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LATE ROMAN/EARLY BYZANTINE GLASS FROM THE AUDITORIA ON KOM EL-DIKKA IN ALEXANDRIA

Renata Kucharczyk

This report continues the presentation of glass from the excavation of a complex of lecture halls uncovered on Kom el-Dikka, covering, briefly, material dated to the Late Roman/Early Byzantine period (4th-7th centuries AD); glass from the Islamic strata has already been published.¹ The repertory is generally the same as in the case of assemblages from other parts of the site and dated to the same horizon. Apart from lamp and windowpane fragments, none of the other objects can be related directly to the assumed function of the auditoria.

Ordinary household containers are common in the assemblage. They are represented by different fragments, chiefly bases and necks with fire-rounded rims. Funnel-neck bottles are undoubtedly the most characteristic among them. Also represented are other glass vessels of daily use, including open forms, such as wineglasses/goblets and tableware, plates/dishes and bowls. Considerable amounts of shards belong to lamps, falling into three well-known types: conical vessels with cracked-off rims, tumbler-shaped lamps and stemmed lamps. Some window-glass executed in different techniques has also been documented.

All the recorded fragments are typical of the period, the type and function being the same regardless of whether the glass is from the Alexandrian area specifically or from elsewhere in Egypt. All the vessels were free blown. Most of them were unadorned. Decoration, when present, is restricted to applied elements accompanied by simple horizontal, wheel-incised or abraded lines and incised criss-cross design. The latter seems to have been widely used by local glassmakers. Conical lamps, wineglasses and tableware were made characteristically of good-quality yellow, olive-green, amber/brown and green glass. Some fragments of conical lamps, however, appear almost colourless and are coated with iridescent weathering. Distinctive are household vessels, made of lesser quality, thin, natural bluish-green glass, containing many bubbles and showing different stages of surface weathering.

The discovery of two well-preserved circular structures made of red bricks, obviously furnaces, under the floor of auditorium G came as a surprise. Unfortunately there is no surviving evidence of the superstructures [*cf. Fig 4* on p.26 in this volume].² One of the furnaces is still

1 R. Kucharczyk, "Islamic glass from the auditoria on Kom el-Dikka in Alexandria", *PAM XVI, Reports 2004* (2005), 31-41.

2 Excavations are planned for the upcoming season of digging.

covered with a thick coating of greenish glass. A third furnace, unearthed in auditorium R, was severely damaged by later, Islamic graves. These structures testify without any doubt to glassmaking on the site and they shed new light on the glass industry in Alexandria during the Late Roman/Early Byzantine period.

The common opinion about glassmaking in Alexandria was based primarily on literary sources³ and until now supported by secon-

dary archaeological evidence, such as fragments of furnace structures with attached glass, remains of crucibles with glass layers adhering to the inner surface, drippings, fragments of glass slag and finally many pieces of ingots of various colours. The evidence for tube-drawing, as well as wasters (distorted body fragments and windowpanes, semi-products, etc.) constituted additional indications associated with glass working, pointing directly to a local workshop.

LAMPS

Vessels with cracked-off rims are undoubtedly one of the commonest glass finds from layers of the Late Roman period. The most popular form, attested also in the auditoria, is a simple conical lamp or beaker.

CONICAL LAMPS

Conical lamps are represented by fragments of flaring cracked-off rims and straight side walls which taper to the different types of bases. The thickness of the fragments varies, since the walls are always thinner in the middle part of the vessels [*Fig. 1:1*].

This characteristic shape has a long history in the lamp-making tradition, one, that was extended also into the Early Islamic period.⁴ Such vessels have been identified both as beakers and as lamps. Those found in the Eastern Mediterranean may have been used predominantly as lamps. Most of the conical vessels excavated at Karanis had an oily deposit and soot in

the base, which indicated such use. They may have stood in small wooden tripods or were suspended from the ceiling. A few pieces from the auditoria show signs of horizontal friction-wear below the rim and at about the midpoint of the body, suggesting that the vessels were suspended in metal rings. Western examples are generally thought to be drinking vessels, as are later medieval glasses of this shape.

Conical lamps are identified by their distinctive bases. The most common type is a solid, plain base, triangular in section with no pontil mark, rounded at the bottom [*Fig. 1:2-3*]. They are present in the excavated material in significant numbers. The best parallels are provided by examples from Naqlun.⁵ By contrast, only three pieces of the characteristic coiled knob base have been found [*Fig. 1:4-6*]. Apart from Kom el-Dikka, finds can be cited from Naqlun,⁶ Tell el-Balamun⁷ and Tebtynis.⁸ Less

3 John Moschus, *Pratum Spirituale* 77.

4 G.T. Scanlon and R. Pinder-Wilson, *Fustat Glass of the Early Islamic period* (London 2001), 54, Pl. 25c and 65, Pl. 32: i. The latter one has added decoration consisting of a festoon caught by pinched lugs.

5 M. Mossakowska-Gaubert, "Question d'éclairage: ermitage no. 44 à Naqlun (Fayyoun)", *AnIsl* 34 (2000), 347, Fig. 3, type 2.

6 Mossakowska, *op. cit.*, 335-357, Fig. 4, Nos. 18-21.

7 A.J. Spencer, *Excavations at Tell el-Balamun* (London 1996), 18, Pl. 87:11.

8 D. Foy, "Secteur Nord de Tebtynis (Fayyoun). Le Verre Byzantin et Islamique", *AnIsl* 35 (2001), 446-447, Figs 1: 9.

numerous are fragments with short, pronounced knob base flattened at the bottom [*Fig. 1:7-9*]. They seem to be rare in the excavated material from Egypt.⁹ Similar pieces are documented among the finds from Naqlun¹⁰ and Karanis.¹¹ Lamps with pronounced knob base have also been found in later contexts, as evidenced at Fustat-Istabl'Antar.¹² A few other shapes of bases connected with this type of the lamp have also been observed [*Fig. 1:10-12*].

Although the recorded fragments of side walls are plain, a few fragments are decorated with closely spaced, very light, wheel-abraded lines. Four pieces have additional characteristic appliqués, which consist of coloured blobs applied to the outer surface of monochrome glassware in a variety of patterns [*Fig. 1:13-15*]. This simple ornamentation, which originated in the mid-3rd century, enjoyed popularity in the eastern Mediterranean and on sites in the Black Sea in the 4th century. In the West, it was continued until the 5th century.

On one shard, there is a single large emerald-green blob in the shape of an almond. The blob is prominent with some protrusion on the interior [*Fig. 1:13*]. More blobs may have been arranged in one horizontal row running around the upper part of the lamp (other designs are equally possible). Small dots could be placed in a few groups forming a simple triangular or diamond-shaped pattern alternating with a single large blob. There is abundant comparative material from Egypt.¹³ Find-places extend, however, across the Mediterranean and beyond.

One isolated, small shard merits special interest. Here, on the olive-green surface, we can observe dark blue trailed-on decoration of open diamonds or a chain [*Fig. 1:16*]. An identical fragment was unearthed in Marina el-Alamein (personal observation). No other exact parallels for this design have been published. Fragments with similar but not identical motifs come from Tebtynis,¹⁴ Tell el-Balamun¹⁵ and Jerash.¹⁶

9 For parallels outside Egypt, see id., "Le Verre en Tunisie: L'apport des fouilles récentes tuniso-françaises", *JGS* 45 (2003), 79, Figs 77-81.

10 Mossakowska, op. cit., 349, Fig. 4: 24.

11 D. Harden, *Roman Glass from Karanis* (Ann Arbor 1936), Pl. XVI: 464-465.

12 D. Foy, "Lampes de verre fatimide à Fostat: le mobilier des fouilles de Istabl'Antar", in: M. Barrucand (ed.), *L'Égypte Fatimide: son art et son histoire* (Paris 1999), 184, Fig. 3:1-2; Y. Shindo, "Glass", in: K. Sukurai and M. Kawatoko (eds), *Egyptian Islamic city, al-Fustat: Excavation report 1978-1985* (Tokyo 1992), 609, 25-28.

13 Recently they have been attested at Marina el-Alamein, House 1 (personal observation). Other sites include *Tebtynis*: Foy 2001, op. cit., 465-466, 482, Fig. 1: 2,4. See also plain examples, Fig. 1: 1,5. *Karanis*: Harden, op. cit., Pl. XVI: 440, 457, 460. *Kellia*: M. Egloff, *Kellia. La poterie copte. Quatre siècles d'artisanat et d'échanges en Basse-Égypte* (Geneve 1977), Pl. 91, No. 2. *Tell-el-Balamun*: Spencer, op. cit., 18-19, Pl. 88:11. *Elephantine*: M. Rodziewicz, *Early Roman Industries on Elephantine, Elephantine XXVII* (Mainz am Rhein 2005), 95, Pl. 9:187-188. They are present at *Red Sea sites*: C. Meyer, *Glass from Quseir al-Qadim and the Indian Ocean Trade* (Chicago 1992), 40: 359. J. Hayes, "Summary of pottery and glass finds in Berenike 1994, preliminary report", in: S.E. Sidebotham and W.Z. Wendrich (eds), *Preliminary Report of the 1994 Excavations at Berenike (Egyptian Red Sea Coast) and the Survey of the Eastern Desert* (Leiden 1995), 38-40, Fig. 16:10. Also *Kharga Oasis*: M. Hill and M.-D. Nenna, "Glass from Ain et-Turba and Bagawat necropolis in the Kharga Oasis, Egypt", *AnnAIHV* 15 (2001), 91 - not illustrated.

14 Foy 2001, op. cit., 465-466, Fig. 1: 3.

15 Spencer, op. cit., 18-19, Pl. 87: 15.

16 C. Meyer, "Glass from the North Theater Byzantine Church, and Soundings at Jerash, Jordan, 1982-1983", *BASOR*, Suppl. 25 (1988), 189-190, Fig. 6: C.

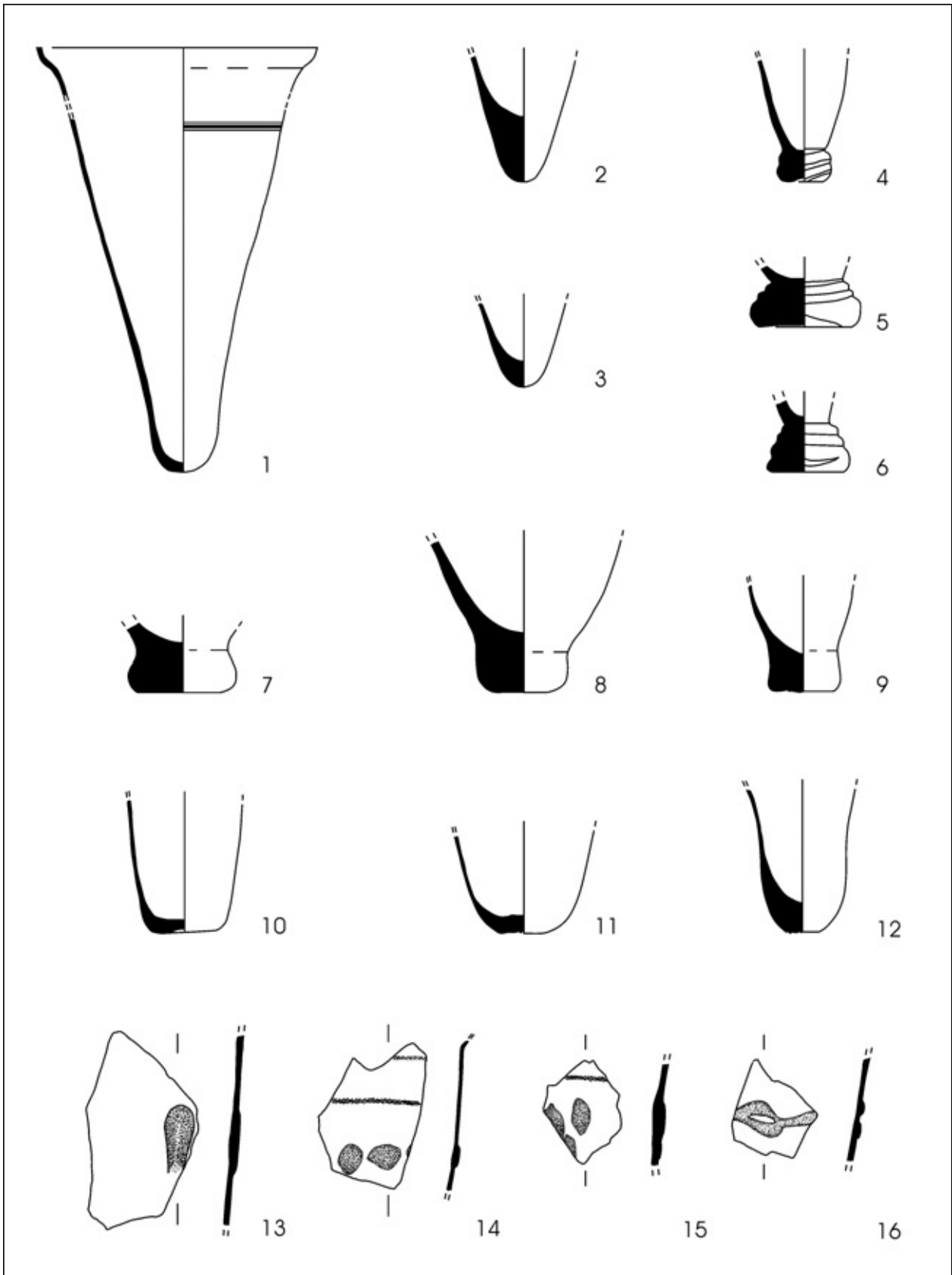


Fig. 1. Conical lamps
 (Drawing R. Kucharczyk and E. Kulicka, digitizing R. Mahler)

A few other forms in various sizes with unworked rims have also been observed. They include hemispherical [Fig. 2:1] and shallow bowls with slightly S-shaped curved sides [Fig. 2:2]. One large fragment probably represents a bulbous jar [Fig. 2:3].

TUMBLER-SHAPED LAMPS

In addition to the lamps with cracked-off rims, the auditoria also produced fragments of tumbler-shaped lamps. They are represented by segments of a slightly flaring side-wall of bowls with rims folded outward and downward and with one surviving handle [Fig. 2:4-5]. Such lamps are usually equip-

ped with three short vertical handles, arranged in a triangle, drawn from the wall up to the edge of the rim. A characteristic feature of such handles is that they are often made in contrasted, coloured glass, usually dark blue, on lighter-colored bodies. This type of lamp could be again suspended or, alternately, freestanding, either on a table or altar.

Tumbler-shaped lamps with slight variations of the rims and hand treatment were common items found in many parts of the Mediterranean region between the 5th and 7th centuries AD. It was a long-lived type and continued to be produced until

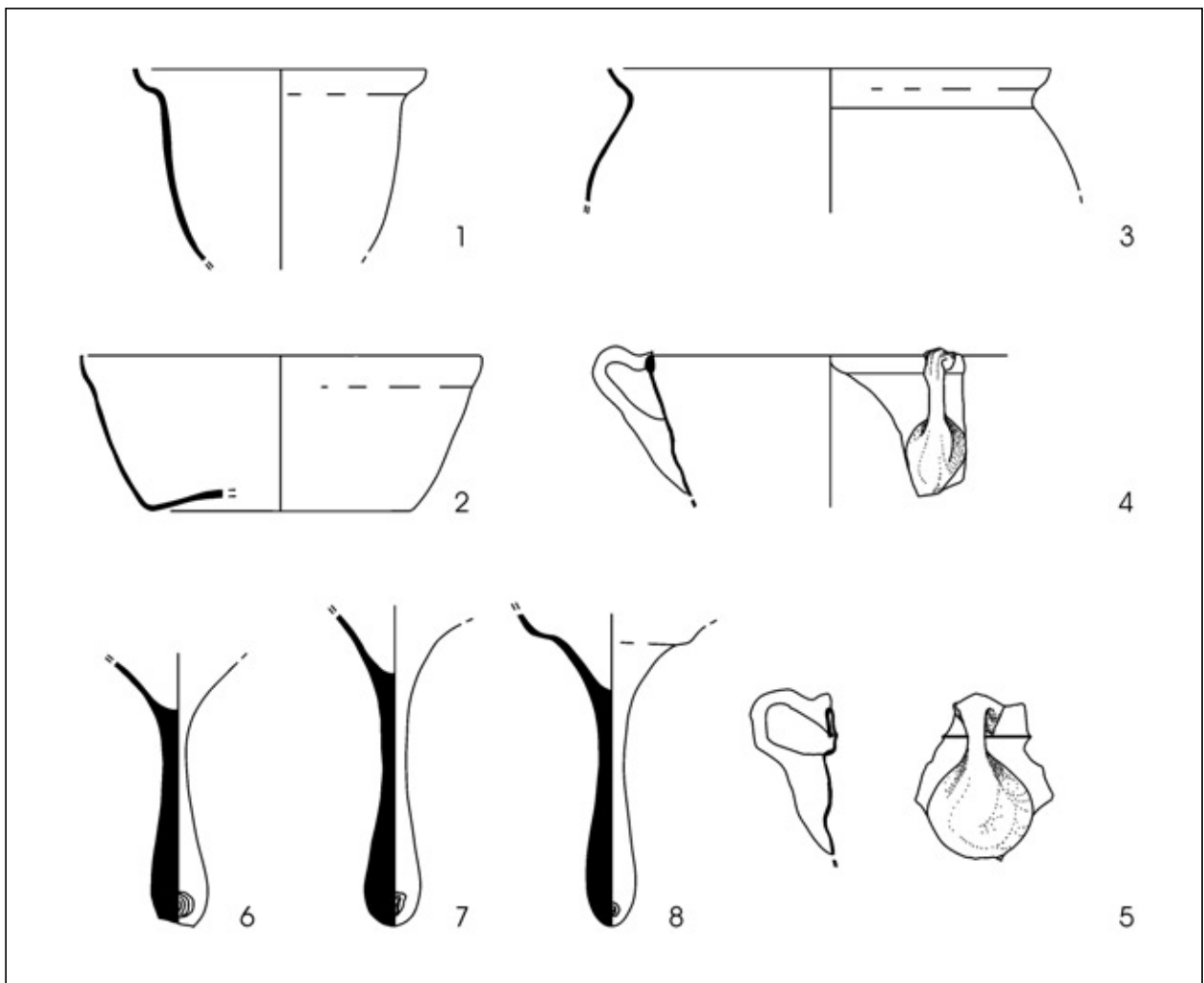


Fig. 2. Vessels with cracked-off rims (1-3), lamps (4-8)
(Drawing R. Kucharczyk and E. Kulicka, digitizing R. Mahler)

Medieval times.¹⁷ Comparative material is truly abundant. In Egypt, apart from Alexandria, other stratified examples may be cited from Marea, Medinet Madi and the Sinai.¹⁸

SOLID-STEMMED LAMPS

Numerous fragments of solid-stemmed lamps, one of the most characteristic items

among finds from the Kom el-Dikka assemblage, with rounded or elongated depressions on the lower part of the stem, have also been recovered [*Fig. 2:6-8*]. They were attested already in the Islamic levels of the auditoria.¹⁹ Moreover, lamps with these peculiar features are abundantly represented at the nearby Marea site, leading one to assume that they were a local product.²⁰

FUNNEL-NECK BOTTLES

Funnel-neck bottles, which flourished in Late Roman and Byzantine times, are surprisingly represented by only a small number of fragments [*Fig. 3:1-5*]. It is in direct contrast to the high proportion of finds of this type from Marea where this shape was amply represented and was indeed the main output of the assemblage.²¹ Usually such bottles, also those recorded from the auditoria, were made of different shades of common natural bluish-green and green glass. They were left undecorated. Like most of the Byzantine bottles, also our finds are thin, in some cases extremely thin-

walled. They have fire-rounded rims, globular bodies and high kicked up bases [*Fig. 3:1*]. The lack of pontil scars is characteristic. The glass is preserved generally in good condition, although some weathering, resulting in light iridescence, has been observed. It contains bubbles in varying amounts and sizes.

Evidence for this very common and geographically widespread type comes from all over the eastern Mediterranean, where they are broadly attributed to a period ranging from the early 5th to the early 7th century AD.²²

17 G. Davidson Weinberg, "A medieval mystery: Byzantine glass production", *JGS XVII* (1975), 138, Fig. 25.

18 Marea: R. Kucharczyk, "Glass finds from the bath in Marea", forthcoming. Medinet Madi: F. Silvano, *Vetri Bizantini dall'Egitto. Medinet Madi. 1998* (Pisa 1999), 23-26, Nos. 11-16. El-Tur: M. Kawatoko, *A Port City Site on the Sinai Peninsula, Al-Tur: The 13th Expedition in 1996 : Summary Report* (Committee for Egyptian Islamic Archaeology, Middle Eastern Culture Center in Japan 1998), 68, Pl. 40: 3. Raya: Y. Shindo, *Islamic Glass finds from Raya, Southern Sinai*, *AmAIHV* 15 (2001), 180-181, Fig. 2: 9.

19 Kucharczyk, *Kom el-Dikka 2005*, op. cit., 39-41, Fig. 6: 8.

20 Id., "Glass finds from the Basilica in Marea, 2003", *PAM XV, Reports 2003* (2004), 63-64, Fig. 1, and id., "Glass finds from the Basilica in Marea", *PAM XVI*, op. cit., 55-56, Fig. 1: 4-7.

21 Id., "Marea 2001: Windowpanes and other glass finds", *PAM XIII, Reports 2001* (2002), 65-71, Fig. 1: 1-3. Considerable quantities of fragments of bottles of the type have been recorded in the current excavations at the basilica in Marea.

22 For parallels, cf. Sardis: A. von Saldern, *Ancient and Byzantine Glass from Sardis* (London 1980), 69-71, Pl. 26: 478. Khirbet al-Karak: P. Delougaz, "The Objects: Glass Vessels", in: P. Delougaz and R.C. Haines (eds), *A Byzantine Church at Khirbet al-Karak* (Chicago 1960), 49, Pl. 59: 2-3,5-6. Samaria: G.M. Crowfoot, "Glass", in: J.W. Crowfoot, G.M. Crowfoot, K.M. Kenyon (eds), *Samaria-Sebaste: The Objects from Samaria, III* (London 1957), 410-412, Fig. 95: 4,7,9. Jerash: P.V.C. Bauer, "Glassware", in: C.H. Kraeling (ed.), *Gerasa: City of the Decapolis* (New Haven 1938), 531, 534, Fig. 25:385.

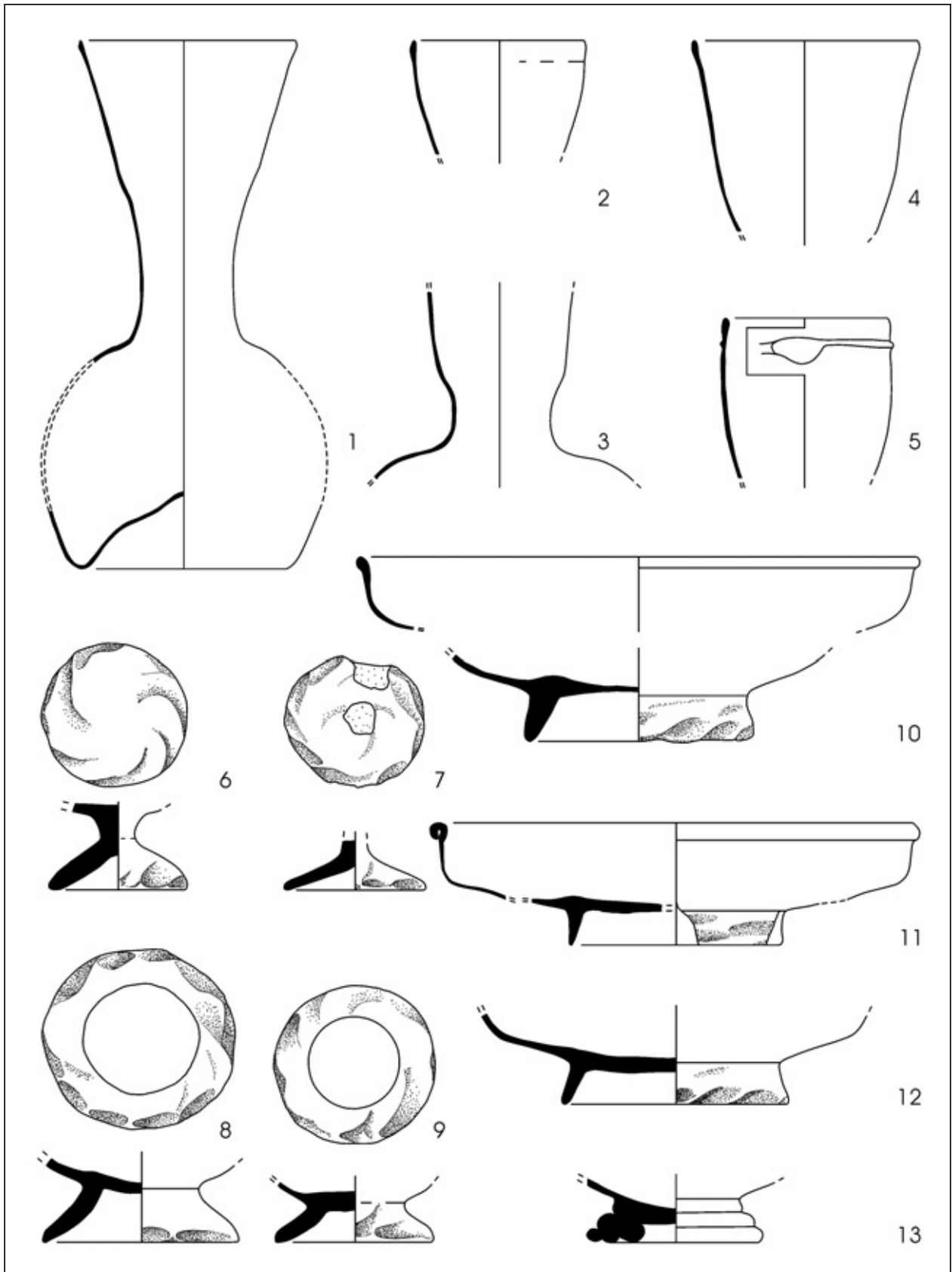


Fig. 3. Bottles (1-5), vessels with various bases (6-13)
 (Drawing R. Kucharczyk and E. Kulicka, digitizing R. Mahler)

VESSELS WITH VARIOUS BASES

Bases with tooling marks were one of the most characteristic items of the assemblage. Small bases bearing such marks appeared in significant quantities. It argues strongly not only for Egyptian, but most probably for local manufacture as well. They were used for a variety of shapes and were connected with smaller forms like goblets and wineglasses, and also bottles [Fig. 3:6-9]. The edges were very often irregular. These bases were made of high quality glass of different shades of green. Their surface is shiny and they show no signs of weathering. Similarly treated bases have been noted in Marea,²³ Marina (personal observation) and the Fayum area.²⁴

Another type of base (ring base) with tooling impressions on the outside and inside, is also present, although in limited quantities. These bases are usually connected with open forms, both with shallow dishes/broad plates and bowls [Fig. 3:10-

12]. Such bases, introduced during the Roman period, are widely distributed throughout Egypt and are usually regarded as products of the region.²⁵ This seems to be supported by a significant amount of such specimens in the assemblage from Kom el-Dikka. Evidence from Istabl'Antar suggests that this form was still current during the Islamic period.²⁶

Coil-wound bases can be used in many ways and for many shapes and sizes of vessels. Although, they are usually connected with jugs or flasks, they may have come also from a bowl. This type of base used to be regarded as the product of Egyptian glasshouses of the Late Roman period; hence, it seems surprising that only three pieces have been attested so far at Kom el-Dikka [Fig. 3:13]. Findplaces in Egypt include several sites.²⁷ Our pieces are paralleled by examples from Carthage²⁸ and Rome,²⁹ where they seem to have been especially popular.

23 R. Kucharczyk, "Glass finds from the bath in Marea", forthcoming.

24 M. Mossakowska-Gaubert, "La verrerie utilisée par des anachorettes: L'ermitage no 44 à Naqlun (Fayyoum)", in: M. Immerzeel and J. van der Vliet (eds), *Coptic Studies on the Threshold of a New Millennium* (Leuven 2004), 1446-1448, Fig. 2 (type 3); F. Silvano, "Vetri romani dai recenti scavi a Medinet Madi (Egitto)", in: *Vetri di Ogni Tempo*, Atti della V Giornata Nazionale di Studio, Massa Martana, ottobre 1999 (Milano 2001), 14, 17, Fig. 7; Foy 2001, op. cit., 469-470, 483:35,37-41,43-45.

25 Karanis: Harden, op. cit., Pl. X: 83, 89, 90, 101, 107-108, 116, XI: 1, 15, 17 and Pl. XIV: 228. Esna: H. Jaquet-Gordon, "Les ermitages chrétiens du désert d'Esna, III, Céramiques et objets (IFAO: Le Caire 1972), 94, Pl. CCXXXIII: 5. Naqlun: Mossakowska-Gaubert 2004, op. cit., 1449-1450, Fig. 3 (type 1-4), Fig. 10. Tebtynis: Foy 2001, op. cit., 467-468, 482, Fig. 1: 20. They have been attested recently in the Alexandrian region, e.g. Marea: Kucharczyk (forthcoming) and Marina el-Alamein (personal observation).

26 D. Foy, "L'héritage antique et byzantin dans la verrerie islamique: exemples d'Istabl'Antar-Fostat", *AnIsI* 34 (2000), 152-155, Fig. 2: 7 excavated in a 9th-century context, and Fig. 2: 6,8 from the Fatimid period.

27 Marina el-Alamein (personal observation). Gabbari necropolis in Alexandria: M.-D. Nenna, "Le mobilier en verre", in: J.-Y. Empereur et M.-D. Nenna (eds), *Necropolis 1* (Le Caire 2001), 505-512, 14.13. Karanis: Harden, op. cit., 217-218, Nos. 641-71, Pl. XIX: 658 (one illustrated). Khargah Oasis: Hill and Nenna, op. cit., 91.

28 Sternini, "I vetri provenienti dagli scavi della missione Italiana a Cartagine (1973-1977)", *JGS* 41 (1999), 98-99, Fig. 9: 116, 118, 119, 120-130, 132. Foy 2003, op. cit., 72, Figs. 41-43, with more references to previous excavations.

29 D. Whitehouse, "The Glass", in: D. Whitehouse et al., *The Schola Praeconum II*, *PBSR* 53 (1985), 164-171, Fig. 5: 55-58; M. Sternini, "Reperti in vetro da un deposito tardoantico sul colle Palatino", *JGS* 43 (2001), 68-70, Fig. 20: 204-219.

WINDOWPANES

Excavations in the auditoria also yielded a certain number of windowpane fragments. Two different methods of manufacturing based on blowing were documented. A few pieces were large enough to be recognized as produced with the so-called cylinder-process. They were made of bubbly, yellowish-greenish glass. These flat and thin fragments most probably

came from square or rectangular panes. No shards preserving the edges have been found. Considerable amounts of such glossy/matt windowglass appeared on the floor of auditorium P. There is also some evidence for the use of the crown method. Unfortunately, few of the characteristic, thick, bull's eye centres and rounded edges have been recovered.