

Title: **Marea 2011**

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Journal: *Polish Archaeology in the Mediterranean* 23/1 (Research 2011)

Year: 2014

Pages: 45–62

ISSN 1234–5415 (Print), ISSN 2083–537X (Online)

Publishers: Polish Centre of Mediterranean Archaeology, University of Warsaw (PCMA UW),
Wydawnictwa Uniwersytetu Warszawskiego (WUW)

www.pcma.uw.edu.pl – www.wuw.pl

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The location of the ancient site of Marea, an important locality mentioned in many ancient sources including Herodotus, Tukidydes and Diodorus the Sicilian, was suggested by the 19th century astronomer and erudite Mahmud el-Falaki, author of a map of Alexandria and vicinity that was published in 1872. He pointed to the only larger concentration of ruins that existed on the southern shore of the lake, close to the village of Huwwariya, approximately 45 km to the southwest of Alexandria. However, despite substantial inscriptional evidence discovered to date, none of the texts have indicated or even suggested the real name of this site (Szymańska, Babraj 2004; 2008: 11–15; Babraj, Szymańska 2010; Grossmann 2003; Wipszycka 2012; for an opinion confirming the identification of the site as Marea, Rodziewicz 2003; 2010).

A dozen years of archaeological research in the ruins have made it clear that the settlement on the southern shore of Mareotis Lake was established at the end of the 4th century AD. Earlier Ptolemaic and Roman occupation of the site was linked to intensive agricultural and industrial activities in the area, confirmed by the presence of a large pottery furnace under the apse of the basilica, numerous glass workshops, harbor infrastructure, huge waterfronts and quays, and water channels throughout the city.

The season in 2011 was beleaguered by administrative mishaps with essential military permits, hence the expedition was able to conclude only some clearing work in the area directly to the east of the basilica and a series of building preservation actions carried out inside the already excavated parts of the church.

ARCHITECTURAL QUARTER BESIDE THE BASILICA

Clearing work concentrated in the area of structures located on the lakeside east of the basilica. A quarter of regular buildings was uncovered, arranged on a regular street grid and constructed of limestone blocks and frequent *spolia* salvaged from earlier structures [Fig. 1].

The area behind the apse of the basilica was set close to the lake. It was delimited on the north by the quay, the structure of which cuts into the rock of the shore. On the south side, the shoreline seems to have been natural without any quays.

In between, the shoreline was built up along the entire length as a regular waterfront. A street ran behind the apse of the basilica from north to south, separating the church from the complex of architecture, which covers 3486 m² (83 m N–S by 42 m E–W). This architecture was presumably connected with the harbor infrastructure, including presumably a kind of customs house directly off the exit from the quay. It is possible to recognize port warehouses, shops and at least one latrine and a villa. The street grid follows a rectilinear plan.

Team

Dates of work: 13 July–24 August 2011

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Acknowledgments

Work at Marea is carried out on the grounds of a cooperation agreement between the Polish Centre of Mediterranean Archaeology of the University of Warsaw and the Archaeological Museum in Kraków, with extra funding provided generously by Mrs. Hélène Zaleski. We are grateful to the Supreme Council of Antiquities, represented by inspectors: Mr. Abd Alaziz Mohamed Said for archaeology and Mr. Saad Mohamed Saad for conservation, as well as Mr. Amr Ibrahim Ali Noh, director of the Fawzy el Fakhrany Storage Museum in Marea. Special thanks are due to Mr. Mohamed Abdel Fattah, Secretary General of Egypt's Supreme Council of Antiquities, for his special consideration of the mission's work. The mission is indebted to Dr. Mahmud Ismail Khaled, General Director of Foreign and Egyptian Mission Affairs and Permanent Committee, for generous assistance at every stage of the project. The work could not have been completed without the cooperation of Dr. Mohamed Mustafa, General Director of the Alexandrian Antiquities Department, and the generous help of Ms Samiha Noshay Rafla, General Director of Foreign Excavations in Alexandria, who expedited many administrative matters to the expedition's benefit.

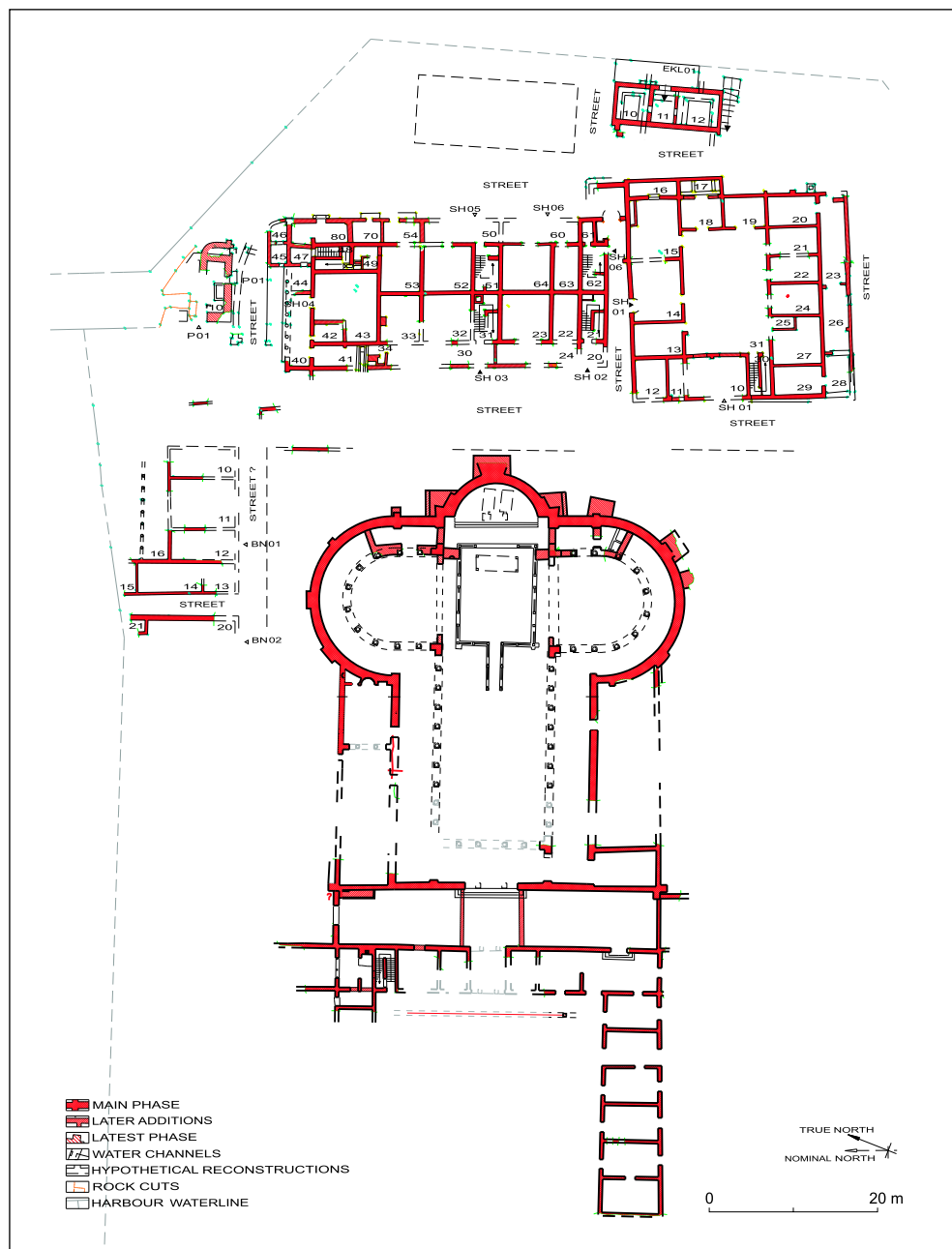


Fig.1. The basilica in Marea and surrounding architecture, after surface clearing in 2011 (Plan J. Kościuk, D. Tarara)

BUILDING SH 01

Building SH 01 [*Fig. 2*] lies in the southeastern part of the said area and is the southernmost of the structures there. It was square, measuring 26 m to the side. A large square courtyard lay in the center of this structure (room 31, 10 m by 15 m), surrounded by a series of rooms, which got their air and light from this central open space. The main entrance to the complex was located most probably in room 10, giving onto the street of the basilica from the west. A second, smaller doorway could have led to room 14 from the street on the north side of the building, separating the building from the architecture further to the north. The street narrowed toward the east. Judging from the staircase in room 30, the building may have had an upper floor, most probably only one as it would otherwise have competed visually with the building of the basilica located in its immediate vicinity. The long narrow rooms on the south side (rooms 28, 26 and 23) are intriguing; perhaps they had once been a portico which was later subdivided to create separate units. A large set of ostraka was discovered on the outside of units 26 and 28 [*Figs 2, 3*]. They were found just below the surface (about 10 cm), in a compact layer of pottery from the 5th to 7th centuries, consisting chiefly of amphoras as well as small quantity of table and cooking ware (that included basins, casseroles, jars) (see also below). The fill in chamber 28 also produced a fine bone pin, 14 cm long, topped by a small cross [see below, *Fig. 7*, bottom left].

Units 20 and 29 respectively at the eastern and western ends of the building were entered from the portico; they could have been used as shops or service units (laundry, cloakroom). Water must have been supplied to the building from a well, possibly linked to a small cistern. The presence of a well was assured by a relatively high water table, resulting from the proximity of the lake. There was no private area proper for a latrine inside the buildings, but there was a large latrine on the lakeshore in the immediate vicinity of the house, just beyond the street to the east (EKL 01, units 10, 11, 12) [see *Fig. 1*]; it used water from the lake to remove the waste. Public toilets or toilets situated outside buildings were the rule in this period, latrines in private houses being a rarity as they required running water and sewage. The plan and layout of surrounding units indicate beyond doubt that the building in question was a residential one. It may have been occupied by someone connected with the construction of the basilica, a steward for example (Thébert 1987; Ellis 1988: 568, *Fig. 2*; Clarke 1991; Baldini Lippolis 2001: 315–316; Smith 2011).¹

BUILDINGS SH 02–SH 06

The SH 02–SH 06 complex of buildings formed a regular rectangle, 17.80 m by 38.30 m, aligned north–south [*Figs 4, 5*]. It was made up of five independent units, each with its own staircase and entrance. The four units on the south side (SH 02, SH 03, SH 05, SH 06) had a similar arrangement: two rooms, a staircase to the upper floor, all independent,

¹ A very close parallel despite a more elaborate plan is offered by a house from Tipasa in Algeria, referred to in the literature of the subject as “House of the Frescoes”. The building was presumably much more elaborate in terms of decoration (wall paintings, mosaics, architectural decoration), but the plan was similar and the dating falls within the same period, that is, the 5th–6th century. For a discussion of the building after discovery, see Baradez 1961.

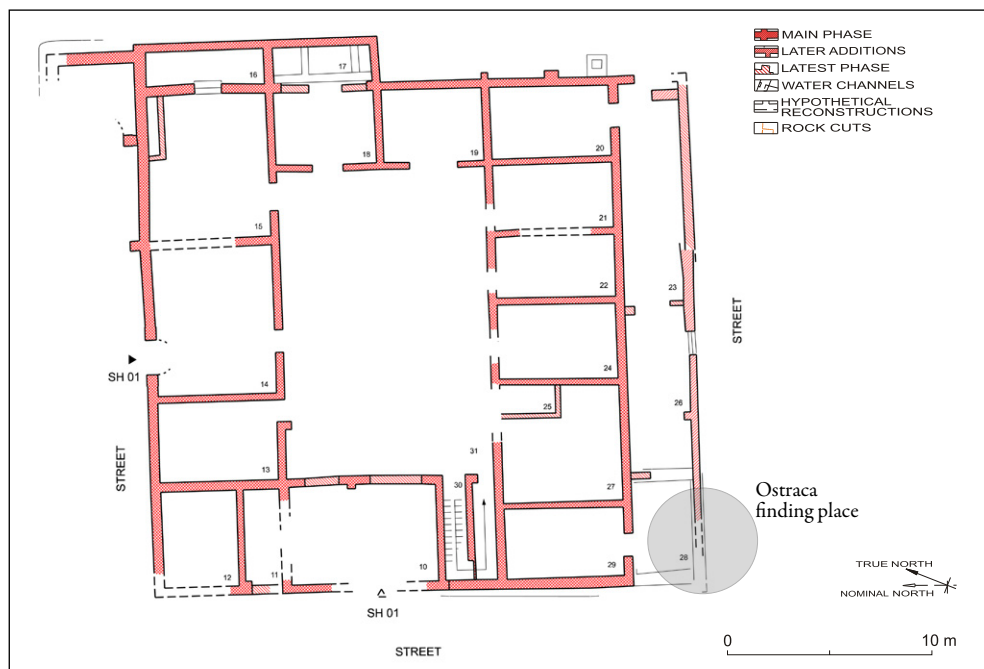


Fig. 2. Building SH 01 (Plan J. Kościuk)

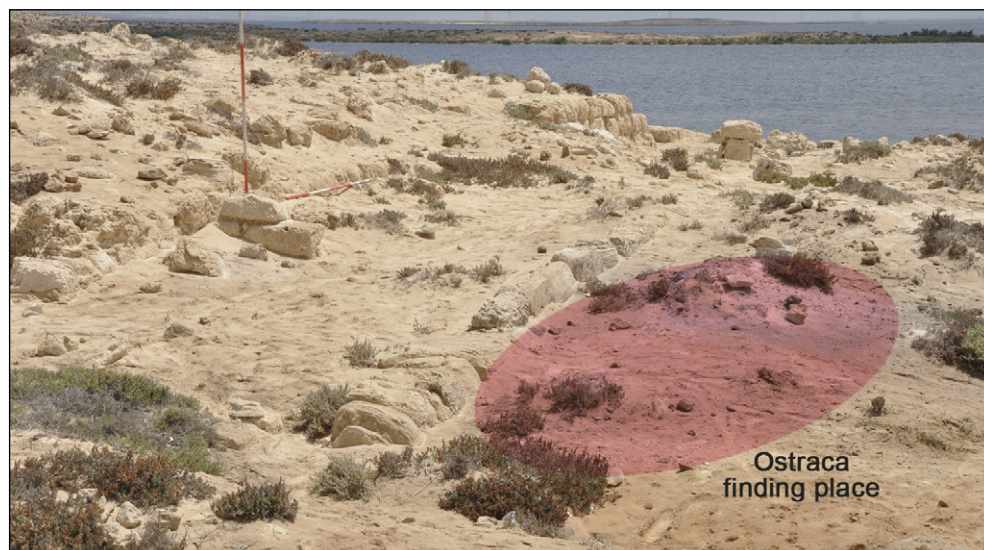


Fig. 3. Southern part of SH 01, rooms 28 and 26 and the area where the ostraka were found, viewed from the west (Photo J. Babraj)



Fig. 4. The cleared district to the east of the basilica, view to the north (Photo J. Babraj)

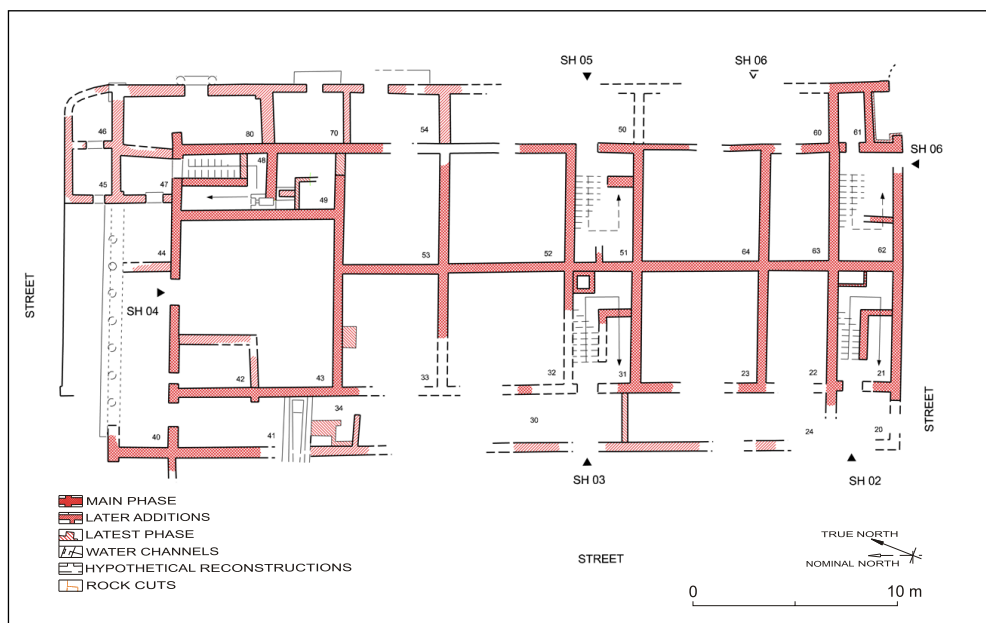


Fig. 5. Buildings SH 02–H 06 (Plan J. Kościuk)

entered from the streets on the east and west sides of the complex. In many instances (rooms 21, 31, 51, 62), the staircase sided a ventilation shaft that should lead to a well or small cistern. It was rather not a toilet, more likely a kind of household hiding place. The other units (22, 23, 63, 64) could have been used to store goods unloaded in the harbor. A fine bowl made of grey granite, presumably coming from the Eastern Desert, was found in room 64. It was 27 cm in diameter and 14 cm high [Fig. 6]. Bowls of this kind, resembling mortars, were considered luxury items and were handed down from generation to generation. They were known already in Pharaonic times. In the present case, the bowl can be dated to the 5th–7th century (Bura 2009; Tzitzibassi 2002: 358–359, Cat. No. 418–442; Rodziewicz 1984: 87, Fig. 82). The residential or administrative part of the house would have been located on the upper floor. In a later phase, the units on the east and west, previously used as a portico, were closed up and added to the main body of the building.



Fig. 6. Bowl of grey granite from SH 06 (Photo J. Babraj)

The northern part of the complex, designated as SH 04, followed a different layout. Fronting the entrance on the north was a portico approximately 2.50 m long and about 2 m wide. It opened on a street that separated the complex from another structure (P 01), which could have been a kind of customs house standing directly opposite the exit from the quay. In a later phase, the portico was divided into two separate units (40, 44), which led to different parts of the building, including the staircase (48) in the northeastern corner of the building, the courtyard (43) in the center and a small unit (41) in the northwestern corner. The courtyard did not give access to the other rooms, which functioned independently. Provisionally, one can also suggest a connection between unit 48 behind the staircase and room 53, which was part of house SH 05; it may have originally connected the two buildings.

In a later phase, the eastern part of the northern portico of house SH 04 was closed off and turned into a series of small rooms. There is some evidence to suggest that the rebuilding followed a conflagration that consumed this part of the complex. The fire may have had something to do with the Persian invasion of AD 619/620. Should this theoretical dating of the fire be confirmed, then the entire late phase of the complex SH 02–SH 06 could be dated to the 6th century. The Persian raiders plundered everything in their way and especially elements of architectural decoration, which they carried off.

BUILDING P 01

Weakly preserved walls were noted on the northern side of the street fronting the north side of building SH 04 [see Fig. 1]. The building technique here

was noticeably different: narrow walls, 0.90 m thick, built of undressed local stone salvaged from other structures, bonded in mortar with joints just 1 cm thick. Waterproof mortar was used as well (*opus signinum*), not unexpectedly considering the proximity of water. This architecture appears to be earlier than the other buildings in the area. The location directly next to the quay suggests a kind of toll house, collecting fees from visitors coming in from the lake. Quantities of small change found in this area and near the exit from the quay stand in favor of this idea.

BUILDING EKL 01

On the eastern side of the complex of buildings SH 02–SH 06 and SH 01, just by the reinforced waterfront, stand the remains of a small building (12.90 m by 5.00 m) with three rooms: 10, 11 and 12 [see *Fig. 1*]. Steps led to the central room 11, from which one could enter the two side rooms on the north and south, both of which were furnished with U-shaped channels that were washed down with waste water discharged from the neighboring building on the west, as well as by water from the lake when the level rose owing to a higher wave. A few steps could be observed between the eastern waterfront and the street running next to building EKL 01.

BUILDINGS BN 01, BN 02

A topographical study of the area ended this season with the clearing of two structures, separated by a street, standing to the north of the northern transept of the basilica [see *Fig. 1*]. The two buildings were separated from the basilica by a narrow alley that ran along the east–west line of the waterfront of the northern bay. The

difference in levels between the waterfront and the said street is evident, the ground sloping very clearly toward the lake. It seems that this slope running east–west was filled with buildings serving the church as well as travelers coming into town by boat.

The narrow longitudinal street between buildings BN 01 and BN 02 ended on the waterfront. The layout of BN 01 is more or less legible, but impossible to define precisely without archaeological excavations. It had approximately six rooms (10–15) on an L-shaped plan and portico 16 (the stylobate and limestone bases of columns can be traced on the surface) opening toward the north. The view from this place must have been enchanting.

PRELIMINARY CONCLUSIONS ON THE TOPOGRAPHY

Numerous architectural traces recorded in a topographical survey of the area east and north of the basilica could be identified as warehouses, houses, shops in all likelihood, toll house and latrine. The quarter appears to take on a rectangular shape, oriented north–south toward the quay next to the basilica, which was the most important communication route in the town, and criss-crossed by a rectilinear grid of streets. Elements of a Hippodameian plan can be observed in this part of the ancient city. Despite the existence of three other quays in the harbor, most of the pilgrimage traffic and trade would have been centered on this particular quay. This arrangement is clear and is in keeping with regional settlement. Preliminary observations suggest that the same arrangement can be recognized also in other parts of the site, although other arrangements are also possible.

SET OF OSTRAKA FROM NEAR BUILDING SH 01

The set of ostraka discovered outside rooms 26 and 28 of building SH 01 counted 264 sherds. Of these 164 are relatively legible, whereas the rest contains single words or letters. The set is being studied by Tomasz Derda from the Department of Papyrology of the Institute of Archaeology of the University of Warsaw and it is on his notes that the present remarks are based. Restorers have already managed to put together some of the broken ostraka; the biggest texts are made up of five or six fragments with separate inventory numbers. Further work on the set should reveal more joins. All the sherds were documented with a digital camera and in infrared. The deposition conditions in this part of the area are extremely humid, being just 15 m from

the lake. The ink in such conditions is mostly faded. Infrared photography has been helpful in deciphering parts that have otherwise been degraded beyond legibility.

The ostraka appear to have been discarded when the notes recorded on them were no longer needed. They were written for the most part in one hand, by somebody writing with ease, although it was not much of a cursive form. The scribe used a certain number of ligatures and abbreviations. The writing is difficult to date. Based on paleographic criteria, it can be assigned to the 5th century as much as to the 6th.

The documents follow a simple model: each item begins with the task to be done, which occupies the first



Fig. 7. Palimpsest ostrakon after recomposition (MA 01/2011): three views, from left, standard photography before conservation, after conservation and in infrared (Photo J. Babraj)

line (only occasionally extending to the lower line), starting from the left margin. In syntactical terms, each item starts with the preposition εἰς, followed by a noun (always notably without an article) or an infinitive describing a specific task. Next come one, two, three and sometimes even four lines specifying workmen necessary for the task. Craftsmen listed here were accompanied by helpers (ὑπουργοί, regularly written incorrectly with the diphthong οἱ- at the beginning). The attribution of particular lines to a given item results from the arrangement of the text: they are set in about 1 cm toward the right margin. Specifications of workmen and craftsmen are accompanied by numerals (from 1 to 6) indicating the number of hired men. Next is the Greek letter *mi* with superscribed horizontal line, which is the symbol of a myriad of denarii. It is followed by a number, which is evidently the product of the number of workmen and their salaries. Pay appears to have been calculated on a daily basis. In some lines extending to the right there is the abbreviation πι(), followed by the numeral. The meaning of this is unclear. Sums were written at the bottom of each document, after a space of two or three lines.

The writing material for the ostraka was prepared from the bodies of Late Roman 4 amphora, the plain surfaces of which were perfect as writing material. These Gazan containers started to be used in the 5th century, after AD 450 (Peacock, Williams 1986: 198–199).

The biggest document in this group of ostraka is made up of five joining sherds (Inv. No. 1+2+11+27+43/2011) [Fig. 7]. It is a palimpsest and contains a building receipt. Considering the context of the find, it is very likely that the building which the receipts concerned was the basilica located in the immediate vicinity.

All things considered, the set is the largest of its kind from 5th century Egypt and is unique in that it contains building receipts referring in all likelihood to the construction of the nearby basilica.

[KB]



Fig. 8. Finds from the area east of the basilica: left, bone pin (SH 01, unit 28); right, fragment of pilgrim's bottle with stamped decoration (found with the ostraka) (Photo J. Babraj; drawing T. Skrzypiec)

POTTERY

The set of ostraka was the most important discovery of the season. The assemblage consisted of body sherds from LR 4 amphoras made of dark red fabric with lime and quartz temper (only one diagnostic amphora toe was found). As such, it is the most numerous set of LR 4 amphoras sherds found to date. Previously, this type of amphora was recorded only in small quantities from the basilica and baths at Marea (Majcherek 2002: 63–64; 2008: 117–118).

A few sherds of imported LR 1 amphoras were also discovered. These containers, which are dated to the 5th–7th century, were produced in Antioch, Cilicia and on Cyprus (Tomber, Thomas 2011: 32–61). They were made of a hard sandy fabric with lime temper, pale pink or cream in color. The preserved fragments were

mostly of upper bodies bearing *dipinti* in red (Fournet, Pieri 2008: 151–192).

A small fragment (H. 9 cm, W. 17) of the body of a pilgrim's bottle with stamped decoration in relief [*Fig. 8*, right] was found more or less in the same spot as the ostraka. The decoration presents a long-horned animal (goat?) and below it a long-beaked bird (heron?). A scrolling ornament or a series of ovoli surrounded the medallion. Bottles of this type were produced in Hellenistic and Roman Egypt, imitating Roman models. A bottle with similar decoration, dated to the 2nd/3rd century AD, was discovered at Abu Qir near Alexandria (collection of the Graeco-Roman Museum, Seif El-Din 2006: 208, FL 1; Rodziewicz 1978: 227–231, *Fig. 1*).

[AD]

GLASS FINDS

The assemblage of glasses studied in the 2011 season, comprising finds from both the current season and the last three weeks of the previous one, presented a range of fairly uniform shapes from the 5th to 7th century AD (see Kucharczyk 2004; 2005a; 2007; Babraj, Szymańska *et alii* 2013: 63–67). Most of the glass objects are of bluish-green or green color, although the original color often cannot be ascertained because of the iridescence or thick dark or white weathering layer coating the surface. Some are in very bad condition and extremely fragile. Most vessels were free-blown and without decoration. A few items were decorated with applied trails, another few were patterned or

mold-blown. All seem to be local/regional products, contributing to further research on late Roman and Byzantine glass in Egypt.

As might be anticipated from the excavation of a basilica and its surroundings, a large quantity of the glass found at the site represents lamps. Glass lamps were the main source of manmade lighting in late Roman and Byzantine churches. Most were made for use in *polycandela*, like the type already well-attested in Marea as well as Alexandria. These lamps featured solid stems flattened on one side and with rounded or elongated depressions on the other [*Fig. 9:1*]. This is the part that is preserved most often, bowls being rather

a rarity. The type was long-lived and is attested in late Roman/Byzantine contexts as well as Islamic layers at Kom el-Dikka in Alexandria (Kucharczyk 2005b: 39–41, Fig. 6:8). Judging by the distribution, one must assume that this particular lamp type was a local/regional product (Kucharczyk 2005a: 56–57).

A few other types of lamps have been evidenced, for example, lamps with solid or hollow rounded stems, lamps with very thin and fragile stems, conical lamps and tumbler-shaped lamps with a characteristic folded-out rim and small handles.

Stemmed goblets, also called ‘wine-glasses’ owing to their modern shape, were one of the main products of the late Roman/Byzantine glass industry (Stern 2001: 270–271). A range of different types of goblets has been recovered: with solid stem and fire-rounded edges [Fig. 9:2] or with hollow stems and tubular edges [Fig. 9:4]. A type where the cup itself begins with a folded collar [Fig. 9:3] was recorded once again. It is attested both in Marea and in Alexandria, but nowhere else either in or outside Egypt (Kucharczyk 2005a: 58, Figs 2, 3; Rodziewicz 1984: 240, Fig. 262, Pl. 73, No. 372; Babraj, Szymańska *et alii* 2013: 67, Fig. 8e). Stemmed goblets were used as drinking vessels and as oil lamps, depending on what was required. However, as no two-legged copper wick holder has been found — unlike at other sites — the usage of particular finds cannot be ascertained. It is only logical, however, to assume that double function was not possible and that

vessels were intended and used for either one or the other purpose.

Domestic glassware, such as bowls, beakers, plates or dishes, bottles, jars, smaller flasks or bottles, was found only in limited numbers [Fig. 9:5,6,8]. Of interest is a bottle of blue glass with applied decoration in the form of a thick coil [Fig. 9:7]. Colored glass like this is seldom found in the mostly bluish-green or green assemblage from Marea.

A very small fragment of a vessel with brownish red painted decoration [Fig. 9:9] corresponded to shards with similar decoration already found at the site in previous years (Kucharczyk 2008: 131).

A single fragment of **window pane** of the flat circular type was recovered. The excavations in the basilica have yielded only a few fragments of window glass, which is generally astonishing in view of the more than 120 fragments of window panes attested from the nearby bath complex excavated by the Polish mission (Kucharczyk 2008: 134–136). In a basilica of this size one would expect as many window panes as at other sites. They were needed not only to let in daylight, but also to keep out sand, wind and rain.

Tesserae made of glass [Fig. 9:10] were also discovered in very small numbers, as was a single necklace bead made of green glass [Fig. 9:11].

Some rather big chunks of glass slag can be considered as further evidence of the existence of glass workshops in Marea (Kucharczyk 2008: 129).

[NW]

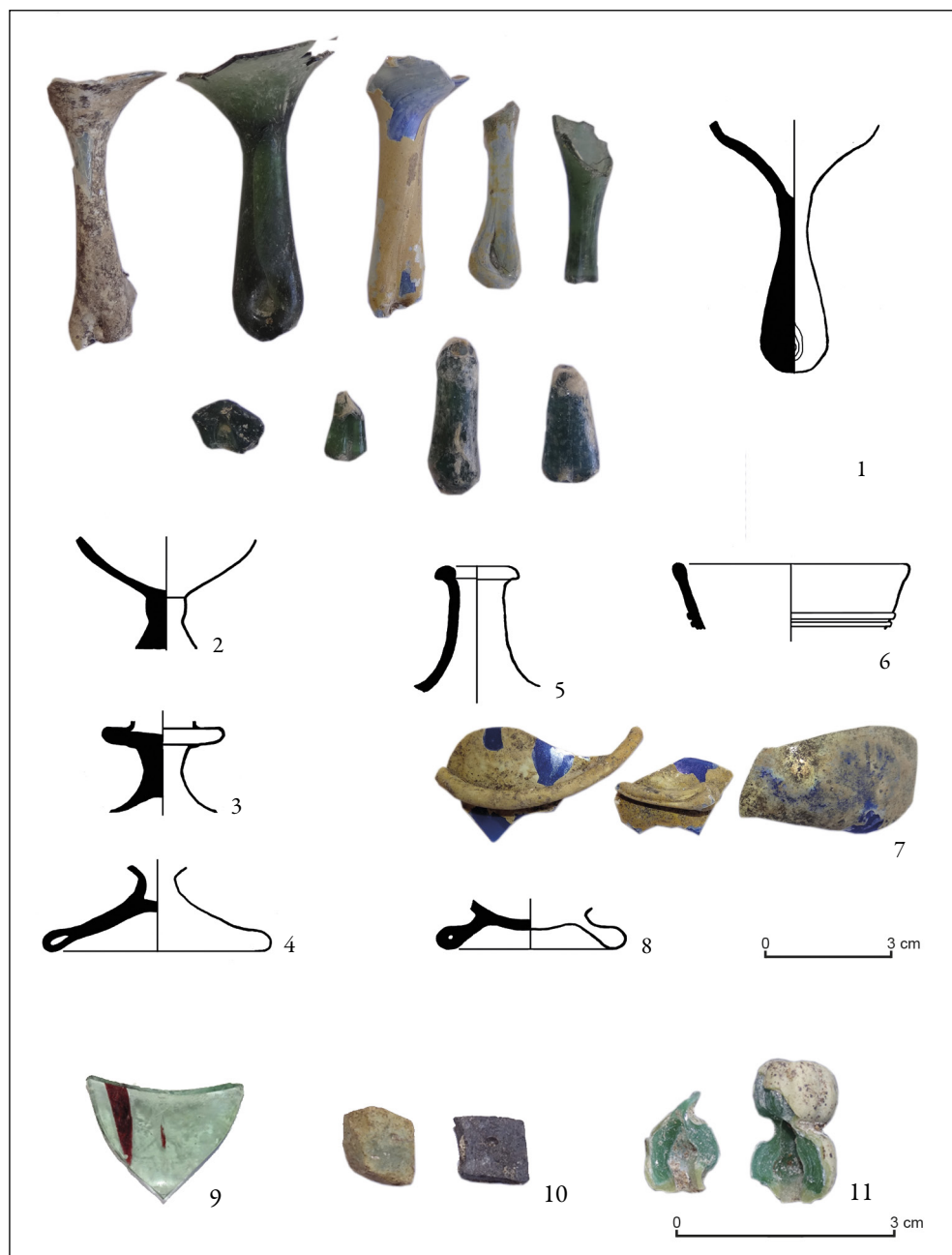


Fig. 9. Selection of glass finds: 1 – oil lamps; 2–4 – stemmed goblets; 5, 6, 8 – domestic glasses; 7 – blue bottle with applied decoration; 9 – painted vessel; 10 – tessera; 11 – necklace bead

CONSERVATION AND PRESERVATION WORK IN THE BASILICA

Conservation work in 2011 provided the necessary maintenance for wall structures preserved in the open and subjected to adverse climatic conditions. This concerned primarily the amphora firing kiln under the

apse of the baptistery and the fragmentary chancel arch. Cleaning and preservation treatment were carried out on the well inside the naos of the basilica and on the plasterwork of the southern wall of



Fig. 10. Conservation of the west pastophory wall inside and outside faces: state before (top), during (center) and after (bottom) conservation (Photo. J. Babraj)

the basilica. The most extensive building conservation work was done on the west and south walls of the northern pastophorium.

The passage of years and experience with conservation in the conditions of the site have led to the adoption of new approaches and materials in seasonal maintenance work. For example, the mud brick used originally in the reconstruction of the pottery furnace suffered complete degradation after just four seasons. It was replaced with a harder material, namely, Byzantine baked brick salvaged from the excavations.

Work was carried out on the south and west walls in the pastophory [*Fig. 10*]. In both cases, the walls needed to have masonry substructures of limestone blocks (modern blocks, cut with a saw, 30 x 14 x

11 cm) introduced to prevent the ancient substance from collapsing. A sand-lime bonding mortar was applied (6 parts sand, 1 part lime, 1 part white cement). The covering plaster coats were twofold: a leveling layer and a second coat that was the face, made of the same kind of mortar with 10% water emulsion of PRIMAL AC33 added to it.

Conservation of the bronze coins from the Marea excavations started with mechanical cleaning, designed to remove dirt and layers of corrosion. Dental tools were used first, followed by baths in 10% solution of edetate disodium. Corrosion was then removed and the coins neutralized in distilled water. Last, the coins were coated with 5% solution of PARALOID B72.

[KB]

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