<sup>rd</sup> cc. CE (Isings 1957: 44). Additionally, he highlights a specimen in the Turin Museum originating from a tomb dating back to the 1<sup>st</sup> c. CE (Isings 1957: 44). An almost identical sample in the Hermitage collection, categorized as an Eastern Mediterranean type, is dated to the second half of the 1<sup>st</sup> c. CE (Kunina 1997: 312—313, cat. no. 293). Additionally, a specimen acquired through purchase by the Pergamon Museum is assigned a date range of the 2<sup>nd</sup> — 4<sup>th</sup> cc. CE (Atila, Gürler 2009: 130, cat. no. 202), while a similar vessel recovered from tomb M76 in the Parion necropolis is dated to the mid-1<sup>st</sup> or second half of the 1<sup>st</sup> c. CE (Kasapoğlu, Özdemir 2012: 160, res. 210/M76). Considering this collective information and comparable specimens, the beaker under consideration is dated to the 1<sup>st</sup> c. CE.

Type B (Cat. No. 9—10): Specimens of this type are conical beakers with bases. These are categorized as "form 34" by Isings (Isings 1957: 48—49, form 34). The form consists of a cylindrical conical body with a flaring rim smoothed with the cutting technique, narrowing to a slightly convex shape towards the bottom, a rounded base, a low base with fillings and a concave bottom. There are no decorative elements on the beakers and they are green in color. The specimen in cat. no. 9 has a height of 11 cm, a wall thickness of 0.2 cm and a rim diameter of 8 cm. The other beaker (cat. no. 10), recorded to have been found in the village of Dumantepe in Terme-Dumantepe, has a height of 10.2 cm, a wall of 0.3 cm and a rim diameter of 7.3 cm.

Isings categorizes this type among those that appeared in the second half of the 1<sup>st</sup> c. CE. He highlights that the production of this type involved various base types, with the majority employing the wheel-cutting technique, although some were filled or single-piece and that these beakers typically feature decorations with grooves or flutes, but samples without ornamentation were also observed. Isings further notes that the use of this type persisted into the 4<sup>th</sup> c., substantiating his observations with specific samples (Isings 1957: 48—49). He also mentions that a decorated Karanis find (Harden 1937: 149, Plt. XV/408) among these specimens was unearthed in a house dating to the late 2<sup>nd</sup>-3<sup>rd</sup> c. CE (Isings 1957: 49). A specimen in the Royal Ontario Museum is dated to the late 1<sup>st</sup> — early 2<sup>nd</sup> cc. CE (Hayes 1975: 56—57, fig. 3: 136), an example in the Hüseyin Kocabaş Collection to the first half of the 3<sup>rd</sup> c. CE (Akad et al. 1984: 68, fig. 145), and two specimens in the Yüksel Erimtan Collection to the 2<sup>nd</sup> — 3<sup>rd</sup> cc. CE (Lightfoot, Arslan 1992: 75—76, cat. nos. 31, 32). Considering this information and similar specimens, the artifacts in the museum inventory are dated to the 2<sup>nd</sup> — 3<sup>rd</sup> c. CE.

Type C (Cat. No. 11—12): Isings categorizes this type as "form 106" (Isings 1957: 126—131, form 106). The form has a cylindrical conical body, rounded base and concave bottom, with a cylindrical, tapering conical body with a flared rim that was flattened and smoothed with the wheel-cut technique. Both beakers have wheel-cut fluted decorations on the body. The beakers are green

in color. Cat. no. 11 has a height of 10.4 cm, a wall thickness of 0.2 cm and a rim diameter of 7.1 cm (Isings 1957: 127—129, form 106b2). The other beaker (cat. no. 12) has a height of 8.8 cm, a wall thickness of 0.1 cm and a rim diameter of 6.9 cm (Isings 1957: 129—130, form 106c2).

Isings notes that this type is a variant of “form 106”, with similar decorative elements, a flared rim, and dates it to the 3<sup>rd</sup> — 4<sup>th</sup> cc. CE (Isings 1957: 126—130). A specimen from the Carnegie Museum is dated to the 4<sup>th</sup> c. CE (Oliver 1980: 108, cat. no. 177), and a specimen in the Hermitage collection, designated as an Eastern Mediterranean type, is dated to the 2<sup>nd</sup> — 3<sup>rd</sup> cc. CE (Kunina 1997: 318, 320, cat. no. 325). Two specimens in the collection of the Türkiye Şişe Cam Fabrikaları were published, but no specific date was suggested (Canav 1985: 82, cat. nos. 129—130). Considering the provided information and analogous samples, the specimens in the Samsun Museum are dated between the 2<sup>nd</sup> and 4<sup>th</sup> c. CE.

## 6.2. Indented Beakers (Cat. No. 13—14)

There are two beakers with indented decoration that were acquired to the Samsun Museum through confiscation. The form is characterized by a rounded, flared mouth that is pulled outward and folded inward, a short, cylindrical and concave neck, a body that widens at the top and narrows towards the bottom, and a concave bottom. The beakers are green in colour. The indents on the body are used as decorative elements. There are also some differences between the two beakers. Cat. no. 13 has a rounded and ring-shaped rim. It measures 10.2 cm in height, 0.2 cm in wall thickness and 7.1 cm in rim diameter. The body is decorated with six indents. The rim of the other beaker is trimmed and flattened. It has a height of 7.7 cm, a wall thickness of 0.1 cm and a rim diameter of 7 cm. The most significant difference between the two specimens is that one has four (cat. no. 13) and the other (cat. no. 14) six indents on the body.

Isings traces the origin of this type, which he identifies as “form 32”, to the second half of the 1<sup>st</sup> c. CE. He notes that the form generally has a convex body, a concave base and a square-like form with four indentations, and that early examples are scarce, dating them to the 1<sup>st</sup> — 4<sup>th</sup> cc. CE. (Isings 1957: 46—47, form 32). He also notes that a six-indented specimen from Cologne comes from a tomb dating to the second half of the 3<sup>rd</sup> c. CE (Isings 1957: 47). A similar specimen from the Royal Ontario Museum is dated to the second half of the 2<sup>nd</sup> — early 3<sup>rd</sup> cc. CE (Hayes 1975: 65, fig. 7: 191), two specimens in the collection of Hüseyin Kocabaş are dated to the 2<sup>nd</sup> — 3<sup>rd</sup> cc. CE (Akat et al. 1984: 67—68, figs. 138b, 142), one specimen in the collection of Yüksel Erimtan is dated to the second half of the 2<sup>nd</sup> c. CE (Lightfoot, Arslan 1992: 99, cat. no. 52), three specimens in the Hermitage Collection are dated to the second half of the 1<sup>st</sup> c. CE (Kunina 1997: 314—315, cat. nos. 305—307), three specimens in the Hermitage Collection are dated to the second half of the 1<sup>st</sup> c. CE (Kunina 1997: 314—315, cat. no. 305—307), and a specimen from the Corning Museum is dated to the second half of the 1<sup>st</sup> c. CE (Whitehouse 1997: 112, cat. no. 171), and one from the Smintheion to the 1<sup>st</sup> — 2<sup>nd</sup> cc. CE (Gençler 2004: 63, 71, fig. 10). Considering the specimens in the above-mentioned studies and the information provided about the form, the Samsun specimens are dated to the 2<sup>nd</sup> — 3<sup>rd</sup> c. CE.

## 6.3. Base-Carinated Beaker (Cat. No. 15)

The Samsun Museum has acquired a base-carinated beaker through purchase. The form features an outward-facing rim rounded by being pulled out and folded inward, a body with an “S” profile that is concave from the rim to the center of the body and tapers sharply to the bottom from the center of the body, a low, thick, filled base, and a high concave bottom. The turquoise-colored specimen has a height of 8 cm, a wall thickness of 0.3 cm and a rim diameter of 7.6 cm.

Isings considered this type, which he identified as “form 109b”, to be one of the most common forms of the 4<sup>th</sup> c. CE; he notes that it generally resembles the pedestalless type of “form 34”, that it differs from this form in that the body narrows towards the base, and that although there are many specimens, those that can be dated are few, and he gives many specimens dating to the 3<sup>rd</sup> — 4<sup>th</sup> cc. CE

(Isings 1957: 136—137, form 109b). A specimen in the collection of the Türkiye Şişe Cam Fabrikaları was published, but no specific date was suggested (Canav 1985: 78, cat. no. 121). A fluted example in the Yüksel Erimtan collection is dated to the 2<sup>nd</sup> — 3<sup>rd</sup> c. CE (Lightfoot, Arslan 1992: 103, cat. no. 54) and a fluted and groove decorated example in the Corning Museum to the 3<sup>rd</sup> — 4<sup>th</sup> c. CE (Whitehouse 1997: 248, cat. no. 422). Considering the aforementioned information and similar specimens, this beaker is dated to the 3<sup>rd</sup> — 4<sup>th</sup> c. CE.

## Conclusion

The glass artifacts considered in this study are categorized into six types based on their form and technical attributes, each examined independently. All of these vessels are crafted using the free-blowing technique and molded with the assistance of a tool. Decorated vessels are relatively scarce, with embellishments such as flutes, grooves, and indents found on only a few specimens. The fact that most of the vessels, which are replicas of metal or ceramic vessels, are found intact suggests that they are grave finds. Furthermore, the idea is substantiated by the existence of comparable specimens reported as grave finds in various publications, the identification of numerous unauthorized excavation pits during conducted surveys in the region, and the historical evidence indicating that the eastern slope of Oymaağaç Höyük/Nerik was utilized as a cemetery area during the Hellenistic and Roman periods (Czichon, Yılmaz 2014: 340). These data also offer insights into the possible archaeological context of the vessels. Moreover, the average dating of the vessels to the 1<sup>st</sup> — 4<sup>th</sup> cc. CE aligns with the political timeline of the region. The identification of analogous specimens as originating from Syria-Palestine, Cyprus, or the broader Eastern Mediterranean region, and the dissemination of these forms from such areas, can be attributed to the prevailing cultural influence. Consequently, the widespread use of similar specimens across a broad geographical range during the relevant period can be linked to the dominance of Roman culture. Notably, there is no available data indicating whether the vessels in the museum were imported or locally produced. Nevertheless, the absence of evidence supporting local production enhances the likelihood that these vessels might have been imported rather than locally manufactured. Recent studies featuring comparable specimens indicate that the glass trade likely resulted from an expansive network, covering a wide geographical area, rather than following a fixed route. There is evidence indicating that commercial activities persisted through various periods, conducted both by land and sea. The Uluburun and Gelidonya Shipwrecks, dating back to the 14<sup>th</sup> — 13<sup>th</sup> cc. BCE, hold significant importance in demonstrating how far back maritime trade stretches in history (Bass 1986a: 269—296; 1986b: 294; Bass et al. 1967: 14, 133, 164; Pulak 1988: 1, 35; 1998: 202; Tek 2005: 111; Nicholson et al. 1997: 143—153; Jackson et al. 1998: 22). The discovery of luxury glass vessels among the exported items in the Antikythera Shipwreck, dating to the Late Hellenistic Period (Weinberg 1965: 30—39; Weinberg, McClellan 1992: 28—33; Erten Yağcı 1993: 45), and the presence of numerous Early Byzantine Period glass oil lamps found in a pithos retrieved from the sea in the Sinop Museum (Temür 2018: 236; Temür, Eker 2019) are significant findings indicating the continuation of maritime glass trade. On the other hand, the absence of any evidence of local production is quite remarkable. This deficiency is likely attributable to the absence of a comprehensive excavation study focused on the late periods of the region, leading to a lack of data on production. Considering the deep-rooted history of the region and the fact that it was a port city, it is undeniable that glass, an important commercial raw material, was not produced. It is quite appropriate to think that future excavations may uncover evidence of glass production and resolve this uncertainty.



## Catalogue

Cat. No	1 (Fig. 1: 1)	Inv. No: 3-50-1988	Loc: Confiscation	Form: Trulla/Pan/Paterae	
Dimensions	Diameter: 10.7 cm	Height: 6.5 cm	Width: 9.4 cm	Bottom Dia.: 5.3 cm	
Color	Turquoise		Technique: Free-blown and tooling		
Description	Transparent, rounded by pulling outwards and folding inwards, and pulled outwards and rounded inwards again, two-tiered, protruding, wide ring mouth, long, flat, with two edges (ears) protruding at the point where it meets the mouth, concave, tapering towards the middle and widening again towards the tip, handle, hemispherical, cylindrical body, rounded base, low base, concave bottom. Full, repaired, iridescent, limestone residues, occasional wear on the surface, various cracks on the body.				
Counterparts	Isings 1957: 92, form 75b; Hayes 1975: 59, plt. 12/148; Canav 1985: 84, kat. no. 135; Kunina 1997: 294—296, cat. no. 202; Whitehouse 1997: 198, no. 346.				
Date	1 <sup>st</sup> — 2 <sup>nd</sup> cc. CE				
Cat. No	2 (Fig. 1: 2)	Inv. No: 3-56-1988	Loc: Confiscation	Form: Trulla/Pan/Paterae	
Dimensions	Diameter: 11 cm	Height: 7.2 cm	Width: 0.2 cm	Gen.: 10 cm	Bottom Dia.: 5.3 cm
Color	Yellowish Green		Technique: Free-blown and tooling		
Description	Transparent, rounded by being pulled out and folded in, and then pulled out and rounded in again, two-stage, protruding, wide ring rim, protruding ear-shaped handle residue at the point where the handle meets the mouth, hemispherical, cylindrical body, rounded base, low base, high concave bottom. Broken (part of the mouth and the entire handle), iridescent, occasional wear on the surface.				
Counterparts	Isings 1957: 92, form 75b; Hayes 1975: 59, plt. 12/148; Canav 1985: 84, kat. no. 135; Kunina 1997: 294—296, cat. no. 202; Whitehouse 1997: 198, no. 346.				
Date	1 <sup>st</sup> — 2 <sup>nd</sup> cc. CE				
Cat. No	3 (Fig. 1: 3)	Inv. No: 3-16-1988	Loc: Confiscation	Form : Amphoriskos	
Dimensions	Diameter: 3.1 cm	Height: 8.7 cm	Wall: 0.1 cm	Width: 6.7 cm	Bottom Dia.: 3.9 cm
Color	Yellowish Brown		Technique: Free-blown and tooling		
Description	Transparent, rounded by pulling out and folding inwards, wide, ring mouth, short, narrow, cylindrical, neck expanding towards the body, spherical body, rounded concave bottom. Broken (upper part of the body), iridescent, limestone structure, some wear on the surface.				
Counterparts	Isings 1957: 32, 77—78, form 15, 60; Hayes 1975: 54, 195, cat. no. 119—120, plt. 9/119—120; Kunina 1997: 204, 321—322, cat. no. 341—342.				
Date	1 <sup>st</sup> — 2 <sup>nd</sup> c. CE				
Cat. No	4 (Fig. 2: 1)	Inv. No: 3-28-1988	Loc: Confiscation	Form : Aryballos	
Dimensions	Diameter: 2.8 cm	Height: 7.1 cm	Wall: 0.2 cm	Width: 6.8 cm	Bottom Dia.: 3.3 cm
Color	Bluish Green		Technique: Free-blown and tooling		
Description	Translucent, rounded and flattened by pulling out and folding out again, wide ring-shaped and mushroom-like mouth that becomes slightly concave downwards and thickening to an oval shape, short, cylindrical neck, spherical body in yellowish brown tones, two simple handles later added to the neck and body, rounded slightly concave bottom. Full, iridescent, slightly limestone structure, occasional wear on the surface.				
Counterparts	Morin 1913: 84, fig. 88, form 33; Isings 1957: 78—81, form 61; Isings 1971: 14, no. 28; Akat et al. 1984: 65, 34, no. 117b; Canav 1985: 38, kat. no. 22.				
Date	late 1 <sup>st</sup> — 2 <sup>nd</sup> cc. CE				

Cat. No	5 (Fig. 2: 2)	Inv. No: 6-1-1994	Loc: Purchase	Form : Guttus/Askos/Bird-Shaped Vessel	
Dimensions	Diameter: 2.9 cm	Height: 7.1 cm	Wall: 0.1 cm	Width: 4.3 cm	Bottom Dia.: 2.9 cm
Color	Greenish		Technique: Free-blown and tooling		
Description	Transparent, wide ring mouth that is rounded by pulling out and folding in, cylindrical, concave neck that narrows and widens towards the body, oval, bird-shaped body with a tail-shaped pouring hole, rounded base, slightly concave bottom. Full, iridescent, limestone structure, occasional wear on the surface, flaking on the surface.				
Counterparts	Isings 1957: 27, form 11; Hayes 1975: 54, 195, cat. no. 118; Oliver 1980: 57, cat. no. 44; Akat et al. 1984: 66, 35, kat. no. 124; Canav 1985: 39, kat. no. 23; Kunina 1997: 328—329, cat. no. 380; Whitehouse 1997: 122, cat. no. 188—189; Antonaras 2010: 302, fig. 2; Atila 2015: 162, 169, cat. no. 5, 6, fig. 2/5, 6; Lightfoot 2017: 160—162, cat. no. 182—185.				
Date	1 <sup>st</sup> — 2 <sup>nd</sup> cc. CE				
Cat. No	6 (Fig. 2: 3)	Inv. No: 2006-7	Loc: Purchase	Form : Guttus/Askos/Bird-Shaped Vessel	
Dimensions	Diameter: 3.4 cm	Height: 8.5 cm	Wall: 0.2 cm	Width: 7.2 cm	Bottom Dia.: 2.9 cm
Color	Greenish Cream		Technique: Free-blown and tooling		
Description	Transparent, wide ring mouth that is rounded by pulling out and folding in, cylindrical neck that expands towards the body, oval, bird-shaped body with a tail-shaped pouring hole, rounded base, slightly concave bottom. Broken (end part of the pouring hole), iridescent, limestone structure, occasional wear on the surface.				
Counterparts	Isings 1957: 27, form 11; Hayes 1975: 54, 195, cat. no. 118; Oliver 1980: 57, cat. no. 44; Akat et al. 1984: 66, 35, kat. no. 124; Canav 1985: 39, kat. no. 23; Kunina 1997: 328—329, cat. no. 380; Whitehouse 1997: 122, cat. no. 188-189; Antonaras 2010: 302, fig. 2; Atila 2015: 162, 169, cat. no. 5, 6, fig. 2: 5, 6; Lightfoot 2017: 160—162, cat. no. 182—185.				
Date	2 <sup>nd</sup> — 3 <sup>rd</sup> cc. CE				
Cat. No	7 (Fig. 3: 1)	Inv. No: 2010-29 (A)	Loc: Purchase	Form : Oinochoe	
Dimensions	Diameter: 4.5 cm	Height: 10.8 cm	Wall: 0.2 cm	Width: 7 cm	Bottom Dia.: 4 cm
Color	Opaque Blue		Technique: Free-blown and tooling		
Description	Wide trefoil mouth, rounded by pulling out and folding inwards, cylindrical, long neck, single thin cylindrical handle added later to the mouth and where the neck and shoulder intersect, spherical body, rounded base, slightly concave bottom. Full, iridescent, limestone structure, occasional wear on the surface.				
Counterparts	Isings 1957: 74, 105, form 56, form 88b; Kunina 1997: 38, 115, 276—277, cat. no. 123—125; Gürler 2000: 90, env. no. 9; Lightfoot 2017: 131, cat. no. 136.				
Date	1 <sup>st</sup> — 2 <sup>nd</sup> cc. CE				
Cat. No	8 (Fig. 3: 2)	Inv. No: 3-49-1988	Loc: Confiscation	Form : Conical Beaker	
Dimensions	Diameter: 6.4 cm	Height: 7.3 cm	Wall: 0.1 cm	Width: 6.9 cm	Bottom Dia.: 4 cm
Color	Yellowish Green		Technique: Free-blown and tooling		
Description	Transparent, rim left flat by cutting technique, cylindrical, slightly convex, conical body with 3 grooves and 3 triple groove decorations made with tool and wheel-cutting technique starting from the rim, rounded base, slightly concave bottom. Full, iridescent, limestone structure, occasional wear on the surface.				
Counterparts	Isings 1957: 44, form 29; Kunina 1997: 312—313, cat. no. 293; Atila, Gürler 2009: 130, kat. no. 202; Kasapoğlu, Özdemir 2012: 160, res. 210/M76.				
Date	1 <sup>st</sup> c. CE				

<b>Cat. No</b>	<b>9 (Fig. 3: 3)</b>	<b>Inv. No: 3-47-1988</b>	<b>Loc: Confiscation</b>	<b>Form: Base Conical Beaker/ Goblet/Lamb</b>	
Dimensions	Diameter: 8 cm	Height: 11 cm	Wall: 0.2 cm	Width: 7.2 cm	Bottom Dia.: 5.2 cm
Color	Green		Technique: Free-blown and tooling		
Description	Transparent, outwardly inclined rim that was pulled outwards and folded inwards and cut on the wheel and left flat, wide, slightly convex body, thick ring-shaped, low filled base, concave bottom. Full, iridescent, occasional wear on the surface.				
Counterparts	Harden 1936: 149, plt. XV/408; Isings 1957: 48—49, form 34; Hayes 1975: 56—57, fig. 3: 136; Akat et al. 1984: 68, res. 145; Lightfoot, Arslan 1992: 75—76, kat. no. 31, 32.				
Date	2 <sup>nd</sup> — 3 <sup>rd</sup> cc. CE				
<b>Cat. No</b>	<b>10 (Fig. 4: 1)</b>	<b>Inv. No: 11-1-1983</b>	<b>Loc: Purchase</b>	<b>Form: Base Conical Beaker/ Goblet/Lamb</b>	
Dimensions	Diameter: 7.3 cm	Height: 10.2 cm	Wall: 0.3 cm	Width: 6 cm	Bottom Dia.: 4.5 cm
Color	Greenish		Technique: Free-blown and tooling		
Description	Transparent, outwardly inclined rim that was pulled out and folded inwards and cut on the wheel and left flat, wide, slightly convex body, thick ring-shaped, low filled base, high concave bottom. Full, iridescent, occasional wear on the surface, cracks on the lower part of the body.				
Counterparts	Harden 1936: 149, plt. XV/408; Isings 1957: 48—49, form 34; Hayes 1975: 56—57, fig. 3: 136; Akat et al. 1984: 68, res. 145; Lightfoot, Arslan 1992: 75—76, kat. no. 31, 32.				
Date	2 <sup>nd</sup> — 3 <sup>rd</sup> cc. CE				
<b>Cat. No</b>	<b>11 (Fig. 4: 2)</b>	<b>Inv. No: 3-42-1988</b>	<b>Loc: Confiscation</b>	<b>Form: Conical Beaker</b>	
Dimensions	Diameter: 7.1 cm	Height: 10.4 cm	Wall: 0.2 cm	Width: 6.4 cm	Bottom Dia.: 4 cm
Color	Green		Technique: Free-blown and tooling		
Description	Transparent, slightly projecting mouth that was pulled out and left flat with the cutting technique, conical shaped body, 7 rows of 3-tiered grooves made with the wheel-cutting technique applied to the entire body starting from just below the mouth at 0.5—2 cm intervals, rounded, slightly concave bottom. Full, iridescent, occasional wear on the surface.				
Counterparts	Isings 1957: 127—129, form 106b2; Oliver 1980: 108, no. 177; Canav 1985: 82, kat. no. 129—130, Kunina 1997: 318, 320, cat. no. 325.				
Date	2 <sup>nd</sup> — 4 <sup>th</sup> cc. CE				
<b>Cat. No</b>	<b>12 (Fig. 4: 3)</b>	<b>Inv. No: 2006-134 (A)</b>	<b>Loc: Purchase</b>	<b>Form: Conical Beaker</b>	
Dimensions	Diameter: 6.9 cm	Height: 8.8 cm	Wall: 0.1 cm	Width: 5.5 cm	Bottom Dia.: 4.2 cm
Color	Green		Technique: Free-blown and tooling		
Description	Transparent, everted rim, conical body, 2 rows of 3 grooves made with wheel cutting technique in the middle of the body, 2 at 1 cm intervals from the rim, rounded base, high concave bottom. Full, limestone structure, occasional wear on the surface.				
Counterparts	Isings 1957: 129—130, form 106c2; Oliver 1980: 108, no. 177; Canav 1985: 82, kat. no. 129—130, Kunina 1997: 318, 320, cat. no. 325.				
Date	2 <sup>nd</sup> — 4 <sup>th</sup> cc. CE				

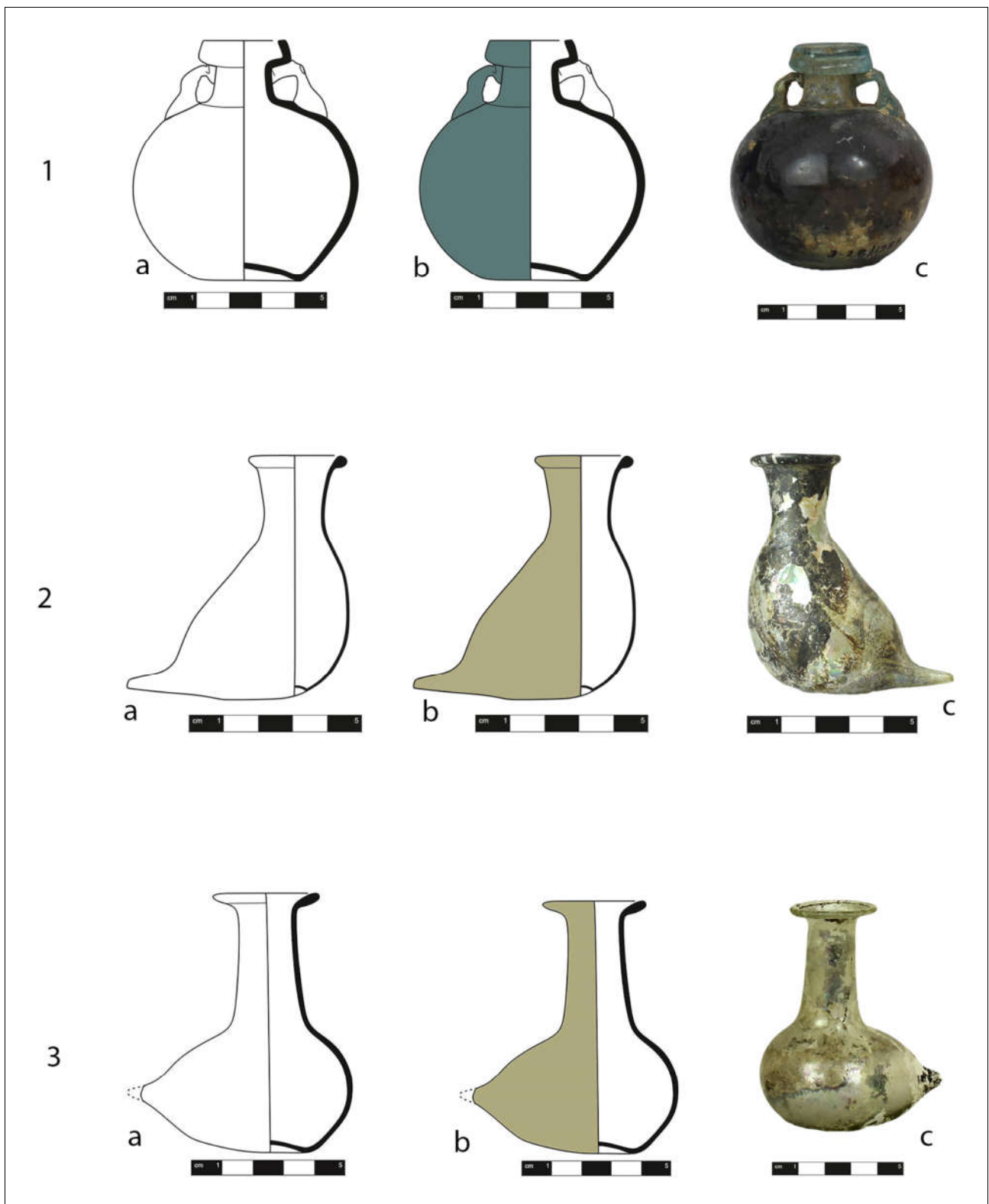
<b>Cat. No</b>	<b>13 (Fig. 5: 1)</b>	<b>Inv. No: 3-48-1988</b>	<b>Loc: Confiscation</b>	<b>Form : Indented Beaker</b>	
Dimensions	Diameter: 7.1 cm	Height: 10.2 cm	Wall: 0.2 cm	Width: 6.8 cm	Bottom Dia.: 3.5 cm
Color	Greenish		Technique: Free-blown and tooling		
Description	Transparent, rounded, extroverted, ring-shaped rim, short, cylindrical, concave neck, body widening at the top and narrowing towards the bottom, 6 depression decorations on the body, rounded base, slightly concave bottom. Broken (a small fracture and various cracks on the body), iridescent, occasional wear on the surface.				
Counterparts	Isings 1957: 46—47, form 32; Hayes 1975: 65, fig. 7: 191; Akat et al. 1984: 67—68, res. 138b, 142; Lightfoot, Arslan 1992: 99 kat. no. 52; Kunina 1997: 314—315, cat. no. 305—307; Whitehouse 1997: 112, cat. no. 171; Gençler 2004: 63, 71, res. 10.				
Date	2 <sup>nd</sup> — 3 <sup>rd</sup> cc. CE				
<b>Cat. No</b>	<b>14 (Fig. 5: 2)</b>	<b>Inv. No: 3-53-1988</b>	<b>Loc: Confiscation</b>	<b>Form : Indented Beaker</b>	
Dimensions	Diameter: 7 cm	Height: 7.7 cm	Wall: 0.1 cm	Width: 7.5 cm	Bottom Dia.: 4.2 cm
Color	Yellowish Green		Technique: Free-blown and tooling		
Description	Transparent, pulled outwards and folded inwards and left flat and straightened by cutting technique, everted rim, short, cylindrical, concave neck, body widening at the top and narrowing towards the bottom, 4 depression decorations on the body, rounded, slightly concave bottom. Full, iridescent, occasional wear on the surface, flaking on the surface.				
Counterparts	Isings 1957: 46—47, form 32; Hayes 1975: 65, fig. 7: 191; Akat et al. 1984: 67—68, res. 138b, 142; Lightfoot, Arslan 1992: 99, kat. no. 52; Kunina 1997: 314—315, cat. no. 305—307; Whitehouse 1997: 112, cat. no. 171; Gençler 2004: 63, 71, res. 10.				
Date	2 <sup>nd</sup> — 3 <sup>rd</sup> cc. CE				
<b>Cat. No</b>	<b>15 (Fig. 5: 3)</b>	<b>Inv. No: 6-1-1998</b>	<b>Loc: Purchase</b>	<b>Form : Base-Carinated Beaker</b>	
Dimensions	Diameter: 7.6 cm	Height: 8 cm	Wall: 0.3 cm	Width: 6.3 cm	Bottom Dia.: 3.4 cm
Color	Turquoise		Technique: Free-blown and tooling		
Description	Transparent, everted mouth that is pulled out and left flat, concave “S” profile body that narrows and widens, narrowing at the bottom of the body, rounded base, low base, high concave bottom. Full, iridescent, occasional wear on the surface, flaking on the surface.				
Counterparts	Isings 1957: 136—137, form 109b; Canav 1985: 78, kat. no. 121; Lightfoot, Arslan 1992: 103, kat. no. 54; Whitehouse 1997: 248, cat. no. 422.				
Date	3 <sup>rd</sup> — 4 <sup>th</sup> cc. CE				

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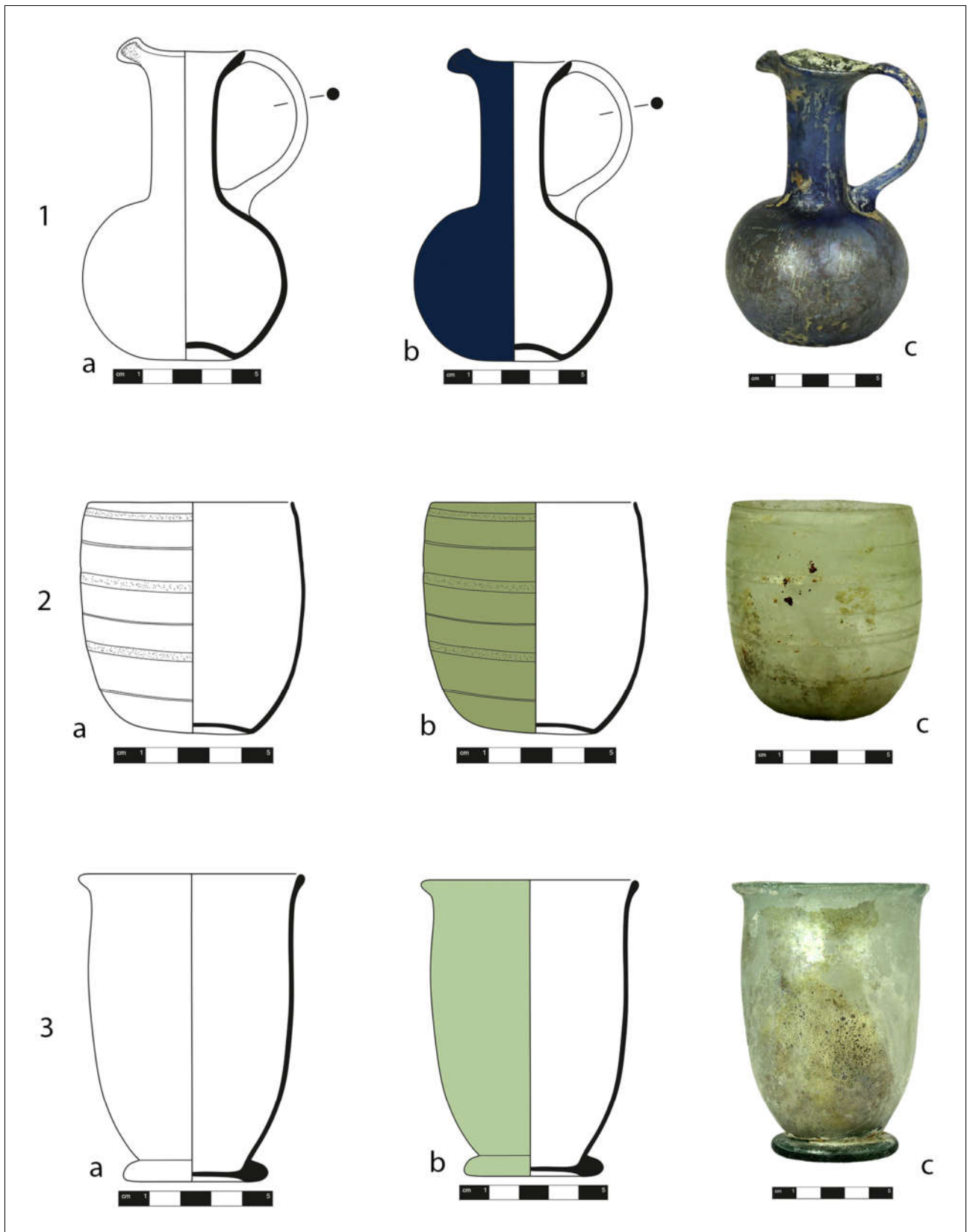
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**Fig. 1.** 1. *a–c* — Trulla/Pan/Paterae; 2. *a–c* — Trulla/Pan/Paterae; 3. *a–c* — Amphoriskos.

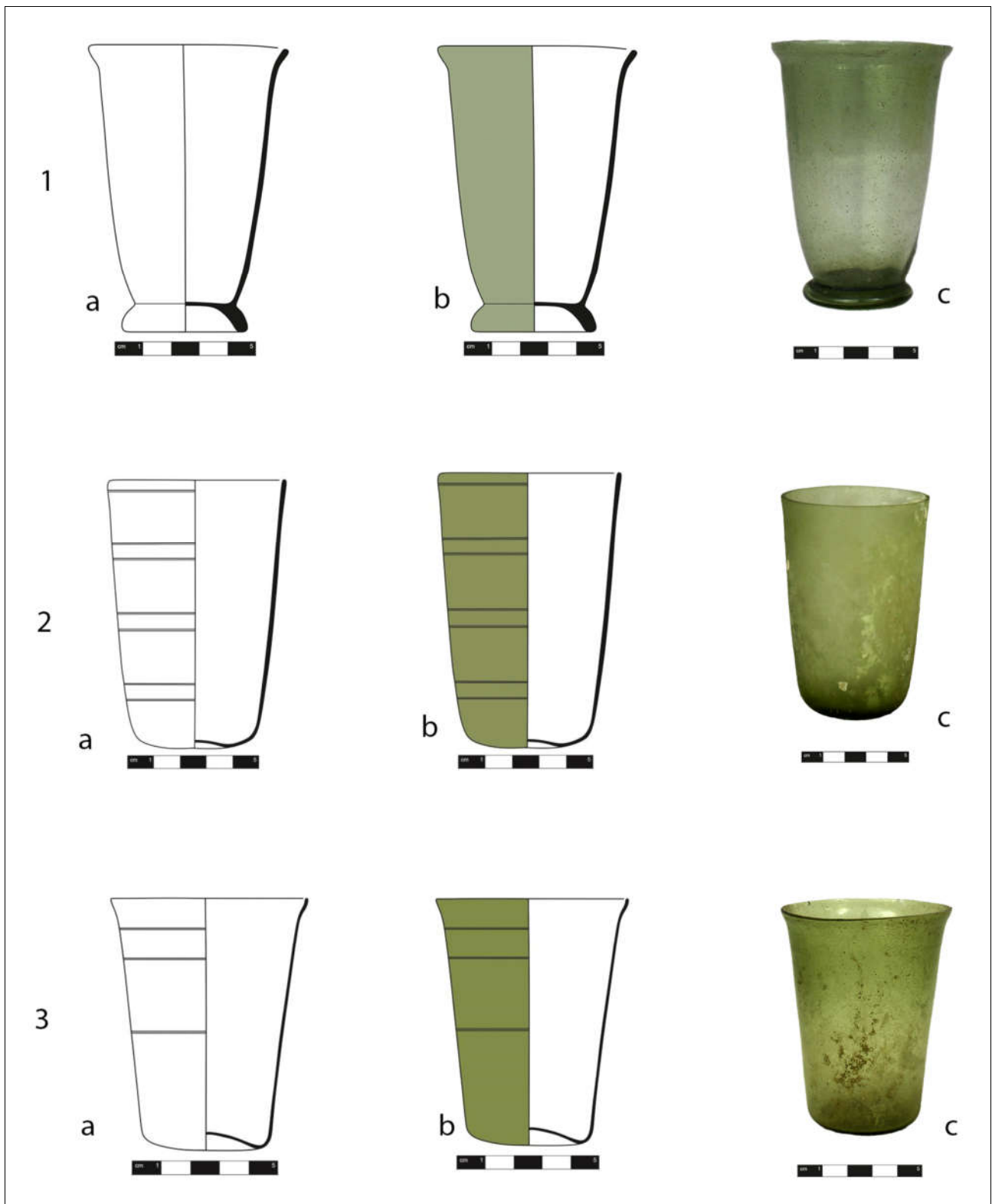


**Fig. 2.** 1. *a–c* — Aryballos; 2. *a–c* — Guttus/Askos/Bird-Shaped; 3. *a–c* — Guttus/Askos/Bird-Shaped.



**Fig. 3.** 1. *a-c* — Oinochoe; 2. *a-c* — Conical Beaker; 3. *a-c* — Base Conical Beaker/Goblet/Lamb.





**Fig. 4.** 1. *a–c* — Base Conical Beaker/Goblet/Lamb; 2. *a–c* — Conical Beaker; 3. *a–c* — Conical Beaker.

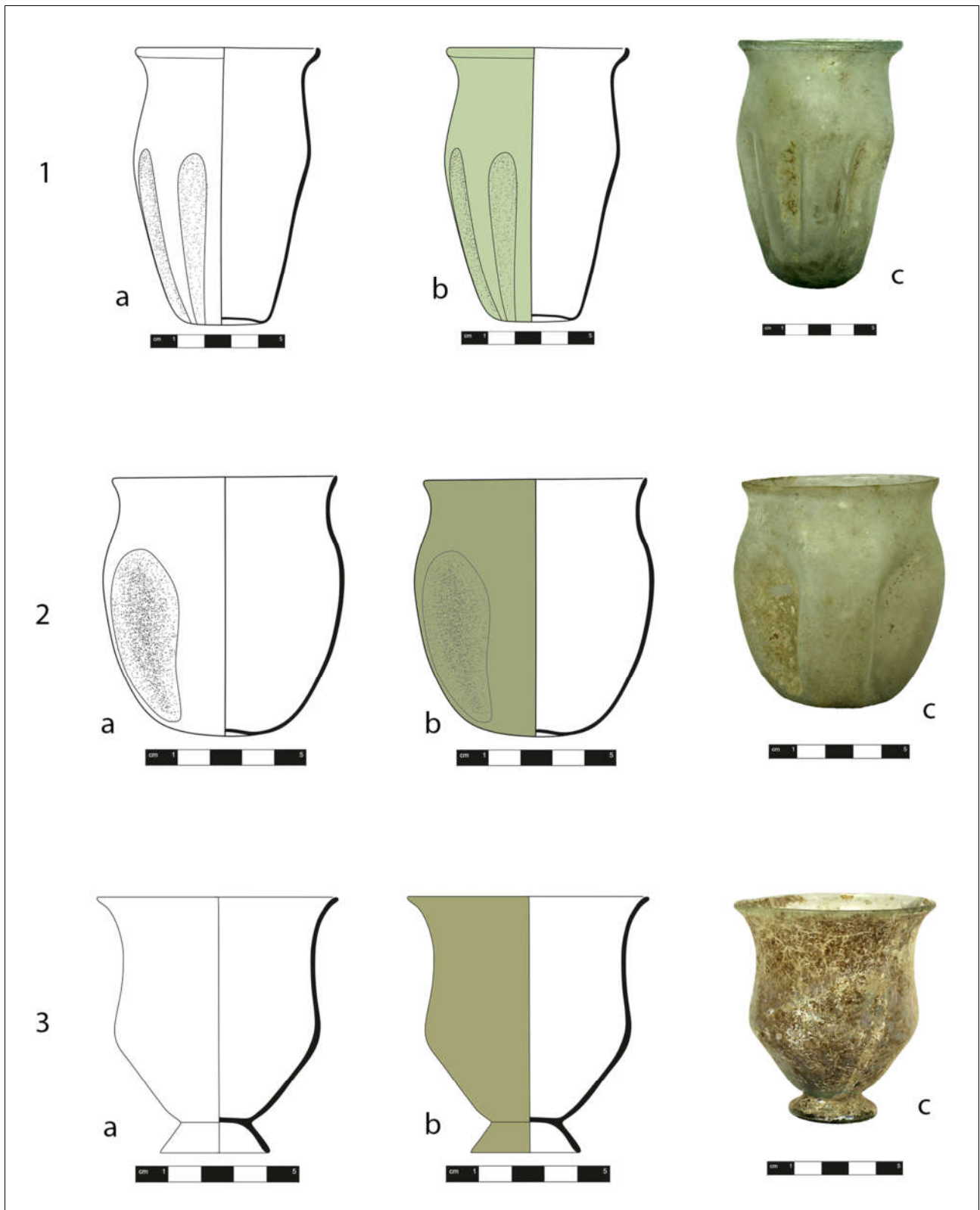


Fig. 5. 1. *a-c* — Indented Beaker; 2. *a-c* — Indented Beaker; 3. *a-c* — Base Carinated Beaker.