

MARTIN LEMKE

Faculty of Archaeology, University of Warsaw

m.lemke@uw.edu.pl

ORCID 0000-0002-1213-5426

DIFFERENT BUT THE SAME. THE REGIONAL MODEL OF BYZANTINE MAREOTIC BATHHOUSES AND THE CASE OF MAREA T2.

ABSTRACT

The town of Marea/Philoxenite was built on the southern shore of late Mareotis, stretching parallel to the coast of the Mediterranean Sea west of Alexandria and the Nile delta, as the last “monumental Byzantine urban project before the Arab conquest of the Eastern Mediterranean in the second quarter of the seventh century AD” (Gwiazda, Derda 2021). There, a Byzantine

bath (Marea T2) was investigated in 2023, which represents a specific type of Late-Roman/Byzantine bathhouses defined by Bérangère Redon and Thibaud Fournet. While the principal aim of the present text is to report on the findings of the 2023 campaign, placing these latest discoveries in a proper context requires first discussing the ‘regional model of Byzantine Mareotic bathhouses’.

Keywords: Byzantine Egypt, Byzantine baths, Mareotic baths, *thermae*, Marea, Philoxenite, Lake Mareotis

Introduction

In their 2017 paper titled ‘Romano-Byzantine baths of Egypt, the birth and spread of a little-known regional model,’ Bérangère Redon and Thibaud Fournet discuss the creation and subsequent development of a specific type of Late-Roman/Byzantine bathhouses,¹ which were geographically limited to the larger area around Lake Mareotis, located near the Mediterranean coast, 40 km west of Alexandria (Fig. 1).

The basis for defining such a ‘regional model’ are aspects of chronology, functionality and aesthetics. Currently, 11 bathhouses are tentatively thought to represent this model, two of which are located in Marea/Philoxenite,² that is, present-day Hawwariya (Fig. 2): *thermae* T1 and T2. While T1 is a quite typical representative of the Mareotic model and was excavated completely in 2000–2006,³ T2 was only superficially investigated in the past.⁴ In 2023, excavations at T2 were taken up

again after three decades and already the first campaign showed that while this bath undoubtedly belongs to the aforementioned model, it also differs from it in a significant way that goes beyond slight alterations forced by the local circumstances.

Marea was “a well-planned town that took the basic needs of the civilian population into account, and the larger part of it was built within an urban planning project. It preserves the prevailing ideals of the time in its plan, with the presence of a large church adjacent to the most important street.”⁵ A significant part of Marea was built in the second half of the 6th century AD, indicating that it was the last “monumental Byzantine urban project before the Arab conquest of the Eastern Mediterranean in the second quarter of the seventh century AD”, and thus appropriately dubbed a “swan song” by Mariusz Gwiazda and Tomasz Derda.⁶

The town plan covered an area of approximately 20 ha and included churches, a monumental street with

¹ Fournet, Redon 2017.

² ‘Marea’ is an established conventional name, but the place should not be confused with the Marea mentioned by Thukidydes (as the headquarters of the Libyan king Inaros; Thuc. 1.104.1) and recently ‘Philoxenite’ is slowly taking over

as the proper ancient name of the site. Cf. Derda 2020, 61–63; Gwiazda 2023, 197 fn. 4.

³ Szymańska, Babraj 2008.

⁴ See Fournet, Redon, Vanpeene 2017, 487–488.

⁵ Gwiazda, Derda 2021, 8.

⁶ Gwiazda, Derda 2021.

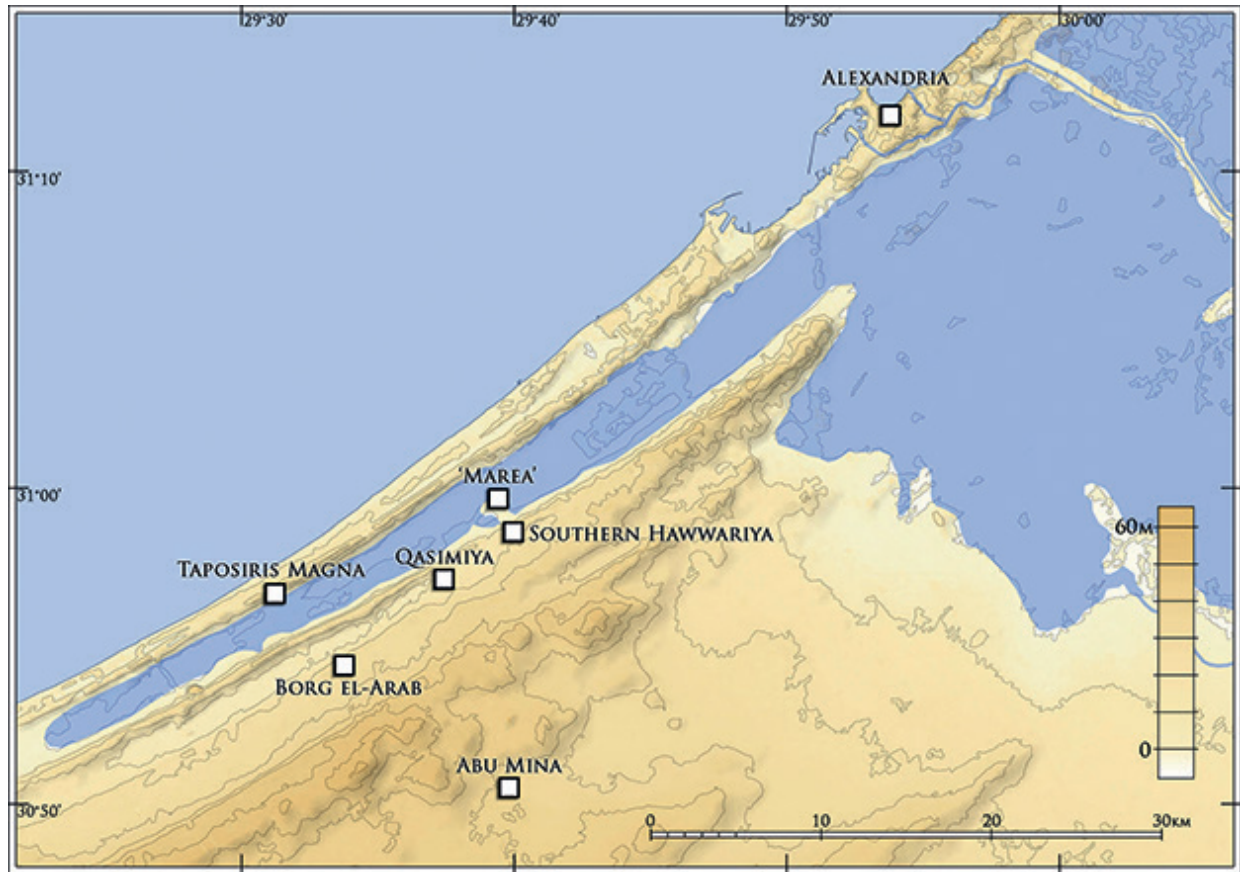


Fig. 1. Mareotis region (compiled by J. Kaniszewski).

adjoining buildings, and waterfronts with boardwalks and piers, complemented by several public latrines, a mill, and two bath complexes. However, the plan is not orthogonal: while the streets run in straight lines, they are oriented along the layout of monumental buildings. On the outskirts, farmlands with an irrigation system were identified hinting at a certain economic independence from the pilgrimage traffic.⁷

The present text reports on the architectural features and peculiarities discovered during the 2023 campaign in Marea T2. However, the observations can immediately be put into the context of the Mareotic baths postulated by T. Fournet and B. Redon. The outcome is a hybrid contribution combining the features of an excavation report with an architectural analysis. The lengthy introduction is justified in this approach first and foremost by the feature which makes Marea T2 stand out from the other Mareotic baths, namely the location of the *prae-furnium*.

Bathhouse T2

The bathhouse at Marea labelled T2 (*thermae* 2) (Fig. 3) has been investigated in the 1970s and 1980s, first by Fawzi el-Fakharani, who initially identified it as a basilica,⁸ and then by Mahmoud Sadek, who cleared the area around the two courtyards and was first to interpret the plan of the bath.⁹

This northern section of the *thermae* around the two courtyards will be hereafter referred to as the ‘cold’ and ‘white’ part of the bathhouse, as opposed to the ‘hot’ and ‘red’ part in the south (also called the “bathing block” by T. Fournet and B. Redon). The distinction goes back to the differing functionalities and building material: the southern part was built of red bricks (although during the operation period most of the brick walls would have been veneered with limestone or marble) and held the furnace and hot basins, while the northern part was built of white limestone and included the two *palaestrae*

⁷ Gwiazda 2023, 197.

⁸ Fakharani 1983.

⁹ Sadek 1992.

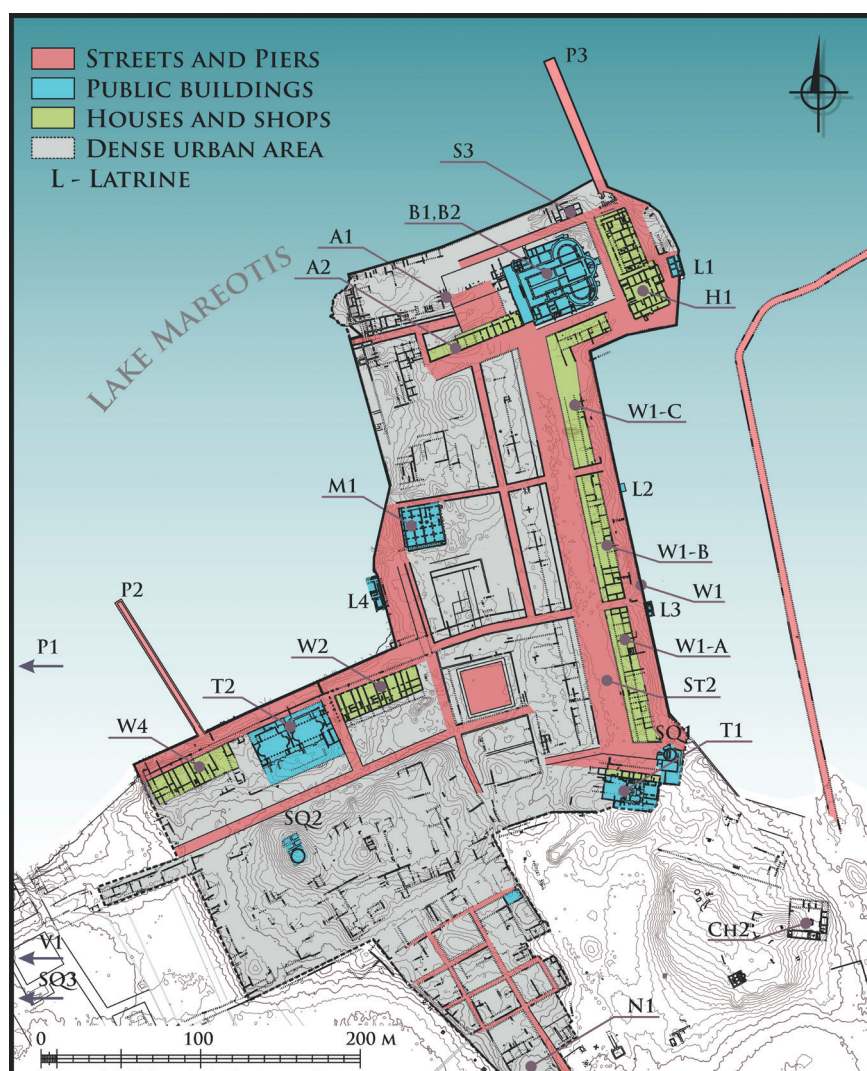


Fig. 2. Marea/Philoxenite (compiled by A. B. Kutiak, W. Małkowski and M. Gwiazda).

(M. Sadek: *exhedrae*) and several rooms and basins without heating.

Bath T2, whose visible features were precisely measured and drawn by Andrzej Kutiak¹⁰ in 2021, has the total area of approximately 1850 m², with the white part being considerably bigger (approx. 1200 m²) than the red (approx. 650 m² or 550 m², not counting the assumed *tabernae* in the east).

The excavations at T2 in 2023 encompassed two principal tasks: the clearing and cleaning of the earlier excavated white part and new excavations mostly within the red part. Given the double or twin layout of the white part, the decision was made to excavate around the central axis, that is, in the red part where the furnace was expected (trenches T2.1. and T2.3.) and in the white part

where a room between the two courtyards had not been fully investigated earlier (trench T2.2.).

The “little known regional model”

T. Fournet and B. Redon defined the group of 11 bathhouses as the Byzantine baths of Mareotis based on the noteworthy “uniformity of their architectural and technical characteristics (...) they appear to be the culmination of a long evolutionary process (...)”.¹¹ They appear in the second half of the 5th century AD and develop until the end of the 7th century, as attested for the sites: Abu Mina South; Abu Mina North; Ezbet Fath’Allah; Karm Kandara; Kom Khobeiz; Marea T1;

¹⁰ Kutiak forthcoming.

¹¹ Fournet, Redon 2017, 280.

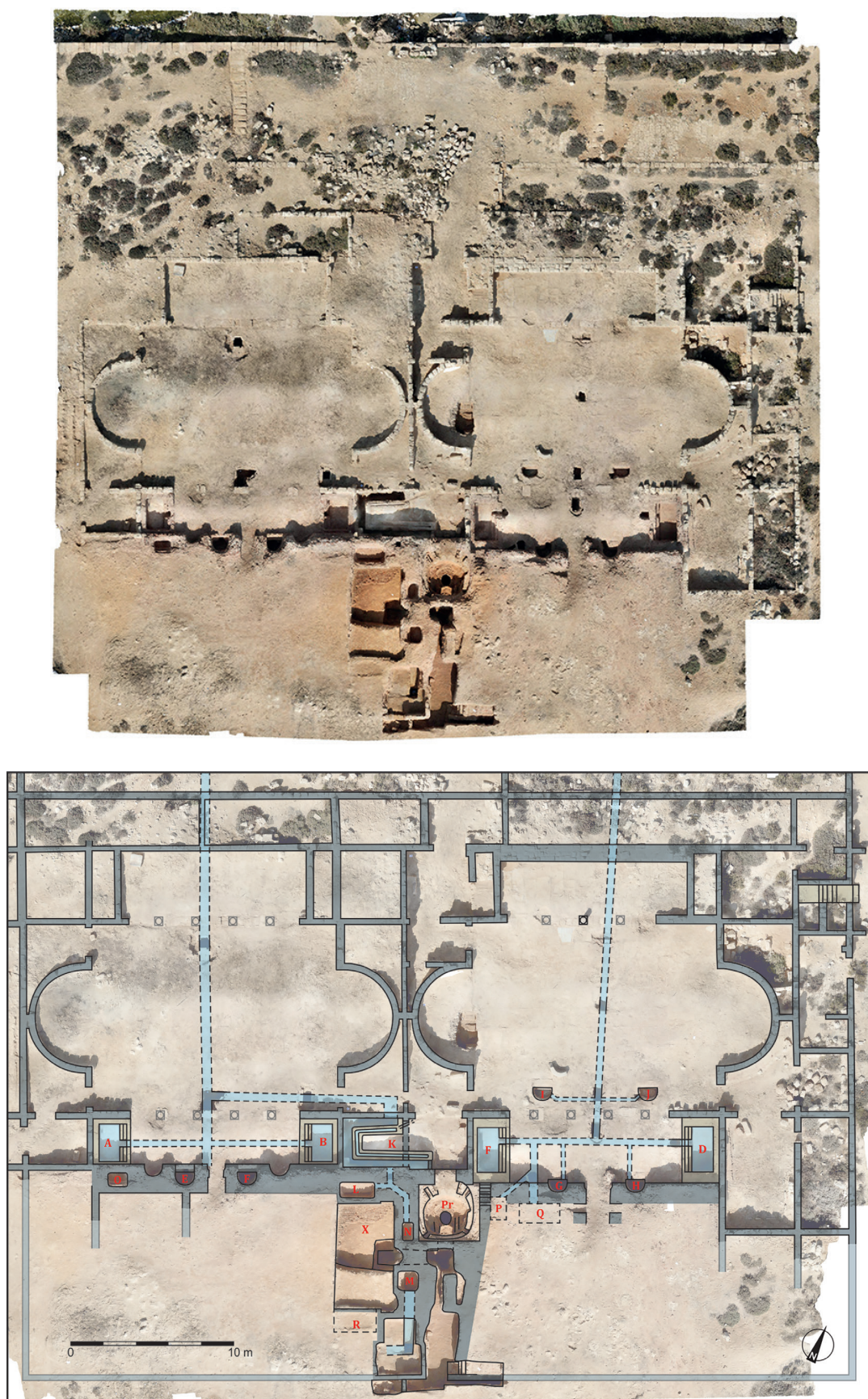


Fig. 3. Bathhouse T2 after the 2023 excavation campaign (A), with marked archaeological features and sections (B) (photo by T. Borowski, compiled by P. Zakrzewski).

Marea T2; Mergham; Mit Abul Kom; Taposiris Magna and Teiba.¹²

The researchers explain that the model developed between the 5th and 7th centuries in the region of Alexandria, more specifically around Lake Mareotis, and indeed seems to represent the culmination of a long process of successive transformations and adaptations of Egyptian baths, characterised by a standardisation of the edifices (Fig. 3). In their view, “Mareotis” is the region of the biggest concentration rather than exclusive appearance of these bathhouses, pointing to the example of Kom Khobeiz located in the north-central Nile Delta and also the possibility of other instances being found in the future outside Mareotis.¹³

In short, the authors say: “All these baths share the characteristic of having an asymmetrical plan and of presenting the bather with a row type itinerary; they also display a marked disproportion between a vast and monumental-looking cold section and a small heated section. The latter comprises one or two rooms equipped with deep, semi-circular or rectangular, individual bathtubs embedded in the walls. More than half the baths in this group have, in addition, the particularity of being doubled: two similar circuits are juxtaposed, or adjoining, thereby allowing the separation of the sexes”.¹⁴

T. Fournet and B. Redon propose a rough rule that the hot part of the baths of Mareotis on average represents only 15% of the total surface area of the spaces open to bathers, not counting the service area.¹⁵ This heated area (“bathing block”) was preceded by an entry hall and a central courtyard with porticoes. Outside the heated area, but not far away, several small cold basins were located, while farther away one would find vestibules, cloakrooms, latrines and other utility rooms. The hot and warm section was completely built of fired bricks and covered by barrel vaults, while in the much more elaborate cold zone, both stone and wood were used for its numerous porticoes and a truly ornamented architecture.

The Hot Rooms

Inside the hot section the bathers would likely follow a ‘fairly classic’ bathing circuit, which – importantly – is also oriented in a circular fashion around the central furnace, so as to maximize the benefits of the heat. The various small bathtubs were embedded in the walls and

could be semi-circular, semi-hexagonal or rectangular in shape. They were equipped with a bench-step to sit upon while being immersed up to the shoulders. While some benches could fit two or even three bathers, the majority of these bathtubs were intended for individuals.

This setup differs distinctly in its philosophy from the classic Roman *caldaria*, which were areas for collective relaxing. Fournet and Redon assume that the water in the individual bathtubs was changed more often than it would have been the case in the larger pools of warm and hot water in the Roman baths of the Principate.¹⁶

These changes with regard to the classical Roman bath layout certainly reflect limitations in access to water, and heating large amounts of water at the same time in particular. However, the small, one-person bathtubs are also a moral statement, which distinguishes Byzantine bathing in general (to which the Mareotic group belongs) from the more libertarian philosophy of the Principate. Philipp Niewöhner formulated this paradigm shift compellingly in his observations concerning a division of rooms in the Southern Bath of Milet: “In the Late Antique and Byzantine repair phases II and III, the aim was (...) to divide the baths into two separate wings, probably so that men and women could bathe at the same time but separately from each other. It is likely that this was not associated with austerity, and the establishment of double baths indicates that personal hygiene was still highly valued and that the necessary infrastructure was maintained. However, it seems that body care was now mainly limited to hygiene and getting warm, whereas the complex procedure of bathing in the imperial era corresponded to a more ‘holistic concept of wellness’. This reveals a shift in thinking that also appears in numerous statements against bathing luxury at the time, which can mainly be linked to the problematic role of the body in the Christian salvation theory. Thus, the Byzantine conversion of the southern *thermae* from a complex spa complex into a simple *balneum* was not determined by economic decline, but by a changed conception of the body. Philosophical factors may have had a greater influence on the end of the ancient baths than is sometimes assumed”.¹⁷

Naturally, the division of baths by the sexes was a standard procedure in Republican and early Imperial times as well¹⁸ (even if not implemented as dogmatically), for example in the famous Stabian Baths at Pompeii, but the removal of the concept of leisure bathing as a community function was now a thing of the past.

¹² Fournet, Redon 2017, 281–282.

¹³ Fournet, Redon 2017, 283.

¹⁴ Fournet, Redon 2017, 283.

¹⁵ Fournet, Redon 2017, 283.

¹⁶ Fournet, Redon 2017, 284.

¹⁷ Niewöhner 2015, 234 (translation: M.L.).

¹⁸ Cf. Yegül 2010, 22–39.

Thus, after a hot but lonesome bath, the bathers in the Mareotis region returned to the large courtyard with porticoes to enter pools or individual immersion basins of cold water. Fournet and Redon observed that there were two to six basins arranged symmetrically on either side of the door leading to the hot section, again located in niches in the façade of the ‘red part’.

Double Baths

The much quoted authors also noted that of the 11 baths belonging to the Mareotic group, seven have two completely independent circuits, which sometimes are almost identical in layout.

The logical interpretation of this doubling is that the bathers were divided by sex; men and women, who until then would have had to share the same edifice, with different opening hours. Now each had their own space, available anytime. This also doubled the capacity of the buildings. T. Fournet and B. Redon point out that in at least four of the seven examples (Abu Mina South, Mergham, Mit Abul Kom and Taposiris), the doubling happened in a second phase: originally they were ‘unipartite’ edifices to which a second circuit was added.¹⁹

Marea T2’s belonging in this group requires separate consideration. T. Fournet and B. Redon marvel at the “perfect symmetry of the two circuits, arranged parallel to one another”, enhancing “the monumentality of the edifice, which must have occupied a surface area at least equivalent to that of the main baths of Abu Mina South (the cold sections alone cover over 1000 m²)”.²⁰ They might be right in claiming that the builders did not have to adapt to a restrictive urban environment, allowing for such monumentality, which was in line with the general development of the town quarter. But on the other hand, under close inspection the symmetry turns out not quite perfect, with the recess in the main E-W wall partitioning the hot and cold parts, as well as other details, raising the question whether an initial single bath was duplicated here after all.

The Heating System

Within the group of Mareotic baths, the construction techniques are visibly uniform – fired bricks in the hot sections are used from the foundations up to the

vaults, constituting the base for the cleverly devised heating technology.

This technology is naturally reminiscent of ‘traditional’ Roman baths, in that it uses furnaces (*praeurnia*), sometimes with a boiler on top, linked to a system of hypocausts and heated walls. But many details are different: the arrangement of the furnaces, the fuel and the manner in which the heat was distributed. The *praeurnium* of a Mareotic bath is located at a much deeper level than in the baths of the Principate or even many Byzantine baths. In the depth, they were surrounded by utility rooms in actual basements under the bathing rooms. T. Fournet and B. Redon note how “this distinctive feature meant that the furnaces could be placed at the centre of the edifices rather than in a peripheral position” and the “central position of the furnaces permitted by this layout is particularly adapted to double edifices, whose two circuits are arranged around this ‘central’ heating”.²¹ The combustion chamber of these *praeurnia* was, because of this location, significantly taller than that of older Roman furnaces, although a comparable solution, dubbed “high-flame furnace” by the excavator Wojciech Kołataj, was found in the Byzantine main baths of Kom el-Dikka (Alexandria),²² which are not part of the Mareotic group, but likely faced the same problems regarding availability of fuel.

In the Mareotic group, the principle furnace was located at the centre of the hot section and had a boiler above it to heat the water for the bathtubs, although in larger buildings, additional furnaces were used as well. The boilers were made up of one, two or four circular metal bottoms, each around 60 cm in diameter, topped with a masonry cistern, a structure which leaves behind very characteristic traces in the archaeological record. The largest edifice (Abu Mina South) contained four furnaces, two of which had boilers, so additional furnaces can be expected to be found at Marea T2 in the future.

The furnaces with boilers had their own chimneys, “going up vertically around the reservoirs, as well as a conduit opening onto the hypocaust: it was no doubt possible to modulate their working by adjusting the opening of these chimneys, to improve the heating of the water or of the rooms according to need”.²³

The hypocausts of Mareotic baths are quite unlike the instantly recognisable hypocaust cellars dotted with small pillars of pedales bricks of the Republic and Principate. They consist of parallel rows of brick vaults that are connected with each other only at a few points. T. Fournet and B. Redon convincingly argue that such

¹⁹ Fournet, Redon 2017, 286–287.

²⁰ Fournet, Redon 2017, 286.

²¹ Fournet, Redon 2017, 287.

²² Kołataj 1992, 176–178; cf. Fournet, Redon 2017, 287.

²³ Fournet, Redon 2017, 288.

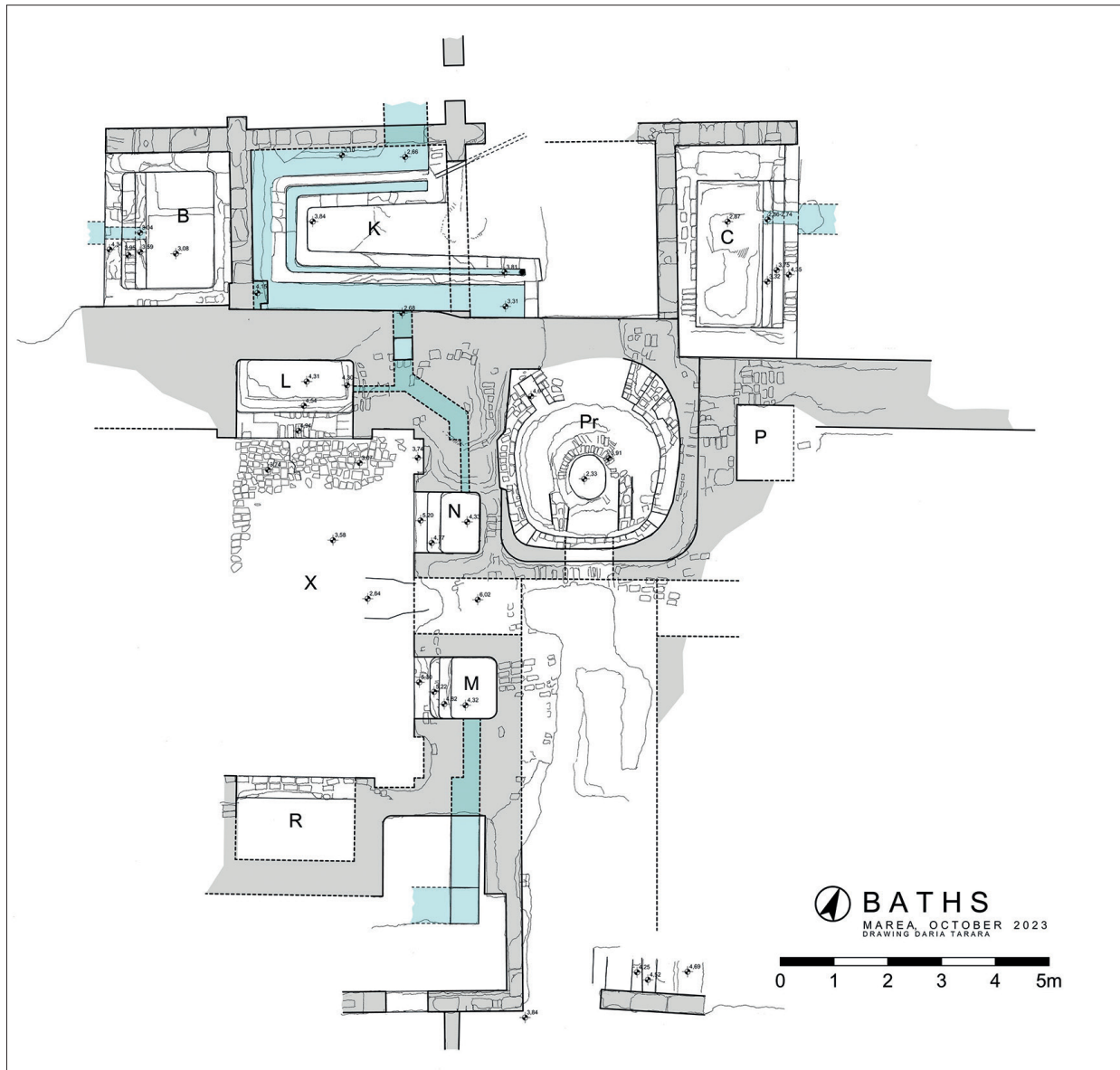


Fig. 4. Fieldwork areas in 2023 (drawing by D. Tarara).

a construction “was probably more resistant and avoided the need for specific materials: the commonly available bricks, used equally for building the walls and the vaults, were used here in this installation thereby precluding the need for round bricks or bipedales”.²⁴ This was possible, because the small hot basins were not built on the hypocaust floor and thus not heated from the ground, and so could be deeper than before. This choice again goes back to the solitary bathing philosophy: the water was changed more frequently than in the large pools of the

Roman baths, hence it was not necessary to maintain the temperature of the basins through underground heating, opting instead for a fresh supply of hot water from the boilers when needed.

The position of the boilers in relation to the basins is also very different from the Roman model and crucial in the general Mareotic concept. Since there was no communal pool with warm or hot water, the boiler had to be located centrally and supply the numerous peripheral bathtubs.

²⁴ Fournet, Redon 2017, 288.

T. Fournet and B. Redon conclude, stressing the “remarkable standardisation from one edifice to the next in the Mareotic group: all share the use of the ‘high-flame furnace,’ vaulted hypocausts and heating chimneys. The majority place the main boiler in a central position, which supplies hot water to the small bathtubs in the bathing block. This standardisation logically reflects the one observed in the plans of these edifices, for they too, with greater or lesser means and ambition, follow common principles of organisation”.²⁵ It can be traced at Marea T2 as well, but there is one crucial aspect in which the latter bathhouse differs, as we will see below.

The Marea 2023 campaign

All excavated areas mentioned in the introduction (Fig. 4) yielded interesting results. The furnace indeed

was located at the expected spot (although given the overall size of the compound and the fact that – as we have seen – two furnaces are not uncommon in the Mareotis-type baths, including bath T1 in Marea,²⁶ a second *prae-furnium* might be discovered in the future), while the excavations in the white part revealed a latrine. Additionally, cleaning up the white part brought interesting observations regarding the water management and marble decorations of bathhouse T2.

T.2.1 Room X

Trench T2.1. (Fig. 5) revealed a large room within the ‘red’ part of the bathhouse, likely one of the utility rooms for the *prae-furnium*. Its eastern wall was uncovered in its entirety, that is, on the length of 6.30 m, while the perpendicular northern and southern walls were



Fig. 5. ‘Room X’ as seen from the south-west. Visible are basins L, M and N, as well as the archway towards the *prae-furnium* (photo by M. Lemke).

²⁵ Fournet, Redon 2017, 289.

²⁶ Szymańska, Babraj 2008.

3.70 m long each. The western wall, however, has not been unearthed so far. All were built of bricks measuring 23×10×7 cm. In the centre of the eastern wall, a vaulted passageway towards the utility room south of the furnace (Pr) was discovered, while both the north-eastern and south-eastern corners of the room were flanked by niches with a width of 0.65 m and a recess of 0.15 m.

The area, dubbed 'room X', has to be considered a part of the basement of the bath, as the crown of its walls is level with the entry to four basins for hot water adjoining it from the north (L), east (M and N) and south (R) within the very same brick structure, at a height of approximately 5.30 m a.s.l. While the floor of the level above the cellar is missing entirely, the pavement of room X, made of bricks, was discovered preserved along the northern wall on the level of 3.67 m a.s.l. This pavement was repaired or replaced with a second layer of bricks set in a levelling layer of sand at 3.74 m a.s.l. Future excavations will show whether this pavement is the remains of a vaulted hypocaust floor.

Likewise, two phases can be distinguished in the walls of the room, to a point where it is unclear whether

the architecture of the bathhouse was repaired/modified – somewhat awkwardly – above the preserved earlier phase (which ends at the height of max. 4.48 m a.s.l.), or if the earlier phase stemmed from a different building altogether, which had been adjusted to accommodate the 'hot' part of the *thermae*.

Either way, a decline in building technique is clearly visible. Both phases consist of the same brick type mentioned above, but the brickwork of phase 1 is neat and even with a solid wall footing at 3.01 m a.s.l., while phase 2 displays far thicker beds and perpend (albeit of a similar greyish mortar with an aggregate of crushed ceramics, gravel and seashells) and hence a less tidy workmanship. A trial trench in front of the passageway revealed a canal-like structure running below the cellar floor (2.64 m a.s.l.), possibly towards the furnace, which likely served as a connection to a hypocaust running westwards.

The walls of the ground floor of the entire 'red' portion of the bathhouse have been severely damaged – they are now preserved up to the height of 6.02 m a.s.l. in between basins L and N, just off the north-eastern corner of room X.



Fig. 6. Latrine (photo by M. Lemke).

T2.2. The latrine (K)

The rectangular room (7.50×3.00 m) in between the twin partitions of the ‘white’ part of the bathhouse, whose southern wall is the northern wall of the ‘red’ part, turned out to be a latrine (Fig. 6), albeit one that had been partially excavated in Sadek’s times and then re-filled.²⁷ The latrine could be accessed through the southern passageway connecting the eastern and western *palaestrae*. It consists of a small antechamber at the eastern end as well as the latrine proper, a characteristic rectangular ‘island’ of brickwork (4.80×1.90 m) surrounded by a 0.50 m wide sewage canal on three sides, whose water inlet were the drains of basins L and N in the ‘red’ part, while the outlet was connected to the western main canal of the *thermae* under the western *palaestra*.

The central block was built of bricks bonded with a greyish hydraulic mortar and topped off with a layer of light grey mortar that covered the floor and a gutter meant for cleaning the infamous sponge sticks used for washing oneself after the act. The outlet of this gutter poured water into the easternmost part of the canal encircling the latrine. Above the canal were the seats, probably made of wood, which are not preserved. Only their supports are protruding from the walls, as well as the remains of an arch that spanned the toilet along the central N-S axis of the bathhouse, supporting its roof.

T2.3. The furnace (*praeurnium*)

The furnace or perhaps rather a furnace of the bathhouse (Fig. 7) was located just off the central N-S axis of the bath towards the east, flanked by the antechamber of the latrine in the north and room X in the west and accessed via a vaulted corridor from the south. While the overall surface area of the *praeurnium* is approximately 3.50×3.20 m, the construction is typical of the Mareotic group of *thermae* in that it consists of a high, almost cylindrical combustion chamber in the centre (1.57 m high and ovoid in section with a diameter ranging between 0.80 and 0.60 m). Such chambers were a standard element of the aforementioned ‘high-flame-furnaces,’ topped off with a quadruple boiler, whose metal bottoms left a characteristic mark and were supported by a suspension frame set in four niches created in the outer wall.

Importantly however, the *praeurnium* is not set as deep in comparison to the bathing rooms as in other Mareotic baths and remains in a semi-peripheral position overall (see below). The space in between the combustion chamber (built of bricks covered on the inside

with a layer of grey heat-resistant mortar) and the walls of the room was filled with *opus incertum*, leaving access through a corridor approximately 1.00 m wide, entering from the south and enclosed by a vault connected to the service opening of the combustion chamber.

The basins

During the 2023 campaign, a total of 17 basins were documented, 14 of which were cleared – the majority for a second time following previous investigations, though some were probably cleared completely for the first time. All were built of bricks bonded with and covered in a reddish hydraulic mortar. There are four bigger rectangular basins (A, B, C and D), probably *frigidaria*, two in each wing of the ‘white’ part of the twin bath. The eastern pair – C and D – are slightly bigger (approx. 2.65×1.75 m, 1.40 m deep) than the western – A and B (approx. 2.30×1.75 m; 1.22 m deep). Set in the wall separating the two principal areas were four small (radius: 1.00 m, depth: 1.20 m) semi-circular basins (E, F, G and H), designed to be used by one person at a time, which can be assumed to have been *tepidaria* or *caldaria*. Four rectangular basins (*caldaria*) with rounded corners were set in the walls around room X (L, M, N and unexcavated R), west of the *praeurnium*. They were slightly uneven in size (2.10–1.15×1.05–0.75 m, respectively), while to the east of it two more (P and Q) were identified but not excavated. Finally, two very small semi-circular basins (I and J), likely *frigidaria*, with a radius of merely 0.86 m were (re)discovered in the eastern *palaestra*, just north of the southern portico.

The majority of these basins originally had marble veneers, small fragments of which were noted in several instances. Exceptions are basins E and F in the apparently slightly inferior western twin portion of the ‘white’ part, which show no traces of ever being furnished with marble, as well as basin I (Fig. 8), where the marble veneer was almost completely preserved, including a tub-shaped marble monolith lying next to it on the surface. The drain was destroyed like in all other basins.

Water management

The water necessary for operating the bathhouse was acquired from a *saqqiya* located 62 m to the south of the furnace on a slight elevation (approx. 9 m a.s.l.). Directly below the *saqqiya* are the remains of two cisterns. Neither the aqueduct connecting these with the assumed *castellum aquae* in the bathhouse nor the conduits used for

²⁷ Solieman 2004.



Fig. 7. *Praefurnium* (photo by T. Borowski).



Fig. 8. Basin with intact marble veneering (photo by T. Borowski).

distributing water to the boiler(s) and other outlets have been discovered so far.

However, a lot can be said about the system of sewers used for disposing of the water into Lake Mareotis. All of the basins seem to have been equipped with lead pipes siding the drain between the basin and the sewage canal, that is, on a stretch of approximately 0.50 m. Unfortunately, the lead was salvaged and reused when the bath fell out of operation (like in Abu Mena²⁸), inflicting considerable damage to both the basin as well as the floor of the bath. The remaining gaps and holes, com-

bined with the fact that the sewage canals were built large enough to accommodate a person servicing them moving around, allowed for accurate observations in this part of the water management system.

The canals (Fig. 9) are 0.85–1.10 m high, 0.52–0.55 m wide and, with a few exceptions, have a very low gradient. From all the basins, as well as the latrine, the canals run northwards to connect to one of the two main sewers running along the N-S axis, roughly underneath the centre of each *palaestra*. The eastern one had been visible for decades, while the western canal tops located

²⁸ Müller-Wiener *et al.* 1967, 174 fn. 3.



Fig. 9. One of the cleared main sewers (photo by M. Lemke).

near the lake were uncovered only during the 2023 excavation season. Their beginnings, which lie under the ‘red’ part, have not been discovered so far. A certain exception is basin M, whose canal leads towards the south and west, but it likely also connects with the western main sewer in a hitherto unexcavated area.

The side walls and the bottoms of the canals were built of stone. Up to the line of the stylobates of the two southern porticoes the canals are vaulted with bricks, but to the north of them – up to the lake shore – they are covered with stone slabs, with particularly massive monoliths below the stylobate, suggesting that they were designed to withstand additional pressure.

Observations on architecture and decorations

While the ‘white’ part of the bathhouse is significantly larger than the ‘red,’ the proportions are nowhere near the common average for Mareotis-type baths, where the “bathing block” represents “only 15% of the surface area of

the spaces open to bathers”.²⁹ This renders the bathhouse Marea T2 a more balanced structure. Another departure from the Mareotis-type characteristics notable in this context is that bathhouse T2 consciously foregoes the principle of maximum heat exploitation achieved by ‘wrapping’ the hot part completely around the furnace and then the cold part around the hot part. Instead, it sacrifices the easily heated space north of the *prae-furnium* in favour of arranging both parts of the bath on either side of a lengthy E-W axis, valuing monumentality over functionality. This layout will remain intact, even if a second furnace is uncovered in the western part of the ‘red’ area in the future.

The ‘white’ part of the bath was almost entirely clad in marble – small patches of the marble floor have been discovered, while in other places the characteristic perpend and beds in the mortar layer on the ground show the outline of the marble slabs once placed there.

The Modular design in Marea

The aforementioned characteristics of monumentality and symmetry in bath T2 fit very well into the overall layout of Marea/Philoxenite. The “widespread use of duplicate floorplans leaves no doubt as to the nature of these foundations. They were certainly not individual building projects, but buildings constructed as part of a larger urban programme that covered an extensive part of the town”.³⁰ At the same time, the hospital at Marea, together with the two baths and the considerable number of latrines, indicates that the health and comfort of the residents were valued greatly by the planning architects.³¹

The modular design was rooted in the traditions of the Roman and Early Byzantine periods, when it was used primarily for shops (*tabernae*), warehouses, and cisterns.³² All the modular buildings in Philoxenite are located in its northern part, near the lake, covering approximately 5 ha, that is, almost half of the urban area.³³

Its significance for Marea also highlights a completely different aspect; M. Gwiazda argues that the architecture of Marea/Philoxenite reflects the influence of the pilgrimage movement on the development of towns of the early Byzantine Period. “The large-scale use of modular design at the site aided in urban planning, and today it helps us determine the way the entire district was constructed in order to serve the needs of pilgrims. Philoxenite thus yields new insight into the influence of Christianity on Late Antique urban planning and the way that new cities were created”.³⁴

²⁹ Fournet, Redon 2017, 283.

³⁰ Gwiazda, Derda 2021, 6.

³¹ Gwiazda, Derda 2021, 6.

³² Gwiazda 2023, 196.

³³ Gwiazda 2023, 198–199.

³⁴ Gwiazda 2023, 196.

While the convenience and ease of execution provided by the use of repetitive plans in architecture may seem evident, the fact that the idea shaped Marea/Philoxenite is far from trivial. One should note that historically “the modular building technique was primarily used in structures associated with trade and storage. It is poorly attested in the case of private residential complexes. Moreover, modular design seems to have been used in larger public and sometimes military construction projects”.³⁵ As a matter of fact, Marea/Philoxenite is unique, because no other site is known to exhibit the modular design implemented on such a large scale.³⁶

Conclusion

In the case of a bathhouse, there can be more than one reason for the repetitive or modular nature of the twin plan: aesthetics, the division of the sexes, chronology or the duplication of the floor area, for instance to accommo-

date an unexpected increase in the number of clients. The latter is corroborated by the visible differences between the twin portions, which are difficult to explain otherwise.

However, in general, the bathhouse T2 in Marea appears to combine the ‘best of both worlds’: following the rules of the Mareotic bath model for its cost-efficiency (and moral integrity), while at the same time circumventing some rules in order to fit into the monumental building style along the ‘corniche’ of Marea.

Acknowledgments

The University of Warsaw’s archaeological expedition at Marea is supervised by Tomasz Derda and was financially supported in 2023 within the Excellence Initiative of the University of Warsaw via the CRAC Small Grant PSP 501-D115-20-0013110 for the author and also IDUB PSP 501-D115-20-0005420.

Bibliography:

- Derda T. 2020, ‘Marea’ ad Aegyptum: New research and new documents, in: K. Myśliwiec, A. Ryś (eds), *Crossing Time and Space: To Commemorate Hanna Szymanska*, Warsaw-Wiesbaden, 61–74.
- el-Fakharani F. 1983, Recent Excavations at Marea in Egypt, in: G. Grimm, H. Heinen, and E. Winter (eds), *Das Römisch-Byzantinische Ägypten: Akten des Internationalen Symposions 26.-30. September 1978 in Trier*. Aegyptiaca Treverensia 2, Mainz am Rhein, 175–186.
- Fournet T., Redon B. 2017, Romano-Byzantine baths of Egypt, the birth and spread of a little-known regional model, in: B. Redon (ed.), *Collective baths in Egypt 2. New discoveries and perspectives*, Cairo, 279–322.
- Fournet T., Redon B., Vanpeene M. 2017, Catalogue of the Roman and Byzantine Baths of Egypt, in: B. Redon (ed.), *Collective baths in Egypt 2. New discoveries and perspectives*, Cairo, 451–523.
- Gwiazda M. 2023, Modular designs at the Early Byzantine pilgrimage site of Philoxenite, Egypt, *Journal of Roman Archaeology* 36 (1), 196–214.
- Gwiazda M., Derda T. 2021, Marea: a swan song of ancient urban planning, *Antiquity* 95 (382):e21.
- Kołątaj W. 1992, Imperial Baths at Kom el-Dikka, Alexandrie 6, Warszawa.
- Kutiak A. B. forthcoming, An urban settlement at Lake Mareotis, in: T. Derda, M. Gwiazda (eds), *Philoxenite on the Lake Mareotis: a town for pilgrims built under Justinian*, Warszawa.
- Müller-Wiener W., Engemann J., Traut F. 1967, Abu Mena: 4. Vorläufiger Bericht, *MDAIK* 21, (1966), 171–187.
- Niewöhner P. 2015, Die Südstadtthermen von Milet. Vom kaiserzeitlichen Baderundgang zum byzantinischen Doppelbad, *Archäologischer Anzeiger* 1/2015, 173–235.
- Sadek M. 1992, The Baths at the Ancient Harbour of Marea, in: Sesto Congresso internazionale di Egittologia: Atti, Turin, 549–554.
- Soliman N. 2004, Marea. An Archaeological Study and the Manner of its Tourist Investment, unpublished PhD thesis, University of Alexandria.
- Szymańska H., Babraj K. 2008, Byzantine Marea Excavations in 2000–2003 and 2006. Marea 1, (=Biblioteka Muzeum Archeologicznego w Krakowie IV), Kraków.
- Yegül F. K. 2010, *Bathing in the Roman world*, Cambridge.

³⁵ Gwiazda 2023, 207.

³⁶ Gwiazda 2023, 210.