



FACIAL BEAUTY: A COLLECTION OF GLASS KOHL CONTAINERS FROM THE NORTH OF JORDAN

Zeena Sultan¹ and Alia Khasawneh²

*¹Department of Archaeology, Faculty of Archaeology and Tourism, The University of Jordan,
Jordan*

²Department of Antiquities of Jordan, Irbid Dar Al Saraya Museum, Jordan

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Corresponding author: (zeena.sultan1970@yahoo.com)

ABSTRACT

The rescue excavations, conducted by the Department of Antiquities of Jordan in 1999 and 2000 under the supervision of Alia Khasawneh and Nasr Al-Zubi, in two late Roman/Early Byzantine cemeteries at Waqqas and At Turra, in the territories of The Irbid Governorate, brought to light a number of glass flasks among the other funeral objects. A group of sixteen delicate glass flasks from both sites are presented here. This paper demonstrates that the flasks were used as kohl "eyeliner" containers. The analysis of a sample obtained from one of the flasks revealed that it was the mineral Galena. Furthermore, the presence of small applicators (kohl sticks) with the glass flasks confirms their use.

KEYWORDS: Waqqas, At Turra, Kohl, Flask Tubes, Cosmetic Containers

1. INTRODUCTION

Two rescue excavations of cemeteries at the sites of Waqqas and At Turra, in the territories of Irbid Governorate, yielded sixteen glass flasks. Since their discovery, the collection has been stored at the Irbid Dar Al Saraya Museum. In this article, a catalogue of the flasks and the evidence of the analysis is presented followed by a discussion that contextualizes these cosmetic containers.

From the fifteenth century B.C. onward, that the work of the glassmaker was in evidence all over Babylonia and Assyria, glass makes its appearance also in Egypt in the fifteenth century, often with the same features and the same techniques in production, but it was probably in upper Syria after the Persian conquest, that glassmakers began to blow hot glass first into molds and then freely into different forms (Oppenheim, 1973).

In Jordan, for example, studies of the Roman and Early Byzantine glass from sites such as Bait Ras / Capitolas, Umm Qais / Gadara and Jerash / Gerasa in Northern Jordan revealed that these glasses were classified as soda - lime- silica with natron as a flux. Based on that, glass from these sites assumed to belong to what is called and defined as Levantine 1 group (Liritzis et al., 1997; Abd-Allah, 2010, 2012; El- Khouri, 2014; Ali and Abd-Allah, 2015).

The production technology for this type of glass composition has been discussed in some details elsewhere. Certain Palestinian coastal beach sands contain approximately the proper concentrations of quartz and calcite that would allow them to be mixed with soda (probably from the lakes of Wadi Natrun in Egypt) to produce a blue-green soda-lime-silica glass. This procedure was carried out in large tank furnaces of the type excavated at Beth Shearim, at Beth Eli'ezer, and in Apollonia (Arsuf), in batches of 5 to 10 tons (Freestone et al., 2002; Abd-Allah, 2013).

The optical examination of the glasses revealed that they are examples of thin-walled glass of fairly good quality. Most of

them exhibit casting marks. This aspect, in addition to the fabric, shape and curvature, indicates that these glasses were made by the mould-blowing technique. Stylistically, these glasses resemble very closely a collection of Roman mould-blowing glasses excavated from other Roman sites in Northern Jordan, such as Yasileh and Quelbeh, as well as Roman glass from Egypt, Syria and Palestine. It was already established that blown glass was first invented or appeared early in the Roman period (Abd-Allah, 2010).

It was during the 4th century A.D, that there is an association between cosmetic galena and a double-chambered flask that became, over the subsequent century or so, one of the most common items among tomb goods in the eastern Empire. We lack any precious metal versions of these flasks that would have been in the cosmetic kits of wealthier ladies. Such flasks were very popular, but that popularity did not extend beyond the eastern Mediterranean, as no discoveries of such flasks were reported from the western part of the Empire (Fleming, 1997).

In our catalogue, sixteen glass flasks used as kohl "eyeliner" containers are studied, all of which were made by using the blowing technique. The colors ranged between green and pale green, bluish-green, and light brown. There was a tendency to decorate the flasks, and the method of decoration was to apply thin strands of glass to the bodies of the flasks.

Handles were of two types: side handles and basket shaped handles. On a number of flasks, the decorative glass strands attached to both sides of the tube was applied in the form of side handles. As Fleming observed, the handles sometimes hindered access to the chambers beneath (Fleming, 1997). We have noticed that the general shape, the technique of manufacture, the colors and the decoration of the sixteen flasks studied here are similar to parallels from Jordan, Palestine, Syria and many of unknown provenance displayed in museums.

1.1 The Catalogue

Fig.1 Double- compartment cosmetic tube; made of blown glass, light green. Decorated with a band applied to the upper part in zigzag shape, while the rest of the tube is decorated with a band wound in nine spirals around the body.

Found intact, in very good condition, only parts of the trail decoration are missing.

H: 12.5cm; dia: 1.6cm, 1.4 cm (interior, at the rim of both tubes).

Provenance: Waqqas (DarAl-Saraya Museum, Irbid, IR 6078).

Date: Late Roman/Early Byzantine.

For parallel examples see: Whitehouse 2001:192, no. 724; Fleming 1997:34, no.21; Hayes 1975:117, no 454.



Figure 1 Cosmetic tube

Fig. 2 Double-compartment cosmetic tube with two side handles; made of blown glass, light green. Decorated with a band wound in five spirals around the body, while the lower part of the tube is decorated with a band applied in zigzag shape.

Found intact, in good condition, basket handle and the base of the flask are missing. 11 cm., diam. 1.5cm.,2 cm. (interior,at the rim of both tubes).

Provenance: Waqqas (Dar Al-Saraya Museum, Irbid, IR 6077).

Date: Late Roman/Early Byzantine.

For parallel examples see: Sary 1991: 9, pl. 2 c ; Whitehouse 2001: 194, Fig.745;Hayes 1975: 101, Fig 359.



Figure 2 Cosmetic tube two-handles

Fig. 3 Double-compartment cosmetic tube; made of blown glass, green.

No decoration is applied on body of tube, while two glass bands are attached on both sides of the tube to form decorative handles.

Found intact, in good condition.

A kohl stick was found inserted in one of the tubes, also a bronze spoon was found beside the tube (17.8 cm. in height),h. 11.5 cm., diam. 1.5 cm., 2 cm. (interior, at the rim of both tubes).

Provenance: Waqqas(Dar Al-Saraya Museum, Irbid, IR 6658).

Date: Late Roman/Early Byzantine.

For parallel examples see : Sary 1991: 9, pl.2c.



Figure 3 Cosmetic tube

Fig. 4 Double-compartment cosmetic tube with two side handles; made of blown green glass.

Found intact, in good condition.

h. 10.5 cm., diam. c.2 cm., c 2.5 cm. (interior, at the rim of both tubes).

Provenance: Waqqas (Dar Al-Saraya Museum, Irbid, IR 6431).

Date: Late Roman/Early Byzantine.

For parallel examples see : Hayes 1975: 101, Fig 359; Dussart 1998: 174, pl.57, no. 24; Whitehouse 2011: 194, no. 745; Seligman et al. 1999: 53, Fig. 17, 2.



Figure 4 Cosmetic tube with two handles

Fig. 5 Double-compartment cosmetic tube with two side handles; made of blown green glass. No decoration is applied on the body of tube, upper part is decorated with a band in zigzag shape.

Found intact, in good condition except for cracks in the body.

h. 10.5 cm., diam. 2.7 cm., 2.8 cm (interior, at the rim of both tubes).

Provenance: Waqqas (Dar Al-Saraya Museum, Irbid, IR 6138).

Date: Late Roman/Early Byzantine.

For parallel examples see : Fleming 1977: 35, fig24; Dussart 1998: 173-174, pl.57, no. 19.



Figure 5 Cosmetic tube with two handles

Fig.6 Single-compartment cosmetic tube with two side handles and a base; made of blown green glass.

The lower part of the body is decorated with a band of zigzag decoration, while the middle part is decorated with a band formed in three parallel coils, color of applied glass is bluish-green.

Found intact, in good condition except for cracks in the body.

h. 11.3 cm., diam. 4 cm (interior, at the rim).

Provenance: Waqqas (Dar Al-Saraya Museum, Irbid, IR 6423).

Date: Late Roman/Early Byzantine

For parallel examples see: Hayes 1975:107, Fig 394; Dussart 1998: pl.56, no. 2; Israeli 1998: 46-47.



Figure 6 Cosmetic tube with two handles

Fig. 7 Double-compartment cosmetic tube with a basket handle; made of blown green glass.

No decoration is applied on the body of tube, while two glass trails are thrown on both sides of the tube to form a decoration that is in the shape of handles.

Found intact, in good condition.
h. 18 cm, diam. 2 cm, 2.5 cm (interior, at the rim of both tubes).

Provenance: Waqqas (Dar Al-Saraya Museum, Irbid, IR 6035).

Date: Late Roman/Early Byzantine.

For parallel examples see: Milhem et. al 2011: 32, Fig: 6; McNicoll et. al. 1982: 152-3; Dussart 1998: 175, pl.58, no. 5.



Figure 7 Cosmetic tube with basket handle

Fig. 8 Double-compartment cosmetic tube, handle is missing; made of blown green glass.

No decoration is applied to the body of the tube.

Found intact, in fairly good condition, except for the broken handle and broken part of the rim on one tube.

h. 11 cm, diam. 2 cm, 2.5 cm. (interior, at the rim of both tubes).

Provenance: Waqqas (Dar Al-Saraya Museum, Irbid, IR 6033).

Date: Late Roman/Early Byzantine.

For parallel examples see: Hennessy 1980: 231, Figs. 3,4; Engle 1980: 89, 66; Dussart 1998: 174, no. 22.



Figure 8 Cosmetic tube with two handles

Fig. 9 Double-compartment cosmetic tube with a basket handle; made of blown light brown glass, the handle is hazel in color. Decorated with a band applied to the body of the tube in multiple spirals.

Found intact, in very good condition.

h. 15.7 cm (with the handle)

diam. 2 cm, 1.5 cm (interior, at the rim of both tubes).

Provenance: Waqqas (Dar Al-Saraya Museum, Irbid, IR 6045).

Date: Late Roman/Early Byzantine.

For parallel examples see: Hayes 1975: 118, no. 458; Dussart 1998: pl.58, no. 6.



Figure 9 Cosmetic tube with basket handle

Fig. 10 Double-compartment cosmetic tube with a basket handle; made of blown green glass.

No decoration is applied to the body of the tube. Incomplete, small parts of body are missing.

h. 16.5 cm (with the handle);

diam. 3.3 cm, 3 cm (interior, at the rim of both tubes).

Provenance: Waqqas (Dar Al-Saraya Museum, Irbid, IR 6043).

Date: Late Roman/Early Byzantine.

For parallel examples see: Hayes 1975: 118, no. 458; Whitehouse 2001:196, no749.



Figure 10. Cosmetic tube with basket handles

Fig. 11 Double-compartment cosmetic tube; made of blown bluish- green glass

The upper part of the tube is decorated with a band of zigzag decoration, while the rest of the body is decorated with nine applied coils wound around the body.

Incomplete, the base and part of one tube are missing.

h. 9.3 cm; diam. 1 cm, 1.5 cm (interior, at the rim of both tubes).

Provenance: Waqqas (Dar Al-Saraya Museum, Irbid, IR 6139).

Date: Late Roman/Early Byzantine.

For parallel examples see: Hayes 1975: 117, no. 454.



Figure 11. Cosmetic tube with double compartment

Fig. 12 Double -compartment cosmetic tube with a basket handle; made of blown green glass. A spoon was found inserted in one of the compartments.

The upper part of the tube is decorated with a band of zigzag , while rest of the body is decorated with coils applied around the body, only two are still intact. Found intact, in good condition.

h. 14.8 cm (with the handle); diam. 2cm.,2.5 cm. (interior, at the rim of both tubes)

Provenance: Waqqas (Dar Al-Saraya Museum, Irbid, IR 6074).

Date: Late Roman/Early Byzantine.

For parallel examples see: Hayes 1975: 101, no. 360-361; Hadidi 1979: 134, LIII fig 8,255; Fleming 1999:106, no 107; Husseini 1935: 176, PILXXXV, 3.



Figure 12. Cosmetic tube with handles

Fig. 13 Single-compartment cosmetic tube with a basket handle, the base is missing, made of blown green glass.

Three loops were applied vertically to the sides of the body, extending from above the base up to the rim. The body of the tube is decorated with seven applied coils wound around the body.

Found intact in good condition, except for the broken base.

h.19 cm. (with the handle),

diam. 3.5 cm. (interior. at the rim).

Provenance: Waqqas (Dar Al - SarayaMuseum , Irbid, IR6081).

Date: late Roman/Early Byzantine.

For parallel example see: Whitehouse 2001: 192, 741.



Figure 13. Cosmetic tube with basket handle

Fig. 14. Single-compartment cosmetic tube with a base and a double basket handle; made of blown green glass.

Four loops were applied to the body in vertical spirals extending from above the base up to the rim. Body of tube is decorated with twenty five applied coils wrapped around the body.

Found intact in very good condition.

h. 9.3 cm (with the base and handle),
diam. 3.5 cm (interior, at the rim), d. 6 cm (of base).

Provenance: At Turra (Dar Al-Saraya Museum, Irbid, IR 7132).

Date: Late Roman/Early Byzantine

For parallel example see: Fleming 1999:120, Fig E63; Whitehouse 2001: 194 no, 746.



Figure 14 Cosmetic tube with single compartment

Fig. 15. Single-compartment cosmetic tube with a base and a double basket handle; made of blown green glass.

Five vertical wavy strips were applied extending from above the base up to the rim. Body of tube is decorated with twenty five applied coils wrapped around the body. Found intact in very good condition.

h. 12cm (with the base and handle),
diam. 3.5cm (interior, at the rim), d. 6 cm. (of base).

Provenance: At Turra (Dar Al-Saraya Museum, Irbid, IR 7131).

Date: Late Roman/Early Byzantine

For parallel examples see: Whitehouse 2001: 192, no. 741, 194, no. 746.



Figure 15 Cosmetic tube

Fig. 16. Double-compartment cosmetic tube with a double basket handle, the base is missing; made of blown green glass.

Four vertical wavy strips were applied in vertical spirals extending from above the base up to the rim. Body of tube is decorated with nineteen applied coils wrapped around the body.

Found intact in good condition, except for the broken base.

h. 18 cm (with the handle),
diam. 3.5 cm (interior, at the rim)

Provenance: At Turra (Dar Al-Saraya Museum, Irbid, IR 7132).

Date: Late Roman/Early Byzantine.

For parallel examples see : Hayes 1975: 117-118, no. 457; Fleming 1997: 35, Fig.25; Whitehouse 2001: 194, no 746.



Figure 16 Cosmetic tube double basket

2. RESULTS AND DISCUSSION

2.1. Archaeological results

Eye paints were nearly universal across the Middle East, North Africa and South Asia since the Bronze Age. Used by both females and males, the black paint provided relief from the glaring sun and reflection from the sand, its metal components were toxic to bacteria carried by flies and contaminated water, thus providing some relief from conjunctivitis and other bacterial eye infections. Tearing caused by soot in the eyes kept the eyes washed clean of contaminants, grits and bacteria (Cartwright-Jones, 2005). In addition to its health related properties, eye paints served in cultic worship and were related to witchcraft in antiquity. Personal use of eye paints with other types of cosmetics developed over time and thus became essential to the ideals associated with beauty (Rubin, 2005).

In ancient times lamp-black was the most common source of pigment, though galena, (lead sulphide), and stibnite, were also used for black, and copper compounds for blues and greens. Galena is found in Egyptian graves, not before the late pre-dynastic times, in several conditions, as fragments of the raw material, as stains on palettes and in the prepared state (kohl), either as a compact mass of the ground material made into a paste or as a powder

(Lucas 1930: 6). Galena was first mentioned by the Roman naturalist Pliny the Elder (1st cen. A.D). He described it as lead ore. Pliny and Dioscorides described the manufacture of another black eye paint by the ancient Egyptians. Galena was pounded with frankincense and gum, and then mixed with goose fat. It was put in dough or cow dung and burned. The burning eliminated the sulphur from the galena and formed lead oxide. The lead oxide was soaked in milk and then pounded in a mortar with water. This was decanted several times and the finest powder was collected, dried, and made into tablets (Pliny 1855: book XXXIII: chap 31; Cartwright-Jones, 2005).

In the sixth century, Alexander of Tralles described kohl made of burnt cadmium, copper, acacia gum, aloes, spikenard, opium, myrrh, lead, burnt ebony and copper, roses, and rainwater. Celsus (1st c. B.C - 1st c. A.D) described twenty-six formulae for kohl and medicated eyewash (collyrium). Five used stibnite, eight used burned copper, and others used lead, ash from fragrant woods, verdigris, and copperas (Scarborough, 1997; Cartwright-Jones, 2005).

2.2. Analytical Results

2.2.1. Chemical Analysis of the Kohl Paste

To investigate the mineralogical composition of the Kohl Paste, a considerable sample of Kohl past was collected from the inner of glass tube previously shown in Fig.3 IR 6658, excavated from Waqqas archaeological site in northern Jordan (Fig.18). The X Pert MPD-Philips X-ray powder diffract meter (XRD) with Cu K α radiation (1.543 Å) operating at reflection mode was used. Furthermore, optical assessment using stereo optical microscopy was carried to investigate the optical properties of the sample.

The XRD analysis reveals that the analyzed sample is the mineral Galena which is characterized that it is the primary ore mineral of lead (Fig.19). Worked for its lead content as early as 3000 BC, it is found in

ore veins with sphalerite, pyrite, chalcopyrite, tennantite-tetrahedrite, etc. and in skarns, as well as in sedimentary rocks where it may replace carbonate beds or be deposited in pore spaces. The crystals are bright when fresh but often tarnish after exposure to air (Helmi, 1984).

2.3 Kohl applicators

The kohl applicators are long, thin sticks made of wood, ivory, bone, bronze or glass. The kohl stick has a rounded point at one end to facilitate spreading around the eyes, and sometimes a spoon-like or spatula at the other end for stirring the makeup and removing it from the vessel. The kohl stick would be immersed in water or scented oil before being inserted into the powder to ensure that the powder would stick to the applicator (Olson, 2009).

In Jordan, kohl applicators are attested among grave goods from an early date. In an Ammonite tomb at Um Udaina-Amman, Al-Hadidi discovered such objects, but since the tomb was used over a long period of time 8th c - 4th c. B.C., it is difficult to give a precise date for the use of kohl applicators in Jordan (Hadidi, 1987). One should also take into consideration that such spatulas were also used for medical and pharmaceutical purposes and

therefore, it is difficult to determine their use unless they are found with kohl tubes. Such spatulas are widespread in sites in Jordan and are usually dated to late Roman - Early Byzantine (Suleiman and Betts, 1981).

3. CONCLUSION

Such elegant kohl tubes discovered in the cemeteries of two towns in the north of Jordan confirms that glassware was no longer a luxury item reserved for the rich alone, such tubes became an item of everyday use. Blown glassware was used by a larger segment of the population since the first century A.D. The art of glass making reached its highest point in Antiquity between the 3rd and 5th centuries, by the third century workers had become more daring with the elaborate patterns of trailing-on of threads applied to glass tubes (Harden, 1933).

In conclusion, sixteen elegant kohl glass flasks, discovered in the cemeteries of two towns in the north of Jordan confirms the use of such glass flasks as kohl tubes based on the chemical analysis of the contents of one of the bottles, in addition to the presence of small applicators (kohl sticks) with a number of glass flasks examined here.



Figure 18 Sample of the kohl paste from cosmetic tube no. 3 (IR 6658).

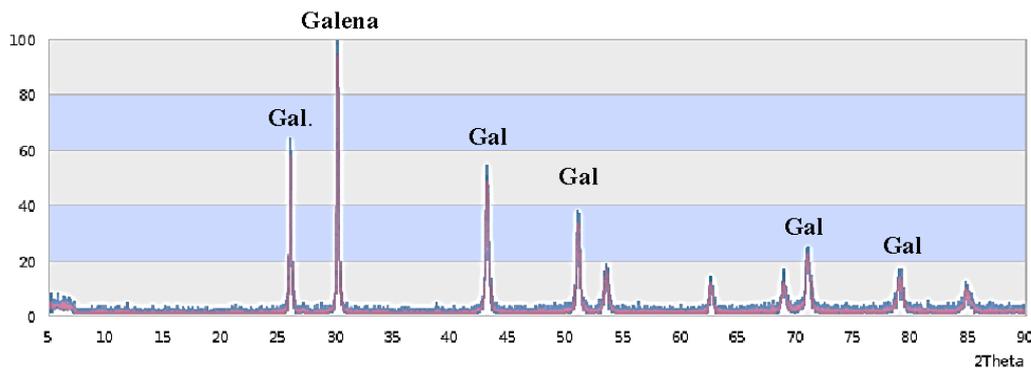


Figure 19 XRD pattern of Galena mineral.

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