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**Marina El-Alamein Polish-Egyptian
Conservation Mission : Research and
Conservation in the 2011 Season**

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MARINA EL-ALAMEIN POLISH–EGYPTIAN CONSERVATION MISSION: RESEARCH AND CONSERVATION IN THE 2011 SEASON

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Abstract: In 2011, the program of the Polish–Egyptian Conservation Mission to Marina el-Alamein included research and conservation in the public quarter of the ancient town, at the necropolis and in a few houses. The mission focused on the anastylosis of the superstructure of a large tomb (T17), and continued work in the area south of the Forum, where remains of Roman public baths from the 2nd to the 4th century AD have survived. Current maintenance and conservation work was carried out as usual in some of the ancient Roman houses in the eastern part of the site.

Keywords: Marina el-Alamein, Tomb T17, Southern Baths, architecture, research, preservation, anastylosis

The program for the 2011 season included research and conservation in the public district of the town, in a few houses and at the necropolis. Despite limitations imposed by the events in Egypt (transformation following the Arab Spring), most of the tasks were completed as planned thanks to the commendable effort and commitment of the staff of the Egyptian antiquities authorities. The unintended delay in the opening was taken advantage of to complete a program of studies and inventorying.

Apart from current maintenance and conservation undertaken in the district of restored private houses in the eastern part of the town, the project priorities this year included the anastylosis of the superstructure of a large tomb (T17) in the southern necropolis and continued work in the public baths located to the south of the central square of the ancient town, since 2008 the object of protection and preservation activities by the mission working under the auspices of the PCMA.

[RC]

TOMB T17

Tomb T17 is situated in the central part of the southern necropolis, immediately to the north of a tall pillar tomb T12. It was discovered in 1997 by a PCMA team directed by Prof. Wiktor A. Daszewski (see Daszewski 1998: 69–70). The team uncovered remains of the foundation, base part, section of the main body of the structure and two loculi adjacent to it. Elements collapsed from the upper part of the tomb superstructure were recorded nearby [*Fig. 1*].

A preliminary study back in 1997 assumed the presence of more elements from the demolished upper part buried under the sand further to the east,

reconstructing the superstructure of the tomb hypothetically as another example of the pillar type, like the neighbouring T12 and the four tombs from group T1. However, the idea was not verified archaeologically.

Research and an inventory of the remains carried out in 2011 disproved the pillar hypothesis, indicating instead that the superstructure of the tomb was in the form of a plain sarcophagus with lowered gable roof, 2.62 m long from east to west and 1.32 m wide. The facade was from the east and was topped with a pediment carrying little pedestals at the lateral ends [*Fig. 2*]. Supporting the pediment was

Team

Dates of work: 17 April–1 June 2011

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Epigrapher: Prof. Adam Łajtar (Institute of Archaeology, University of Warsaw)

Acknowledgments

Failing health kept Prof. Stanisław Medeksza from being present at the site, but he remained in close contact with the team over the entire season. The unfailing assistance of Marina el-Alamein General Site Director Dr. Khaled Abul-Hamd and SCA inspector Mostafa Younis Menazi is gratefully appreciated.

an architrave, its ends resting on two flat pilasters, both topped with simplified geometricized capitals. The back elevation (from the west) was undecorated. The total height of the facade was 1.20 m. The masonry sarcophagus stood on a base that was slightly wider (i.e., about 1.40 m) than the superstructure. It was flanked on both sides by single loculi of the same length as the monument and about 0.90 m wide (on the outside), covered with flat slabs. The ground level used to be about 0.45 m below the upper edge of the base and the top of the slabs covering the loculi, which means that the burial niches were sunk into the ground. The tomb was built of limestone blocks and slabs of a typical

size, approximately 0.60 m long, 0.30 m high in the base and 0.34 m high in the main body of the structure. Some blocks in the decorated eastern facade and the roof elements were atypically bigger in size (0.30 x 0.41 x 0.66 m).

[RC]

ARCHAEOLOGICAL RESEARCH

Cleaning around the tomb prior to the reconstruction and conservation project uncovered more blocks from the collapsed superstructure and identified a walking level to the north, south and west of the structure. This level consisted of a layer, approximately 0.10 m thick, made of packed sand and pieces of limestone. It matched

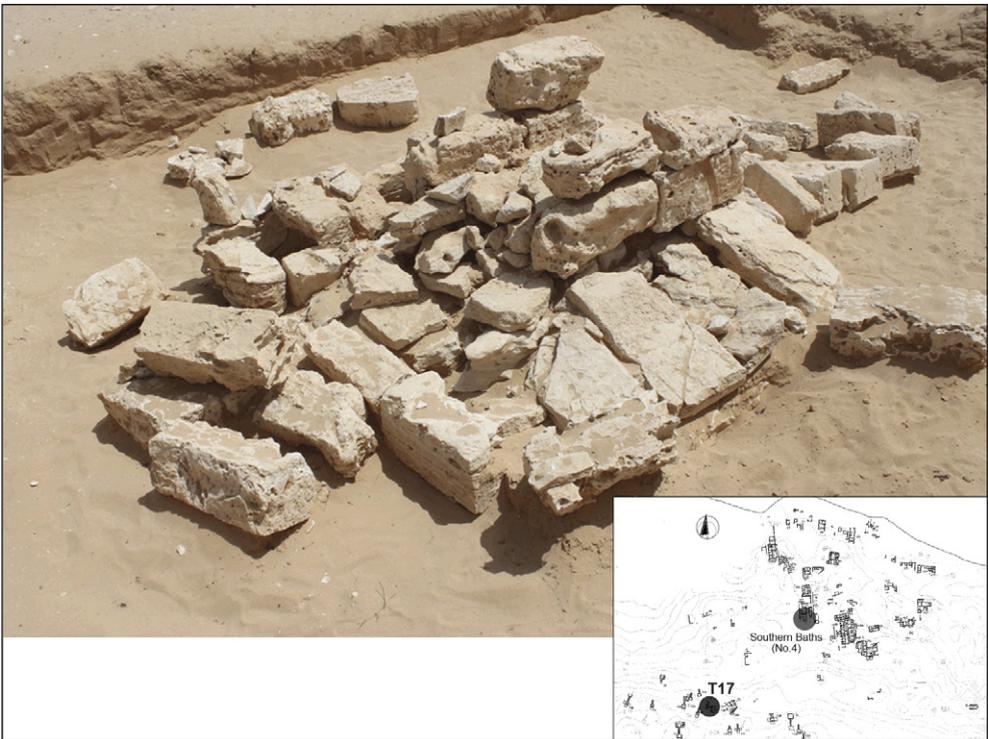


Fig. 1. Tomb T17, before anastylosis in 2011, view to the north; inset, location of the tomb in the city necropolis (Photo R. Czerner; plan, PCMA mission archives)

the bottom of the topmost course of blocks of the base, leaving the upper part of the burial box open to view in this phase. Large blocks were noted by the west wall of the southern loculus, approximately 0.30 m below the walking level; their purpose may have been to stabilize the foundation. The walls of the burial box were three courses high, each course measuring about 0.30 m in height. A test trench by one of the walls showed that they had been raised on undisturbed ground.

The northern loculus had been explored in 1997, the southern one was not investigated. This season only the slabs covering the burial were lifted. The inner width was established at 0.50 m and the length at approximately 2.10 m. Sherds observed at the eastern end of the burial niche, near the closing slab,

were dated to the 2nd–3rd century AD (G. Majcherek, personal communication). Also a dozen or so sherds identified mainly as amphoras, found in the upper accumulation layer were from the 2nd–3rd century. In the layer coming from the time when the tomb was used pottery from the 2nd century was discovered. The vessel fragments from the foundation level are dated to 1st–2nd century.

[GB-C]

ANASTYLOSIS AND CONSERVATION

Assessment of the parts of the structure, both the elements still standing and those collapsed and buried under the sand, gave grounds for an anastylosis, or partial reconstruction. Some of the most damaged parts, detached or shifted from

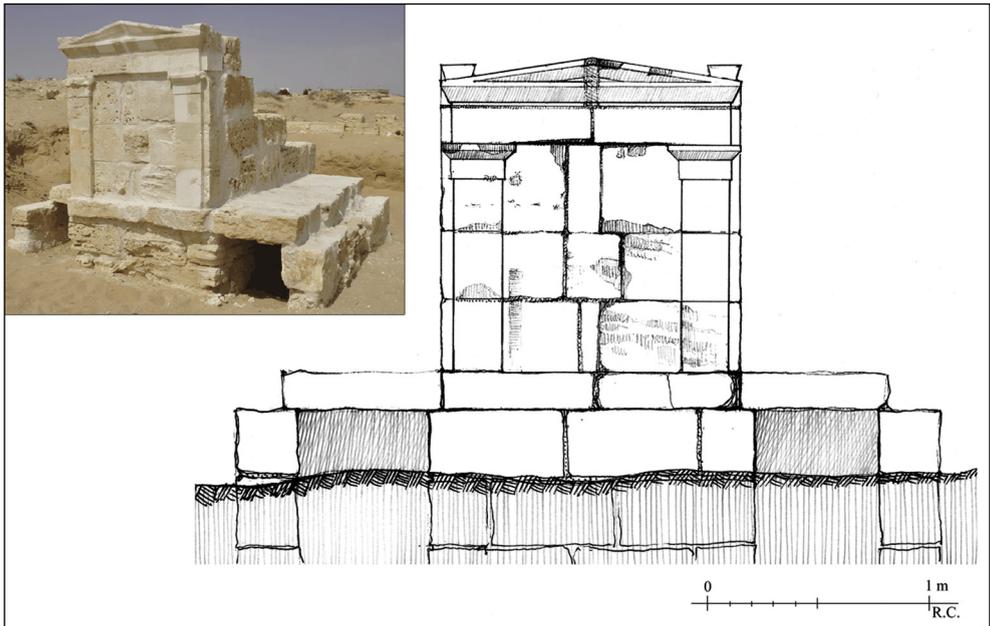


Fig. 2. Reconstruction of the facade of Tomb T17: inventory drawing and view after anastylosis in 2011 (Photo P. Zambrzycki; drawing R. Czerner)

their original position, were subsequently disassembled for conservation. The more extensively eroded blocks from the base and body of the structure were replaced with better preserved ancient building material salvaged from the vicinity of the tomb. Replacement of blocks took place especially in the basement structure, the walls of the burial niches and to some extent in the side walls. A full set of carved elements from the eastern tomb facade was preserved (except for one small uncomplicated fragment), requiring restoration however. Stone patches and putty were used to fill the losses in the stone surface.

Following this preparatory conservation work, the structure was reassembled [Fig. 2, top left]. Still, most of the original blocks from the gable roof crowning the tomb are missing and therefore only the eastern part of it behind the decorated facade was reconstructed. The west wall and the upper parts of the side walls were left incomplete for lack of original material, but enough has survived to make clear the original form and features of the building. The reconstruction can be completed in the future assuming new stone blocks of proper size are acquired at some point.

[RC, WG]

SOUTHERN BATHS

The northern part of the complex of the southern baths adjacent to the south side of the main town square was uncovered in the first years after the discovery of the site in 1986 (Daszewski, Majcherek *et alii* 1990: 18, Fig. 2; Daszewski 1995: 19, Figs 5, 6). From 2000 to 2005 the Polish mission undertook comprehensive research in the square and its vicinity, focusing on the *thermae* in 2004 and 2005 (Daszewski 2007: 79–83, Figs 1, 8). Egyptian archaeologists resumed investigations in the area in 2006 and 2007, working in collaboration with an American ARCE/EAP mission and uncovering a part of the complex situated further to the south from the square. Rooms marked as 4, 5, 6 and 7 on the plan were cleared provisionally at the time. By 2008 the gradual deterioration of the remains, which had not been protected upon discovery, necessitated emergency conservation work, which the Polish conservation team working at the site was requested to undertake (Medeksza, Czerner *et alii* 2011: 116–118). The work

was extended in 2009, clearing a portico courtyard (No. 4), protecting its walls and setting up a number of columns (Medeksza, Czerner *et alii* 2012: 84–102). In room 6, conservation began on the relics of a heating system surviving there and in the adjacent room 7. In the current season, work was continued in rooms 4 and 6, two other rooms (5 and partly 8) were cleared, and investigated [Fig. 3]. Updating the results of research carried out in the previous seasons, especially in 2009, the present studies have brought the team significantly closer to identifying the functional layout of the southern baths.

Room 5 is the southernmost of three rooms siding the portico courtyard on the east. It is nearly rectangular in plan, roughly 5.80 m long from east to west and 3.20 m wide from north to south. The walls were constructed of regular limestone blocks, 0.43 m wide, 0.60 m long and 0.30 m high. Numerous blocks of similar length and height but 0.30 m wide indicated that above a certain height the walls were

thinner, that is, 0.30 m thick. Considering the virtual absence of the thicker blocks in the tumble inside the room, this change in wall thickness must have occurred at a relatively low height, probably just above the preserved remains. Relics of a collapsed brick barrel vault with evidence of plastering were also found inside the room, meaning that it could have been covered with it. The floor was paved with large slabs of dark grey marble; several of these have survived intact in the western and eastern parts of the room [Fig. 4, bottom]. In the central part the floor was dismantled, but

the bedding substructure of lime mortar has survived, preserving long sherds cut from amphora bodies and small pieces of marble slabs regularly arranged to support the overlying flagstones. Similar slabs paved the floor in the two passages from the room, both a meter wide, one in the east wall, near its southern end, leading to hall 8b, and the other in the north wall, 1.62 m from the western end, opening into room 6 (explored in 2009), which adjoined it on the north and was of similar size. The latter room contained a hypocaust substructure and wall tubuli heating system. A marble

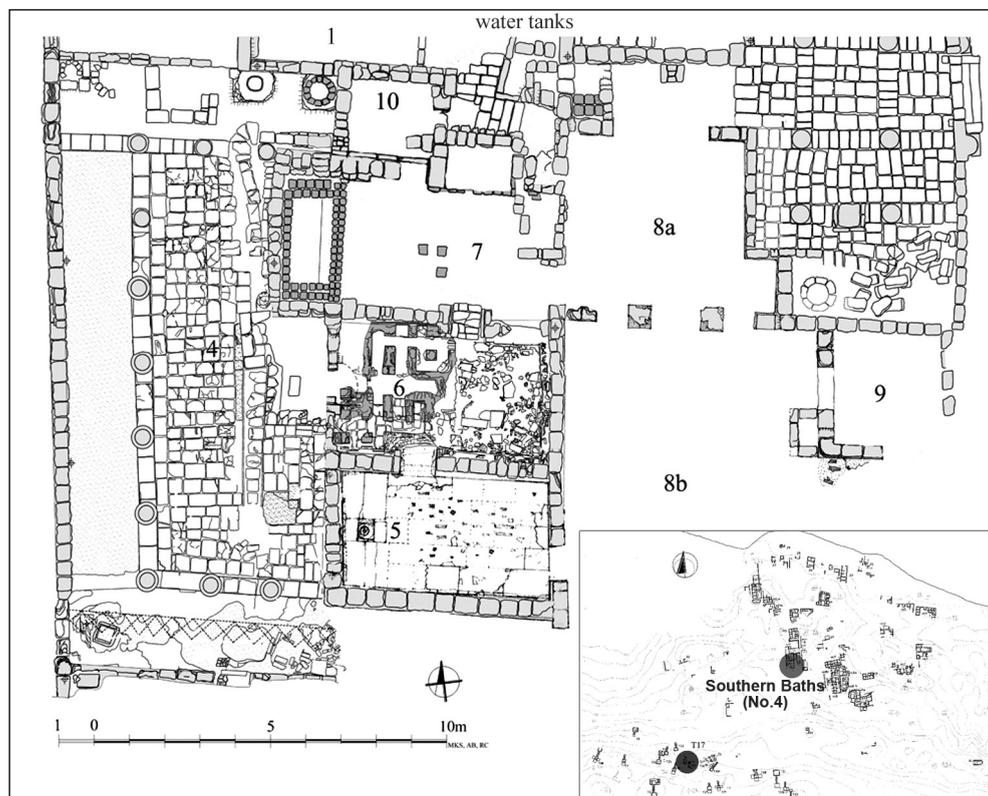


Fig. 3. Inventory plan of the Southern Baths; inset, location of the baths in the city, state in 2011 (Drawing A. Brzozowska, R. Czerner, M. Krawczyk-Szczerbińska; plan, PCMA mission archives)



Fig. 4. Room 5 of the Southern Baths, before (top) and after conservation in 2011, views from the south (top) and east (Photos R. Czerner)

pedestal preserved in its original position in the middle of the west wall of room 5 originally held a large *labrum*. The basin, which was found nearby, was made of the same kind of marble and measured 1.48 m in diameter; installed on the pedestal, its rim would have touched the wall. The pedestal was 0.61 m high, conical with an upper diameter of 0.25 m and a square base measuring 0.43 m to the side.

Hall 8 is the biggest of the excavated rooms of the bath. It was over 16 m long from north to south, its width increasing in a series of lateral recesses on the eastern side, from 5.02 m at the northern end and 5.95 m (room 8a), then 7.15 m beyond the partition located 6.84 m from the north end, reaching more than 10 m at the southern end (room 8b). The partition

was furnished with a doorway 4.45 m wide and two columns standing in the middle; their foundations were preserved in place [Fig. 5] as well as fragments of marble column shafts, either one or two, in the rubble fill. At the north end, a passage, 2.93 m wide, opened into a transversal passage that led to the east, into the adjacent basilica. A door led west from the hall (its southern section) into room 5, and there was one more door, further to the south, into a corridor leading towards the southern portico of courtyard 4. A door led east from the hall into a small room 9 and another one further to the south into a room that has not been investigated as yet. Hall 8 had a marble floor and walls that were plastered and polychromed.



Fig. 5. Room 8a of the Southern Baths, view from the south after the 2011 season (Photo R. Czerner)

Backing on the west the set of rooms discussed above was a rectangular courtyard (No. 4), cleared in 2009. It had porticos lining three sides: the northern, western and southern, and relics of a mosaic made of large (up to 1.5 cm to the side) limestone cubes in the southern portico.

[RC]

ARCHAEOLOGICAL RESEARCH

Room 5, part of which was excavated originally for the purposes of the ARCE/EAP project (discovering the *labrum* and marble pedestal in the process), was now cleared completely before undertaking conservation and reconstruction work (for the size of the room and architectural details of description, see above). The rubble fill still present in the eastern part of the chamber consisted of stone blocks and pieces of mortar with attached bricks (measuring 25 cm to the side) about 0.33 m thick, presumed to come from a barrel vault. A bronze coin found in the rubble could be identified as local issue of Hadrian (AD 120/121) (B. Lichocka, personal communication) [Fig. 6, top left]. The stone rubble lay on top of packed dark sand with pieces of bricks, marble slabs, pottery and mortar, as well as numerous fragments of a white stucco cornice and white plaster with claret-colored stripes applied to waterproof mortar. The layer on the floor comprised 10 cm of packed fine sand with scarce potsherds, fragments of pane glass and marble tiles of various size. The floor was made from large marble tiles (1.8 cm thick), most of the preserved ones 1.30 m by 0.63 m in size. Thin marble tiles (1.3 cm thick) revetted the lower parts of the walls; the highest of those preserved in place measured 0.23 m, the longest 0.75 m.

Anchoring marks were recorded on the walls at a height of 0.30 m and in some cases negative imprints of the tiles, which suggest that the revetment reached to a height of at least 0.75–0.80 m. The walls above the tiles were painted white with decoration in the form of 2 cm-wide, claret-colored stripes. The walls in the room were painted twice. A molded stucco cornice ran at the top of the walls. A window was identified in the west wall above the *labrum*. Its presence is confirmed by fragments of glass windowpanes found not only in the current season, but also on the other side of the wall during the excavation of the portico in 2009 (Medeksza, Czerner *et alii* 2012: 90).

As noted above, chambers 5 and 6 were interconnected by a passage 0.76 m long, paved with grey and white slabs. Chamber 5 also opened onto hall 8. The waterproof nature of the mortar used in the construction confirmed the function of this chamber as a presumed *tepidarium* (connected with a *sudatorium* in room 6 and *frigidarium* in hall 8). Pottery finds from the room dated its operation to the 2nd–3rd century.

Room 8 was partly cleared in previous seasons (by the Polish archaeological team in 2005, see Daszewski 2007: 83, and by the American ARCE/EAP mission in 2006–2007). A partly preserved marble inscription plaque from the times of the Emperor Hadrian was discovered then, attached to the front of a masonry pedestal set centrally against the northernmost wall, directly opposite the passage (Daszewski 2012: 429; Łajtar 2005: 99–108). The room was further excavated in 2011 and the work completed under archaeological supervision. Details of its place within the complex and

architectural structure were presented above. The walls were preserved up to four courses of stone blocks, that is, roughly 1.10 m, especially in the northern part (8a; 6.84 m by 5.02 m). The tumble consisted mainly of the blocks from the walls and it was possible to determine that the topmost layer had fallen from the east wall, whereas the underlying one came for the most part from the west wall. The blocks had collapsed onto a layer of packed dark sand (0.20–0.25 m thick),

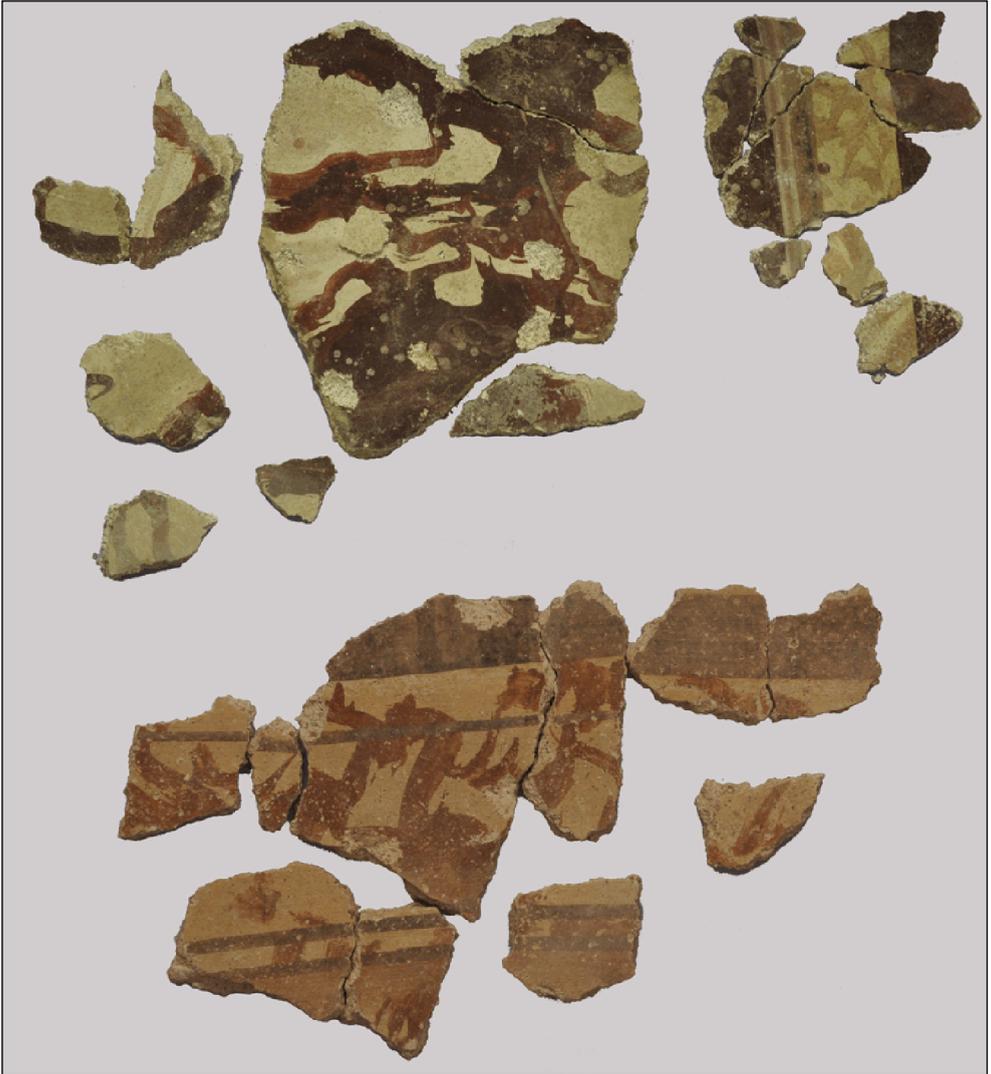
comprising lumps of mortar, a small number of pottery and fragments of painted plaster. Below, there was a layer (0.50–0.15 m thick) of tightly packed dark sand with spots of burning that were small hearths: a bigger one in the northeastern corner and another one in the middle of the room, which even damaged the flooring underneath it. This packed-sand layer comprised heavily fragmented ceramics, glass shards from the 2nd–3rd century (R. Kucharczyk,



Fig. 6. Finds from the Southern Baths: a – bronze coin from the reign of Hadrian (AD 120/121, Egyptian issue); b – bronze pendant in the form of a figure of Harpocrates; c – bone disc with inscription (Photo P. Zambrzycki)

personal communication), animal bones, four heavily corroded parts of iron nails, and two pieces of a marble hand. The floor, on which this deposit had accumulated, was formed of small irregular tiles of grey marble, the same as in the small recess

with inscription. It has survived in good condition except for the part along the west wall where a layer of rubble occurred. One explanation for this situation is that the floor had disappeared together with the vault of a presumed cryptoportico.



*Fig. 7. Fragments of painted plaster from room 8b of the Southern Baths
(Photo P. Zambrzycki)*

Foundations under two bases (0.64 m square) for columns (which were made of grey marble as indicated by large pieces of the shafts found in the fill) were recorded in line with the short projections emerging from the east and west walls, separating the northern (8a) and southern (8b) parts of the hall. The latter has yet to be fully explored, but it is already clear that it did not have a marble-tiled floor. Passages were noted in the east wall of this room, the northern one leading off to a small chamber 9 (as yet unexplored). The other passage, originally paved with marble tiles, opened into a space as yet unidentified.

Scant traces of painted plaster have survived on the walls, revealing frequent repainting. In room 8a, the base of the wall was first painted black, then grey with black patterning. Red plaster was noted at the foot of the east wall, whereas the divider walls between 8a and 8b had a green-painted base. Fragments of plaster lying there indicate that the walls above might also have been green, but with red patterns. White plaster with dark red decoration resembling marbling was also found in the fill of both parts of hall 8 [Fig. 7].

The pottery from the rubble layer in both parts of hall 8 was dated to the 2nd–3rd century. A coin attributed to Maximinus Daia, Caesar, AD 308–310, was found in a sand layer (B. Lichočka, personal communication).

Other archaeological work in the complex included clearing of a marble threshold in the eastern entrance to courtyard 4. Protection of the mosaic floor led to the discovery of ceramics from the 2nd–3rd century AD; it should be noted that the mosaic floor was evidently

repaired several times in antiquity. Judging by holes left near the door in the west wall, at the opposite end of the portico with mosaic, a wooden door frame had once been fitted there. In Room 6, clearing prior to the reconstruction of the west wall uncovered a door opening, 0.73 m wide, below the level of the portico, presumably leading to the cryptoportico. The rubble yielded fragments of bricks and waterproof mortar.

The evidence to date indicates that the baths were used in the 2nd and 3rd centuries AD. They were destroyed, probably in an earthquake, in the later 3rd century. Surface finds included a bronze pendant in the form of Harpocrates [Fig. 6:b]. The naked god is wearing a double crown. In his left hand he is holding a cornucopia, the right one is raised with his palm close to his mouth, probably showing the characteristic gesture for “silence”. The other interesting item is a small bone disc with a hole in the centre and an inscription written in Greek letters: the Latin name (*nomen*) IOULIOS (Greek version of IULIUS) (A. Łajtar, personal communication) [Fig. 6:c]. It may have been used as an entrance ticket.

[GB-C]

FUNCTIONAL LAYOUT OF THE BATHS

A preliminary reconstruction of the functional layout of the Southern Baths complex was enabled by the results of the present season. In 2009, it was suggested that unit 4 was a recreational courtyard with shady porticos and an open central area, whereas room 6 may have served as a sudatorium, that is, a dry sweating room (Medeksza, Czerner *et alii* 2012:

98–99). Now, room 5 can be interpreted as a tepidarium, based on an examination of features, such as lack of heating, marble floor and wall facing, the presence of a basin but no pools. Thus, rooms 7, 6, 5 would form a logical sequence of interconnected chambers: caldarium, sudatorium and tepidarium, that is, gradual cooling after a hot bath. Moreover, the passage in the east wall of room 5 led to the large hall 8, which could thus be a frigidarium.

The functional layout of the complex can be reconstructed as follows [see *Fig. 3*]. The northern part was of a technical nature. Water tanks were located to the east, on an elevated base to induce natural water flow down through pipes into the heating devices and pools below. The extensive utility courtyard to the north was either partly or entirely roofed. From here, stairs led down to a cryptoportico (where a praefurnium was situated) that continued along the eastern foundation wall of room 7 (caldarium), below hall 8 (in its northern part 8a). Chambers 7, 6, 5 and spacious hall 8 formed a sequence of functionally specific chambers: caldarium, sudatorium, tepidarium and possibly frigidarium, closing off the complex on the eastern side. The bath was entered from a street, that is, from the west, customers being led through the southern portico of courtyard 4 to hall 8 (or more precisely, its southern part 8b). South of the courtyard and the corridor was another complex of rooms, which is still to be explored. They were entered up a stairs, through a passage in the wall of the southern portico. An apodyterion and sanitary facilities should be anticipated in this location. It can also be expected that the entrance to room 8b was situated here. The level of

the courtyard was about 0.50 m lower than the level of the floor in the main chambers of the baths.

[RC, AJ]

CONSERVATION

Preparations for conservation of the architectural substance in the Southern Baths followed standard procedures: a photographic record was made, measurements updated and the collapsed stone architectural elements in rooms 5 and 8 were mapped. The accumulations in this room and the adjoining room 6 were excavated methodically, paying particular attention to places where undisturbed occupational layers were preserved on the floors.

Building and conservation works were carried out in rooms 4, 5, 6 and 8 of the Southern Baths [see *Fig. 3* and *Fig. 1* on page 79; see also Zambrzycki *et alii* 2014, in this volume]. An anastylosis of original blocks from the collapsed west wall (on the street side) of courtyard 4, begun in 2009, was now completed. The wall was found standing to a maximum of four courses of blocks, that is, 1.30 m, but some of the most weathered stones from the upper layer needed to be replaced before blocks recovered from the tumble could be raised on top of them in one to three courses. Most of the wall now has been levelled at four courses with both ends being made higher (in 2009, only the northern end had been raised), reaching seven courses, that is, about 2.20 m. From the corners the wall lowers in offsets toward the middle. The jambs of the west entrance to the courtyard were reconstructed, the southern one four and the northern one seven courses high. Finally, the mosaic in the southern portico had the edges of surviving patches

protected and gaps filled in with mortar. Substantial sections of this mosaic floor have been preserved, but the original design is largely obscured by later alterations, new openings to a subterranean sewer being fitted into the floor and various repairs.

In the presumed tepidarium (room 5), big slabs of dark grey marble were laid out quite regularly as a pavement and similar slabs of lighter marble were used for the wall facing. The latter have survived only fragmentarily at the base of the wall. As for the floor, more than 10 big slabs have survived, some of them intact, others requiring protection measures in order to be permanently displayed. Broken pieces were fitted together and slab edges protected, both on the floor and on the walls. Walls surviving up to 1.5 to 2.5 courses above the floor were reconstructed to a height of 2.5 blocks above the floor, that is, about 0.75 m, in

order to protect the marble relics from prevailing western winds and to enable a clear display, especially of the marble *labrum's* relic standing against the west wall [see *Fig. 4*, bottom].

The jamb of an entrance cut in the west wall of room 6, already below floor level, leading probably to a praefurnium from a late phase, was protected and partly reconstructed. Relics of a brick hypocaust cellar were temporarily covered with geotextile and backfilled with sand in order to protect them from weathering. As for hall 8, the range of building and conservation works was limited, comprising the building up of the north wall to protect it and a reconstruction of the entirely destroyed eastern jamb of a passage in a wall. Similarly, the eastern part of the wall dividing rooms 8a and 8b was partly reconstructed.

[RC]

CURRENT MAINTENANCE AND CONSERVATION

Adverse weather conditions are responsible for the rapid deterioration of the state of preservation of remains of ancient buildings in Marina. Thus, maintenance restoration of places where the main work was finished already several years ago is a continuous process. In the town houses, for example, it is necessary to fill in the joints in the wall surfaces and between elements of reconstructed columns and other features. Interestingly, repairs in

antiquity were carried out in much the same way. The current season saw such maintenance work in the southern portico and in the exedra in the central square of the town. The stone benches and columns were pointed, as were also the walls of main hall and columns of the courtyard porticos in house H10. The latter needed plastering in the parts particularly prone to weathering.

[RC]

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