

Alexandria, Kom el-Dikka. Fieldwork in the 2019 season



Abstract: The report offers an account of archaeological and conservation work carried out at the site. Excavations in the central part of the site (Sector F) were continued for the fourth season in a row. Exploration of remains of early Roman houses led to the discovery of a well preserved multicolored *triclinium* mosaic floor with a floral and geometric design. A large assemblage of fragments of polychrome marble floor tiles, recorded in the house collapse, showed the scale of importation of decorative stone material from various regions of the Mediterranean. Overlying the early Roman strata was direct evidence of intensive construction work carried out in the vicinity in the form of large-scale kilnworks, supplying lime most probably for the building of the late Roman bath and cistern. Included in the presentation is a brief review of the limited conservation work that was conducted in the complex of late antique auditoria.

Keywords: Alexandria, lime kilns, Roman mosaic, ceramics, decorative marble, conservation

Recent fieldwork of the Polish–Egyptian Archaeological and Conservation Project on Kom el-Dikka centered on the central part of the site (Sector F), even as the project’s conservators continued with ongoing preservation work, including mosaic floors, benches in Auditorium T (Area CW) and minor operations around the architectural monuments scattered around the site. On-site maintenance continued to be the most pressing issue and the biggest challenge for the site managers and the

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conservation team. For those in charge of the site, the growing numbers of visitors in the period between field seasons are a source of unquestioned satisfaction on one hand and constant apprehension on the other. Littering is perhaps the most acute problem, forcing regular cleaning campaigns to remove the garbage (empty cans, plastic bags, empty packages etc.) accumulated between excavation seasons. Next in line is an exuberant and uncontrolled vegetation growth due to the high

precipitation rate during the winter rainy season. It not only restricts visibility, but also threatens the integrity of the restored monuments, plant roots deeply penetrating the architectural structure, tending to open up mortar joints and cracking the most massive walls. Methodical eradication of all vegetation in the ruins is a regular activity each year before the fieldwork starts and this year it took a consignment of laborers six days to complete.

EXCAVATIONS

The focus of excavation in the central part of the site is on uncovering the remains of Roman domestic architecture investigated in the area for the past several seasons (Majcherek 2018; 2019). The extent of exploration and the duration of the project are determined every time by the logistics of having to remove a large volume of soil from the center of an archaeological site in the middle of a vibrant modern city and of excavating in deep trenches with the dumps located quite some way from where the work is taking place. Thus, the team excavated trench S2019 in the western part (Area W) of the sector, extending the area investigated in the past two seasons.

EARLY TO MID-ROMAN PHASE

Continued clearing of the façade of a Roman building that was excavated in the previous season was halted when two lime kilns of later date were exposed. They blocked access to the facade, but also partly cut into remnants of earlier structures (see below). A stratigraphic

test was planned in Room 19, part of which had been explored in 2009 (Majcherek 2012). The idea was to explore the stratigraphy and chronology of the complex, but the results were somewhat unexpected.

Assortment of stone floor tiles

The first layer was made up almost entirely of remnants of the floor from the collapsed second storey (context 1343/19). Over 300 assorted multicolored stone tiles were recorded, some still with an adhering layer of ash-lime bedding up to 6–7 cm thick. This considerable thickness may have been needed to compensate for an uneven floor level resulting from the varying thickness of the floor tiles. The tiles were all broken, irregular and apparently spoliated pieces. Most could be classified as fragments of original *crustae*, 2–3 cm thick, while other, more solid examples (3–6 cm thick) could have come from the floor pavement. Only a few pieces preserved the original edges. None of the recorded fragments could be ranked among specifically shaped *sectilia*;

on the contrary, the forms are totally random. In two cases, small fragments of inscriptions (a few letters) were recognized. Unsurprisingly, the pattern of the floor decoration could not be reconstructed. It may have been a simple multicolored patchwork.

Varied as they are, the catalogued pieces represent a wide range of polychrome decorative marbles, originating from Egypt, the Aegean, western Asia Minor and presumably North Africa. Usually referred to as “imperial marbles”, they come from stones that were quarried mostly in the period from the 1st to the 3rd century AD; some might have even been of earlier date.

Colored decorative stones from the site were discussed by Barbara Tkaczow (2010: 99–103), but the newly found assemblage merits discussion in view of the contribution that it makes to the discussion of the trade patterns supplying Alexandria with ornamental stones. It is hardly surprising that Egyptian stones are present in a considerable quantity (approximately two-thirds of the total). They mostly came from the state-controlled quarries, and their diffusion in Alexandria is proof that some quantity of this material, probably leftovers, nevertheless entered the market. Their presence, as pointed out by Patrizio Pensabene (2016), could thus be well explained both by the role played by the city in exporting Egyptian stones and by the assumed existence of a sculptors’ school, producing imperial statues. Red porphyry is certainly a case in point [Fig. 1A]. Listed in *De Pretiis* as the most expensive stone material, it is still relatively common at the site in contexts

of different date, not only as fragments of sculpture, but also as *sectilia*, wall veneer, small columns and even *mensae* (Tkaczow 2010: 102). A pavement of large marble slabs with a simple geometrical centrepiece, employing a red-porphry roundel (*rota*) inscribed in a square, was found nearby in house FA (Majcherek 1998: Fig. 2).

Egyptian alabaster (*alabastro cotognino*) [Fig. 1B] is another stone well attested in the assemblage (36 pieces) and again well documented throughout Alexandria, the so called Alabaster Tomb being the most striking and obvious example to cite. Alabaster, used essentially as wall veneer, was very often recycled as paving slabs. A well preserved floor, employing re-worked alabaster tiles, was uncovered, for instance, in the southern *triclinium* of House MA, next to the theater (Majcherek 2003).

Other stones, quarried in the Eastern Desert, are definitely marginal. One should mention two fragments of *marmor claudianum* [Fig. 1C left]. Columns made of this grey and black speckled tonalite were shipped primarily to Rome and used to embellish Trajan’s Forum, the Pantheon and the Bath of Caracalla among other buildings. *Marmor claudianum* is rarely reported from Alexandria and mostly used as wall revetment. A single fragment of a serpentine slab (*serpentina moschinata*) extracted in Wadi Um Esh (Klemm and Klemm 2008: 294) supplements the list of Egyptian ornamental stones [Fig. 1C right]. This extremely rare, mottled, dark yellowish-green stone was employed chiefly for sculpture in the Roman period. A well known statue of a dog, in the collection of the Musei Capitolini

(Inv. No. 1110) is perhaps the most spectacular example. A fragmentarily preserved statue of green serpentine

was also discovered at Kom el-Dikka, in the adjacent Sector G (Majcherek 2013: Fig. 2).

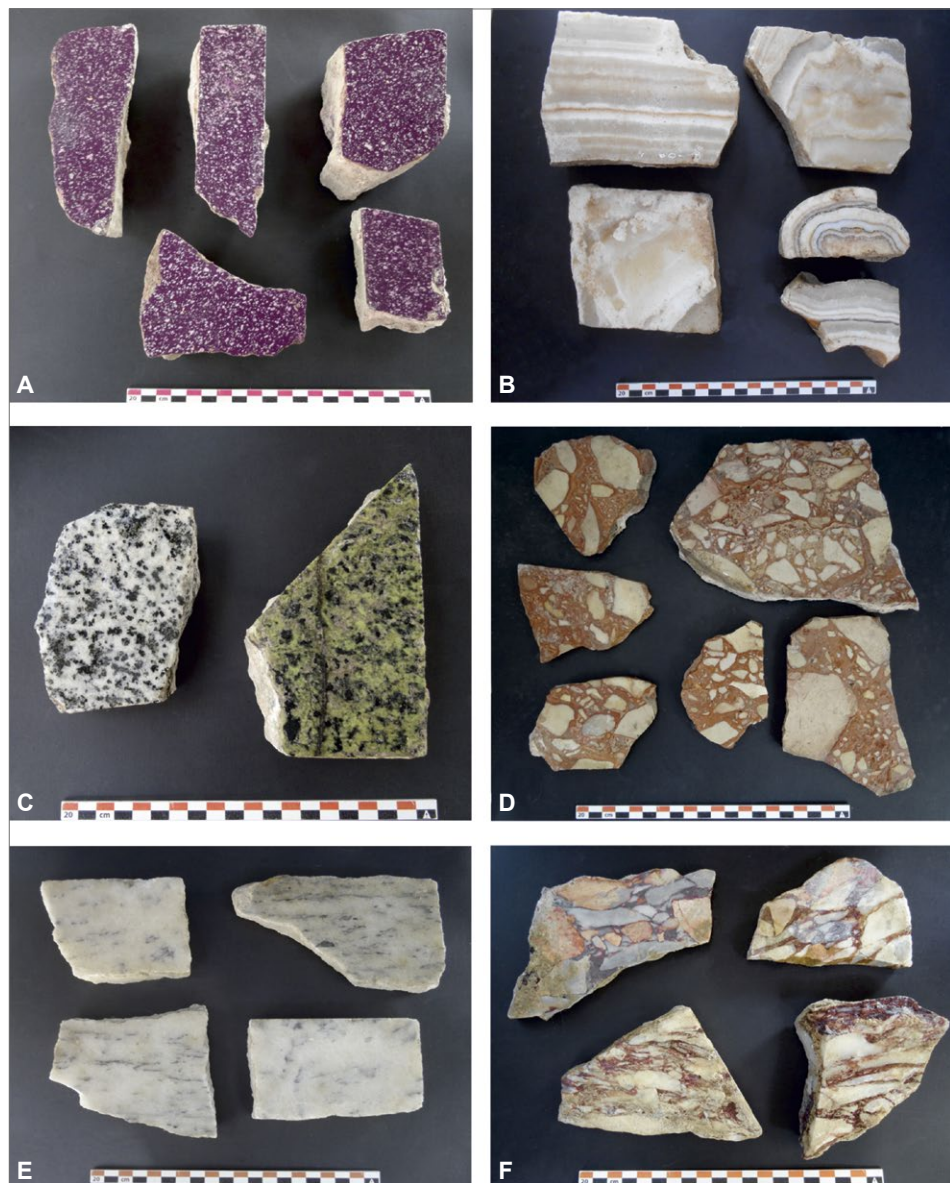


Fig. 1. Selection of polychrome marble finds from Room 19 of a Roman house: A – red porphyry; B – Egyptian alabaster; C – *marmor claudianum* and *serpentina moschinata*; D – *breccia corallina*; E – *greco scritto*; F – *breccia di Sciro* (PCMA UW Alexandria Kom el-Dikka Project | photos G. Majcherek)

Polished nummulithic limestone slabs were also employed on a large scale (42 recorded fragments). They were thicker as a rule (4–6 cm). Some more regular rectangular pieces were noted alongside the broken pieces. Nummulithic limestone, most likely quarried in Middle Egypt (Klemm and Klemm 2008: 60–76), was commonly used as building material both in Ptolemaic and Roman periods. The best evidence of its popularity is widespread usage in late antique structures uncovered at the site. Nummulithic pavers and doorsteps were cleared among others in the bath and the theater portico (Majcherek 2017b).

The macroscopic visual identification needs to be verified, but it seems that most of the extremely abundant red-and-white breccia fragments (over 100 pieces) [Fig. 1D] were not of Bithynian origin (*breccia corallina*), but represented an Egyptian limestone breccia variety, quarried in Wadi Gelbana (Klemm and Klemm 2008). Local provenance would explain to a large extent its predominance in the assemblage.

The source of *greco scritto* [Fig. 1E], a stone represented by 11 fragments, is also in need of careful consideration. Two totally different sources should be looked at: Annaba in North Africa and the region of Ephesus (Attanasio et al. 2012). It goes without saying that the origin of the Kom el-Dikka pieces cannot be positively identified without petrographic and isotopic analyses.

A dominant position among the imported stones belongs unquestionably to Proconessian marble (76 fragments).

It was exported on an enormous scale all over the Mediterranean and Alexandria is no exception. Numerous capitals, columns and bases, found in various monuments at the site, are the best evidence of the popularity of this greyish-white marble. The low price could above all account for massive distribution of Proconessian marble all over the Mediterranean. Given as 40 denarii in Diocletian's Edict, it amounts to but a sixth of the price of porphyry or *lapis lacedaemonius* (Russell 2013).

Several fragments of *pavonazzeto* and Dokimean white marble, along with *breccia di Sciro* [Fig. 1F], *bigio antico* (Lesbian?) and red *marmor iassense* complement this short list of Aegean and Asia Minor polychrome marbles.

However, the total absence of *cippolino verde* in this repertory is highly unusual. It is particularly striking when confronted with a large number of columns and broken *crustae* of Karystos marble recorded throughout the site (Tkaczow 2010: 101).

While a rather well developed marble-working industry based on spoils is well evidenced in late Roman Alexandria (Rodziewicz 1991; Majcherek 2019), it now appears that the phenomenon can be traced back to as early as the mid-Roman period.

Mosaic floor

The floor of the square room under the layer of collapse was decorated with a fine tessellated mosaic floor, measuring approximately 5.70 m to the side. The southern part of the room, sealed by a later wall W778, has yet to be excavated, hence the length remains conjectural.

The mosaic consisted of two parts, forming the U+T layout typical of Roman *triclinia*. Ample space along the walls (about 1.35–1.40 m wide), accommodating the couches, was paved with irregular multicolored stone chips (mostly *breccia corallina* and Proconessian marble, but also some pebbles), with no pattern to them, set in a red mortar. A similar technique, also using multicolored stones, was also applied in zones, bordering the *opus sectile* mosaic that decorated the southern *triclinium* in House MA, uncovered in front of the theater (Majcherek 2003: Fig. 4).

The main tessellated field forms a square (2.60 m by 2.60 m) framed by a band of five/six rows of white cubes, enclosing a two-stranded guilloche, on a black backdrop [Fig. 2]. Within an inscribed circle, again bordered by a guilloche, the field is arranged in a honeycomb pattern of seven adjoining hexagonal panels. The panels are separated by a continuous two-stranded guilloche on a black background. Each panel (measuring approximately 0.53 m to the side), framed by a double white filet, is filled with a representation of a polychrome flower on a black background. The three middle-row panels show six-petaled flowers, while the four lateral ones are filled with fully opened lotus flowers with pointed petals (*Nelumbo nucifera* spp.). The decoration in the spandrels consists of stylized lotus flower buds on a white background [Fig. 3 bottom].

A transversal element of the decoration (the horizontal bar of the T) is also quite elaborate. It is framed by a band of white astragals on a black background. The geometrical composition is divided

into a row of adjoining white octagons, separated by squares, lozenges and triangles, each outlined by double black filets and filled respectively with smaller red lozenges or squares [Fig. 3 top]. Octagons are filled with vegetal motifs: scrolls, stems and buds, alternating with stylized lotus flowers set in a cross-like manner.

The mosaic was executed using middle-sized tesserae, the mean density being from about 50 to 65 cubes per dm² for the border and the panels respectively. Common stone material (basalt, *pavonazetto*, *breccia corallina*, *giallo antico*, limestone) employed for tesserae, resulted in a rather limited although vivid color palette: black, yellow, greyish-blue, red and white. It seems quite probable that the white cubes used in the mosaic may have been cut from large limestone clasts extracted from the matrix of Egyptian *breccia corallina*.

The new mosaic apparently fits well with Alexandrian mainstream mosaic art. The composition of the central panel upholds the view about the special popularity of the circle-in-square design in Alexandrian mosaics (Daszewski 1996). The design is well attested in mosaics from both the late Ptolemaic and Roman periods, known from Maamura, Shatby, Canopus and the Cinema Diana excavations (Guimier-Sorbets 2019: 71–84). The Kom el-Dikka excavations have also yielded a number of similar examples from the ruins of Roman houses (Majcherek 1999; 2003).

The honeycomb pattern, while also recorded on mosaic floors in Alexandria—a good example comes from House *gamma* on Kom el-Dikka (Rodziewicz 1984: 52, Fig. 38)—seems to be generally better

attested in the Western Mediterranean. Mosaics from Gaul (Belis et al. 2016: 18–22; Balmelle and Darmon 2017: 111, Figs 139–140), Baetica (Dunbabin 1999: 150; Vargas Vázquez 2017: 356, Fig. 12) and Africa Proconsularis (Stern 1953: 184, Pl. 24) offer the best parallels (M.T. Olszewski, personal communication). Against this background, it is certainly interesting to note that similarly rendered, fully open lotus flowers are shown on the *triclinium* mosaic discovered at the Diana site in Alexandria (Guimier-Sorbets 1998), while stylized lotus buds are preserved in spandrels of the honeycomb pattern mosaic at Vaison-la-Romaine in Gaul (Balmelle and Darmon 2017: Fig. 139).

The Kom el-Dikka mosaic, in similarity to all the above-listed examples,

should be dated most probably to the second half of the 2nd–early 3rd century AD. One cannot ignore the fact that the honeycomb pattern inscribed into a circle was first developed in Roman art in connection with zodiac or calendar designs on relief ceilings and was only later transferred to mosaic pavements (Hachlili 2009).

The northern, transversal element of the mosaic was rather seriously damaged, most probably due to the robbing of the wall separating it from Room 18. Similar damage was likewise observed along the eastern edge of the mosaic. The wall dividing it from Room 16 was dismantled at an as yet unknown time. The central panel suffered damages as well. In several places the surface was substantially



Fig. 2. Central panel of the mosaic pavement from Room 19 (PCMA UW Alexandria Kom el-Dikka Project | photo G. Majcherek)



Fig. 3. Roman mosaic in Room 19: top, geometric pattern in the forepart; bottom, lotus flower and lotus bud in the spandrel, detail of the central panel (PCMA UW Alexandria Kom el-Dikka Project | photos G. Majcherek)

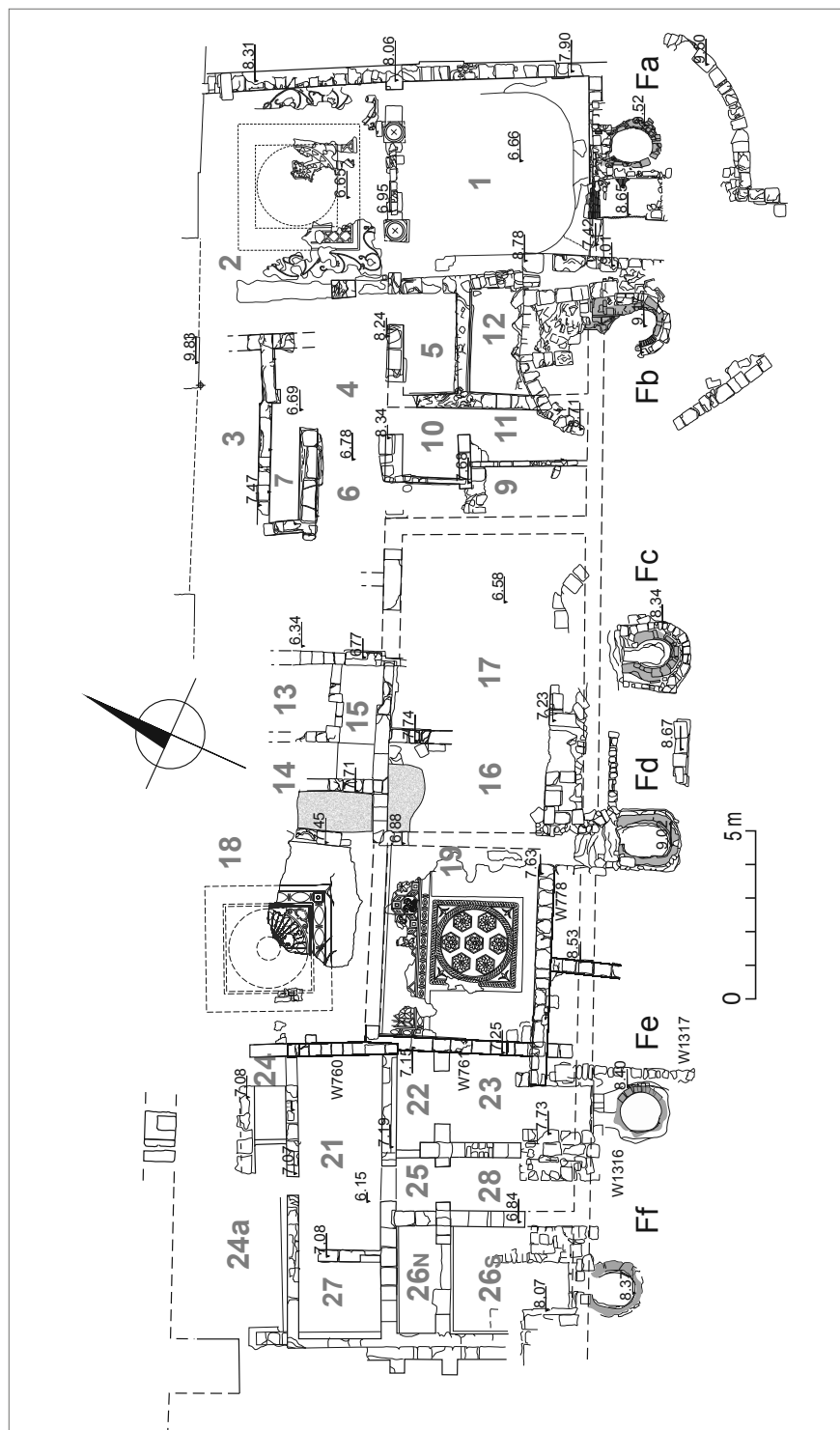


Fig. 4. Area FW: plan of the early Roman building (PCMA UW Alexandria Kom el-Dikka Project | drawing G. Karpńska, M. Sołtys, A. Brzozowska, G. Majcherek)

indented by stone collapse; in others, distortions usually interpreted as seismically-induced have been observed.

The layout of the mosaic indicates that the entrance to the *triclinium* was in the north wall [Fig. 4]. The wall was completely dismantled already in antiquity. The negative was not cleared in its entirety, hence no parameters can be given. Neither is there any data on its structure except for two pilasters preserved on the opposite walls (W761 and W701 respectively), which argue in favor of a typical tripartite monumental entrance instead of a single doorway, enhanced with columns. A similar entrance, flanked by two columns, was also recognized in the eastern wing of House FB (Rooms 1 and 2). Two fallen monolithic columns

of Aswan granite (approximately 3.80 m high), originally standing on marble bases preserved *in situ*, were found there (Majcherek 1999: 37–39). Interestingly enough, two fragments of middle-sized grey marble column shafts (Dia. 0.40 m and length 0.62 m; and Dia 0.45 m and length 0.58 m, respectively) were found reused in a structure (W1247) surrounding the nearby lime kiln Fe [Fig. 5]. The height of these plain shafts could be calculated as not exceeding 4 m, that is, comparable to the granite columns from Room 2.

Assuming this is correct, then the newly discovered *triclinium* would be accessed from the north, from Room 18, which was also decorated with a mosaic [see Fig. 4]. Of note is that the arrangement of Rooms



Fig. 5. Fragments of columns found in the structure of kiln Fe (PCMA UW Alexandria Kom el-Dikka Project | photo G. Majcherek)

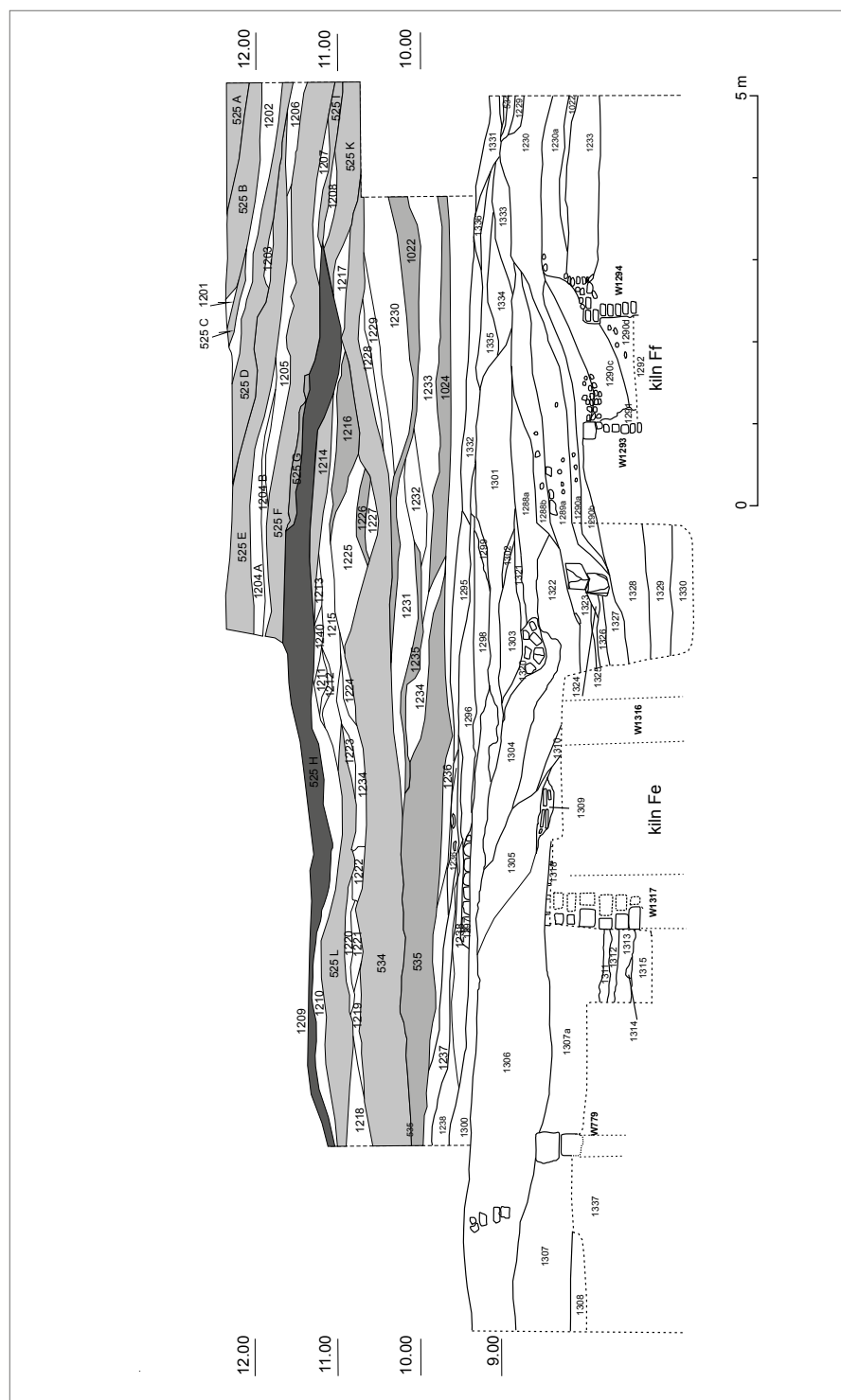


Fig. 6. Area FW: stratigraphic cross-section, southern face of the trench (PCMA UW Alexandria Kom el-Dikka Project | drawing E. Kulicka)

19 and 18 duplicates almost exactly the location of Rooms 1 and 2 in the eastern confines of House FB [see Fig. 4]. It may be that we are dealing here with a kind of modular layout. In both cases northern units, serving as anterooms or courtyards, were decorated with mosaics decorated with the familiar circle-in-square design featuring a shield of bichrome interchanging scales (Majcherek 1999; 2012: 30–32). Both the sizes of respective rooms and the mosaic floors are almost identical. This altogether unexpected outcome raised the question of the general layout of House FB. It is highly likely that we are dealing here with two separate houses instead of one, each with its own *triclinium*. The need to pursue the issue is obvious.

Secondary occupation

It turned out that Room 19 was reoccupied together with the rest of the building. In several places on the mosaic there were circular depressions left by pots placed there for a prolonged time. Three such fragmented pots, used most probably as *impromptu* hearths, were found *in situ*. Two of them were cut from the middle part of the cylindrical bodies of a Mareotic AE3 and an early version of a Gazan amphora respectively (Majcherek 1995). The third one belonged to an Egyptian middle-sized, two handled jug, produced in a hard Nile-silt fabric, well evidenced in the 2nd–3rd century deposits at the site. No particular content except for some



Fig. 7. Kiln Fe: vaulted stokehole (PCMA UW Alexandria Kom el-Dikka Project | photo G. Majcherek)



Fig. 8. Nude male statue: front and back view (PCMA UW Alexandria Kom el-Dikka Project | photo G. Majcherek)

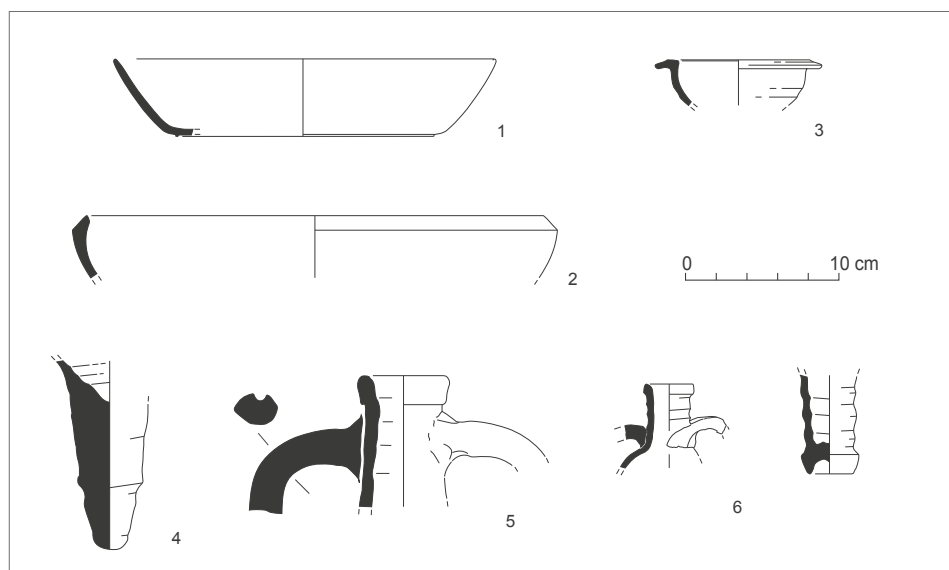


Fig. 9. Selection of late Roman pottery finds: 1 – ARS plate, form 50; 2 – ARS dish, form 61; 3 – ERSA bowl, form T311A; 4 – LRA7, base; 5 – LRA1, small module; 6 – LRA3A, foot and neck fragments (PCMA UW Alexandria Kom el-Dikka Project | drawing G. Majcherek; digitizing M. Momot)

ash and charcoal was retrieved from the pots. The *terminus ad quem* suggested for the pottery is approximately the late 3rd-early 4th century AD. Examination of the glass finds (see Kucharczyk 2020, in this volume) corroborated these chronological observations.

Evidence for secondary occupation or squatting was previously recorded also in Rooms 13–16 located further east. The building obviously housed artisanal production as proved by ample evidence of glassmaking: stone molds accompanied by a great number of beads and half products (Majcherek 2018; Kucharczyk 2019).

LATE ROMAN PHASE

Lime kilns

A lime kiln (Fe) was identified in the vast accumulation covering the ruins of early Roman House FB, sitting partly astride the presumed side street there (contexts 1307/19, 1312/19, 1315/19 and 1337/19) [Figs 6, see also 4]. The round chamber of moderate size (1.10 m in diameter) was built of flat square bricks: 24 x 24 cm, approximately 4.5 cm thick. Bricks were often cracked and partly disintegrated due to prolonged exposure to high temperatures.

The chamber was most probably tronco-conical in shape. The walls are preserved to a height of only 1.20 m, apparently less than half of what they had been originally. A stokehole (0.58–0.60 m wide) opened toward the north. A short tunnel, 0.80 m long, was covered by a partly preserved radial vault [Fig. 7]. Similarly to other kilns found in the vicinity, a fairly wide stoking

area (approximately 1.35 m wide) was framed by two quite solid parallel walls (W₁₃₁₆ and W₁₃₁₇), extending north for a distance of 2.00 m and 2.30 m respectively. Unmortared walls were built of assorted stones, originating most likely from the dismantled structures of the neighboring early Roman house.

The kiln chamber has yet to be cleared and details of the structure studied. It was partly sunk into the ground, certainly built for continued use and was, in all probability, of the so called “flare” type. Such kilns were obviously loaded from the top and fired from the bottom, with fuel and air supplied through a stokehole. Following the calcination process, which may take at least several days, quicklime was removed through the stokehole and slaked (Adam 2005: 116–129).

The last load of quicklime was found still in the chamber; some fragments of large half-melted stone blocks are still visible. In front of the kiln, in the stoking area, a fragmentary marble statue of a male nude was found (Reg. No. 5280) [Fig. 8]. The statue may have been part of the load. Feeding marble to the lime kilns was a widespread phenomenon in antiquity. The productive efficiency of marble and its availability were the main reasons for its common use.

The kiln is one of a battery of six regularly aligned kilns, apparently built as a single complex (the other kilns Fa to Ff were discovered previously) [see Fig. 4]. The complex can be associated with extensive building activity in the area, most probably the construction of the bath and/or cistern in the first half of the 4th century AD.

Such kilnworks producing lime on an industrial scale are a very rare find. The closest parallel is a set of six well preserved kilns found in Iversheim in the Rhineland, apparently operated by a local legionary detachment in the period from AD 150 to AD 300 (Sölter 1970). However,



Fig. 10. Late Hellenistic stamped amphora handle (PCMA UW Alexandria Kom el-Dikka Project | photo R. Kucharczyk)

er, the kilns from Germania Inferior were much larger (3 m in diameter) and their load accordingly large, reaching 15 m³ of lime each. The kilns from Alexandria should be ranked among the more modest installations, on a par with those uncovered in Naukratis (Coulson and Wilkie 1986), measuring approximately 1.30 m across. The load in the case of the kiln from Kom el-Dikka could be estimated at a mere 2.50–3.00 m³.

House FB was abandoned at the end of the 3rd century–beginning of the 4th century AD at the latest, giving a useful *terminus post quem* for the kiln. No legible coins were found in associated layers (contexts 1300/19, 1303/19, 1306/19), which produced a limited quantity of broken pottery and some glass finds belonging mainly to the 3rd–mid 4th century AD horizon, suggesting operation in the 4th century AD. Commercial amphorae

Table 1. Quantification of amphorae found in the refuse dump

Amphora Type	R	B	H	S	RBHS	%RBHS
LRA 4A	76	31	112	1965	2184	58.85%
AE 3 T (Egloff 172)	19	13	22	478	532	14.33%
LRA 7 (Egloff 177-179)	11	20	21	303	355	9.56%
LRA 1A	15	6	23	119	163	4.39%
"pinched" handle amphorae	2	3	1	21	27	0.73%
African (various forms)				26	26	0.70%
Pompei V (Ras el Bassit)	1	3	7	15	26	0.70%
Spatheion 1				25	25	0.67%
Kapitän II	4		2	17	23	0.62%
Agora M 239	2	3	3	12	20	0.54%
Tripolitanian (various forms)	2	3	1	16	16	0.43%
LRA 3	2	3	3	7	15	0.40%
Crétoises (various forms)	2			10	12	0.32%
Laodicean Dr 2-4			2	5	7	0.19%
other (unidentified, residual etc.)	6	6	7	261	280	7.54%
Total	142	85	204	3280	3711	100%

were plentiful, while tableware was virtually absent, hence the chronology still needs to be supported with more solid evidence. Typically, early versions of Gazan amphorae (LRA4A) dominated the assemblage (Majcherek 1995), while Egyptian containers were limited to occasional sherds of Nile silt AE3-type amphorae.

One should also mention sound evidence of Aegean vessels in the assemblage. Apart from several examples of 2nd-century Crétoise amphorae (AC1 and AC2; Marangou-Lerat 1995) fragments of Kapitän II and LRA3A (single-handled, open-foot version) were also noted.

Two other catalogued forms are particularly noteworthy. One is a 4th-century Pompeii V successor, which, based on its dark red-brown fabric with abundant sub-rounded basalt and lime inclusions, most probably originates from the Ras el-Bassit workshops (Mills and Reynolds 2014). The other is a characteristic red-fabric Zeest 80 (Pontic) amphora. This container, seldom reported from Egypt, is represented by several body sherds and a rim fragment. They all belong to an early variant from the 3rd–4th century AD (Riley 1979: 188–189; Benghazi MR5) with a characteristic wedge-shaped, somewhat sloping rim marked by two deep grooves on the outside. The distribution of this wine amphora is generally confined to the Aegean and Black Sea regions with sporadic examples reported from Athens, Benghazi and Rome. Its presence in Alexandria is also rather occasional. Even though previously reported from Kom

el-Dikka (Majcherek 2015: Fig. 6), the Zeest 80 amphora has not been identified in the recently published vast collection of vessels from the Graeco-Roman Museum (Şenol 2018).

Post-kilns levelling

This relatively thin set of layers (contexts 1236/19, 1237/19 and 1238/19) extended over almost the entire trench area, covering the abandoned kilns and thick lime deposition. It consisted mostly of lime refuse, some ash and slag with some marble detritus, apparently raw material for lime production. Prominent among the identified examples were fragments of wall veneer or floor slabs, some retaining the original edges. Most of them represent decorative stones, quarried in the Aegean. Similar deposits of raw material were also previously noted in the vicinity of other kilns with a particularly heavy concentration next to kilns Fc and Fd (Majcherek 2011: 42, Fig. 6).

The explored deposits turned out to be rather short of fine wares. Only a few examples of imported and Egyptian tableware were identified. African Red Slip ware was exemplified mostly by fragments of a large dish with a straight wall and a plain rim (form ARS 50) dated to AD 240–325 and a far later flat-based dish with a triangular incurved rim (form ARS 61) assigned to AD 325–400/420 [Fig. 9:1–2]. Even though obviously residual, the presence of ARS 50 in this context is particularly significant. It is commonly regarded as a marker of opening expansion of African Red Slip ware in the Eastern Mediterranean. The form is usually recorded in considerable numbers not only in Alexandria but also

throughout Egypt (Ballet, Bonifay, and Marchand 2012).

The Cypriot Red Slip presence is limited to fragments of a dish with a rounded off, thickened rim (form CRS 1) dated to the late 4th–mid 5th century, whereas Egyptian Red Slip wares

in turn are signified by several sherds of group A, originating from Aswan workshops (Gempeler 1992: 91–92; form T311A), generally assigned to the same period [Fig. 9:3]. The *terminus post quem* for this deposit could thus be set in the late 4th century AD.

Among other finds, mostly residual, one should note a late Hellenistic stamped amphora handle with the fabricant's name: ANAPIKOY, and a caduceus below (Reg. No. 5281) [Fig. 10].

Refuse dumps

Sector F is located on the northern fringes of a vast area ensconced between the Imperial Roman bath, the cistern and the theater, which was never fully built over and was in a way isolated from the late antique urban fabric. Starting in the 4th century, it was turned into an enormous dumping ground that very quickly rose to a considerable height.



Fig. 11. Small alabaster mortarium (PCMA UW Alexandria Kom el-Dikka Project | photo G. Majcherek)



Fig. 12. Bone scraps from the rubbish dumps (PCMA UW Alexandria Kom el-Dikka Project | photo G. Majcherek)

Another portion of these deposits from the late 4th–5th centuries AD was excavated this season. A large part of the upper strata (approximately 3 m thick), composed of ash originating from the nearby bath and also some urban refuse, was cleared already in 2018. Layers explored this season (contexts 525/19, 534/19, 535/19 and 1209/19) once again turned out to be particularly rich in ceramic finds. Altogether approximately 4000 sherds were collected from a relatively small area (7 m by 3 m).

The results are hardly staggering. The amphorae, which represent the bulk of the finds, display the usual spectrum of forms typical of the 4th–5th century AD horizon in Alexandria. Fragments of an early version of the ubiquitous LRA4 amphora, produced in southern Palestine (Gaza–Ashkelon area), once again turned out to be particularly prolific. With amphorae constituting over 58% of the RBHS count, they form unquestionably the most numerous group [Table 1]. Such a high share, reached by Gazan amphorae, noted already also in other assemblages throughout the site, once again points to a very high consumption of Palestinian wines on the Alexandrian market (Majcherek 2004). Egyptian wine amphorae, manufactured in various centers of the Delta and Nile Valley, are definitely in the minority. Their combined quota does not exceed 25% of all the amphorae. Interestingly, the bulk of this group of containers is formed by examples of AE3T (Egloff 172) amphorae (Dixneuf 2011). Vessels with their characteristic ringed toes and large rounded handles are attested in a much smaller number as a rule. Their

frequency is much higher than LRA7, a quintessential Egyptian amphora. However, only earlier forms of the latter (Egloff 177–179) were recorded [Fig. 9:4]. Identifying their origin is a largely futile task. A visual characteristic of the basic silt fabric, virtually the same along the whole Nile valley, renders such identification impossible. They may have been manufactured in any of the many production centers recognized in Egypt.

Of the other vessel types, the most frequent in the assemblage is the LRA 1A container, originating in Cilicia or Cyprus, accounting for 4.39% of the sherds. Aside from typical densely ribbed body sherds, belonging to the standard morphological type, fragments belonging to a small sub-module [Fig. 9:5] as well as several hollow toes of its 3rd–4th century predecessor were also identified (Reynolds 2008: 70–72, Fig. 3). The presence of other foreign vessels is rather marginal. The most numerous is by and large the group of Eastern amphorae. However, each of the identified type-forms accounts for only well below 1% of the total. The repertory is limited to some Cretan amphorae, Kapitän II, LRA 3A (open foot version) [Fig. 9:6], pinched handle amphorae and their later small module, white-washed variant (Agora M239), both made in a typical brick-red western Cilicia (Anemurium) fabric. Two further type-forms are particularly noteworthy: Laodicean Dr 2–4, so far reported only in the Eastern Desert and on Red Sea sites, and examples of Pompeii V amphorae, manufactured in the distinct Ras el-Bassit fabric. The latter have also been reported in early 4th century AD contexts related to lime kilns.



Fig. 13. Auditorium T: Doric column drum incorporated into the portico backwall (PCMA UW Alexandria Kom el-Dikka Project | photo R. Kucharczyk)

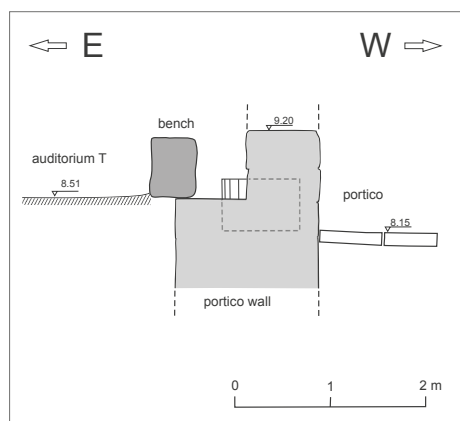


Fig. 14. Auditorium T: cross-section through the benches and portico backwall (PCMA UW Alexandria Kom el-Dikka Project | drawing G. Majcherek)

Both forms, however, seem most likely to be residual in this stratum. Its relatively high frequency comes as a surprise, since such amphorae have not been reported so far either from Alexandria or from Egypt as a whole. In contrast with previously studied assemblages from this area (Majcherek 2017a), containers from the Western Mediterranean came in surprisingly small numbers. They include examples of Tripolitanian 2 and 3 amphorae, together with non-diagnostic sherds of vessels from Africa, regarded under a general fabric heading. Prominent among them are *spatheia* (Type 1), usually assigned to workshops centered around

Nabeul. Ceramics other than amphorae are extremely rare in the assemblage.

Fragments of the 5th century Aswan kegs, complete with lids, as well as sherds of Egyptian and Aegean cooking pots, exhaust the repertory of commonwares. The list of fine wares is even shorter. Only three fragments of a symptomatic form ARS 50 and several stray sherds of ERSA were recorded. Finds other than pottery included some glass fragments, a small alabaster mortarium [Fig. 11] and numerous bone scraps [Fig. 12], waste from a developed bone-carving industry active in the vicinity.

LATE ANTIQUE AUDITORIA

Small scale research was also undertaken in auditorium T. In preparation for planned conservation work, the entire west wall of the hall (=back wall of the Theatre Portico) was cleared. A small deposit, sealed behind the northern end of the western bench, turned out to be of particular value for the chronology of the auditorium. Fragments of LRA 1B and LRA 4B, as well as two rims of Cypriot Red Slip (forms 1 and 2) pointed to the first half of the 6th century AD as the most plausible date for the construction of the auditorium. The wall itself was made of large dressed stones, sometimes using *spolia* as well. A drum from a Doric column, similar to those employed in the gate leading to the imperial bath complex and possibly originating from the same source, was incorporated into the wall [Fig. 13]. The location of the bench, positioned partly over the west wall, leaves no doubt that it had been dismantled prior to the construction of the auditorium [Fig. 14]. This operation must have been deliberate and fully controlled,

as it was dismantled in a most unusual way. The eastern face of the wall was removed, leaving only three courses of the western face above the portico pavement. This phenomenon has in turn serious implications as far as the development of the portico is concerned. Substantial reduction of width (from approximately 1.55 m to 0.80 m) resulted in a total change of its structural load-carrying capacity and for all practical reasons excluding its role as a portico backwall. Such a wall could hardly reach a height of approximately 8 m needed in the portico and sustain the load of heavy roof trusses. In other words, it puts into question the very existence of this section of roofed portico in the late 6th century AD and later.



Fig. 15. Auditorium N: eastern stretch of benches in 2019: top, state prior to preservation work; bottom, after preservation (PCMA UW Alexandria Kom el-Dikka Project | photos G. Majcherek)

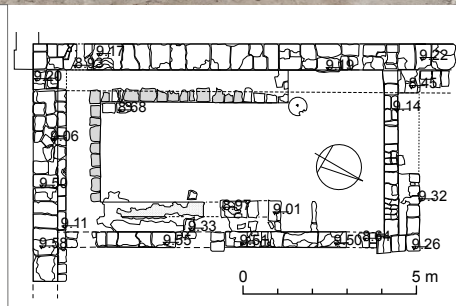


Fig. 16. Auditorium T: top, benches prior to restoration work in 2019; bottom, after restoration; right, plan with restored benches highlighted in grey (PCMA UW Alexandria Kom el-Dikka Project | photos and plan processing G. Majcherek)

CONSERVATION WORK

In the beginning of the season the mission undertook necessary repairs to the protective barriers delimiting the visitors path (Majcherek 2019). Several sections of the barrier had been vandalized between the fieldwork seasons. Some of the supporting steel posts were found overturned, the steel wire cut or torn from the clamps. In these cases, the posts were fixed in cement bases, whereas new steel wire was reinstalled and fastened with clamps. Moreover, warning notices, in Arabic and English, were hung in chosen places.

Some of the architectural monuments suffered from heavy rains during the winter season. Necessary repairs were undertaken in all the affected areas: the baths, the portico gate and the residential quarter. Procedures entailed the refilling and grouting of washed away joints and fixing loose blocks or bricks in the wall.

In sector W₁N, an entire street façade, approximately 17 m long, enclosing a series of rooms in House H (front walls of rooms H₁, H_{3a}, H_{4a} and H_{8a}), was treated. A large part of this section had been subjected to conservation



Fig. 17. Mosaic MA-1: restored and on display in the mosaic shelter (PCMA UW Alexandria Kom el-Dikka Project | photo R. Kucharczyk)

procedures a few years back (Majcherek 2016), but unusually heavy precipitation in the winter season had resulted in serious damage.

The main objective was to stop the process of degradation. Mortar washed out from the joints had eased water penetration into the wall structures. The principle of minimum intervention guided the team's work as usual. All the joints were repaired and pointed with new mortar. In several places, damaged wall coping was reshaped using a more resilient layer of well hardened mortar. Similar treatment was also undertaken in the southern wing of the auditorium complex. Likewise, in auditoria F, G and H, missing joints were repaired and some deteriorated stones replaced with new ones.

In auditorium N, the eastern stretch of benches had undergone conservation. Large patches of plaster, covering the benches, were cleaned and consolidated [Fig. 15]. Edges were secured with new protective mortar bands, whereas detached fragments were affixed with PVA and limewash.

However, the main task undertaken in the auditoria complex was the conservation of auditorium T [Fig. 16]. The western (4.60 m long) and southern (2.80 m long) stretches of the benches in this auditorium, which was excavated in the 2005/2006 season, were gone, obviously destroyed by burials of the so-called Lower Necropolis (Majcherek 2008: 31–34). However, the evidence of imprints left on the floor permitted a full reconstruction.

The operation was performed strictly in accordance with applicable procedures. Missing sections of benches were restored

using blocks found during excavations and assumedly originating from the structure [see Fig. 16]. Mortar used in the process was based on an ancient formula (1:3 lime to sand). The restoration was limited to the lowermost bench; to avoid confusion, new additions were separated from the original ones by strips of bitumen-tar paper. The original layout was thus recreated, enhancing visual integrity.

This season, the conservation of mosaic MA-1 (approximately 1.85 m by 1.65 m), initiated last season, continued with the transfer of the floor to the Villa of the Birds, where the final phase of conservation was performed. A protective canvas, fixed with PVA, was now removed and the entire surface thoroughly cleaned. Some losses in the bedding were completed and occasional loose tesserae re-set [Fig. 17]. This fine example of Roman art, featuring a bichrome geometric design, was put on display in the shelter, by the north wall. The mosaic was placed on a specially prepared low stone pedestal and anchored with stainless steel bars to the shelter wall.

With regard to the newly discovered mosaic from Area FW, reburial was chosen as the near optimum preservation measure in anticipation of regular conservation in the coming season. Basic preservation measures were applied: thorough mechanical cleaning, washing of the surface with demineralized water, detailed photographic and graphic documentation. The edges of the mosaic were subsequently secured with a kind of protective frame of vertical wooden planks. The surface of the mosaic was coated with a vapor-permeable membrane (mdm AQ 180) and polypropylene interlining, and

covered with a 12–15 cm thick layer of desalinated sand. It was then sealed with a protective layer of soil. The latter was

applied primarily as an extra protection against heavy rainfall and/or mechanical damage.

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References

- Adam, J.-P. (2005). *Roman building: materials and techniques*. London–New York: Routledge
- Attanasio, D., Yavuz, A.B., Bruno, M., Herrmann, J.J., Jr., Tykot, R.H., and van den Hoek, A. (2012). On the Ephesian origin of greco scritto marble. In A. Gutiérrez García-M., P. Lapuente Mercadal, and I. Rodà de Llanza (eds), *Interdisciplinary studies on ancient stone: Proceedings of the IX Association for the Study of Marbles and other Stones in Antiquity (ASMOSIA) conference (Tarragona 2009)* (pp. 245–254). Tarragona: ICAC
- Ballet, P., Bonifay, M., and Marchand, S. (2012). Africa vs. Aegyptus: routes, rythmes et adaptations de la céramique africaine en Égypte. In S. Guéron (ed.), *Entre Afrique et Égypte relations et échanges entre les espaces au sud de la Méditerranée à l'époque romaine* (=Scripta antiqua 49) (pp. 87–117). Bordeaux: Ausonius
- Balmelle, C. and Darmon, J.-P. (2017). *La mosaïque dans les Gaules romaines*. Paris: Picard
- Belis, A., Budrovich, N., Kondoleon, C., Lapatin, K., and Leatherbury, S. (2016). *Roman mosaics in the J. Paul Getty Museum*. Los Angeles: J. Paul Getty Museum
- Coulson, W.D.E. and Wilkie, N. (1986). 'Ptolemaic and Roman kilns in the western Nile Delta, BASOR 263, 61–75
- Daszewski, W.A. (1996). From Hellenistic polychromy of sculptures to Roman mosaics. In *Alexandria and Alexandrianism: Papers delivered at a symposium organized by the J. Paul Getty Museum and the Getty Center for the History of Art and the Humanities and held at the Museum, April 22–25, 1993* (pp. 141–154). Malibu, CA: J. Paul Getty Museum
- Dixneuf, D. (2011). *Amphores égyptiennes: production, typologie, contenu et diffusion, III^e siècle avant J.-C.–IX^e siècle après J.-C.* (=Études alexandrines 22). Alexandria: Centre d'études alexandrines
- Dunbabin, K.M.D. (1999). *Mosaics of the Greek and Roman world*. Cambridge: Cambridge University Press
- Gempeler, R.D. (1992). *Elephantine X. Die Keramik römischer bis früharabischer Zeit* (=AV 43). Mainz am Rhein: Philipp von Zabern
- Guimier-Sorbets, A.-M. (1998). Le pavement du triclinium à la Méduse dans une

- maison d'époque impériale à Alexandrie. In J.-Y. Empereur (ed.), *Alexandrina 1* (=Études alexandrines 1) (pp. 115–140). Cairo: Institut français d'archéologie orientale
- Guimier-Sorbets, A.-M. (2019). *Mosaïques d'Alexandrie: pavements d'Égypte grecque et romaine* (=Antiquités alexandrines 3). Alexandria: Centre d'études alexandrines
- Hachlili, R. (2009). *Ancient mosaic pavements: Themes, issues, and trends. Selected studies*. Leiden–Boston: Brill
- Klemm, R. and Klemm, D.D. (2008). *Stones and quarries in ancient Egypt*. London: British Museum Press
- Kucharczyk, R. (2019). Glass finds and other artifacts from excavations of Area FW at the Kom el-Dikka site in Alexandria in 2018. *PAM*, 28/2, 43–60
- Kucharczyk, R. (2020). Glass finds from Area FW at Kom el-Dikka in Alexandria. Season 2019. *PAM*, 29/2, 497–513
- Majcherek, G. (1995). Gazan amphorae: typology reconsidered. In H. Meyza and J. Młynarczyk (eds), *Hellenistic and Roman pottery in the Eastern Mediterranean: Advances in scientific studies. Acts of the II Nieborów Pottery Workshop, Nieborów, 18–20 December 1993* (pp. 163–178). Warsaw: Research Center for Mediterranean Archaeology, Polish Academy of Sciences
- Majcherek, G. (1998). Kom el-Dikka excavations 1997. *PAM*, 9, 23–36
- Majcherek, G. (1999). Kom el-Dikka. Excavations, 1997/98. *PAM*, 10, 29–39
- Majcherek, G. (2003). Mosaic floors from Roman *triclinia* in Alexandria. Evolution of techniques and design. In Z. Hawass and L.P. Brock (eds), *Egyptology at the dawn of the twenty-first century: Proceedings of the Eighth International Congress of Egyptologists, Cairo, 2000, I* (pp. 319–327). Cairo: American University in Cairo Press
- Majcherek, G. (2004). Alexandria's long-distance trade in Late Antiquity—the amphora evidence. In J. Eiring and J. Lund (eds), *Transport amphorae and trade in the Eastern Mediterranean: Acts of the international colloquium at the Danish Institute at Athens, September 26–29, 2002* (=Monographs of the Danish Institute at Athens 5) (pp. 229–238). Aarhus: Aarhus University Press
- Majcherek, G. (2008). Kom el-Dikka. Excavation and preservation work, 2005/2006. *PAM*, 18, 29–40
- Majcherek, G. (2011). Alexandria: Kom el-Dikka excavations and preservation work. Preliminary report 2007/2008. *PAM*, 20, 35–51
- Majcherek, G. (2012). Alexandria Kom el-Dikka: Excavations and preservation work. Preliminary report 2008/2009. *PAM*, 21, 27–48
- Majcherek, G. (2013). Alexandria. Excavations and preservation work on Kom el-Dikka. Preliminary report 2009/2010. *PAM*, 22, 33–53
- Majcherek, G. (2015). Alexandria. Excavations and preservation work on Kom el-Dikka. Seasons 2012 and 2013. *PAM*, 24/1, 29–61
- Majcherek, G. (2016). Alexandria, Kom-el-Dikka. Seasons 2014–2015. *PAM*, 25, 33–52
- Majcherek, G. (2017a). African amphorae in the East: A view from Alexandria. *HEROM*, 6(2), 205–235
- Majcherek, G. (2017b). Alexandria, Kom el-Dikka. Season 2016. *PAM*, 26/1, 37–53

- Majcherek, G. (2018). Alexandria, Kom el-Dikka. Season 2017. *PAM*, 27/1, 35–56
- Majcherek, G. (2019). Alexandria Kom el-Dikka. Excavations and preservation work in the 2018 season. *PAM*, 28/2, 21–42
- Marangou-Lerat, A. (1995). *Le vin et les amphores de Crète: de l'époque classique à l'époque impériale*. Athens: École française d'Athènes
- Mills, P. and Reynolds, P. (2014). Amphorae and specialized coarsewares of Ras al Bassit, Syria: Local products and exports. In N. Poulou-Papadimitriou, E. Nodarou, and V. Kilikoglou (eds), *LRCW 4: Late Roman coarse wares, cooking wares and amphorae in the Mediterranean. Archaeology and archaeometry. The Mediterranean: A market without frontiers I* (=BAR IS 2616/1) (pp. 133–142). Oxford: Archaeopress
- Pensabene, P. (2016). Egyptian stones from the Eastern Desert and Aswan: The role of Alexandria in their trade. *Marmora*, 12, 11–64
- Reynolds, P. (2008). Linear typologies and ceramic evolution. *Facta. A Journal of Roman Material Culture*, 2, 61–87
- Riley, J.A. (1979). Coarse pottery. In J.A. Lloyd (ed.), *Excavations at Sidi Khrebish, Benghazi (Berenice) II* (=Libya Antiqua Supplements 5) (pp. 91–467). Tripoli: Department of Antiquities, People's Socialist Libyan Arab Jamahiriya
- Rodziewicz, M. (1984). *Les habitations romaines tardives d'Alexandrie: à la lumière des fouilles polonaises à Kôm el-Dikka* (=Alexandrie 3). Warsaw: Éditions Scientifiques de Pologne
- Rodziewicz, M. (1991). *Opus sectile mosaics from Alexandria and Mareotis*. In E. Dassmann (ed.), *Tesserae: Festschrift für Josef Engemann* (=Jahrbuch für Antike und Christentum 18) (pp. 204–214). Münster: Aschendorff
- Russell, B. (2013). *The economics of the Roman stone trade*. Oxford: Oxford University Press
- Şenol, A.K. (2018). *Commercial amphorae in the Graeco-Roman Museum of Alexandria* (=Études alexandrines 44). Alexandria: Centre d'études alexandrines
- Sölter, W. (1970). *Römische Kalkbrenner im Rheinland*. Düsseldorf: Rheinland Verlag
- Stern, H. (1953). *Le calendrier de 354: étude sur son texte et ses illustrations* (=BAH 55). Paris: P. Geuthner
- Tkaczow, B. (2010). *Architectural styles of ancient Alexandria: Elements of architectural decoration from Polish excavations at Kom el-Dikka (1960–1993)* (=Alexandrie 8). Warsaw: Centre d'Archéologie Méditerranéenne de l'Académie Polonaise des Sciences
- Vargas Vázquez, S. (2017). Geometric mosaics of Baetica. *Journal of Mosaic Research*, 10, 347–364