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„Hygiene and Sanitation in Late Antique Egypt

Investigations of Latrines from the 4th to 7th Century AD"

verfasst von / submitted by

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1. Introduction

1.1. Definition

A clear definition of 'hygiene' and what can be considered 'hygienic' is not easy to establish. Although hygiene is regarded as "a science of the establishment and maintenance of health",[1] it can also be understood as "a practice of keeping yourself and your surroundings clean, especially in order to prevent illness or the spread of diseases."[2] In a broader sense, the Encyclopaedia Britannica defines the term in the following:

> "The subject embraces all agencies affecting the physical and mental well-being of humans. It involves, in its personal aspect, consideration of food, water and other beverages; clothing; work, exercise and sleep; personal cleanliness; and mental health. In its public aspect it deals with climate; soil; character, materials and arrangement of dwellings; heating and ventilation; removal of waste matters; medical knowledge on incidence and prevention of disease; and disposal of the dead."[3]

Throughout this thesis, the term 'hygiene' is understood to mean the "practice of keeping yourself and your surroundings clean",[4] meaning that the following should examine the extent of physical hygiene in Late Ancient Egypt. Furthermore, in order to establish the factors that were decisive for maintaining cleanliness, the focus is placed on sanitary facilities, especially latrines. In using the term 'sanitation', I am leaning on Merriam-Webster's definition, stating that "sanitation is the promotion of hygiene and prevention of disease by maintenance of sanitary conditions as by removal of sewage and trash."[5] In particular, in order to define the hygienic and sanitary measurements in Late Antique Egypt, the arrangement of lavatories, its ventilation, evacuation of waste and access to water will be examined in the course of this thesis.

Especially in the current Covid-19 pandemic, the concept of hygiene represents one of the most globally relevant topics today. In this context, the question arises as to how widespread the awareness and perception of hygiene in Late Antiquity was. Since transferring modern concepts to Antiquity always poses a danger, the answer to this question is difficult to establish from our perspective. At the same time, one can consider the question a challenge for science. For how should we grasp abstract concepts of modern societies, and to what extent can we project them onto Antiquity?[6]

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[1] Merriam-Webster 2021, s. v. Hygiene.
[2] Collins Cobuild 2021, s. v. Hygiene.
[3] Britannica 2021, s. v. Hygiene.
[4] Collins Cobuild 2021, s. v. Hygiene.
[5] Merriam-Webster 2021, s. v. Sanitation.
[6] Cf. Similar and further reflections on the topic in: Koloski-Ostrow 2015, 41.

The first difficulty we encounter is the concept itself, as a term such as 'hygiene' is not only understood differently from continent to continent, but is treated in various forms from country to country, from region to region, and ultimately from person to person. Moreover, how a person understands the proper maintenance of hygiene is related to numerous factors—the WHO divides hygiene into three separate parts: domestic, community and personal.[7]

First and foremost, home education provides the groundwork for domestic and, at the same time, personal hygiene awareness. Children are usually taught a behavioural pattern in the household by learning to maintain their cleanliness. Since most diseases are transmissible through dirty water and human excreta, the focus of home education centres on toilet training and its related personal hygiene. As a rule, children learn to throw away dirty toilet paper, flush the water after using the toilet, and wash their hands. However, this routine alone cannot be considered universal as these are based on the personally established rules by parents or legal guardians.[8]

Further, based on the place of residence, one can distinguish between different sanitary systems in the city and rural settlements. Usually, a person who lives in the city owns a toilet in their own house. Modern water closets have always been connected to the municipal sewerage system and the associated sewage treatment plant. In contrast, although increasingly rare in European countries but still common in other continents, we may find latrines not connected to a sewage system in village architecture.[9] In this case, human excreta end up in a pit emptied regularly. As such, domestic hygiene, and sanitation as well as the question of how one deals with it depend on the given living space.[10]

Numerous factors determine communal hygiene, such as access to water, supply of soap and toilet paper, the design of the toilet facilities themselves, and the handling or disposal of impurities.[11] Furthermore, the differences in the toilet location show us that sanitation has an impact on hygienic measures, as access to clean water is not the same everywhere. In a broader sense, this means that what is understood as the correct observance of hygienic measures for one person can be seen as unhygienic behaviour for another. Therefore, how the understanding of hygiene – i.e., the practice of keeping oneself and your surroundings clean – looked like in Late Antiquity needs to be examined on a case-by-case basis. Such examination shall help to

[7] Howard et al. 2002, 65-73.
[8] Gastelaars 1996, 483-505.
[9] Rahman et al. 2009, 299.
[10] Esteves Mills – Cumming 2017, 45. 69.
[11] Taylor 2005, 53-54.

assess the hygienic and sanitary measures prevalent in a given location. Concerning the observations made from an archaeological context on the hygienic measures, this study is mainly based on examining latrines, as those facilities have an especially strong association with sanitation and maintenance of cleanliness. Thus, in the case of the Late Antique latrines, each site must be treated separately to shed light on the ancient hygienic and sanitary measures employed in Late Antique Egypt.

1.2. Methodological Approach and Structure

The methodological approach is based on a study of literature. First and foremost, secondary literature was consulted to understand better how a decision relating building process and its design impacted the erection of sanitary facilities, i.e., latrines. For this purpose, mainly excavation reports and comprehensive sources of the excavators themselves were considered. The first phase of research showed that older literature lacks profound documentation of the archaeological material. Contrary to expectations, latrine descriptions are missing from many excavation reports found in older texts.[12] Even if mentioned, only one latrine possesses a detailed description, while others are only mentioned in a subordinate section. Therefore, these sources are only helpful for reconstructing the latrine findings and their position within buildings, as reflected in the extant visual material. In addition to the secondary literature, which explicitly deals with the excavation site, the knowledge conveyed about each settlement's historical and topographical framework is based on a comparative study of numerous monographs and anthologies dedicated to each site that is discussed in this thesis.

The following text contains only a relatively low percentage of primary literature. The main reason for this limited selection is the lack of ancient sources dealing with hygiene and sanitation in the given timeframe and geographical area. A further reason for relying on literary sources on a small scale is the deficiency of primary sources concerning the architecture of the chosen settlements. Nevertheless, despite an inadequate literary foundation on latrines in Late Antique Egypt, the ancient sources form a solid basis for a contextual analysis of the discussed archaeological sites, revealing information about social life in three case studies, namely Abu Mina, Marea and Kellia. Further, it gives essential information regarding the erection of the St. Catherina monastery in Sinai.

In order to ensure contextual evaluation, the study of the latrines is based on literary analysis of the primary sources, independent observation of the visual material, and information taken

[12] Cf. Chapter 3.2.

from the excavation reports. Building on both literary and archaeological sources, this thesis will give insight into the social theory of architectural design. In order to approach the question of whether and how latrine constructions reflect hygienic and sanitary measures in Late Antique sites of Egypt, the thesis is structured as follows:

The first introductory unit contains six sub-chapters. First, the reader is provided with the modern meaning of 'hygiene' and 'sanitation', whereby it is strongly emphasised that the conventional definitions should be interpreted very broadly and cannot be understood as uniform and therefore do not reflect the ancient understanding of cleanliness. The following section is an outlining of the methodological approach to the topic of the master's thesis. In this segment, the reader shall understand the study's primary aim and how the outcome of the research will be achieved. The third sub-chapter has the task of presenting the essential terms used in connection with the different types of latrines and explaining their definition concisely. Thus, the first three sub-chapters present the core of the theoretical approach. The fourth part discussed the continuing relevance of the topic and the modern problems encountered in connection with the construction of latrines. Following this, a number of questions are posed in the next section, which are to be answered through four case studies. To conclude this part, the reader is introduced to the history of research on ancient latrines and the topic of hygiene and sanitation in Antiquity.

The central part of the study consists of two chapters, including a historical overview and a part presenting four sites as case studies. The chronological outline deals with the history of Egypt based on the country's political events. Due to the social component included in the question, the focus is extended to other aspects, namely the social structures of the country, the administrative corpus, and the religion. The brief listing of the social hierarchy is intended to make the reader aware of the different social groups. The administrative division shows how the population could operate and reveals the possibilities open to them for advancement. In addition, a sub-chapter also deals with the military career, which can also be particularly helpful for understanding the architectural structures in the fourth case study. The last sub-chapter of the historical framework deals with religion, which shaped the country and its architecture during Late Antiquity.

Four case studies were chosen to provide an introductory study of latrines in Late Antique Egypt – Marea, Abu Mina, Kellia and St. Catherine's Monastery in Sinai. Marea was chosen as an example of a Late Antique city in which private and public latrines are found. Abu Mina belongs to the most famous pilgrimage sites of Late Antiquity, where various types of accommodation were built for different social groups and a presumed hospice for the sick. The site will be used to show an example of how a pilgrimage centre incorporated latrines into the construction of sheltering sites and what the separation between women's and men's areas looked like. A laura (for the exact definition, see chpt. 3.3.1) in the Kellia was chosen as the third case study. As a place of settlement for Egyptian monks, Kellia represents an exceptional example of sacred and residential architecture encompassed within a single complex. The fourth case selected is the monastery at Sinai, representing a different form of monasticism and an alternative style of communal living. The varying contextual placement of the sites was intended to encompass a vast range of variation and the widest possible spectrum of latrine building.

Nevertheless, each case study follows the same structure. First, a short introduction to the history of research is made. In the next step the literary sources are introduced, which explicitly mention the site's history. This is followed by a description of the topography, and precise characterisation of the site and its ancient installations. Finally, the individual latrines are described and contextualised by presenting comparative examples.

The final part (chpt. 4) forms a synthesis of the conclusions reached during the study. Here, an attempt is made to answer the questions listed in chapter 1.5., which serve to approach the central question of the thesis, i.e., what measures can be observed in the discussed latrines that point to a hygienic and sanitary practice of keeping people and their surroundings clean.

1.3. Terminology

Among the most frequently used terms in the following work are 'toilet', 'lavatory' and 'latrine'. According to Merriam-Webster, a toilet is "a fixture that consists usually of a water-flushed bowl and seat and is used for defecation and urination"[13]. For the purposes of this work, 'toilet' is understood to refer to "a fixture that consists of a seat and is used for defecation and urination"[14] as toilets were not usually flushed in the period of Late Antiquity. 'Lavatory' is defined as "a room with conveniences for washing and usually with one or more toilets"[15], this definition given above will also be applied in this work.

In rare cases, dictionaries deal with an exact definition of 'latrine'. For example, The Concise Oxford Dictionary of Archaeology defines latrine as a "Latin term for lavatory".[16] The Oxford

[13] Merriam-Webster 2022, s. v. Toilet.
[14] Cf. Merriam-Webster 2022, s. v. Toilet.
[15] Merriam-Webster 2022, s. v. Lavatory.
[16] Darvill 2009, s. v. Latrine.

Dictionary of Byzantium does not deal with the word's etymology. However, it gives interesting insights about information taken from primary literature:

> "Legal texts give evidence that in private homes latrines were built in the courtyard and each was provided with drain pipes and gutters. Harmenopoulos in the Hexabiblos (Harm. 2:4.78), repeating the building regulations of Julian of Askalon (cf. Ja. Sjuzjumov, ADSV 1 [1960] 3–34), described two types of cesspool (koprodocheion): one with thick stone walls; the other simply dug out of the earth. The first type had to be at least 3 ells (pecheis) distant from a neighbor's wall; the second no less than 6.5 ells. Washing facilities (christeria) could be constructed in a courtyard, provided they caused no harm to neighbors (Harm. 2.4.79). In crowded apartment houses sanitary conditions were poorer. The law (Harm. 2:4.71) forbade throwing human waste from upper floors, yet John Tzetzes, who was living on the second floor of a three-story building, complained that the 12 children and the pigs of a deacon who lived upstairs "urinated so much that they produced navigable rivers" (ep.18, p.33.5–16). For chamber pots the Byz. used special vessels (amis, etc.) made of clay, glass, and even silver and gold (Koukoules, Bios 2.2:76). Dreams about latrines occupy an important place in the Oneirokritikon of Achmet ben Sirin (pp. 30.11–28, 62.3–63.21): images of urinating or evacuating one's bowels in various places were interpreted as portents of good or bad fortune."[17]

Due to the lack of reference works regarding latrines from the Byzantine period, The Oxford Dictionary of Byzantium gives scant references to archaeological material. A mention is made only of a latrine in a private house in Corinth, which "had a latrine located immediately off the main room (Scranton, Architecture 68, 19-21)". Furthermore, latrines are mentioned as parts of the Byzantine towers.[18]

While searching for an exact etymology of the term and a distinction between different types of latrines, I have decided to rely on the elaborated terminology of Koloski-Ostrow. In her work "The Archaeology of Sanitation in Roman Italy: Toilets, Sewers, and Water Systems", we find the exact assignment of terms to the respective types of latrines. The Latin word *latrina* is borrowed and takes its origin from the term *lavatrina*, which in turn defines in its meaning not only as a latrine but can also be understood in a broader sense as a bathing facility. It is also connected to the verb 'to wash' *lavare* (Cf. Varro ling. 9, 68; Plaut. Curc. 580).[19] Koloski-Ostrow presents a hypothesis in which she assumes that the term *latrina* meant a public toilet from the 3rd century BC onwards. However, she believes that other terms were used to differentiate various accommodations:

> "…*secessus* (privy or private), *sella* (chair for toileting), and *necessaria* (the necessaries of life)— were used by the Romans for toilets within houses or in settings with restricted numbers of users (private clubs, army barracks, along city walls, and the like)."[20]

[17] Karpozilos et al. 2005, s. v. Latrines.
[18] Karpozilos et al. 2005, s. v. Latrines.
[19] Neudecker 1994, 50.
[20] Koloski-Ostrow 2015, 40.

Koloski-Ostrow makes a further distinction between private latrines mentioned above and so-called public latrines, which she refers to as *forica* (pl. *foricae*). A *forica* is a toilet located in a public place and equipped with several seats. It could be a toilet in the baths or next to the forum. However, it must be emphasised that the term *forica* does not automatically imply a toilet equipped with running water.[21] Which facilities had running water, and which lacked it, will ultimately be discussed in detail in the course of the thesis.

Examination of the different types of latrines will allow us to make a detailed analysis of the structures in which they are located. A careful investigation of their construction process, their location, their access to water, or incorporation of sanitary facilities in the context of the whole city, is an indispensable aid in interpreting the archaeological material. Thus, to give the reader a conception of the different settings of, and the various problems caused by, the lack of adequate sanitary facilities, I refer to the current problems and discussions that are circulating on the issue of latrines, sanitation systems, and related hygiene standards.

1.4. Relevance of the topic

While access to toilets has become a matter of course on the European continent, billions of people suffer from a lack of hygienic facilities around the globe.

Toilets and sanitary facilities are the foundation of a healthy life. It is of essential importance to provide everyone with access to toilets adequate to prevent the spread of bacteria. In this context, organised wastewater disposal is critical in the fight against the development of pathogens in sanitation facilities.[22] The presence of services that ensure the safe removal of human urine and faeces is crucial in maintaining hygiene, which can only be provided through safe waste and sewage disposal. According to modern standards, the maintenance of proper sanitation should have as its primary aim the creation of the healthiest possible living conditions for all while not neglecting the exploitation of natural resources. Furthermore, groundwater and soil should be protected from contamination in order to ensure dignity and comfort in the process of relieving oneself.[23]

Making basic sanitation available to everyone still remains a distant goal even today. The World Health Organisation (WHO) has presented numerous facts illustrating the discrepancy between European and Western standards from those in many countries. According to the policy brief

[21] Koloski-Ostrow 2015, 40.
[22] For more about ancient sanitation and its impact on health see Kron 2008, 210-223.
[23] Brocklehurst – Mead 2020, 11. 21. 28-29.

on "Water, sanitation, hygiene and health" published in 2020, more than 31 million people lack access to basic sanitation. 'Basic sanitation' refers to controlled water supply and sanitation, which has not been achieved in a standardised manner in many countries. Access to clean and organised sanitation shows a wide variation in percentage across territories, ranging from 16% to 99%. The difference also highlights the lack of groundwater supply in 25% of healthcare facilities, a problem that directly affects the health of medical patients. Furthermore, 16 million people suffer from a lack of water access. Not only do hospitals and other health-related facilities have to deal with water shortage problems; many schools do not provide drinking water, and 7.4 million students attend schools that still lack sanitation facilities.[24]

According to the latest statistics regarding "Progress on household drinking water, sanitation and hygiene", in 2020, 46% of the world's population did not have access to safely managed sanitation services This was especially pronounces in rural areas, where the percentage reached 66%. 'Safely managed' refers to facilities separating human excreta from human contact in a hygienic, regulated, and controlled manner. In the same year, 494 million people did not have access to toilets and practised open defecation. The lack of sanitation facilities forces people to defecate in fields, bushes, forests, and open water. In addition, 616 million people have unimproved facilities, namely latrines with a septic tank without a slab or platform, including hanging and bucket latrines. Therefore, 1.9 billion people can only benefit from basic services, meaning access to facilities is not shared with other households. Therefore, a total of 3.9 billion people are not served by safely-managed sanitation services, which could ensure that faecal waste is disposed of carefully on-site or that its transport and disposal outside the area of use is subject to regulated management. Such a service would also ensure every household access to non-shared sanitation facilities.[25]

These statistics seem to say little at first glance. However, the lack of sanitary services may have a significant impact on human health. According to the WHO, the practice of open defecation is one of the main triggers causing diarrhoeal diseases. Disorders easily and quickly treated in Europe often lead to numerous deaths in other parts of the world. The best known acute diarrhoeal disease, which is fatal if either treated poorly or not at all, is cholera. In addition, the lack of sanitation facilities equipped with soap and clean water is closely related to chronic diarrhoea, which occurs in half of all malnourished people. Malnutrition does not only affect the well-being of adults; it also leads to a reduction in workability. Children affected

[24] Shinee – Schmoll 2020, 2.
[25] Shinee – Schmoll 2020, 5; Steele 2021, 9.

by such conditions and from the disease are in many cases unable to learn, which can have a major impact on their entire future. Rarely mentioned is the retardation of children under the age of five, related to diarrhoeal diseases, helminth infections, and environmental intestinal enteric distress. Contaminated water used for washing can contain worms that cause helminth infections. These often lead to anaemia, miscarriage, or premature birth.[26]

Hygiene issues and related problems such as the development of diseases can also be examined from a very different perspective. For example, UNICEF stresses in one of its latest annual reports that social effects should not be underestimated and always stay related to sanitation.[27]

Above all, the dignity of the human being was highlighted, something that can be severely violated by not complying with the minimum sanitation requirements. Most people feel the need to control their own bodily functions, including the need to relieve themselves. A poorly organised and non-functional sanitation facility may not meet the requirements of privacy or safety. Such a lack of facilities seems especially problematic for women during menstruation. The lack of a clear separation of the toilet, water scarcity and the absence of cleaning products, leads to an incapacity of cleaning the intimate area, which can cause shame and humiliation. People with disabilities face similar difficulties in the case of limited or non-existent access to sanitation. The need to meet physiological needs in an environment that does not provide the necessary facilities causes panic and diminishes dignity.[28]

The second important aspect that could affect accessibility to sanitation is poverty. It requires no study to conclude that the poorer classes have less well-equipped sanitation facilities. UNICEF also points out that this discrepancy is further pronounced in the more rural areas, in which only wealthy households have access to sanitary infrastructure. However, this phenomenon is not only observable in rural areas but also in poorer states. For example, in European countries, public toilets at railway stations, some petrol stations, and other public places have become common, requiring people to pay a certain fee to access them. In this way, homeless people find it difficult to use public toilets that have clean water and soap.[29]

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[26] Sinden 2020, 21; Esteves Mills – Cumming 2017, 16-24. In this context, WHO has published several papers such as: "WHO, FAO and OIE, Technical Brief on Water, Sanitation, Hygiene and Wastewater Management to Prevent Infections and Reduce the Spread of Antimicrobial Resistance, WHO (Geneva 2020)"; "WHO, Safer Water, Better Health, WHO (Geneva, 2019)"; "WHO, Preventing diarrhoea through better water, sanitation and hygiene: exposures and impacts in low- and middle-income countries", WHO (Geneva, 2014).
[27] UNICEF 2021a, 22.
[28] Brocklehurst – Mead 2020, 28-29.
[29] UNICEF 2021b, 12.

The third point, which UNICEF particularly highlighted, relates to the issue of disability. The impact of poorly organised toilets on human dignity has already been discussed above, especially for people who cannot use such available facilities. Attention is drawn to the fact that people with disabilities are forced to crawl on the floor to use the toilet in some cases. No further explanation is required to highlight that such forced actions can lead to an increased risk of infection. Further unpleasant consequences may occur if the people concerned have to wait too long to enter facilities adapted to their needs. The long wait can, among other scenarios, lead to uncontrolled urine leakage.[30]

Another concern raised is the issue of safety. Toilets, often isolated places without supervision, tend to be locations where users are particularly vulnerable to sexual, psychological, and physical violence. However, it cannot be ruled out that a good supply of restrooms would reduce such risks in this case. Women and children are a highly exposed group to all kinds of abuse. The problem of ensuring adequate security in sanitation facilities is particularly acute in isolated and remote locations. However, even over-populated toilets, particularly in bars, clubs, or train stations where alcohol consumption is high, do not provide adequate security for their users.[31]

Poor sanitation standards significantly impact women's health to a higher degree than men's health; therefore, gender is a firm focus of attention. As mentioned earlier, the lack of sanitation standards can affect health. For example, many women are forced to drink less water due to the lack of toilets, making them delay urination, leading to dehydration and urinary tract infections. Furthermore, women's mobility is often limited due to the lack of publicly accessible facilities with adequate cleanliness and standards.[32]

In many poorer countries, where schools fail in maintaining sanitary conditions in restrooms, many girls, especially those going through hormonal changes, choose to drop out or not attend school at the given time. In many cases, this can contribute to women only opting for elementary education and tending to bypass the problem in this way. It should be highlighted that the issue of menstruation has become a taboo in most countries; therefore, women's needs are not addressed. In fact, women themselves consider the topic repulsive. For this reason, changes are made very slowly and are often not adapted to women's needs, given that these are not

[30] Esteves Mills – Cumming 2017, 77.
[31] Esteves Mills – Cumming 2017, 40-42.
[32] Hunter et al. 2015, 31-37.

addressed. The improvement of sanitation standards certainly cannot be achieved within this vicious circle.[33]

The major organisations dealing with health and sanitation issues, namely the WHO, UNICEF and WTO (World Toilet Organisation), seek to highlight in their publications and at conferences the difficulties faced by people all over the globe due to the lack of clean sanitary facilities. However, the preceding evidence shows how, even in the 21st century, the world remains far from an ideal in which primary needs can be easily met and do not cause shame, fear, or embarrassment to anyone.

1.5. Research questions

The topic mentioned above, and the connected challenges can explain how hygienic and sanitary conditions may have looked like in Late Antiquity. In order to provide an answer to this question, whether any understanding of hygiene existed in Late Antiquity, we should confront ourselves with a wide range of questions connected to the topic of sanitation. First, we shall establish what sanitary facilities looked like and whether it is possible to trace any signs of standardised building concepts as organised places for storing and disposing impurities; were latrines connected to sewage systems; which equipment could people expect in public toilets?

Modern differences between rural and urban sanitations show us that geographical location plays a crucial role in the planning and construction of these facilities. Following this approach, it is possible to reflect on such differences in the period of Late Antiquity. Moreover, considering not only geographical but also climatic differences, we can try to establish how the climate may have influenced the construction of sanitary facilities, in particular latrines.

From a modern perspective one can find a great discrepancy in the quality and equipment of sanitary facilities. Taking into account the social differences one may wonder whether the equipment of ancient latrines was differentiated based on a populations' wealth. It is not only the class difference with its associated prosperity that forms the basis for the differentiated approach to hygiene. In chapter 1.4., I referred to the problems faced by women when it came to the provision of latrines. By taking this fact into account, we can reflect on the problems women faced in Late Antique Egypt. On this basis, the following questions can be asked: What did the reality for women look like? Is it reasonable to assume that women had to deal with

[33] Cf. Several studies regarding girls' menstruations and associated problems in attending school Sommer 2009, 383-398; Sommer 2010a, 521-529; Sommer 2010b, 268-278; McMahon et al. 2014, 7; Hunter et al. 2015, 31-37.

similar problems as today? Are there facilities that were only intended for one sex? Did pilgrimage sites have latrines with gender separation?

Looking for answers to these questions within international research, it quickly becomes apparent that very few scholars have studied ancient latrines until now.[34] While the following thesis is certainly not the first to undertake the task of examining lavatories, it is the first to focus on latrines in Egypt erected in Late Antiquity.

1.6. Overview of past research

In order to give an overview outlining the history of research in this topic, a subdivision must be undertaken at first to highlight the numerous aspects of this text. The thesis aims to provide the reader with an understanding of hygiene and sanitation in Late Antiquity. Therefore, publications dealing with hygiene will be enumerated and briefly discussed in the following. Since latrines are the main subject of investigation for answering the question in the thesis, the second part of this sub-chapter deals with and comments on the academic contributions concerning ancient latrines.

1.6.1. Contribution towards hygiene in Antiquity

Unfortunately, not many publications exist that focus primarily on hygiene in Antiquity. This may be related to the problematic definition of the word, which nowadays has acquired many meanings (the exact definition of this word, its various meanings are discussed in chapter 1.1.). For this reason, the question of everyday or communal hygiene was rarely addressed by archaeologists. At the beginning of the 20th century, two works appeared that deal with the concept of bodily purity. The book published by Söllner in 1913 shows that in the beginning of the century, literary sources rather than archaeological remains were used to answer questions regarding ancient views on the concept of purity. In his work, Söllner presents Vitruvius' views on hygiene.[35] Furthermore, only one book has been published that considers hygiene in Ancient Greece, titled "L'hygiène chez les anciens Grecs".[36] The work, published only in French in 1924, did not achieve great popularity, which testifies to the lack of interest in the topic. Also, in this case, the author presents his study based only on ancient literature without considering any archaeological material sources. Although the book provides a wide range of literary sources, it lacks a broader perspective linking hygiene with closely related concepts such as

[34] A detailed overview of the past research gives Jansen 2011, 157-164.
[35] Söllner 1913.
[36] Panayotatou 1924.

sanitation. At about the same time, in the early 1920s, another paper on Roman hygiene was written, taking archaeological research as its starting point. As this was the very first research of its kind, the author chose only one city of the *Imperium Romanum*, namely Pompeii, as a case study.[37]

For a long time, scientists have not tackled the subject of hygiene in relation to ancient cultures. The work of the British social anthropologist Mary Douglas has led to a change, by offering a valuable source in understanding social behaviour and by explaining reasons for a deep human need to maintain purity. Douglas widely discusses her considerations of whether cleanliness is an inseparable part of human nature in her book "Purity and Danger".[38] Although her work did not enjoy popularity immediately after its publication, it was recognised several years later as significant and ground-breaking research,[39] building a strong base for further studies linking cleanliness with social behaviour. To this day, scholars use her work as a foundation of the study of hygiene in Antiquity.

In the last 30 years, several researchers have turned towards the study of ancient sanitary and hygienic practices. Douglas' work opened the floor for further investigations and discussions. In the 1970s and 1980s, the first works appeared dealing with hygienic conditions in cities, whereby the issue of people's health was considered as a key question in research studies.[40] While Winkelmann devoted himself to the topic of water supply, Grassnick chose the baths as his main research subject in order to demonstrate whether ancient cultures could be considered 'hygienic'.[41]

Although these works can be regarded as ground-breaking, it is clear that the research area was not appealing enough among a large number of scholars. However, it is only in the first decade of the 21st century that we come across extensive works focusing on the study of human hygiene. These publications include works such as "Clean. A history of personal hygiene and purity"[42] or "Götter, Helden, Heinzelmännchen. Ein Streifzug durch die Geschichte der Sauberkeit und Hygiene von der Antike bis zur Gegenwart".[43]

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[37] Mygind 1921, 251-281.
[38] Douglas 1966.
[39] In the second edition, the author modified numerous passages that had met with sharp criticism.
[40] Amurlee examines modern London as well as ancient Rome, see Amurlee 1973, 244-255; Bell, among others, uses archaeological and historical sources to bring the deeper understanding of hygiene closer to the reader, see Bell 1987, 57-68. Winkelmann, on the other hand, focuses on the study of water supply as a possible disease vector, see Winkelmann 1988, 157-170.
[41] Grassnick 1992.
[42] Smith 2008.
[43] Blenke – Schuster 2005.

Hygiene often belongs to a more extensive set of questions or is combined with other concepts. As in Douglas' work, in order to portray a greater and broader spectrum of everyday life in Antiquity, the book "Rome, Pollution and Propriety: Dirt, Disease and Hygiene in the Eternal City from Antiquity to Modernity"[44] seems particularly noteworthy as it highlights the continuity of topics in the field of hygiene. As editor of the work, Bradley intended the book to talk about pollution in Antiquity and in later periods. He gathered scholars from other disciplines, who examined in several contributions the concepts of hygiene or purity from the perspective of other eras.[45]

There is no single and correct way to approach the topic of hygiene in Antiquity. In recent years, various essays have been published showing that the study of latrines, baths, pilgrim sanctuaries, and aqueducts all contributed to the study of hygiene. For example, in an interesting essay titled "Nutrition, Hygiene and Mortality",[46] Kron deals with question of how hygiene or the lack thereof could impact mortality. Compton emphasises the fundamental role of sanctuaries for human healing in Antiquity, stressing the original meaning of the world 'hygiene' in his article "The Association of Hygieia with Asklepios in Greco-Roman Asklepieion".[47] Furthermore, water and its purifying function are discussed in detail by Kosso and Scott in the essay "The Nature and Function of Water, Baths, Bathing and Hygiene from Antiquity through the Renaissance".[48]

Moreover, scholars turn on numerous occasions towards the matter of hygiene in Antiquity, yielding different results. While on the one hand baths or aqueducts serve as evidence for a certain cleanliness, these are also used by other scholars to support the theory of a "dirty" Antiquity. This dichotomy shows how problematic the term 'hygiene' has become in recent years, and how strongly the understanding of the word differs among scholars.[49]

1.6.2. Contributions towards antique latrines

In the context of archaeological research, studies and publications focusing on the detailed reconstruction of the appearance, construction, and location of latrines in ancient Roman cities have been carried out only for the last thirty years. Before the 1990s, only one very short

[44] Bradley 2012. Additionally, on settlement hygiene in ancient Rome see Thüry 2001.
[45] Similar by Curtis 2007, 660-664; Curtis – Biran 2001, 17-31; Curtis et al. 2000, 22-32.
[46] Kron 2008, 193-252.
[47] Compton 2002, 312-329.
[48] Kosso – Scott 2009. Earlier studies also investigated the connection between the bathing culture and ancient hygiene see Fagan 2000, 281-286; Grassnick 1992.
[49] For more details on the issue, see Jansen 2000a, 275-280.

contribution to this subject has been published.[50] In earlier publications, we rarely find a detailed description of lavatories. In most cases, latrines are only mentioned marginally or are wholly disregarded. This lack of attention to the subject is related to numerous factors:[51]

Although hygiene and sanitation affect society, they have always been overshadowed by other current debates among scholars. In the past century, archaeology has been mainly concerned with the study of monumental buildings, ancient art, and trade contacts. The study of the everyday life of the ancient population has occupied a marginal place in archaeological research. However, in the last 20 years, a shift has occurred as the humanities have attempted to adopt modern concepts to develop new questions regarding the ancient world. One of the recent models applied to Antiquity is globalisation, which is still being discussed in today's society. In this case, scholars used the modern term to emphasise that the *Imperium Romanum* was not a sealed empire; on the contrary, lively exchange between European and Asian cultures could be confirmed in Antiquity.[52] Another topic that is currently attracting scholarly attention is the question of migration or migration currents in Antiquity, Late Antiquity and Byzantium.[53] The present migration crisis, initiated by wars in the Middle East, can be understood as a trigger opening the debate. The emergence of questions regarding mobility in the ancient world has led to numerous projects that aim to explore the topic in greater depth.[54] These two examples testify

[50] Drexel devotes solely two pages to the subject of latrines in Rome and the Roman provinces, see Drexel 1921, 310-311.
[51] Jansen et al. 2011, 2-3.
[52] Cf. different contributions in Pitts-Versluys 2014; Kouremenos – Gordon 2020.
[53] The various perspectives on mobility have been discussed in numerous papers and at several conferences in the academic world. In the book "Cultures in Contact: World Migrations in the Second Millennium", the author Dirk Hoerder discusses various aspects of the shifting of peoples, with a particular focus on the mobility of the working class. In the last five years, particular congresses and colloquia have been dedicated to the topic of mobility or one aspect of the broad topic, namely migration. The colloquium "*Hospes eram collexistis me*: Crisis and Migration in Late Antique and Early Medieval Europe and Byzantium" organized by Queen's University (Kingston, Ohio) in 2016 dealt with the question of how far the crises of the first centuries affected the migration movements of peoples. In the same year, at the International medieval congress organized by the University of Leeds (England), a session with the title "Global Byzantium: Transitional Relations, 500-1453" was held. The main focus was the connection of different countries to Byzantium. It became clear that trade, culture and religion played an important role in this process. The project "Moving Byzantium. Mobility, Microstructures and Personal Agency", which was launched in the same year and is being carried out by the University of Vienna, also testifies to the extent to which the topic occupied academia in 2016. A conference on "Mobility and Migration in Byzantium: Sources and Concepts" was also organized by the Department of Byzantine and Modern Greek Studies, Vienna University. The contributions were devoted to intercultural contacts in Byzantium during the Middle Ages.
[54] The following books can be listed as significant contributions to the subject: "Historische Migrationsforschung" first published by Hahn in 2012, which discusses approaches to migration research as well as related theories and their methodology. Using specific case studies, the author illustrates the mechanisms of inclusion and exclusion of certain ethnic groups. A few years later, Tsuda and Baker published a comprehensive work "Migration and Disruptions. Toward a Unifying Theory of Ancient and Contemporary Migrations". The anthology is divided into three groups. In the beginning, a thematic framework is presented, which defines migration as a general concept. In the second part, individual contributions discuss historical migration movements. The third part, in contrast, concentrates on the problems of modern migrations. The approaches presented do not focus on the history of European migration but provide an exemplary overview of the world's entire history. Among the books most closely related to the topic of migration in the Byzantine Empire is "Migrationen im Mittelalter. Ein Handbuch",

to the fact that a change is taking place in the humanities regarding questions and academic approaches towards archaeological evidence. Increasingly, the focus shifts towards aspects of everyday life bringing them closer to contemporary people.

Another reason for the lack of publications concerning the study of ancient sanitary facilities is the particularly taboo nature of the subject. Although the same physiognomic needs unite all people, the topic often arouses feelings of discomfort, even the very thought of excrement or urination creates a sense of repulsion in some people. Therefore, discussion regarding such an ordinary and common topic may seem inappropriate in academic circles.[55]

Furthermore, archaeological excavation reports were very spare in describing sanitary facilities. This may be owed to the fact that latrines have not been identified as such for a long-time. In some cases, public toilets were interpreted as storage rooms for amphorae, or as a medical steam bath.[56] In other cases, when correctly identified, latrines were only marginally mentioned in the excavation reports. Often, they were not precisely marked on the plans, and illustrations were either not very conclusive or absent altogether.[57]

Despite these numerous difficulties, archaeology has played an active role in the slow process of breaking the taboo regarding sanitary subjects. It also opened the way towards further studies focusing on sanitation and hygiene in the humanities.[58] Neudecker wrote the very first publication devoted exclusively to ancient Roman latrines in 1991. Neudecker described the development of latrines in the imperial baths under the title "Die Pracht der Latrine. Zum Wandel öffentlicher Bedürfnisanstalten in der kaiserzeitlichen Stadt". It is worth mentioning that this book was written due to his habilitation on the same topic. His research remains an essential basis for any study on latrines.[59]

edited by Borgolte and published in 2014. Although one usually associates the Middle Ages with the European continent, the reader is not merely confronted with the migratory movements of European history. And so, the spectrum of the 25 chapters also covers examples from Africa and South Asia. The most recently published work that illustrates the connections between the three continents is "Migration Histories of the Medieval Afroeuroasian Transition Zone", edited by Preiser-Kapeller, Reinfandt, and Strouraitis. Cf. Hahn 2012, Borgolte 2014, Baker – Tsuda 2015, Preiser-Kapeller et al. 2020.

[55] Jansen et al. 2011, 2.

[56] For more see Neudecker 1994, 8-9; Cf. Jansen et al. 2011, 2. In many cases, the latrines are still not interpreted correctly today. In further chapters, this problem will be discussed in more detail, followed by examples.

[57] These include excavations in Pompeii and almost all publications that appeared before 1980.

[58] Latrine discoveries are often used for media publicity. In recent years, widely comprehensive works on "toilet" have also been produced. Cf. Cahill et al. 1991, 64-69; Chapman 1991, 4-8; Ebeling 2006, 124-127; Hensen 2012, 8-13; Magness 2012, 80-87; Newbery 1999; Piras 1994; Waslander 1994, 14-23; Wheeler 2000, 1-19; Wilson 2000a, 151-179.

[59] Neudecker 1991; Jansen et al 2011, 3.

It is not until several years later that we find another publication by Hobson entitled "*Latrinae et foricae*. Toilets in the Roman World". The title may be misleading since sanitary facilities are not adequately represented in its content. Out of 13 chapters, only two deal with the study of latrines. Nevertheless, his work raises many questions related to the study of latrines, which can be discussed based on intensive research. Furthermore, he is the first to make a clear distinction between public and private latrines in his research.[60]

A major breakthrough in Roman latrine research is due to Jansen and Koloski-Ostrow, analysing Roman latrines and publishing several contributions over the past 30 years.[61] An outstanding work, produced in close collaboration between archaeologists and other related disciplines, was published in 2011, entitled "Roman Toilets", edited by Jansen, Koloski-Ostrow and Moormann. The numerous contributions and their results show the importance of knowledge exchange and close cooperation between different disciplines.[62] Koloski-Ostrow's book "The archaeology of sanitation in Roman Italy" is the third monograph devoted to latrines. Her work contextualises ancient lavatories by taking into consideration water supply and sanitary systems. The book testifies to the importance of embedding archaeological findings in a superimposed context.[63]

The most extensive studies concerning sanitation were carried out based on latrines from Italy.[64] Cities like Pompeii[65], Ostia[66] and Herculaneum[67] also the Villa Adriana[68] offered an especially good study basis due to the abundance of material. In recent years, lavatories from other parts of the *Imperium Romanum* have only rarely been studied. Nevertheless, the small number of published works does not mean that researchers are not interested in the study of sanitary

[60] Hobson 2009; This work is the result of a dissertation see Hobson 2004.
[61] Jansen 1991, 149-166; Jansen 1993, 29-33; Jansen 1994, 218-220; Jansen 1997, 121-134; Jansen 2000a, 275-280; Jansen 2000b; Jansen 2000c, 37-49; Jansen 2000d, 103-125; Jansen 2001, 27-40; Jansen 2002a; Jansen 200b, 76-83; Jansen 2002c, 257; Jansen 2003, 137-152; Jansen 2005, 55-60; Jansen 2006a, 189-196; Jansen 2006b, 109-112; Jansen 2007, 165-181; Jansen 2008, 257-265; Jansen et al. 2011; Koloski-Ostrow 1985, 337; Koloski-Ostrow, 1990; Koloski-Ostrow 1995, 317; Koloski-Ostrow 1996, 79-86; Koloski-Ostrow 2000, 289-295; Koloski-Ostrow 2001; Koloski-Ostrow 2015; De Haan – Jansen 1996.
[62] Koloski-Ostrow et al. 2011.
[63] Koloski-Ostrow 2015.
[64] Chini 1995a, 207-212; Grassnick 1982, 1-10; Koloski-Ostrow 2000, 289-295; Koloski-Ostrow 2015; Scobie 1986, 399-433; Taylor 2015, 69-97.
[65] For more about latrines in Pompeii see Hobson 2004; Hobson 2009; Jansen 1997, 121-134; Jansen 2000c, 37-49; Jansen 2001, 27-40; Jansen 2002a; Jansen 2008, 257-265; Koloski-Ostrow 1990; Koloski-Ostrow 1995, 317; Koloski-Ostrow 1996, 79-86; Love 2007; Sear 2004, 125-166.
[66] For more about sanitation in Ostia see Boersma 1976, 38-39; Boersma 1996, 151-160; Clarke 2006, 293-302; Jansen 2000c, 37-49; Jansen 2006a, 189-196; Ritchings 1979.
[67] Extensive study towards latrines in Herculaneum has been carried out by Jansen 1991, 149-166; Jansen 1994, 218-220; Jansen 2000c, 37-49; Jansen 2006a, 189-196; Ritchings 1979.
[68] More about sanitation in Villa Hardirna in Jansen 2002b, 76-83; Jansen 2002c, 257; Jansen 2003, 137-152; Jansen 2005, 55-50; Jansen 2007, 165-181; Ritchings 1979.

facilities. On the contrary, study strategies towards latrines have changed greatly during the last 15 years, and new approaches and possibilities have been developed. In many cases, latrines are not only considered as mere architectural elements. Increasingly, a more detailed study of the organic remains in latrines is carried out. As a result of such detailed studies, the publication edited by Mitchell titled "Sanitation, Latrines and Intestinal Parasites in Past Populations" was published in 2015.[69]

Although we can only list a few publications that examine latrines from other parts of the empire, they nonetheless testify to extensive foundational research that can be seen as a precursor for further research.[70] This is shown by detailed publications about investigations of latrines from the north-western provinces.[71] Among these is the imposing work by Bouet "Les latrines dans les provinces gauloises, germaniques et alpines" published in 2009.[72] His work is a detailed study of the individual components of latrines, their development, and even the frequency with which they appear in the urban landscape. The most recent publication in this vein is an anthology entitled "*Latrinae*. Roman Toilets in the Northwestern Provinces of the Roman Empire", providing a broad spectrum of latrine types through a variety of case studies.[73]

Publications on latrines from Anatolia also appear to be noteworthy. Investigations from Ephesus, for example, combine numerous approaches, such as the study of architecture, parasites or inscriptions.[74] The parasite studies were also undertaken in Sagalassos, which provided interesting insights into the eating habits of the antique population.[75] Moreover, the decorative furnishing inside latrines was not only examined in Ephesus but also in Bolsena, in Rome on the Via Garibaldi, in Pompeii, and in Sain-Romain-en-Gal.[76]

[69] Mitchell 2015. For further studies based on samples from sanitary facilities see Fisher et al. 2007, 172-197; Goppelsröder – Sommer 1996, 401-412; Jacomet – Wagner 1994, 321-343; Love 2007; Wilson 2006, 307-312.
[70] On latrines and chamber pots in Greece in the pre-Christian period, see Antoniou 2007, 155-164; Antoniou 2010, 67-86; Lynch-Papadopoulos 2006, 1-32; Specifically on latrines from Kos see Merletto 1996, 148-152; Merletto 2000; Merletto 2001, 165-170; Merletto 2004, 251-262; Merletto 2019, 231-259; Neis 2012, 1-41; wilfond 2009, 183-196; Gräzer 2009, 33-63.
[71] Groh – Petzek 2012, 68-69; Jauch 1997; Zieling 2009, 313-320.
[72] Bouet 2009.
[73] Hoos 2018.
[74] Mitchell et al. 2018, 289-297; Ployer 2016, 287-309; Gülbay 2006, 461-466; Jansen 2006b, 109-112; Outschat – Thür 1997; Weisshäuptl 1902, 33-34; Wiplinger 2006.
[75] Beaten et al. 2012, 1143-1159.
[76] Barbet 1982, 101-132; Chini 1995b, 375-382; Chini 1997, 189-191; Chini 1999, 567-578; Jansen 1993, 29-33; Koloski-Ostrow 1985, 337; Leblanc 1995, 239-263; Moormann 2011, 55-63; Weisshäuptl 1902, 33-34; Wiplinger 2006.

The study of lavatories can also be analysed from a different perspective. Contributions regarding the management of urine and *stercus* in Antiquity provide answers to this question using archaeological, epigraphic, and literary sources.[77]

The field of study regarding toilets also includes chamber pots, known from Ancient Greece, that were also used by the population living *Imperium Romanum*. Researchers have also recently devoted themselves to the study of such ceramic vessels.[78] Since chamber pots are rarely identified and form a rarity in the archaeological record, Grabmayer's publication on "Die mittelalterliche 'Toilette' im Bild" can shed light on the use and possible placement of these objects in the household.[79]

Publications covering a study of toilets from Late Antiquity onwards are scarce. For the Islamic world, we have one volume that addresses the issue of hygiene.[80] Indirect references to hygiene, but with no direct incorporation of Late Antique latrines, can be found in the new book on "Public Baths and Bathing Habits in Late Antiquity" from 2020. However, only a contribution by Blanke dealt with three Late Antique latrines from Jerash, Ephesus, Scythopolis/ Bet-Shean and Aphrodisias.[81]

Following the history of research, it becomes clear that scholars did not deal with the concept of hygiene in Late Ancient Egypt, or with the latrines erected in the region over the period. In order to answer questions in relation to hygienic measures in sanitary facilities in Late Antique Egypt this work will examine archaeological sites as Marea, Abu Mina, the Kellia and St. Catherine Monastery. In this thesis, great value was placed on a contextual analysis. Shaping the contextual framework requires more than an evaluation of visual images and excavation reports. For this reason, a historical framework of Late Antique Egypt is given in the following chapter.

2. Historical setting: Egypt between the 4th and 7th centuries AD.

Outlining Egypt's history from the time of Late Antiquity poses a great challenge. On the one hand, multiple continuities from the Ptolemaic, Greek and Roman heritage are still extant, and on the other, completely new worldviews and social structures emerge due to the rise of

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77 Cordier 2003, 51-60; Mattelaer 1999, 145-150; Petznek 2014, 38-46; Wilson 2011b, 147-148.
78 Bienert 2010, 49-63; Klauda 1986; Lynch – Papadopoulos 2006, 1-32; Petznek – Radbauer 2008, 51-92; Bouet – Saragoza 2007, 31-56.
79 Grabmayer 2014, 23-37.
80 Cressier et al. 2016.
81 Blanke 2020, 177-192; Blanke 2016, 43-58; Maréchal 2020.

Christianity.[82] As a prominent country, even before the Roman conquest in 30 BC, Egypt had attracted ancient intelligence from all over the Mediterranean region. The Roman domination, which began under the Emperor Octavian, was established on the territory from the Alexandrian coast to Aswan, one of the most important provinces of the Empire (fig. 1).[83] The blooming economic situation along the Nile ensured the prosperity of the Romans, and, in consequence, Egypt was called Rome's granary. The ports in the Mediterranean area were the most profitable trading points, such as the famous trading hub Alexandria, and likewise, the ports along the Red Sea coast, which bridged the *Imperium Romanum* with the Asian continent.[84] Berenike[85] and Myos Hormos[86] are considered key harbour facilities in the region. These significant trading points allowed Egypt to be seen as a crossroads between Europe and Asia.[87]

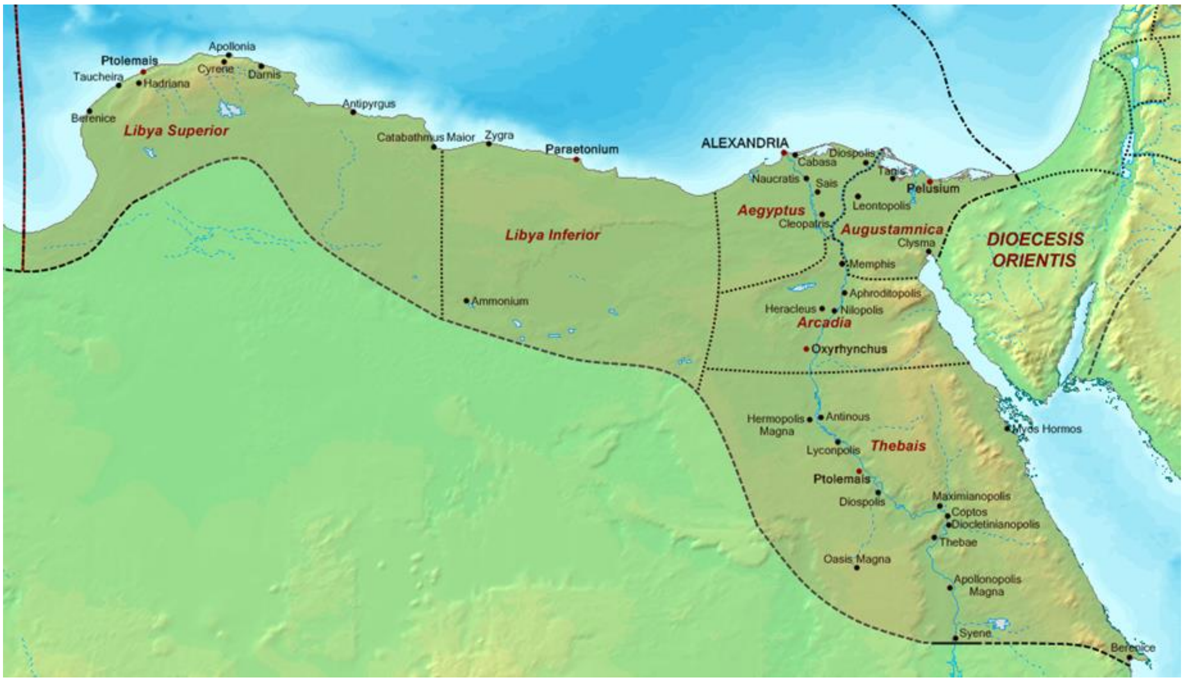

Figure 1: Egypt in Late Antiquity

The main concern arises from the question of how to determine the period of Late Antiquity in the province. According to the history books used in schools, students learn that Antiquity ends

[82] In his book, "Egypt in Late Antiquity" Bagnall classifies the period between the end of the 3rd century until the middle of the 5th century as Late Antiquity. His division is based on the article published a few years before by Giardina, which shall give answer to the question of distinguishing Late Antiquity from the Byzantine period in Egypt. For more, see Bagnall 1993, IX; Giardina 1989, 89-103.
[83] Capponi 2011, 12-14.
[84] Sidebotham 2011, 1-6.
[85] Bagnall – Rathbone 2004, 290-292; Sidebotham et al. 1991, 571-622; Paprocki 2019, 166-180.
[86] Bagnall – Rathbone 2004, 289-290; Paprocki 2019, 166-173.
[87] Gates-Foster 2012, 742; Sidebotham 2011, 1-6.

in 395 AD[88], with the so-called 'division of the Empire' between East and West Rome.[89] Alternatively, the caesura is said to have occurred in 476, the year which marked the deposition of the last Western Roman Emperor Romulus Augustulus.[90] Although the historical dates undoubtedly reflect critical events ensuing on the European continent, no clear separation in the administrative or religious sense can be traced in this particular period in Egypt. The partition of the eras proved at the beginning of the 20th century. Therefore, a new term was introduced, 'Late Antiquity', which illustrates an era of transition between Antiquity and the Middle Ages. However, the newly established term has proven to be a controversial topic until today.[91]

Taking into account my own subjective considerations regarding the "most important" historical events in the Egyptian region, when using the term 'Byzantine Egypt', I refer to the period between the 4th to the 7th century, which I see as a legitimate timeframe when speaking of Late Antiquity. However, it is worth noting that from an archaeological perspective, setting precise dates seems impractical owing to specific phenomena that can be observed both before the beginning of the 4th century AD, which very strongly characterise Late Antiquity in the region, and after the 7th century AD, showing greater continuities and traditions being carried on, especially in the religious, artistic, and historical sense.

The period 284-305AD could be considered as a good example of the presented problem. Significant Diocletian reforms, including the loss of administrative separation of the Egyptian province from the rest of the Empire, fall into this phase.[92] Nevertheless, the upheaval between the 3rd and 4th centuries, including the structural transformations shaping the development and fostering innovations in Egypt, did not significantly affect the main parts of the Empire. Therefore, from a religious point of view, only the years 313 or 380 AD could be adopted as plausible reference points since those changes concerned the whole Imperium.[93]

Furthermore, one could devote oneself to the debate around whether freedom of religion (313 AD) leading to the Constantinian turn has a greater significance, or rather that the recognition of Christianity as the main religion in the entire Empire (380 AD), caused greater changes.

[88] Time reference given will denote AD if not explicitly stated otherwise.
[89] Doyle 2018, 79-80.
[90] In his book titled "Rome médiévale 476-1420. Histoire, civilisation, vestiges", Homo suggests the year 476 AD as the beginning of the medieval period, see the whole work Homo 1934.
[91] Numerous authors use various time reference in order to determine the period; cf. Brown 1971; Bagnall 1993, IX; Bernheimer – Silverstein 2012; Maas – Cosmo 2018.
[92] Derda 2019, 55.
[93] Vandorpe 2019, XXXV.

Unfortunately, the present work cannot answer this question. Although both dates are of cardinal importance, the year 381 AD represents a shift not to be underestimated, namely the establishment of the Alexandrian Patriarchate.[94]

A similar debate surrounds the definition of the end of Late Antiquity. Considering the province's history, the year 395 as the end of the epoch would be utterly incomprehensible since its events did not lead to any striking alterations, in which sense the year 476 also seems more or less irrelevant. The history of this part of the Eastern Roman Empire is marked by powerful attacks by Sassanids, especially in the 7th century. During the reign of Emperor Heraclius (610-641), the province experienced military invasions of foreign peoples. Furthermore, in the period between 619-629, Egypt fell under Persian domination. After the reconquest of the region by the Byzantine emperor, the administration had to be reorganised, followed by internal disputes between the Patriarch Cyrus of Alexandria (631-642) and the Coptic Patriarch Beniamin (626-662). In addition to the already existing division within the province, the Empire is threatened by the Arab army.[95] Egypt was attacked in 639. In 641, Babylon surrendered to the Arab army, and only a year later, Alexandria was separated from the East Roman Empire. In order to regain the lost territories, a campaign was organised in 645, but it ended up in a fiasco.[96]

The numerous changes greatly impacted the political and religious development of Egypt from the second half of the 7th century. Namely, the most substantial alterations can be seen in administration. However, as mentioned before, it took considerable time to reform the whole administrative corpus.[97] A representative example of a long-lasting tradition is reflected in a Greek script, which played a central role from the 4th century BC util the 8th century AD.[98] The prosperity of Christianity also begins to decline from the 7th century. Nevertheless, even here, one cannot assume that an abrupt end was uniquely caused by the newly established caliphate. Indeed, albeit on a smaller scale, Egypt's Christian heritage is still honoured nowadays.[99]

The rapid changes in the first half of the 7th century can be seen as an interface between Byzantine and Arab Egypt. However, archaeological evidence rarely provides us with a possibility of a radical separation between two epochs due to military conflicts. Of course, such upheavals can be detected and leave no doubt about political changes impacting an average

[94] Rubenson 2010, 144-157.
[95] Choat 2019, 470-471.
[96] Bagnall 2007, 1-4.
[97] Sijpesteijn 2007, 444-451.
[98] O'Connell 2007a, 87.
[99] Verghese 1973, 11.

citizen's life. On the other hand, available legacies attest that people continued to live ordinary lives during the period, and changes occurred much slower than one might have expected.[100]

In the present work, it becomes clear that keeping to temporal limitations based solely on the transfer of power would not be counterproductive. For this reason, in some cases, the examination of archaeological contexts will go slightly beyond the 7th century. Such an approach should shed light on certain continuities and transformations in the building structures, which had their origin in Late Antiquity but can also be observed in medieval architecture. In the following, the social, administrative, and religious situation in Late Ancient Egypt will be examined. The selection of the three aspects will serve as the basis for the contextual framework in which the study will continue.

2.1. Social Groups

The society of Late Antiquity can be divided into different groups; primarily, we distinguish between slaves and free people.[101] While in Antiquity, free people (i. e., not slaves) were divided into citizens and non-citizens, the social status of citizens is expressed by their membership to a privileged or a lower class. The members of the lower class, called *Humiliores*, formed the majority of the ancient population. This group included peasants, merchants or even teachers. The upper social class, the *Honestiores*, contained all citizens who held an office, or who worked in the administration or the military. Even after their military career ended, veterans were not excluded from the group.[102]

2.2. Administrative Division

Following the new administrative division of the Roman Empire, the provinces were grouped into twelve dioceses. At the head of the diocese of *Aegyptus* stood the *praefectus Augustalis* with the rank of *vicarius*. This diocese included six provinces, which extended not only to the

[100] Sijpesteijn 2007, 444-451.
[101] For further information regarding the slavery in Egypt see Straus 2014, 452-461.
[102] Krause 2006, s. v. Honestiores/Humiliores.

Egyptian[103] but also to the Libyan territories.[104] After the Diocletian reforms, there was a strict separation in the execution of certain powers, namely civil and military.[105]

The civil administration was subject to a complex hierarchy. Three of the four Egyptian provinces fell under the supervision of *praesides* (sg. *praeses*), except Augustamnica, which the *corrector* headed.[106] The governor was stationed in the capital of each province: Pelusium, Cxyrhynchos, Antinopolis and Alexandria.[107] His areas of responsibility were among the most important administrative tasks of the imperial state apparatus, namely the supervision of tax levies and the jurisdiction. The judicial activity of the governor as *defensores civitatis* supported a legal apparatus, namely *iuridicus*. The duties of the office workers were mainly administrative, including dealing with legal ambiguities and running the court at its headquarters in Alexandria.[108] At the level of the *civitatis* – smaller administrative districts – the oversight of legal matters was also subject to the *defensor civitatis*, whose office, however, was exercised by a regional official, not the city governor himself.[109] In the fiscal sphere, the subdivision of duties ran at the municipal, district, and village levels. The taxes collected the *sitologos* within the *kome* (village); these revenues were further handed over to the respective district head, namely the *pagarchos*. The municipality had several offices or personnel in charge of the settlements: *hypodektes*[110], *epimeletes,* and *diadotes*. The respective offices were reserved to a particular social group, namely the *curiales*. *Curialis* performed the duties of the *councillors*, which opened the way for them to exercise the offices. In Late Antiquity, the more affluent curial families were partially obliged to enter an office career.[111]

[103] Towards the end of the 3rd century, the first two provinces were established, which divided the territory into northern and southern regions respectively, namely the province of *Aegyptus* and *Thebais*. Already at the beginning of the 4th century, another subordination took place, in which a third province was established on the territory, named *Aegyptus Herculia*, where upon the epithet *Iovia* was added to refer to the northern province. In the middle of the 4th century, another alteration to the naming of the provinces occurred: the province *Aegyptus Iovia* again featured the simplified form *Aegyptus* and *Aegyptus Herculia* was transformed into Augustamnica. At the end of the 4th, century the fourth province was added, *Arcadia*. For more see Kruse 2019, 119-138; Palme 2007, 246; Lallemand 1964, 41-57; Zuckerman 1998, 146-147.

[104]According to official data, two Libyan provinces, namely *Lybia Superios* (*Pentapolis*) as well as *Libya Inferior* (*Libya Sicca*) belonged to the diocese of *Aegyptus*. As this work concentrates exclusively on the four Egyptian provinces, the two provinces mentioned above will not be considered.

[105] Palme 2015, 228-229; Kruse 2019, 134.

[106] Palme 2007, 245-247; Kruse 2019, 134.

[107]Yet there were certain exceptions that confirm the mobility of the highest-ranking person, see Palme 2007, 249, footnote 18.

[108] Kruse 2019, 123; Palme 2015, 227.

[109] Kruse 2019, 133.

[110] Before the second half of the 4th century, the officeholder was called *apodektes*.

[111] Kruse 2019, 136-137; Gizewski 2006, s. v. Curialis, Curiales.

Despite the lack of detailed studies related to the Byzantine military in the territory of Egypt, the existence of a strict hierarchy can be observed even in this administrative unit. At the head of the diocese stood the *dux Aegypti*, under whom, for the three provinces of *Aegyptus*, *Arcadia* and *Augustamnica*, the *comes limitis Aegypti* was in command and disposed of 31 *limitanei* units. The province of *Thebais* was first commanded by a *dux Thebaidis* of lower rank, who in the 5th century rose to the rank of *comes Thebaici*, due to the exceptional location and history of the region, having 44 *limitanei* units under his control.[112] The majority of the soldiers belonged to the group of *limnitanei*, who were active in the border districts and often took over the duties of a local *militia*. Somewhat higher in rank were the *comitatenses*, i.e., the mobile field army, which was under the command of the *magister militum*.[113]

According to *Notitia Dignitatum*, four legions were stationed in Egypt, namely *legio II Flavia Constantia*, *legio I Maximiana*, *legio II Traiana* and *legio III Diocletiana*. Furthermore, the region received two *equites*, sixteen *alae* and *nine cohorts*. Considering the distribution of military units, there is no uniformity in the whole territory. The strategic position was related to several geopolitical and economic factors. As in Antiquity, among the most critical regions were ports, which supported the country's cohesion and trade. Therefore, it may not be surprising to find that the port cities demonstrated a higher military presence. Still, trade was not limited to water transport. At that time in Egypt, there were numerous routes known for stone transports from the quarries of *Mons Claudianus*[114] along the east coast. These roads, located on the east coast, represented mainly the most critical junctions, and were subject to military control. The main exit road to the neighbouring province of Palestine was one of the most closely guarded in Late Antiquity. The southern borders, especially in the area of Syrene and Phaiale, were among the military bases.[115]

2.3. Religion

At one point, Egypt became a melting pot that accommodated ancient Egyptian, Greek, and Roman beliefs. The receptiveness towards new religious movements help explain the rapid growth of monotheistic religions, such as Christianity and Judaism, in that part of the Empire. Although it is not clear in what exact ways the Christian faith spread across Egypt, it is possible

[112] Fischer-Bovet – Sänger 2019, 173.
[113] Palme 2007, 254-256, 261; Fischer-Bovet – Sänger 2019, 173-174.
[114] Bagnall – Rathbone 2004, 285-288; Adams 2001, 171-192.
[115] Fischer-Bovet – Sänger 2019, 174. More information regarding the road system can be found in Paprocki 2019.

to detect a particular expansion throughout the province, which led to the emergence of numerous religious currents from the 3rd century onwards.[116]

In Late Antiquity, Christianity formed the main religion of the whole Empire. Although pagan rites were allowed until the end of the 4th century, a far-reaching change came in 391 when the emperor Theodosius the Great prohibited pagan worship, initiating the partitional transformation of the temples into churches.[117] Despite the law, the closure of pagan temples did not bring an end to ancient beliefs. As reflected in several decrees prohibiting pagan cults, polytheism was still present in the 5th century. The slow transformation extended over 200 years, as it is only from the 5th century onwards that one can speak of a Christian majority and a further increase in power of Christian elites. Even well into the 6th century, Emperors had to order closures of some pagan temples, for example the temple in Phiale.[118]

Although the changes led to profound shifts within the religious sphere, a certain continuity can still be observed. Even during Antiquity, the priesthood was reserved for members of the upper classes. The new monotheistic religion adopted a similar tradition, where well-educated individuals held the most important posts in the priestly office ladder, most of whom belonged to a higher class. Nevertheless, the new Christian elite maintained close contacts with the emperors, took an active role in politics and created an extensive official religious apparatus. The most important person within the institutional church was a bishop responsible for carrying out an administrative role over the clergy. Next to him stood presbyters as leaders of smaller communities, and, on a lower level, there were deacons, lectors, and chanters, who established a close connection to presbyters.[119]

The importance of Christianity in the period reflects key historical events, such as the establishment of patriarchates, convocation of councils, and dissemination of several interpretations of the doctrine, which led to the emergence of different religious currents. It was Arianism that appeared as one of the most popular doctrines originating in Egypt and it was represented by the Egyptian bishop Arius, who started the notorious dispute that precipitated the First Council of Nicaea (325 AD).[120]

[116] Pearson 2003, 61.
[117] Irmscher 2014, 753.
[118] Vandorpe 2019, XXXVI.
[119] Wpiszycka 2007, 338-339.
[120] Römer 2019, 79.

These events can be well traced in written as well as archaeological legacies. There were a number of famous ecclesiastical figures originating in Egypt that were also fertile writers, such as Dionysius of Alexandria[121], Athanasius the Great[122], Clement of Alexandria[123] or Origen[124].

To illustrate the remarkable peculiarity reflected in the ancient Christian heritage in Egypt, we can study innumerable relics preserved to this day that reveal an enormous diversity of faiths and traditions in the province. These include monumental structures such as the basilica in Marea discovered a few decades ago, which provides evidence for a large circle of believers dated from as early as the 4th century AD; Egypt's largest basilica at Abu Mina also testifies to a vivid flow of pilgrims in the region, especially in the 5th and 6th centuries. Available historical records on the famous White and Red Monasteries show how the monastic life in Egypt affected the local population where monasteries became places of pilgrimage, offering a chance for visitors to seek a relationship with God in a special way. Cells in Nitra, Kellia and Sketis bear witness to an establishment and transformation of ascetic forms in the desert, which survived Late Antiquity and found their end in the Middle Ages.[125]

Looking for other sources, we can find rich literature focusing on the Desert Fathers and multiple forms of monastic living. *Apophtegmata Patrum* ("Sayings of the Desert Fathers"), belongs to the most well-known written sources describing the holy men's wisdom and daily life.[126] Other historical sources refer to numerous events which led to a transformation of living conditions in the desert. Mainly, the first half of the 7th century contributed to a considerable change in building structures in Kellia.[127] Thence, we can trace enormous changes and enlargements within numerous facilities in the region.

Further, from the beginning of Late Antiquity onward, monastic life and its rules in Egyptian monasteries can be better understood through the reading of the remaining Coptic Literature on the subject.[128] Besides the first monastic rule introduced by Pachomius, we are well aware of numerous scripts of Apa Shenoute, a monastic community leader who wrote various Canons

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[121] Studer 2014, 715.
[122] Camplani 2014, 274- 284.
[123] Mees 2014, 546-549.
[124] Crouzel – Prinzivalli 2014, 977-983.
[125] Descœudres 1997, 77-81; White 1932, 43-72.
[126] The sayings are published in several translations and editions, to the newest belongs the translation by Vivian, see Vivian et al. 2021.
[127] I want to thank professor Descœudres for the comments on the development of hermitages in the Kellia.
[128] Ghigo – Albarrán Martínez 2021, 2-3; Wipszycka 2007, 339-341.

and Discourses. Unfortunately, a large number of his posthumous works have not been preserved.[129]

Uniquely, the religiosity of the lower class is evident not only from the relics, such as shrines and devotionals recorded in the buildings, but also from numerous writings. There are also various miracles and accounts associated with pilgrimages to holy sites such as Abu Mina, where pilgrims expected healing or blessing of the holy Menas. Such manuscripts have survived in many languages. The texts shed light on human needs and expectations toward saints, detect the religiosity of the lower class, and show us their closeness to rituals in front of the Saint's shrine.[130] Egypt thus presents a dual opportunity: first, a wealth of finds that allow us to study the life and work of people from the higher class, and, secondly, preserved relics that shed light on the lifestyle of the poorer citizens.

3. Case Studies

Looking at Egypt in the period of Late Antiquity, a very mixed picture emerges. From one side, we can see a province, which is subject to a strict hierarchical division, as well as to the separation of the lower class from the possibility of joining the administrative set; from the other side, we can observe that the unifying factor between the different classes is religion. Seeing such a huge variation in the population, one may wonder how the matter of hygiene was approached in that epoch. Can we observe differences according to the class of an individual, was the access to the sanitary system made possible to all inhabitants of Egypt? Because of the great diversity of the population only diversified archaeological contexts and their comparisons can help to seek answers to these questions. For this reason, four examples are given below: Marea as an example of a city, Abu Mina as a pilgrimage centre, Kellia as a settlement of hermits, and the monastery of St. Catherine as an example exposing a monks' dwelling. These examples show us locations representing all social classes and include not only the Christian population, but also possible inhabitants not affiliated to the main religion of the time.

3.1. Marea

The ancient ruins, located about 45km southwest of Alexandria, attest to a large, economically oriented city situated on the southern shore of Lake Maryut (known in Antiquity as Mareotis).[131]

[129] Emmel 2007, 87.
[130] Papaconstantinou 2007, 350-351.
[131] Timm 1988, 1601; Fakharani 1983, 175.

However, the city's name does not relate with certainty to just one of the ancient metropolises. Modern literature identifies the place as 'Marea'. However, some researchers believe it to be a well-known ancient city called 'Philoxenite', which, according to literary sources, was founded in the Byzantine period, in the 5th century AD, under the praefect Philoxenos served the Emperor Anastasius I Dicorus (491-518).[132]

3.1.1. History of research

After the slow decline of the city, Marea lay deserted for hundreds of years. The beginning of the rediscovery of the ancient port can be dated approximately to the second half of the 19th century. In 1866 ruins lying on the lake Maryut were identified as the port of Marea. The discovery was made by an astronomer, el-Falaki, serving the viceroy (Khedive) Ismail Pasha.[133] Until that time, the site was little known. One finds only scattered information about the ruins located there. In the 16th century, an Arab traveller, Maqrizi, describes a fertile settlement that extended on the site of the ancient city. According to 19th-century reports by Quatremère, the region still supplied the Egyptian capital with fruits and almonds.[134]

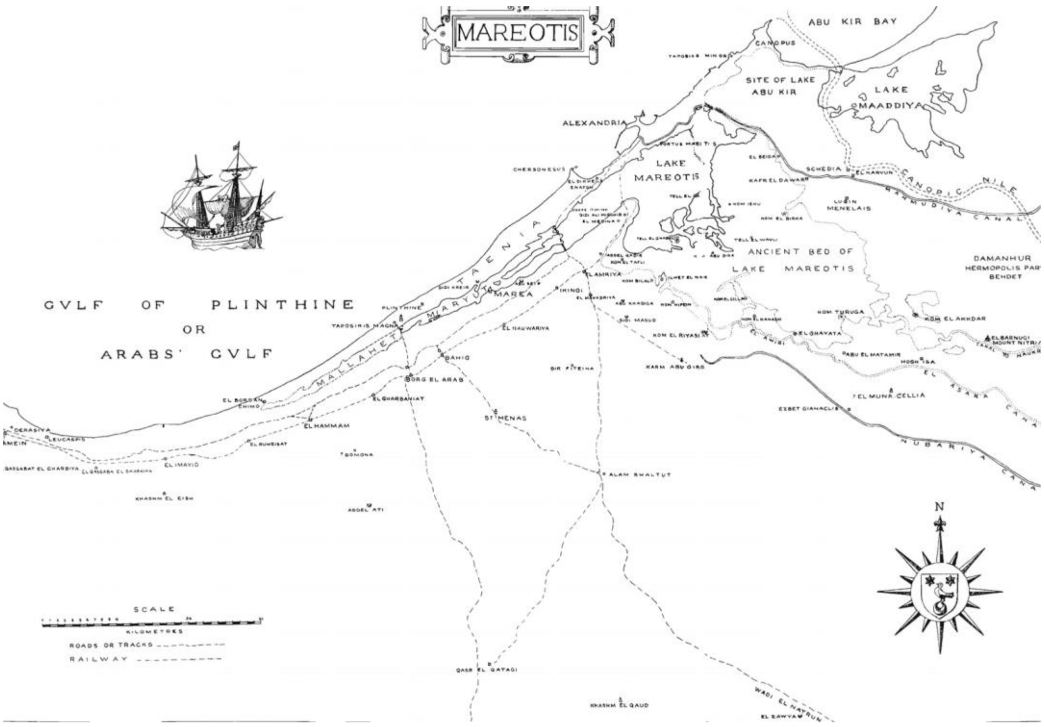

Figure 2: Map after De Cosson

[132] Babraj – Szymańska 2008, 11-14.
[133] Wipszycka 2012, 418; Babraj et al. 2014, 45.
[134] Babraj – Szymańska 2007, 161-162.

Until 1935 researchers played little attention to the ancient site. The situation changed after the publication of the first plans of the lakeshore, drawn up by De Cosson (fig. 2). De Cosson highlighted on his map the more prominent visible monuments of the region with a considerable accumulation of ruins at a spot identified as 'Marea'. However, interest in the archaeological exploration of the region did not begin until over 40 years later. After two excavation and survey campaigns in 1976 and 1978, the University of Alexandria undertook the first excavations, led by Fakharani.[135] The excavations yielded important information regarding the topography of the ancient city, which was built according to a Roman plan with two main streets, *cardo* and *decumanus*. Further, along the streets, the Egyptian archaeologists discovered several shops. Moreover, the first explorers identified a bath near the north-western shore, a few cisterns, and wells. During the exploration of the ancient ruins, numerous burials were detected in the south and west of the town. The excavations also revealed important information regarding a large basilica explored by the German archaeologist Müller-Wiener and recorded by Grossmann, later excavation supervisor in Abu Mina.[136]

Unfortunately, the excavation reports are very sparse, and the methodology used at the time does not meet today's accepted standards. The unsatisfactory publications and the lack of further archaeological evaluation led to results questioned by many researchers.[137] In 1979-1981, Boston University began another field campaign. The work under the direction of Petruso enabled a gain in knowledge concerning the harbour structure. Another aim of the team was to record the plant remains, so the researchers devoted themselves to the question of ancient domestic animal husbandry.[138]

The Polish Centre of Mediterranean Archaeology of Warsaw University and the Archaeological Museum in Krakow have been organising several projects dedicated to the archaeological research of the Byzantine city of Marea since 2000.[139] In the years 200-2002, another Late Antique thermal bath was investigated.[140] One of the most important and extensive archaeological activities concerns the exploration of the great basilica, of which excavations

[135] Timm 1988, 1601; Babraj – Szymańska 2007a, 162; Babraj – Szymańska 2008, 14-15.
[136] Fakharani 1983, 175-186; Babraj – Szymańska 2004, 56.
[137] For example, in the course of the excavations, a lighthouse was identified on the shore of the city. However, the interpretation of the ruins was negated by later excavators. Today, it is assumed that Marea did not have a lighthouse.
[138] Babraj – Szymańska 2008, 14-15; Gabel – Petruso 1982, 1-23.
[139] Babraj – Szymańska 2007a, 162.
[140] For excavation reports regarding the bath see Babraj – Szymańska 2001, 37-45; Babraj – Szymańska 2002, 47-58; Babraj – Szymańska 2003, 41-45; Babraj – Szymańska 2007b, 52-61.

began in 2003 and are continued annually to date.[141] The study of the Basilica is not the only focus of the researchers' studies. Excavations in previous years have aimed to document both adjacent buildings and more distant structures, such as a burial chapel excavated in 2003.[142] During the excavations in 2009, several shops came to light, which are located in the south of the basilica.[143] Another large complex includes the residential building H1, which was investigated during the campaign in 2014.[144] However, a further edifice was identified in 2018, to which the archaeologists have not yet assigned any function. In the same year, during past work in the basilica, the archaeological team discovered the remains of an earlier church dating to the 4th century AD.[145] In recent years, archaeological work has focused on other structures such as latrines (in 2005, 2011, 2016, 2018)[146], investigations of shops (in 2009 and 2019), and one of the main streets also called the 'avenue' (in 2018, 2019).[147]

In addition to the excavations, several non-invasive methods have been used in order to better understand the city's structure. In recent years, several publications have been released with numerous plans illustrating the density of the buildings and the many facilities in the urban area. Based on the previously mentioned investigations the following structures could be identified: many extensive quays, numerous magazines, amphora workshops, and glass workshops. Furthermore, numerous shops flanked the main streets of the city. The dwellings of the population have not been intensively investigated yet, although the latest plans suggest the presence of private houses in several areas. The investigation's results indicate more prominent residences and some more modest accommodations. The various architectural elements dating to the Byzantine period (4th-7th centuries) testify that the city was a large and essential commerce centre in the region. Marea constituted a crucial link between the countryside and large shopping centres not only during Late Antiquity, but also in Greco-Roman times. The most definitive archaeological evidence of a lively trade in that period is the island located directly next to the city's quays. There, Egyptian researchers have identified a sizeable 100-metre-long magazine complex intended to store and exchange goods.[148]

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141 For the excavation reports concerning the basilica see Babraj – Szymańska 2004, 56-62; Babraj – Szymańska 2005, 45-51; Babraj – Szymańska 2006, 55-66; Babraj – Szymańska 2011, 81-87; Babraj – Szymańska 2012, 59-65; Babraj et al. 2013, 56-58.
142 Chapel described in following reports: Babraj – Szymańska 2003, 48; Babraj – Szymańska 2004, 55-56.
143 For reports regarding the shops see Babraj – Szymańska 2005, 52; Babraj – Szymańska 2011, 88-93; Babraj – Szymańska 2012, 66-67.
144 Gwiazda – Wielgosz-Rondolino 2016, 256-257.
145 Results not published yet.
146 Latrines are discussed in following reports Babraj – Szymańska 2006, 62-63; Babraj – Szymańska 2008, 55; Babraj – Szymańska 2011, 85; Babraj et al. 2014, 48. 52; Derda et al. 2020b, 8. 10-11.
147 The newest reports in preparation.
148 Derda et al. 2020a, 2-13; Fakharani 1983, 178; Babraj – Szymańska 2007, 161.

3.1.2. Ancient sources

Over the past few decades, researchers have been raising the question of the site's actual name[149]—one of the essential arguments regarding how to call the port city, based on the literary sources. Pilgrim accounts mention an ancient harbour called 'Philoxenite'. Religious travellers who wanted to visit the pilgrimage centre of St. Menas, Abu Mina, mostly took the sea route. According to the travelogues, pilgrims coming from the Alexandrian port docked at port called 'Philoxenite'. From there, a road led directly to the pilgrimage site at Abu Mina.[150]

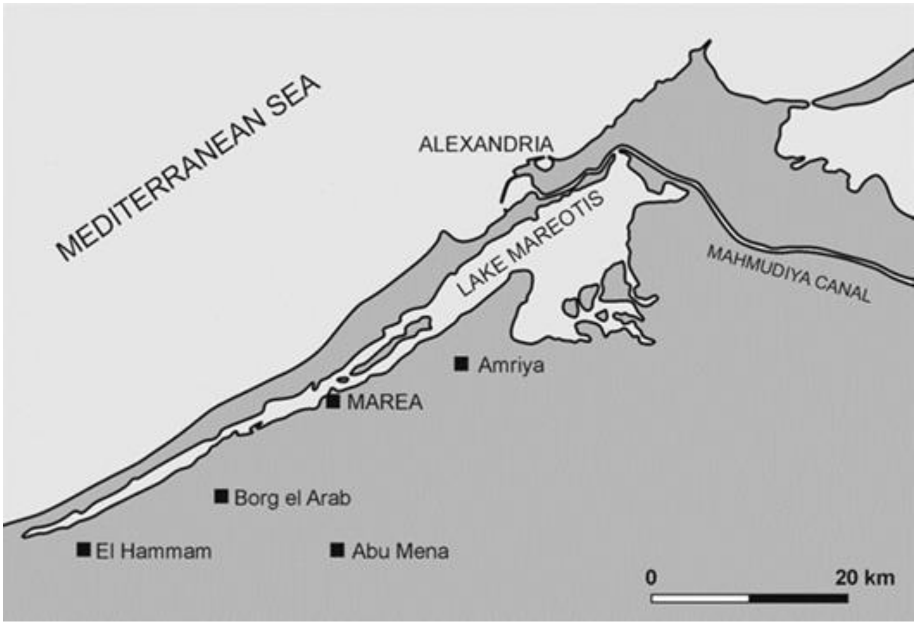

Figure 3: Location of Marea

Nevertheless, literary sources also attest another name that can be associated with the site. The ancient author Herodotus mentions an Egyptian soldier's station named Marea. The location was supposed to operate as a guard post since the 26th Dynasty. Over the centuries, 'Marea' would fall into Persian hands and serve as the capital of the Egyptian Libyan Kingdom. Since the 1st century BC, after the region fell under Ptolemaic power and was later conquered by the Romans, trade increased along the Mareotis lake (fig. 3); thus, the city became an important centre of the area and a major trading partner of Alexandria (Herodotus 2,18,2; Herodotus 2,30,2; Thucydides I, 104).[151]

[149] Rodziewicz was the first to disagree with the identification of the city as 'Marea'. Rodziewicz 2002, 1-22.
[150] Babraj – Szymańska 2007, 161-162; Babraj – Szymańska 2008, 11-14. On the legends in which the name is mentioned see Drescher 1946, 13, 22, 27, 112, 116, 120.
[151] Babraj – Szymańska 2007, 161-162; Wipszycka 2012, 418. For more on the ancient authors and the tradition about 'Marea' see Timm 1988, 1593-1603; Babraj – Szymańska 2008, 11-14.

The fertile landscape that characterised the entire Mareotis region was already highly valued in ancient times (Virgil, Georgics II,91; Horace, Odest I, 37; Athenaeus I, 33). Lively agriculture developed in the vast area around the lake.[152] The olive groves, vineyards and also papyrus plantation shaped the ancient landscape surrounding Marea. Several wine presses found near the town prove the importance of wine production in the region. Moreover, the lake offered an economical and fast trade route by gathering the goods produced in the rural areas at the city's port before loading them onto ships. The leading destination of the trade route was the largest city in Egypt, namely Alexandria. The archaeological material testifies to bustling commerce in the jetties of the city. To date, several warehouses have been discovered, which provide evidence of distinct and organised exchange.[153]

As in most Egyptian cities, Eastern Roman domination and the Christian faith marked the Byzantine period. The exact time when Christianity reached the town is not known. An ancient document dating to the middle of the 3rd century AD states that the city did not have Christian believers yet. This assumption is based on Patriarch Dionysius' notes, who had his seat in Alexandria and was exiled to Libya in 260 AD. His writings indicate that people from Marea did not know Christianity at the time. However, based on the literary sources, it is difficult to identify precisely at what moment the region became unambiguously Christian.[154] The main argument in the discussion on the development of Christianity in this city is one of the largest basilicas built in Egypt[155], which occupies a central position in Marea. The Byzantine ruins and archaeological material discovered there prove that Christianity played an essential role in the 5th to 7th centuries AD. Besides, the town must have been an important pilgrimage rest stop on the way to Abu Mina since the best-known route of the pilgrimage to the Sanctuary of Saint Menas led from Alexandria via Mareotis Lake.[156] Therefore, one can assume that the pilgrims docked at that port of the city to continue their journey by foot, horse, or even carriage. However, this assumption would lead to proof that the archaeological site should bear the name 'Philoxenite'. Nevertheless, the findings, which do not date to the Byzantine period, testify a

[152] Fakharani 1983, 178.
[153] Fakharani 1983, 178-181; Babraj – Szymańska 2007, 161.
[154] Timm 1988, 1594-1596.
[155] This basilica is the second largest late ancient church in Egypt identified as such to date. Only the great basilica at Abu Mina surpasses it in size.
[156] Not far from the city, in the course of excavations, a large building was unearthed. Due to the floor plan and the distribution of rooms, it is interpreted as a hostel. The complex could be understood as a shelter for the great stream of pilgrims. Since the journey from Marea took about 5 hours at a good walking pace, it can therefore be assumed that the pilgrims of Alexandria, who docked in Marea/Philoxenite in the afternoon, were seeking a place to sleep in the area to avoid the risks of a dangerous journey at night, see Rodziewicz 1988, 271-276, fig. 2. The interpretation is contradicted by Grossman 2002, 243-245, fig. 10.

lively exchange trade in the period of Roman domination and appear problematic. This issue has led to a new debate on the topic in recent years.[157]

Researchers suspect a new Byzantine foundation of the praefect Philoxenos at the old ruins of the ancient city of 'Marea' in the 5th century AD. However, literary sources do not confirm this assumption. We find no mention of the renaming of the town or the building of a new urban area on top of the older ruins. Besides, the archaeological material needs to be further evaluated. A significant find indicates an almost continuous use of the area, which archaeologists discovered below the basilical church of the town, as a large oven on top of which the apse of the Christian basilica was built. The finds recovered from the site date the last use phase of the kiln to the 3rd century.[158] A few decades later, the first church was probably erected near the kiln. Later, in the 5th century, the church was rebuilt into a large basilica. Although archaeologists were able to confirm a clear gap of several decades between the abandonment of the kiln and the church's construction, the fact cannot be used as an indicator proving the validity of the hypothesis, which states a new city foundation. On the one hand, the small gap could indicate a new city founded in the 4th, not in the 5th century. On the other, a new foundation could also be crowned with a new and big basilica, speaking for the hypothesis of a new foundation next to ancient ruins. In order to clarify this issue, further literary as well as archaeological research must be carried out.[159]

Unfortunately, the primary literature does not provide us with information regarding the decline or abandonment of the city. Therefore, we can only rely on the evidence of archaeological investigations concerning the final settlement of the town. Towards the 8th and 9th centuries AD, the landscape of the region began to change. The city fell into disrepair, and the canals carrying the freshwater were destroyed. Furthermore, the lake began to dry up and consequently shrink.[160] It was not only the lack of water supply that contributed to the slow decline of the city. The increased invasions of nomadic tribes, which posed a great threat to the city's inhabitants in the 5th and 6th centuries, as well as to the entire region – including the pilgrimage centre of Abu Mina – increased in the 7th and 8th centuries. The archaeological remains attest to the city's abandonment in the 7th and beginning of the 8th century AD.[161]

[157] Wipszycka 2012, 418; Rodziewicz 2003, 27-47.
[158] Babraj – Szymańska 2007, 164-165; Babraj – Szymańska 2004, 62; Babraj – Szymańska 2005, 48-50.
[159] Babraj – Szymańska 2004, 62; Babraj et al. 2013, 169; Gwiazda – Wielgosz-Rondolino 2015, 256.
[160] Babraj – Szymańska 2007, 161.
[161] Timm 1988, 1594; Babraj – Szymańska 2008, 12-14.

3.1.3. Topography

The current state of research allows archaeologists to make only rough assumptions regarding the exact layout and construction of the Byzantine city (fig. 4).[162] Researchers assume a metropolis that extended over more than 50ha. An investigation of the area by magnetic survey and digital terrain modelling identified remains of the Late Antique city in multiple spots located under the ground.[163] Agricultural facilities, as well as residential areas, are suspected in the south of the city. A necropolis identified in the southeast covers remains of a large burial chapel excavated and documented during the previous campaigns.[164]

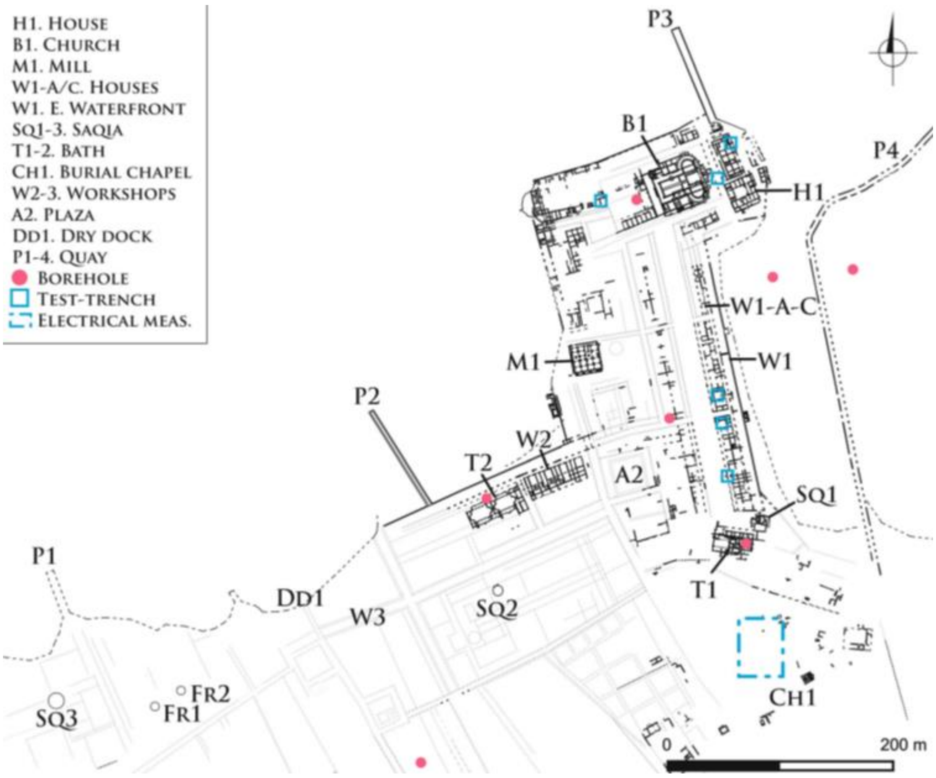

Figure 4: Marea in Late Antiquity

Of interest, not far from the cemetery, the plans indicate a dense accumulation of buildings of which the exact function has not yet been determined. In the north-western part of the town, along the shore equipped with several quays, archaeologists suspect the presence of several

[162] Although intensive excavations have been carried out over the last 20 years, they have mainly focused on the precise exploration of the baths and the basilica. Only in isolated places excavated trenches could provide more information about the exact orientation and street layout of the city. To answer the questions, mainly non-invasive methods were used. In the coming years, sections will be made in other parts of the city to verify the preliminary results. In the coming years, planned trenches in other parts of the city are meant to verify the preliminary results.
[163] Derda et al. 2020a, 2-13.
[164] Babraj – Szymańska 2003, 48; Babraj – Szymańska 2004, 55-56.

workshops. Archaeological surveys and previous finds from the campaigns in the 1970s confirm further workshops in the town.[165]

The great unknowns in the city's study highlights the question of where to locate the agora. The commercial centre has not been identified yet. Until now, the lack of an archaeological record has made it possible to make only vague assumptions about the location of the agora within the city limits. Suggestions that were made during previous conferences could not be supported by any tangible confirmation. The situation is different as regards the question of the city's church. Müller-Wiener already identified a basilica in the 1970s.[166] The large basilica is located in the northern headland of the city. With the help of active excavation work over the last 20 years, archaeologists were able to identify the remains of a previous smaller church from the 4th century AD. In the 5th century, a 49 x 47 m basilica with three conchs replaced the smaller building on the site. A large avenue, up to 18 m wide, led from the southern part of the city in a straight line directly into the narthex of the basilica.[167] Along the avenue stood several commercial buildings and shops.[168] To the east of the basilica, that is, directly behind the central apse, two large buildings with numerous rooms were located. The researchers assume residential houses were present here, next to which a public toilet stood.[169] Other latrines were located in the great basilica, next to a northern side chapel and in both city' baths.[170] These are exclusively public latrines, which can be classified as *foricae*. Further, remains found in some shops, houses and the church's chapel may indicate the presence of private latrines i.e., *necessaria*, which the archaeological team did not classify as such.[171]

3.1.4. Latrines

3.1.4.1. The Double Bath

The Double Bath is located in the southern part of the city.[172] The complex consists of several parts, namely the bathing unit itself with two separate areas, one for men and the second for

[165] Fakharani 1983, 175-186; Babraj – Szymańska 2008, 14-15; Babraj et al. 2013, 55; Babraj et al. 2014, 45. 52.
[166] Babraj – Szymańska 2004, 56; Babraj – Szymańska 2007, 163.
[167] Babraj – Szymańska 2004, 56-62; Babraj – Szymańska 2005, 45-51; Babraj – Szymańska 2006, 55-66; Babraj – Szymańska 2011, 81-87; Babraj – Szymańska 2012, 59-65; Babraj et al. 2013, 56-58.
[168] Publication in preparation.
[169] Babraj et al. 2014, 46-52; Gwiazda – Wielgosz-Rondolino 2016, 256-257.
[170] Babraj – Szymańska 2003, 43; Babraj – Szymańska 2005, 62-63; Latrine in room 51 not published yet.
[171] Latrine inside a chapel was interpreted as a channel for liturgical purposes: Babraj – Szymańska 2005, 47. The room 30 is interpreted as a stable: Babraj – Szymańska 2012, 60-70; Ventilation shafts in building SH02-06 are interpreted as hiding place: Babraj et al. 2014, 51.
[172] The city poses two double baths. Due to the sparse publications on the double baths located in the north-western part of the city, only the southern bath are discussed below. More about the north-western double bath in: Fakharani 1983, 175; Rodziewicz 2003, 198.

women,[173] and two large atria (F1, F6), which simultaneously fulfil the function of the *frigidarium*. The core of the complex, interpreted as the men's and women's hot baths, covers $170m^2$, the zone with the atria and associated annexes occupies $642m^2$ (fig. 5).[174]

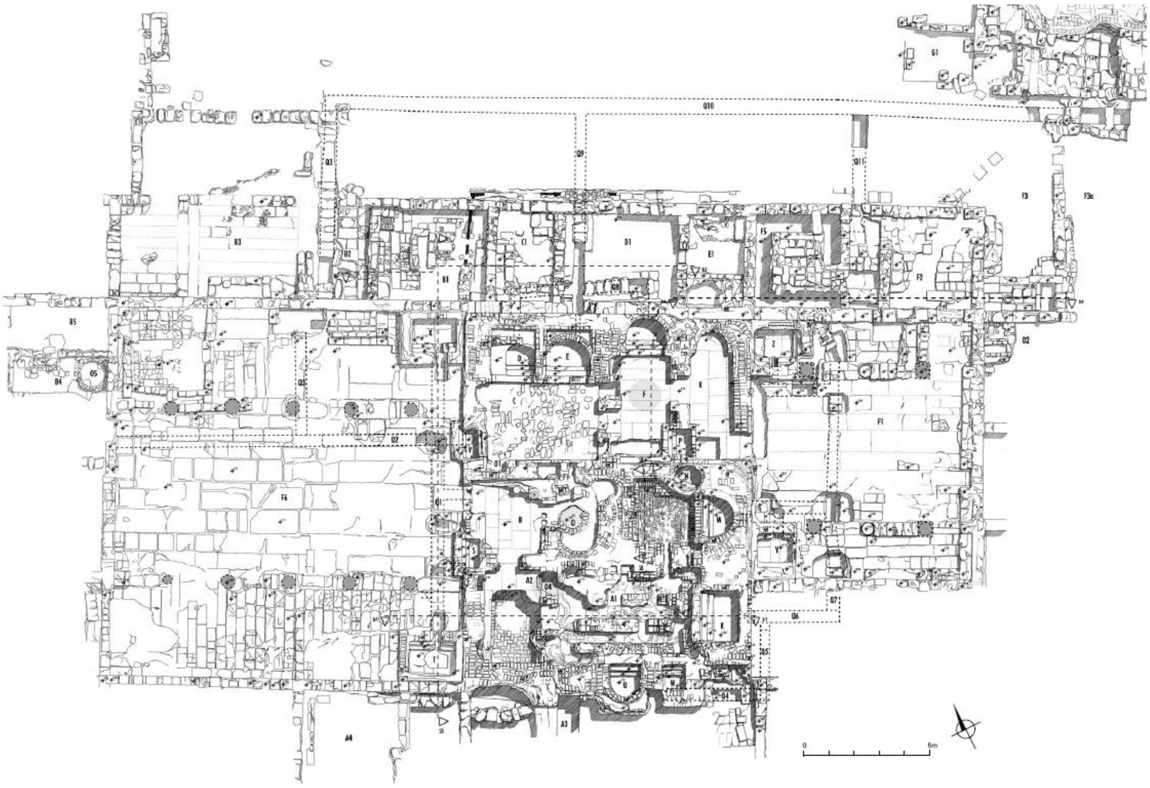

Figure 5: The Double Baths in Marea

The men's section opened through a courtyard F6 located in the west of the complex. Room F6 served the function of the *frigidarium,* from which the visitor entered room B, namely the *apodyterium,* providing access to A2, the *tepidarium*. From the area with the lukewarm water, an entry connected it with two rooms offering hot bathing, namely *caldaria* A1 and L. The women's baths were considerably more modest in the number of rooms and bathing arrangements. The entrance was on the eastern side of the complex. From the area offering cold water F1, visitors had access to *apodyterium* K, leading to the two *caldaria* F and C. Along the north wall of the bath, shops B1, C1, D1, E1, an anteroom F2 and a latrine F5 completed the needs of the baths.[175]

[173] The assignation is based on a bead find identified in only one wing, hence the area was interpreted as the women's section.
[174] Babraj – Szymańska 2007, 162.
[175] Babraj – Szymańska 2008, 27-29; Babraj – Szymańska 2009, 248-250. For excavation reports see Babraj – Szymańska 2001, 37-45; Babraj – Szymańska 2002, 47-58; Babraj – Szymańska 2003, 41-45. More about double-baths in Late Antiquity see Maréchal 2020, 186, 195, 200, 209, 217-218, 410, 414-415, 429-430, 445.

3.1.4.1.1. Latrine F5.

To enter the latrine F5 located in the north-eastern area of the bath complex, the visitor had to pass through the anteroom F2 and a small corridor (fig. 6). The latrine was 3.70 x 3.35 m in size. It was enclosed by a 2 m deep and about 0.7 m wide channel running along all four walls. The reconstruction undertaken by Tarara[176] assumes space for six seats. However, this assumption is based only on the dimensions of the walls, as none of the benches have survived. The archaeologists found a depression in the room's pavement and understood it to be an area for a water collector used by visitors when washing hands. The lack of elements preserved *in situ* makes it challenging to reconstruct the section more precisely.[177]

At an unspecified time, the entrance to the latrine underwent alterations. Visitors were led directly into the interior from *frigidarium* F1. It is difficult to explain what prompted the architects not to shield the entrance with additional walls to ensure protection from outside eyes.[178]

The new entrance to the privy was only possible from the female area. The question arises whether male visitors were allowed to enter anteroom F2 to use the latrine. The first construction phase of the baths would still be conceivable, as there was a door between anteroom F2 and the women's *frigidarium* F1. Besides, a small corridor separated the entrance to the lavatory so as not to be directly visible. To prevent both men and women from using the facility at the same time, it is possible that an attendant controlled the entrance and exit.[179] After the reconstruction of the access into the latrine, with the door directly connecting the privy to the women's *frigidarium*, such an option can most likely be ruled out. From that point on, it would be challenging to protect the privacy of one sex from the other. However, the archaeologists did not find any other room that could serve as a man's lavatory. Therefore, it must remain open where the next public *forica* was located, which would also be accessible to men.[180]

[176] Babraj – Szymańska 2008, 47, fig. 12.
[177] Babraj – Szymańska 2008, 35; Babraj – Szymańska 2003, 43.
[178] Babraj – Szymańska 2008, 34-35.
[179] This is a rough assumption which is not based on any evidence.
[180] Babraj – Szymańska 2008, 46 fig.11; Babraj – Szymańska 2003, 41-42.

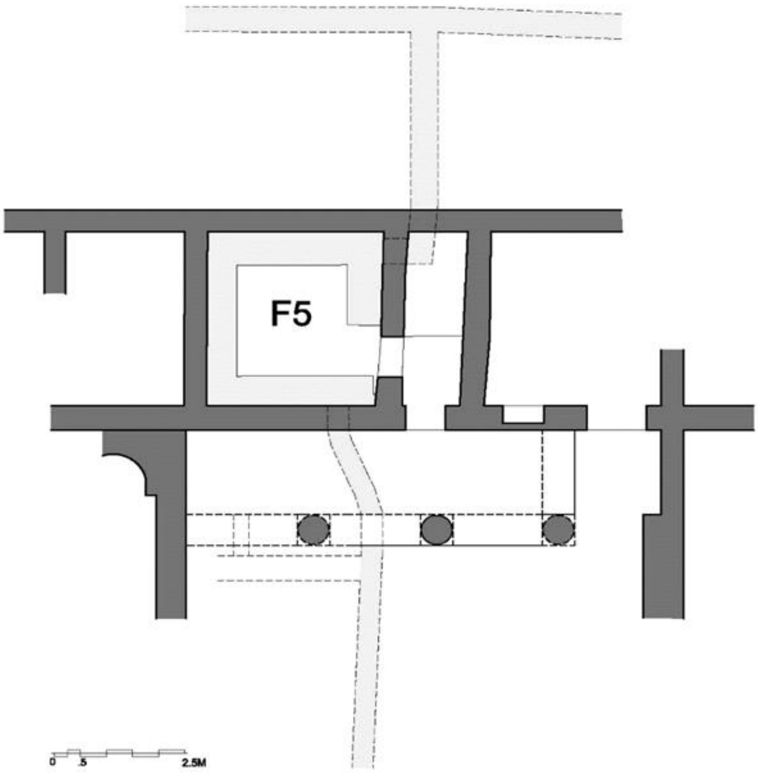

Figure 6: Latrine F5

The poor state of preservation also makes it difficult to reconstruct the room's ventilation system. The walls have only survived just above the general floor level of the bathroom. Although the archaeological remains were sufficient to reconstruct a clay vault in room F5, it is unclear whether any more existing walls were provided with air shafts or windows.[181] The erection of windows could have been an additional and, in all likelihood, not the only option for ventilation. Although the archaeological team found several remains of windows and openings in the bath complex, no traces of glass could be detected in the immediate vicinity of latrine F5.[182] Spare findings do not allow for any further conclusions about the presence or even the shape and placement of the supposed windows in the room. The finds of the excavated channels in the compound, i.e., Q7 and Q11, did not yield any clues that might help answer the question. It is conceivable that the latrine was equipped with air shafts, at least on the upper parts of the walls, which allowed for better ventilation of the facility. The problem of unpleasant

[181] Many Late Antique complexes in Egypt were equipped with air shafts, usually located below the ceiling. In most areas, the construction of small openings protected the rooms from the desert sand and heat. The air shafts allowed better air circulation, while the thick masonry kept the room cool to prevent the hot air coming through the shafts from overheating the room. The QR 195 facility in Kellia provides a good example, see: Henein – Wuttmann 2000, 17-26, 37, 188, 196-197.

[182] We cannot exclude that windows in lavatories possessed no glass, for more on that possibility cf. Koloski-Ostrow 2015, 29.

smells must have arisen at the latest when the entrance to the latrine was altered. The door connected the latrine directly to *frigidarium* F1, with only a single wall separating basin Z from the privy. Therefore, the assumption that the latrine was equipped with either openings or air shafts in several places should be taken into consideration.[183]

Similar to most public latrines, a channel led the waste into an underground sewerage system (fig. 7). According to several excavations, the sewage system consisted of several conduits Q1-Q11, which extended underneath the thermal baths and below the city's streets. All the pipelines marked with the letters Q formed part of the sewage system, which meant the wide underground channels connected respective basins with the main city sewer.[184]

The underground equipment of the bath can be divided into several groups. Firstly, there were ovens underneath the baths with lukewarm and warm water, which kept the bathwater warm. Secondly, four hypocaust areas lay beneath the pavement. In the men's section, they were located under rooms A1 and L, whereas in the women's section, rooms F and C supplied an underground hot air heating system. Furthermore, the archaeologists recorded a vast network of a channel system and a few remains of a pipeline. The dirty or used water flowed in the men's section through canals Q1-3, Q4-7; the women's section included the canals Q9 and Q7. Drain Q7 leading to the latrine sewer emptied into Q11. The water, derived from both the men's and women's sections, was used for flushing the latrine.[185]

Additionally, the rainwater channel ran along the shop and ended in F5. A gutter collecting water from the bathroom roof ran along the wall of shop E1 and ended in the channel of room F5. Subsequently, the channels Q3, Q9 and Q11 were subordinated to the main pipe Q10, which collected and conveyed the wastewater from the thermal bath.[186]

The channel system listed here had the sole function of draining the dirty and used water from the pools.[187] During the archaeological investigations, a large, semi-circular well with a *saqiyah* was recorded and excavated.[188] The water collected in a large basin was taken out from the well—a thin pipe connected to the extensive basin G2. The pipe consisted of thin ceramic tubes tied together, which were led from the well, along the north wall of the *thermae*. The pipe bent

[183] Babraj – Szymańska 2008, 35. 134-136; Babraj – Szymańska 2003, 41-42; For more on windowpanes from the Bath see Kucharczyk 2009, 255-262.
[184] Babraj – Szymańska 2008, 38; Babraj – Szymańska 2003, 41-42; Babraj – Szymańska 2002, 54-56; Babraj – Szymańska 2001, 39. 42. 44.
[185] Babraj – Szymańska 2008, 38-46.
[186] Babraj – Szymańska 2008, 46 fig. 11; Babraj – Szymańska 2009, 249. 251.
[187] Babraj – Szymańska 2008, 38.
[188] For a more detailed explanation of the term and further information on the ancient wells see Şen 2013, 705.

behind shop C1, ran underneath B1 and fed into basin X (in the area of the *caldarium*). In the course of their investigations, archaeologists identified only this one pipe *in situ*. Several remains of such ceramic pipes were also found in F6 and other areas of the city not belonging to the complex. These finds provide an essential indication of a complex water conduit system in the city, in which freshwater was drawn from the well, collected in a large basin, and then conveyed through narrow ceramic pipes.[189]

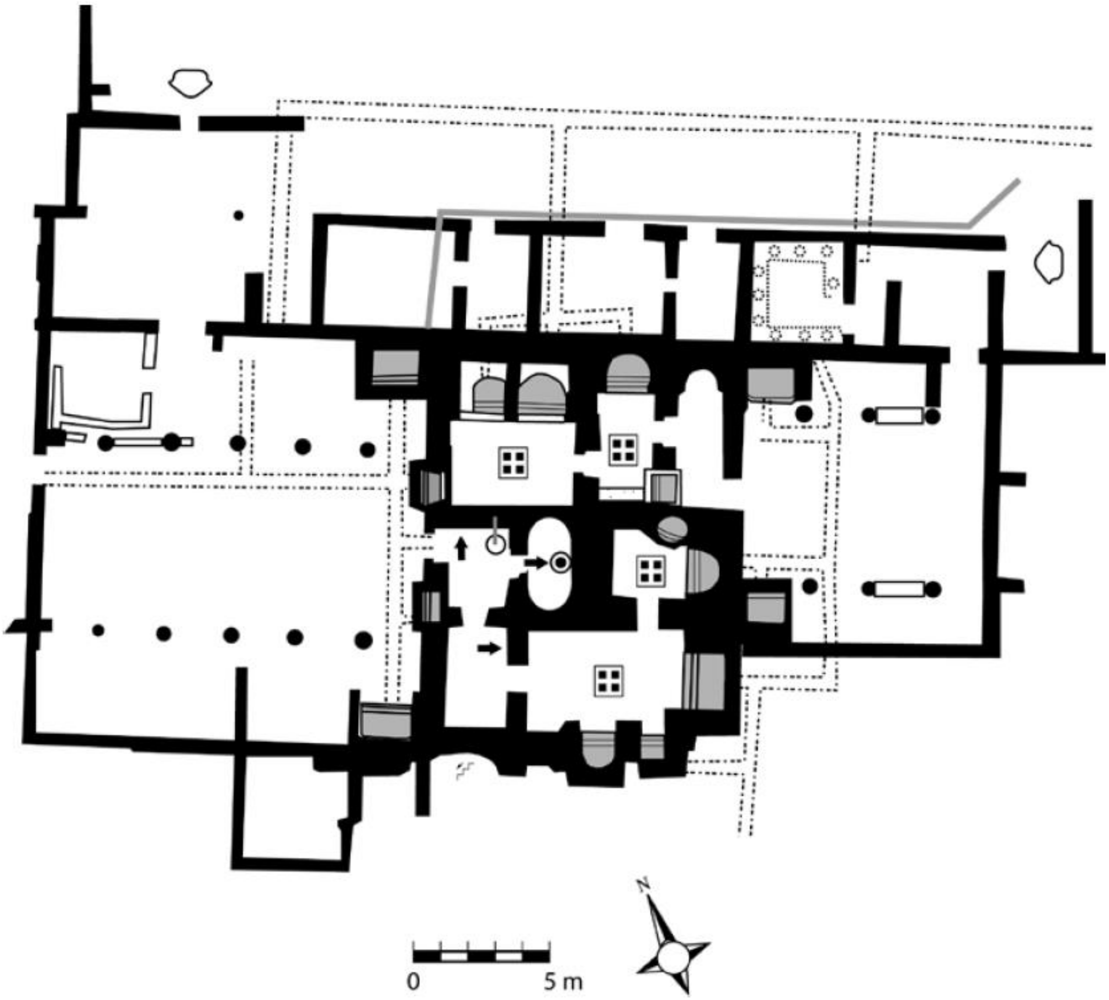

Figure 7: Sewage system of the Double Baths

In order to collect the wastewater, however, wide canals leading to a strong network were built; short canals were often connected to individual basins and flowed into a more extensive and longer superordinate sewer, which was used as a sewage disposal system. The current state of research does not allow any more precise statements regarding the exact structure of the city's sewer system. The excavation reports often only mention underground channels in passing. The

[189] Babraj – Szymańska 2009, 252; Babraj – Szymańska, 87-88; Babraj – Szymańska 2002, 56; Babraj – Szymańska 2001, 44.

single major publication focusing on the research of the double baths in Marea paid more attention to channels than most previous publications. Unfortunately, the system could not be fully explored. The reason for the lack of proper reconstruction is the poor state of preservation of the ceramic pipes, as well as the lack of an existing stratigraphy. Whether the pipes were connected to each basin separately or from one basin to another cannot be answered. The Marea Archaeological Project team is planning a major publication in the next few years, which shall provide more details on each of the excavated features and the latest surveys. Possibly the underground installations will be discussed in the new volume more precisely containing the new data.[190]

With regard to the baths in Marea the main difficulty in interpreting the archaeological record is the very poor state of preservation in this part of the location. We are not able to reconstruct with absolute certainty the inventory of this area. However, thanks to a detailed study of the sewage system and the construction design for the entire construction, as well as the changes which occurred in the division of the rooms during the operation of the baths, it is possible to undertake an analysis allowing us to make an attempt in interpretation.

We can state that the bath in Marea is designed as a quadrilateral room in which the sewer runs along all four walls. This layout of the sewers made it possible to remove the pollutants from every corner of the latrine, partly preventing the sewers from clogging. In addition, the used water from the baths was drained through a drainage channel, which was designed and planned in such a way as to flush out the impurities from the latrine. Another source of water, although probably not a very efficient one, was a canal which carried rainwater, accumulated on the roof of the bath, straight to the latrine. The drainage system depicted here shows us how the construction of the latrine positioned at the edge of the whole bath complex, and its composition into a detailed sewer system, reflects the need to keep human excrement as far away from the bathing rooms as possible.

[190] Babraj – Szymańska 2008, 38; Babraj – Szymańska 2002, 55-56; Babraj – Szymańska 2001, 44.

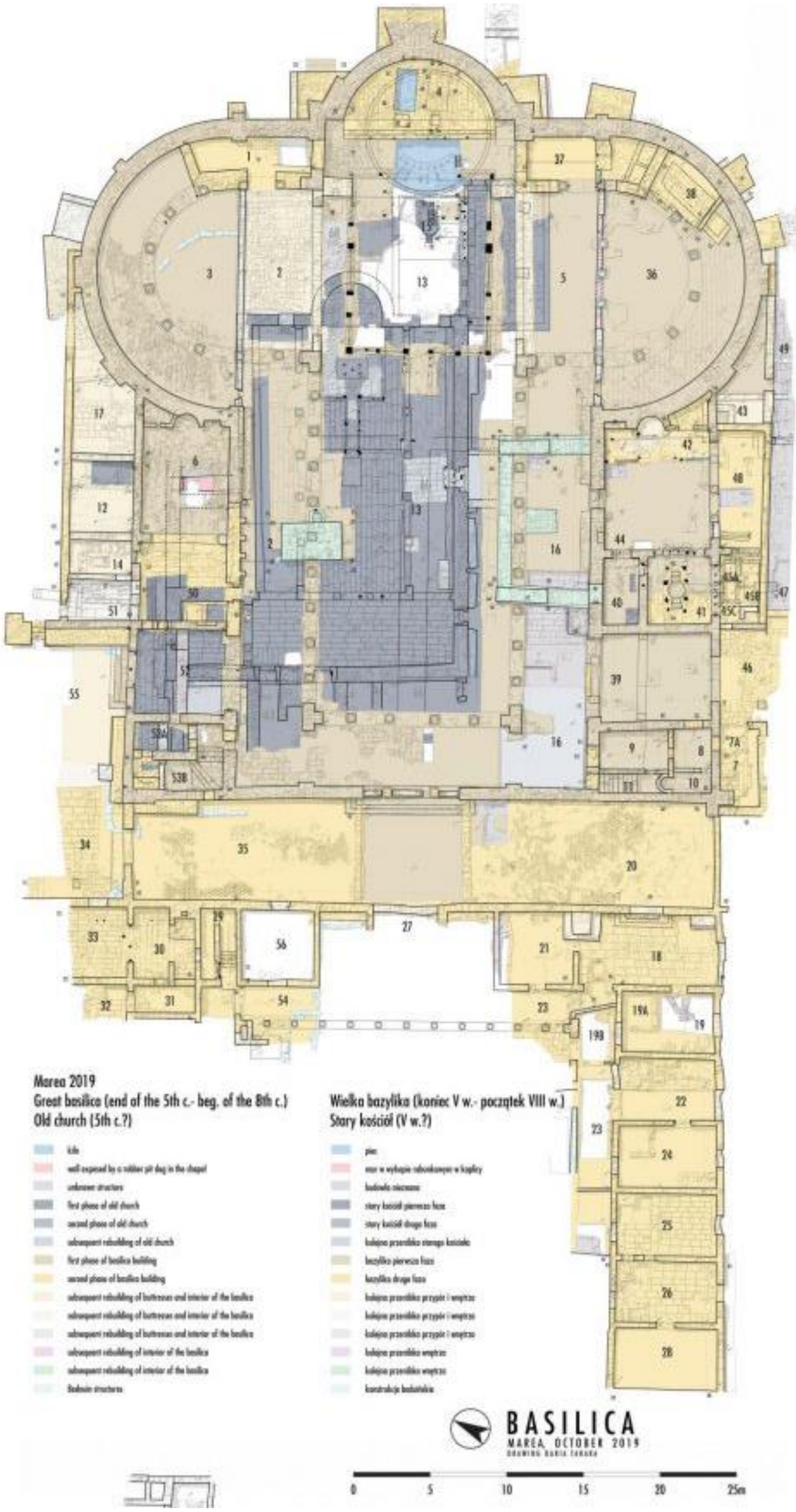

Figure 8: The Basilica and adjacent rooms

3.1.4.2. The Basilica

The basilica of the ancient city is located in the northern part of the urban area. Its prominent position is indicated by the natural formation of the peninsula, where the building occupies a central spot on the city' cape. Furthermore, its imposing size, measuring 49 x 47 m, makes it the second-largest basilica known to date in Egypt dating to Late Antiquity (fig. 8).[191] Due to many findings and well-preserved stratigraphy, researchers date the large building to the 5th century AD. However, the basilica was not the first Christian building to be erected on that site. In the course of recent excavation campaigns, archaeologists have been able to confirm an earlier Christian building: a smaller edifice identified below the naves of the basilica. The remaining structures made it possible to interpret it as an early Christian church dating to the 4th century AD.[192]

Presumably, the increase in the number of worshippers made it necessary to expand the ecclesiastical complex. For this reason, a sizeable triconch basilica was built, equipped with several additional annexes. The three-nave building, which faced east, had a central apse about 4 m deep and 10 m long. Furthermore, two additional, much larger, semi-circular apses flank the central one to the north and south. Several rooms were built against the south wall of the basilica, one of which functioned as a baptistery. Towards the southern wall, a small chapel and a row of rectangular rooms enclosed the basilica to the north. The chapel *locus* (further abbreviated as loc.) 6 consisted of a small annexe in the north-eastern corner. The floor of the enclosed section covered limestone slabs. The archaeologists identified a mouth of a canal positioned inside a niche of the room. The researchers interpreted it as an annexe used for liturgical purposes, the canal is understood as a channel used as an outflow for liturgical water. However, it could serve as a small latrine room (see below).[193] In the course of the excavations, several rooms were identified along the north wall of the loc. 6. Particularly noteworthy here are loc. 14 and 51.[194] The two elongated rooms are inferred to be latrines. The basilica was preceded by a narthex, which connected the building with a large atrium. The excavations revealed numerous small rooms surrounding the atrium, which are assumed to have been shops, loc. 19, loc. 22, loc. 24, loc. 25., loc. 26, loc. 28. An additional staircase, loc. 29, proves the

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191 Babraj – Szymańska 2007, 163.
192 The publication on the former church in progress.
193 Babraj – Szymańska 2008, 38; Babraj – Szymańska 2002, 55-56; Babraj – Szymańska 2001, 44.
194Babraj et al. 2021, 1; Babraj – Szymańska 2006, 62-63; Babraj – Szymańska 2010, 75.

existence of an upper storey. Although the excavation reports do not identify a latrine in the area, there is a possibility that a privy was also constructed in loc. 30.[195]

The construction of two latrines excavated in 2005 and 2016 is linked to the great basilica.[196] In addition to latrines recognised by archaeologists in their function as lavatories, other areas may have probably also served as toilets. These are a small room attached to loc. 6 (i.e., chapel) and a separate area in loc. 30.[197] Furthermore, according to the archaeologists, a latrine was identified in loc. 10, located "2 m lower". The lack of a plan of the unit and photographs prevent any further statements to be made at the moment. However, the stage supports dating the latrine in Roman period since it lays at the same level as the kiln mentioned above.[198]

3.1.4.2.1 Latrine inside the basilica's chapel (loc. 6)

The latrine built against the north chapel's apse was not identified as such during the excavation. It is a small, almost triangular, room built between the little apse in the northeast corner of the chapel. Access to the room was directly through the interior of the chapel. A semi-circular niche was built in the north wall, which was provided with a seat (fig. 9). The seat had a deep hole connecting it to a channel.[199]

Figure 9: Latrine in loc. 6

[195] Babraj – Szymańska 2003, 43; Babraj – Szymańska 2005, 62-63; Babraj – Szymańska 2012, 66-69.
[196] Babraj – Szymańska 2006, 62-63.
[197] Babraj – Szymańska 2005, 47; Babraj – Szymańska 2012, 68-70.
[198] Babraj – Szymańska 2005, 52.
[199] Babraj – Szymańska 2004, 48.

Numerous parallels can confirm the interpretation of the room as a one-seat toilet. Archaeologists have found latrines built according to such a scheme in various lauras in Kellia (cf. chpt. 3.3).[200] In most cases, however, such facilities are built on the outer wall of a structure. Usually, waste from such privies ran directly behind the wall and was collected in an underground chamber or accumulated in the open air. Unfortunately, the excavation reports do not specify the exact construction of the underground channel, whether there was a cesspit below the latrine, or if a more extended channel was supposed to remove the waste outside the building.[201]

3.1.4.2.2. Latrines loc. 14 and 51

Latrines loc. 14 and 51 are located in the northern annexe of the great basilica. To the south, they adjoin the chapel loc. 6 and an antechamber loc. 50, connecting the two annexes with the northern aisle of the basilica (fig. 8). Initially, access to the latrines was provided through the antechamber loc. 50. In a later but not definable phase, the connecting wall was bricked up. The entrance to latrine loc. 51 opened in the north wall. Primarily, a direct connecting door existed between the two latrines, but that too was bricked up. It is not clear whether lavatory loc. 51 formed an anteroom to loc. 14 in a later period since the latter possessed no entrance in the north wall.[202]

Figure 10: Latrine in loc. 51

[200] There is evidence of a well-organized system in Kellia following the construction of the latrines. The rooms consisted of one or two seats, which were built in the form of a wall niche. The latrine from Marea proves that this design was known in the wider area and probably based on a template. This is supported by the very great similarities in the design of the latrine in the chapel and those from the hermitages in Kellia. Cf. Walters 1974, 223, fig. 39; Henein – Wuttmann 2000, 17-26, 37, 188, 196-197.
[201] Babraj – Szymańska 2005, 47.
[202] Babraj et al. 2021, 1.

Both latrines were built according to the same scheme. Along the 4 m, long east wall, a deep channel was extended, covered by a row of seats. Only the stone seat supports survived in the archaeological material. Nevertheless, these allowed the reconstruction of at least four seats in the rooms. In latrine loc. 14 (fig. 11), a large 1.4 x 0.8 m basin was found *in situ*. Such containers are known from other archaeological sites that provided water for latrine users. In latrine loc. 51 (fig. 10), on the other hand, the pavement has been better preserved. A wide gutter ran along the seats, which probably served to rinse the dirt on the floor. The floor in both rooms was most likely covered by a red waterproof plaster – i.e., *opus signinum* – of which remains have been partially preserved in loc. 14.[203]

Figure 11: Latrine in loc. 14

According to the current state of knowledge, one can only make assumptions concerning the organisation of the waste disposal system. In the course of the excavation campaigns, an underground chamber was explored, located to the west of loc. 14. In this case, it was a cellar built of stone blocks, consisting of two chambers. Both chambers were divided by a wall but also connected by a small opening. The entrance to the underground room was provided by steps leading into a small vestibule. Archaeologists did not identify the exact function of the room during that campaign since the exact context was not known at that time.[204] After several years, the area above the cellar was excavated, later identified as a latrine loc. 51. The question arises as to whether the supposed cellar could be interpreted as a cesspit of the latrines. An underground chamber located directly below supposed privies could be identified in several

[203] Babraj – Szymańska 2006, 62-63.
[204] Babraj – Szymańska 2010, 75.

places, not only in Marea – below loc. 30[205] – but also at other archaeological sites in Egypt, such as Abu Mina (see chpt. 3.2.). In particular, one recent published example from the pilgrimage site of St. Menas shows many parallels in its building structure. The so-called House with a wine press, which was published in 2019, provides essential information on wine production in Abu Mina and enables the reconstruction of a house from Late Antiquity.[206] In the course of excavations, an underground chamber was identified directly next to the east wall of the house. The floor plan, as well as the architectural features, resemble the cellar under the latrine loc. 51 of Marea. The underground facility from Abu Mena had an opening in the roof, which can be addressed as a sewer conduit. Due to the poor state of preservation of the area above the pit, the appearance of the latrine cannot be reconstructed with certainty. In this case, however, it is assumed to have been a simple latrine with a seat, which was directly connected to the pit by a shaft.[207]

Furthermore, deep cesspits existed also under *necessaria*, which can be considered a collection structure for the waste in households, as known in the case of an Alexandrian private house or many Roman houses.[208] A simple square shape characterises the Alexandrian pitfalls. How exactly the excreta were retrieved from the chambers cannot be clarified due to the lack of investigation into the matter. While the underground cellars in Marea had external access, the reports do not mention any substructures that led to the cesspool of the houses. For this reason, it can be assumed that human excreta were scooped directly out of the latrine.[209]

3.1.4.3. Room 30

A similar subterranean area, addressed as a 'cellar', is located below loc. 30, making up part of a row of rooms and the church's narthex. Unit 30 is an elongated room containing a small partition wall at the rear, i.e., to the south. In the southeast corner of the area, delimited to the north by the small partition and to the south of area loc. 29, a shaft connecting the cellar with the building's upper floor was identified. South to the shaft inside loc. 30, a hole cut in the floor was found. Directly below the clearly separated area, the archaeologists uncovered a

[205] Babraj – Szymańska 2012, 69-70.
[206] Grossmann 2019, 25-27.
[207] Grossmann 2019, 24-25, fig. 3, Pl. 5a, 9a-b.
[208] The Roman latrines had a variety of cesspits. In some cases, they were small underground chambers, in other cases there is evidence of very large rooms. Since these underground facilities were not connected to the city's sewage system, they are identified as cesspools. Cf. Koloski-Ostrow 2015, 3, 12, 42, 59, 65-66, 89, 92, 207.
[209] Rodziewicz – Michalowski 1984, 106-111, 115, 123, 234-236, 240, 241, 259; Jansen et al. 2011, 72.

subterranean chamber and interpreted the room as a cellar, which could have possibly been used to store wine vessels. This assumption is based on a significant find of bottles located there.[210]

The very specific construction of this unit, namely an elongated shaft probably connected to the upper floor, a hole in the floor directly next to the shaft, and an underground chamber that was built directly below it, is reminiscent of latrine construction in domestic housing. In Alexandria, a very similar construction in a private house was interpreted as a latrine.[211] A shaft, which communicated with the upper floor, was supposed to have the function of a drain. Also, a latrine seat was built directly next to the shaft on the lower floor, connecting the privy to a cesspit below ground level. This parallel, which has almost identical features to the building in Marea, could be evidence that the separate area of room loc. 30 also served the purpose of a privy. The underground cellar under loc. 30, which consisted of two areas, connected them by a low, i.e., 50 cm high opening. In fact, such narrow access linking two areas of a large cellar would hardly make sense from an architectural point of view. As a result, the interpretation of the unit as a storage room seems doubtful. Particularly, since the opening, which is only 50 cm high, would make it very difficult for an average-sized person to enter the underground chamber.[212]

There is a strong probability that the underground unit functioned as a cesspit or even a cesspool. The architectonic evidence points towards the idea that the construction of a low opening may be useful in emptying a latrine's pitfall. In the case of this particular cellar, accumulated waste could be collected and removed with a longer shovel.[213] A small opening could be sufficient to take out the impurities and prevent a constant and strong spread of unpleasant odours.[214]

The excavation reports reveal further evidence to reinforce this interpretation. In the area of loc. 30, the archaeologists describe the floor as 'dirty'.[215] This vague statement only suggests the excavation team encountered waste here. The archaeologists interpret this area as stable.[216] Therefore, it would not be far-fetched to assume that the term 'dirty' refers to excrement. The

[210] Babraj – Szymańska 2012, 68-70.
[211] Rodziewicz – Michałowski 1984, 106-111, 115, 123, 234-236, 240, 241, 259.
[212] Babraj – Szymańska 2012, 68-70; Rodziewicz – Michalowski 1984, 106-111, 115, 123, 234-236, 240, 241, 259. For more regarding roman cesspits and cesspools see Koloski-Ostrow 2015, 3, 12, 42, 44-45, 59, 65-66, 68, 92, 207, 242. More about odours, in Koloski-Ostrow 2015, 28, 33, 39, 44-45, 68-69, 224, 229, 232, 241. For further information concerning emptying the cesspit, see Jansen et al. 2011, 71-86.
[213] Unfortunately, we have no parallels or literary sources proving such hypothesis.
[214] Babraj – Szymańska 2012, 68-70; Jansen 2011, 76-78.
[215] Babraj – Szymańska 2012, 68.
[216] The archaeologists' interpretation does not exclude the possibility of locating a latrine inside a steel. In fact, in rural areas, the steel was used as a latrine in the winter months, even a few decades ago. In this way, people protected themselves from the cold in the lavatories built outside, at the same time keeping the unpleasant smell in a place designated for it.

numerous pottery finds taken out of the cellar led to the notion that the area was reorganised later and served other purposes. The original access to the underground store was through a staircase and a connecting door, which was walled up in later periods.[217]

3.1.4.4. Probable latrines in the SH02-SH06 complex

During the excavation campaign of 2011, the archaeological team investigated the area east of the basilica. The excavations focused, among other things, on a large complex consisting of five adjoining but separate structures (fig. 12). The large building possessed five entrances and five staircases leading to the upper floor. Due to the poor state of preservation, where only the base of the lower walls has been preserved, no statements can be made about the upper floor layout. The enclosures SH02- SH06 were erected on a square ground plan 18 x 40 m. The remaining walls allow for a reconstruction of the floor ground plan. Units SH 02, 03, 05 and 06 show a similar layout; each unit consists of two rooms and a staircase. Noteworthy are conspicuous shafts identified next to the staircases. While in the excavation report, the archaeological team does not connect this find with a shaft of a latrine, Kościuk does not exclude in his report such possibility.[218]

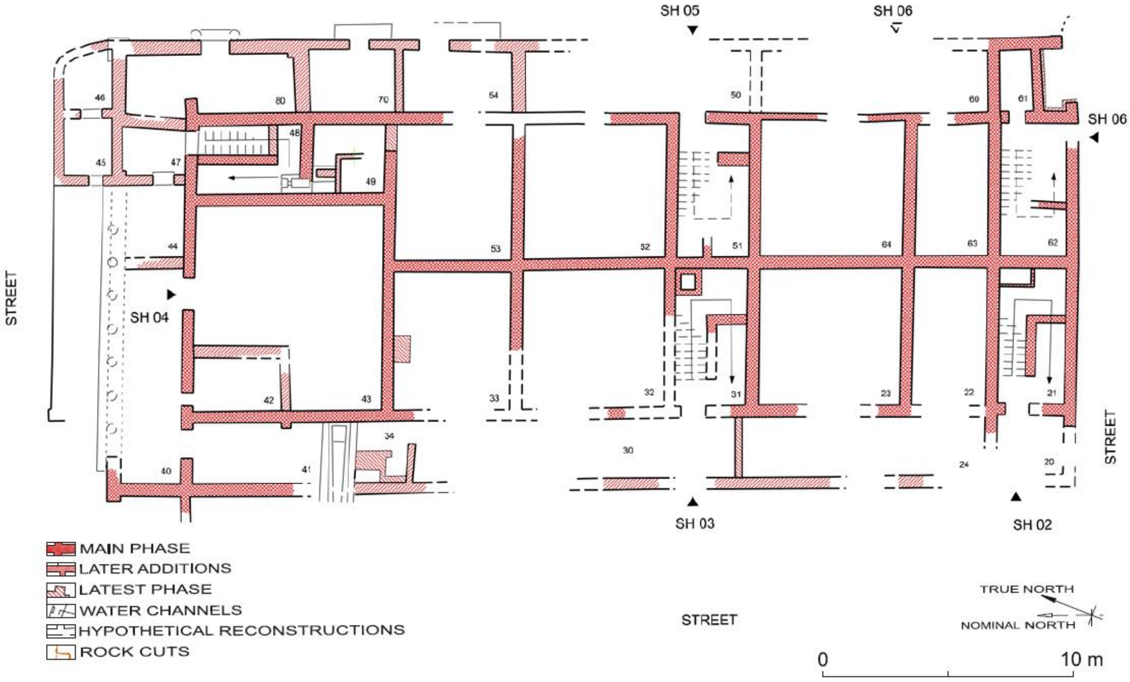

Figure 12: Building SH02-SH06

[217] Babraj et al. 2013, 59.
[218] Kościuk 2012, 32-34.

The vents resemble the shaft from loc. 30 (near the narthex of the basilica) and the shaft from a house in Alexandria.[219] The possible misinterpretation of the findings (i.e., as storey shafts) in the excavation report is based on the following assumption of the researchers: "Public toilets or toilets situated outside buildings were the rules in this period, latrines in private houses being a rarity as they required running water and sewage"[220]. The latrines found in private facilities did not, in any case, link to a sewer connected to the sewerage system in the respective town or in other cities. Further, *necessaria* found in other parts of *Imperium Romanum* were not connected to any sewer system, rather the impurities were led into a pitfall.[221]As a rule, private latrines and some public latrines possessed a regularly emptied cesspit (cf. Abu Mina, Alexandria, Kellia). Therefore, neither running water nor an external drainage channel was necessary for such facilities. An almost identical concept in the design of latrines in private dwellings could be found in Greek and Roman houses. A good example can be observed in Herculaneum. Inside the House of the Gran Portable (V 35) the latrine stands next to the staircase. Further, in Delos, another example shows a similar structural idea. In *insula* IV, the architect of house B planned one of the latrines next to a staircase to the upper story in the quartet of the theatre.[222]

3.1.4.5. *Forica* EKL

To the east of the basilica, just by the banks of the lake, is an oblong building. A characteristic feature of the edifice is a deep shaft that extends along the east wall and between the north-south walls. This pit connects the southern and northern parts of the west wall with underground channels used to function as a water supply channel. Two other outlets of canals connect to the east wall of the structure in two places (fig. 13). The archaeologists interpret them as sewers through which the wastewater was discharged directly into the lake. The oblong external wall separated three platforms, L1-1, L1-2 and L1-3 and a wall between L1-1 and L1-2. The depth of the drains and their positioning along the 8 of 10 walls suggest the construction was once a large latrine separated into two or more areas.[223]

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[219] Rodziewicz – Michałowski 1984, 106-111, 115, 123, 199-216, 234-236, 240, 241, 259.
[220] Babraj et al. 2014, 48.
[221] Same pattern can be observed in Roman houses, cf. Hobson 2011, 123-126.
[222] Gräzer et al. 2011, 36, fig. 3-27; Jansen et al. 2011, 53-54, fig. 5.3; Koloski-Ostrow 2015, 145, fig. 29. Cf. Location of the latrine in private houses and workshops in *Imperium Romanum*; Hobson 2011, 123-128.
[223] Cf. Babraj et al. 2014, 52; Derda et al. 2020b, 8. 10-11.

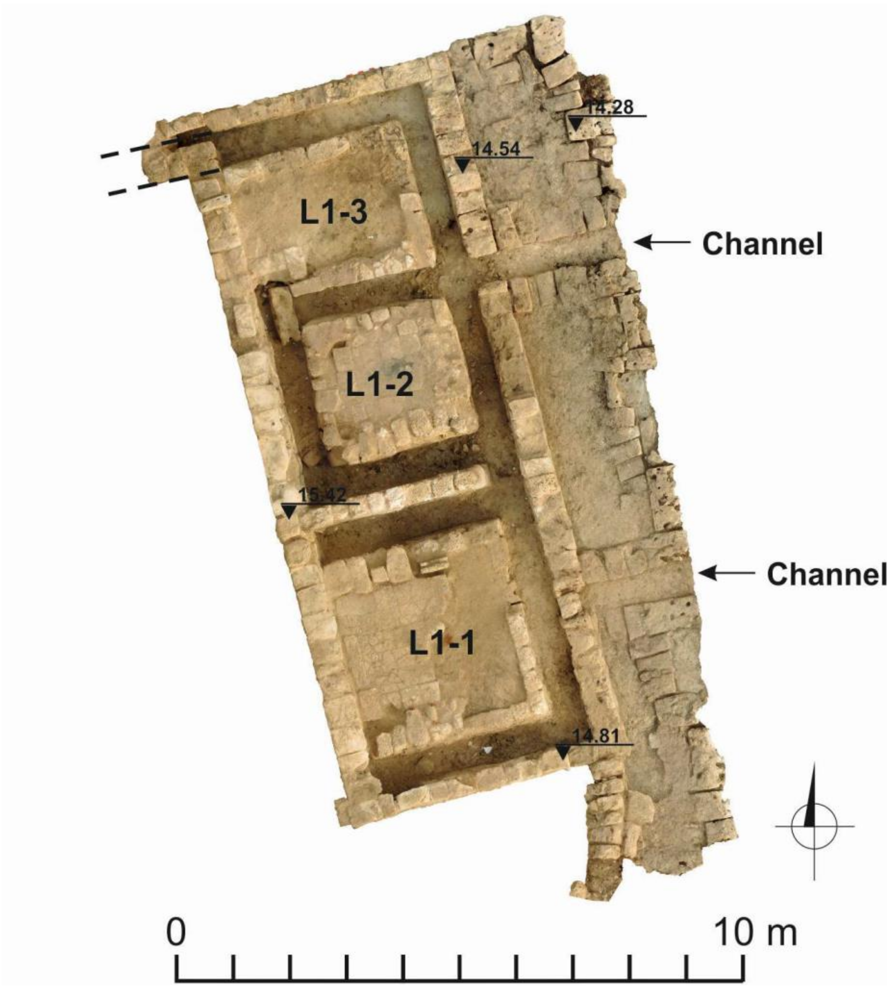

Figure 13: Latrine EKL

The attempt to reconstruct the latrine presents many difficulties. During the first excavations at the site in 2011, the archaeological team made the first preliminary reconstruction of the *forica* (fig. 14). The plan distinguishes three areas. While L1-1 and L1-3 are addressed as latrine rooms, L1-2 is interpreted as an anteroom. The building's entrance appeared to open through the east wall, as the remains of steps outside the building may indicate, which lay at about the level of platform L1-2. According to the plan, entrances to the northern and southern units would be provided from room L1-2. However, this interpretation, based on a questionable reconstruction of the walls, appears doubtful. A partition wall between L1-1 and L1-2 can be reconstructed with certainty since transparent wall remains have been preserved between the shafts of the two rooms. More significant ambiguity is the reconstruction in the area between platform L1-2 and L1-3. These two platforms are separated only by a channel. The archaeological material does not allow the reconstruction of a wall running along the shaft between L1-2 and L1-3, as the mentioned plan presents.[224]

[224] Derda et al. 2020b, 8. 10-11; Kościuk 2012, 31, fig. 2, 34.

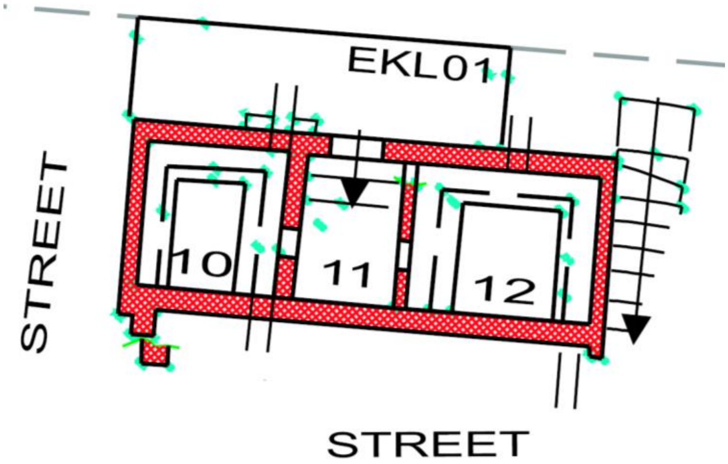

Figure 14: Reconstruction after Kościuk

Additionally, there is still considerable uncertainty concerning the whole complex. It stems from the poor state of preservation of the site. Ambiguities arise around the following questions: Where to locate the entrance or entrances to the building; how many separate areas did the building consist of; where to reconstruct the seats; what was the function of area L1-2?[225]

The preserved height of the rising wall proved to be too low and at no point does it clearly indicate the existence of a doorway. The archaeologists suspect an entrance to the supposed latrine from the eastern side, which opens directly onto the lake. The main argument favouring that assumption is the remains of a staircase identified at the level of L1-2, which suggest the steps located there were directly connected to the building. The proposal to reconstruct the access to the latrines on the east side of the building, although the shaft runs along the entire east wall, may seem to be a misinterpretation. It may appear logical to plan a door at the point under which there is no sewer. Nonetheless, the exact location of the entrance to a public latrine was not subject to any general or rigid rule. The entrances were adapted depending on the surrounding terrain and the size of the complex.[226]

In many cases, a latrine shaft runs along all four walls, above which a ramp provides access to the interior. There is also evidence of latrines in which the shafts ran along three walls. In many cases, access to the lavatories was provided above the deep canal. Consequently, there was not always an entrance on the fourth wall, which was not equipped with a further channel. Such an

[225] Derda et al. 2020b, 8. 10-11.
[226] Babraj et al. 2014, 46-48. 52.

example can be observed in Housestead's Roman Fort (Vercovicium). In that case, no particular furnishings are visible along the fourth wall.[227]

In contrast, the latrine in the Baths of the Philosopher (V, II, 7) at Ostia was designed differently. Here, the total length of the fourth wall was used to build in a semi-circular basin. Access was also provided in this case by a ramp; a similar example is provided by the latrine of the Marcellum in Puteoli.[228]

According to Kościuk's reconstruction (fig. 14), the middle platform – i.e., L1-2 – served as an anteroom. The visitor was first led into the vestibule, providing access to the northern and southern rooms. However, when looking at the reconstruction, it is noticeable that there was no wall between the area L1-2 and L1-3. The separation of the building into three areas, therefore, proves to be problematic. Since the separation between L1-2 and L1-3 cannot be confirmed, one can assume that only area L1-1 was strictly separated from the rest of the building.[229]

At least two or three separated areas may indicate that it is a latrine with a gender partition. Assuming this was indeed the case, one might wonder why the building only provided shared access to the separate latrines. One could assume that the access to the women's wing was planned in a different place than that of the men. Such an assumption was justified by finds from Abu Mina. The public latrines usually had independent entrances and were separated from each other. Therefore, one could imagine that the entrance to area L1-1 had an individual entry, while a wall did not separate area L1-2 and L1-3. This would mean that the area was a single room with an additional entrance. It is conceivable that the channel running between L1-2 and L1-3 was not covered with seats. As mentioned above, the seats usually leaned against the wall on one side. In this case, the deep recess in the floor may indicate a washing facility above, where the hands were washed, leaving the dirty and used water to flow directly into the canal.[230]

The biggest problem is the reconstruction of the benches. By looking at *foricae*, one can observe the typical construction of the seats. Those were either built directly into the wall or placed on wooden or stone pillars that protruded from the masonry. In the case of latrine L1, it is not clear what purpose the channel between L1-2 and L1-3 was intended to serve, as no seats were probably planned at that point. The rows of seats in area L1-1 ran along the shafts on the south and north walls, and there were probably a few seats along the east wall, where the entrance

[227] Jansen et al. 2011, 136.
[228] Jansen 2011, 83, fig. 6, 18.
[229] Kościuk 2012, 34; Derda et al. 2020b, 10-11.
[230] Derda et al. 2020b, 10-11.

was probably located. In area L1-3, it can be assumed that the seats were located along the south and east wall.[231]

Furthermore, one could posit a row of seats in area L1-2, which could have been built along the west and south wall. However, such a construction does not seem logical and cannot be supported by a single comparative example.[232] Based on the current state of knowledge and the lack of comparative models, it is not possible to answer why the sewage system was planned and implemented in this way in the case of latrine L1.[233]

3.1.5. Comparative Examples

3.1.5.1. Latrines in Baths

The example of the double bath at Mares testifies to the fact that some of the Late Antique *thermae* were subject to a gender division. The double bath has a schematic floor plan showing a clear division into two areas. Although both bathing wings have a similar layout, only one part of the baths features a toilet, which was presumably used by women as well as men. If this hypothesis is correct, we can assume that during the planning and construction of the communal latrine, the design was adapted to the needs of both sexes. Unfortunately, the archaeological material provides us with little support to make further statements regarding the question of hygienic measures in the latrine of the double bath. The examination of the construction phases also offers no evidence for changes in the interior equipment after the rearrangement in this part of the double bath, where the entrance to the latrine was exclusively accessible from the presumed women's wing.[234]

Unfortunately, the evidence from other double baths also shows us a less than pleasing picture. According to the actual state of knowledge and due to an extremely sparse archaeological basis, vague observation of the ground plans and the knowledge of the drainage system within the complexes are of little help in the attempt to reconstruct the interior fittings of the latrines in the Egyptian Late Antique baths. Nevertheless, a brief look at other facilities will be taken to provide a broader picture to clarify the question of the lavatory's position within the bathing complex and sewer connection. Insights gained from this process will form the basis for further interpretations in a subsequent step.

[231] Derda et al. 2020b, 10-11.
[232] Cf. Blanke 2020, 177-192.
[233] Derda et al. 2020b, 10-11.
[234] Maréchal 2020, 412-413.

Although only a few double baths are known to have been built in Egypt in the period between the 4th and 7th centuries AD, we must admit that the number of such baths divided by gender is nevertheless much higher than in Antiquity.[235] Besides the double baths in Marea discussed above and the double bath from Abu Mina (which will be examined in more detail in further chapters), we are aware of three other double baths with a gender division, respectively in Kom el-Ahmar (fig. 15), Mergham and Taporis Magna. Moreover, baths in Mit Abul Kum have been converted into divided baths.[236]

The most appropriate example of a bathing facility in which the position of the latrine and the sewerage system were investigated is the complex at Kom el-Ahmar. The thermal structure has a very irregular floor plan. Looking at the ground plan, the impression is given that the individual areas of the bath were built side by side and not enclosed in a square wall, as is the case in the Roman predecessors. The bath has two main entrances: one entry is located on the north side of the complex, the second lies on the south side. While the northern access leads directly into the bathing facility, the southern entrance is very long and involves a sharp curve within the corridor. Right at the beginning of the elongated corridor, a latrine was built. The toilet follows a similar layout to the latrine of the double bath in Marea. Likewise, the latrine seats were built along the walls of the square room. The access to it was in front of the entrance to the women's area. According to archaeological evidence one can conclude the use of the latrine was intended both for women and men. The location of the latrine in front of the entrance to the women's hall was constructed in such a way as to exclude the possibility of looking into the first room of the southern part of the baths, being prevented by a specially built corridor. This design differs considerably from the entrance to the Marea baths, especially after the second phase of the reconstruction of the supposed women's wing. In spite of the different ways to design the entrance to the bathing latrine, similarities, or comparisons between the two *thermae* can be seen in the organisation of the drainage system. In both Marea and Kom el-Ahmar, the main drainage channel ran through the latrine, carrying away used water and other waste products deposited in the latrine.[237]

[235] Neudecker also suggests that the ancient double baths were not necessarily subdivided into sexes. Cf. Neudecker 1994, 64; Jansen et al. 2011, 132.
[236] The baths at Mergham, Mit Abul Kum and Taporis Magna were not completely excavated nor is reference made to latrines in publications regarding these baths. Based on current knowledge, we are unable to determine whether the baths were provided with latrines. For more on the baths at Mergham see Fournet et al 2017, 492-493; Maréchal 2020, 414-415. A detailed description of the Mit Abul Kum baths can be found in Fournet et al. 2017, 494; Maréchal 2020, 415. The results of the study of the baths at Taporis Magna can be taken from Le Bomin 2015; Le Bomin et al. 2015; Fournet et al 2017, 511; Maréchal 2020, 418-419.
[237] Maréchal 2020, 409-410; Fournet et al 2017, 481; Kenawi 2014, 106-112; Khachab 1949, 30-38.

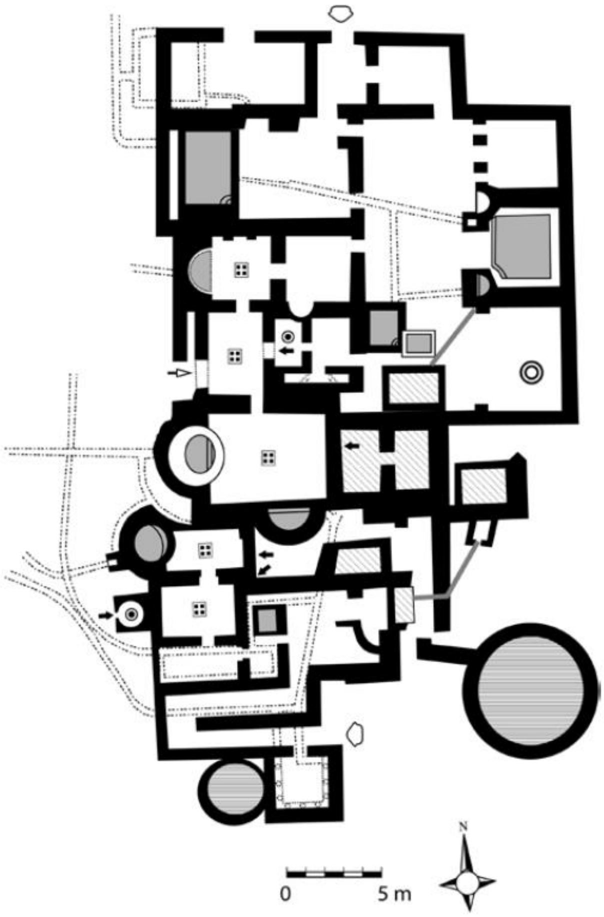

Figure 15: Baths in Kom-el Ahmar

With regards to the other double baths in Egypt, no information is available regarding the construction of the *forciae*. This is due to the fact that the thermal complexes in Mergham, Ait Abul Kum and Taporis Magna have not yet been fully investigated, and publications on the baths are lacking. To illustrate the poor state of knowledge, the thermal facilities at Mergham can be taken as an example. The baths were not completely recorded during the course of the excavations, so the location of possible latrines cannot be determined, nor any conclusions made about the drainage system. The lack of excavation reports, which were never published, is the reason for the inadequate information. Furthermore, the only available ground plan does not allow us to discuss the question of the presence of a latrine connected to the site.[238]

The investigations of the double baths in Egypt provide us with a less than satisfactory basis for clarifying the hygienic measures in the thermal facilities, especially with regard to the sanitary accommodations of the baths. Nevertheless, in chapter 4, an attempt is made to draw

[238] Fournet et al 2017, 492-493; Maréchal 2020, 414-415.

general conclusions about the hygiene standards in Egyptian baths from Late Antiquity on the basis of the material available to us.

3.1.5.2. *Foricae*

In the search for parallels of available latrines with a similar internal division as the above described *forica* EKL (fig. 13), it was difficult in any way to compare this unique design with the structures of other public latrines. The issue is strongly connected to the fact that the latrine in Marea is divided into three sections. In most cases, public latrines have one, maximum two room(s). For example, most *foricae* dating between the 1st and 4th centuries AD usually have one room, and therefore it is most likely that this type of latrine was used by men exclusively.[239] Unlike ancient *foricae*, in Egypt in the Late Antiquity there are also toilets which had two separate rooms, a fact which forms a basis to support the hypothesis that double latrines were accessible to both men and women.[240] Such an example would be the latrines at Abu Mina discussed below (see chapter 3.2.4.1-3.). A similar division into two sections can be seen in the nearby so-called *villa rustica* of Marea (fig. 16). In this case, three latrines are located in a complex consisting of two peristyle courtyards surrounded by porticoes. Two lavatories share a common anteroom, while the third is separated from the double latrines by a staircase leading to the first floor. The plan shows that all three latrines had a subterranean canal, which carried away the impurities outside the perimeter of the so-called villa.[241]

In order to obtain more information concerning the building system of a public latrine, a report from an excavation in Kom el Dikka – a Late Antique district in Alexandria – provides a good basis for further comparisons. A public latrine is situated at the so called 'southern passage', i.e., one of the main streets leading to the imperial baths. *Forica* is situated in room E and was open to public. The latrine is located in a rectangular room, which is bordered on three sides by 2.5 m deep channels. The length is not known, but the plan allows the width of the room to be estimated at just under 6m. The channels are at the floor level, i.e., 0.5m wide, and are tapered downwards. At the lowest point, the width is 0.1m. The side walls were fixed with double limestone slabs, which are only partially preserved. The channels themselves had no paving. The remaining floor was paved with oblong rectangular 0.8/0.9 x 0.4 x 0.04 m stone slabs. A stone block with a deepened groove was uncovered, which had served as a gutter. The benches and parts of the floor were probably removed in the Middle Ages. Whether the space was used

[239] On the discussion see chapter 4.
[240] Grossmann 2018, 205-206.
[241] Grossmann 2002, 243-245. 394-395, fig. 10.

in the later phases remains unclear due to a lack of profound stratigraphy.[242] On the basis of the archaeological report of this room, we can state that the latrine was not connected to the wastewater system, most probably the liquid impurities seeped into the soil at the bottom of the deep canal. How the latrine was cleaned from faeces remains uncertain. Archaeologists assume the presence of an underground sewer, which was designed to carry the dirt to an underground room. This assumption is not grounded in archaeological material. In order to prove the authenticity of this suggestion it is necessary to carry out further investigations under the street R4 (southern passageway).[243]

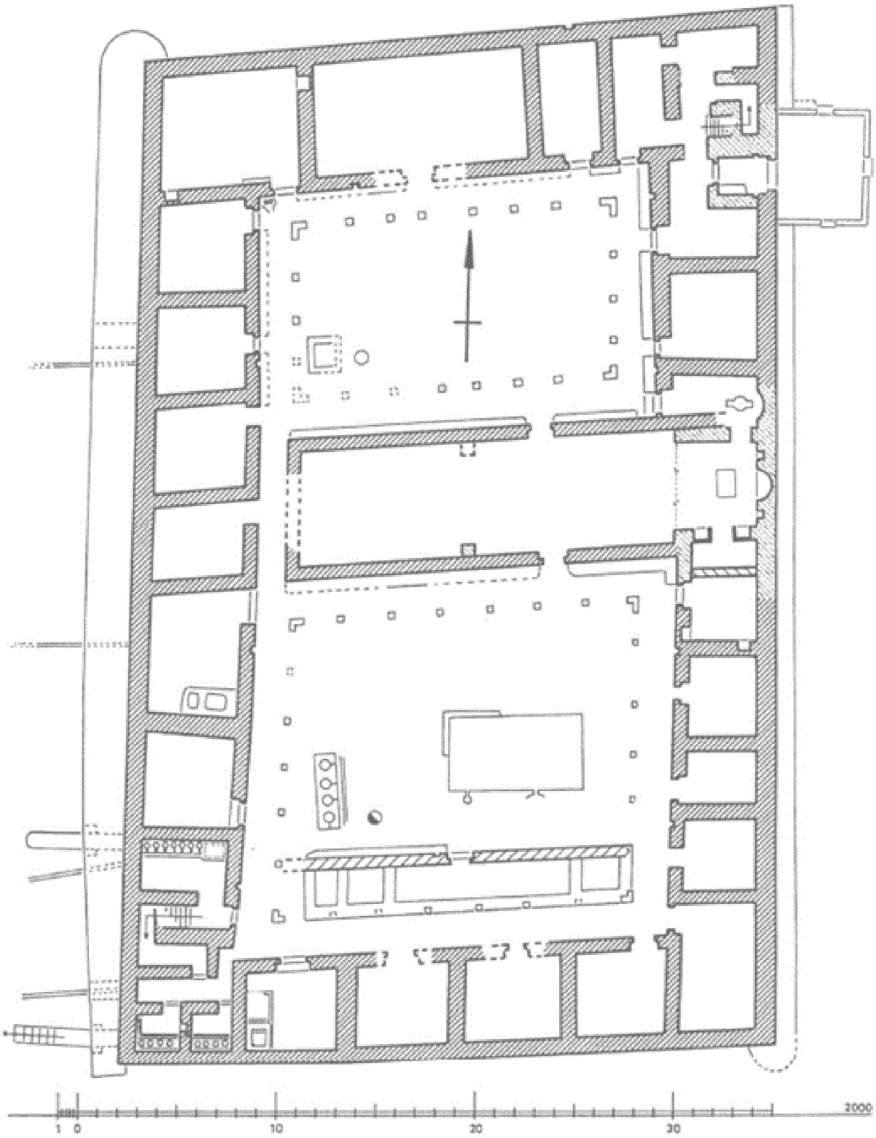

Figure 16: The so called *villa rustica*

[242] Woźniak 2008, 41-44.
[243] Woźniak 2008, 44.

This differentiated overview of public latrines allows us to conclude that public latrines were not necessarily connected to the city's sewage system. Moreover, not every latrine gives us the basis to claim that *foricae* in Egypt dating to the period of Late Antiquity were always subject to gender division. Furthermore, these observations allow us to suspect that the approach to cleanliness and hygiene in public places varied from place to place.[244]

3.1.5.3. Latrines in Private Houses

The study on private latrines in the Egyptian cities, towns and villages dating to the period of Late Antiquity has not been carried out to date. The main reason for the limited knowledge concerning the region's sanitary systems of this period is related to the exceptionally few excavations and projects that focus on the period of Egyptian urbanization between the 4th and 7th centuries AD. One of the most famous cities, or rather its district, subjected to intensive archaeological research is the already mentioned Kom el-Dikka. Within this district, which dates its main exploitation phase between the 4th and the first half of the 7th century, not only the imperial *thermae*, theatre, and a big cistern were investigated through archaeological excavations, but also a housing fragment, which was probably inhabited by the lower class. In this district we find several multi-storey houses, where there are reasons to assume that most of these buildings were equipped with a latrine. As an example, the house D, which is dated to the 5th century, contains a well-documented latrine.[245]

A latrine is located in the north-east corner of house D on the ground floor. The floor plan of the room is rectangular 2.2 x 2.55 m. From the courtyard of building D, a narrow 0.6 m wide corridor led to room 9. On the plan it is evident that the latrine was positioned in a partitioned area, behind the stairs connecting with an upper floor. In addition, traces of iron nails have survived in the aforementioned corridor, indicating a partition door between the two areas: the courtyard and the latrine. Room 9 contained a bench and a drainage shaft (in the south-east corner). A rectangular cesspit was located below the room. Despite the poor state of preservation, both the *necessarium* and the original shape of the shaft can be reconstructed. Room 9 was covered with limestone slabs and hydraulic mortar. The bench can be reconstructed along the south wall (the reconstruction is based on the drainage shaft located there, as well as a limestone plinth). The duct as well as the limestone plinth were plastered with red hydraulic mortar (*opus signinum*). The ditch was supported by additional buttresses on the north and south

[244] For further interpretation see chapter 4.
[245] Rodziewicz – Michałowski 1984, 107-111.

walls. No disposal channels could be established that were embedded in a sewer system. This suggests that faeces were removed from above.[246]

Examples given above demonstrate that latrines in private houses were not connected to the sewer system. All known parallels indicate that the necessities were not only located on the ground floor of the building. In the private houses of both Marea and Alexandria shafts have been preserved, which can be interpreted as a conduit for the drainage of latrines from the upper floors. Such a system allows us to assume that the hygienic standard in private houses was not particularly improved. Nevertheless, the very fact that the dwellings were provided with a sanitary zone, and that the latrines were usually situated on the margins within a building, indicates an attempt to separate the pollution collection area from other parts of the building. Unfortunately, we are not aware of any example which could confirm the assumption that private latrines were equipped with hand-washing facilities. Furthermore, it is not possible to answer the question of how people cleaned themselves after using a sanitary facility.

3.2. Abu Mina

The Late Antique and early medieval site of Saint Menas, which bears the name Abu Mina, is located in Lower Egypt about 45 km southwest of the city of Alexandria, in the Mareotis region. The 'holy' place is situated in a desert area several kilometres south of Lake Mareotis (fig. 3). Once known as the largest pilgrimage centre in Egypt, it has been neglected for almost 800 years since the 12th century AD, when it was completely abandoned by medieval population. Admittedly, even the exact location of the famous pilgrimage site was unknown for several centuries.[247]

3.2.1. History of research

The first reference to the ruins of Abu Mina is listed in the 19th century, although it took another century before the first official publication appeared.[248] It is noteworthy that the first presumed discoveries of the ruins did not link this site to St Menas. Thus, in the 19th century, many different names were given to the place, such as "bumnach", which is indicated on a map of 1827, or Medinet El Kafirin (City of the Gentiles).[249] Research interest in the location only developed at the beginning of the 20th century.[250] From 1905 to 1907, large excavation

[246] Rodziewicz – Michałowski 1984, 107-111.
[247] Bangert – Gwynn 2010, 293-294.
[248] Quatremère 1811, 371; Pacho 1827, 10; Junker 1889, 25.
[249] Quatremère 1811, 371; Pacho 1827, 10; Junker 1889, 25; Kościuk 2009, 15.
[250] In the 19th century the place was mentioned in travel reports, but it was not identified as the site of St Menas.

campaigns were carried out under the direction of Kaufmann. However, they were not undertaken and documented according to today's methods. In the course of the first excavations, based on the finds – especially the large number of Menas flasks – it could be confirmed with certainty that the excavated ruins represent the Late Antique pilgrimage site of St Menas.[251]

During the first excavation campaigns, the archaeologists concentrated on uncovering the church buildings.[252] The excavations served as the basis for a series of publications in which Kaufmann published a selection of very first findings.[253] Furthermore, he presented the initial interpretations, which, however, can be regarded as erroneous due to the poor and inefficient state of research at that time. The series of publications also contained a number of errors that were not corrected until decades later.[254] For example, Kaufmann based the dating of the church buildings exclusively on historical sources, on the basis of which he also referred to the largest church complex as the 'Arkadius Basilika'. In most of his publications he concentrated on the so-called "holy spring" from which the healing water was to be drawn.[255] His assumptions were also wrong on that point. Contrary to Kaufmann's hypothesis, the buildings investigated were not a facility containing holy water, but bathing complexes of the pilgrims' centre. At the beginning of the 20th century, further discoveries were made in articles by Baumstark, who focused on the 'Arkadius Basilika', and by Drerup, writing about the ostraca discovery.[256]
Further research on the site was not carried out until the 1920s. At that time, the project was led by the Graeco-Roman Museum in Alexandria, which did not publish any fundamentally new results.[257] Another attempt at comprehensive research in Abu Mina was made by Deichmann and von Gerkan. Deichmann was one of the first scholars to question Kaufmann's interpretations. In his publication he made it clear that the baths found by Kaufmann had no cultic significance. In addition, he discussed dating issues, which in his opinion did not correspond to the ancient tradition. His critical approach to the results published by Kaufmann and the numerous corrections clearly showed that the pilgrimage site of Abu Mina required a complete revision.[258]

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[251] The following accounts were published: Kaufmann 1906; Kaufmann 1907; Kaufmann 1908; Kaufmann 1909; Kaufmann 1910a; Kaufmann 1910b; Kaufmann 1924; Breccia 1933; Additionally, the excavations were discussed in the following articles: Baumstark 1907, 9; Drerup 1908, 240-257.
[252] Kaufmann 1910a, 3-9.
[253] Cf. Kaufmann 1906; Kaufmann 1907; Kaufmann 1908; Kaufmann 1909; Kaufmann 1910a; Kaufmann 1910b; Kaufmann 1924.
[254] Deichmann 1937, 78-86; Ward Perkins 1949, 37-40; Labib 1953, 133-138.
[255] Kaufmann's interpretation regarding 'holy spring' see: Kaufmann 1907, 45. 64-65; Kaufmann 1908, 7. 10-14; Kaufmann 1910a, 103-122.
[256] Baumstark 1907, 9; Drerup 1908, 240-257.
[257] Bereccia 1933.
[258] Deichmann 1937, 75-86.

Due to Kaufmann's criticised approach to the evaluation of the literary sources, the ancient sources concerning Abu Mina were published in detail by Perkins in 1949. The publication focuses mainly on the ancient tradition concerning the time of the churches' origin. On the basis of the quoted text fragments, Perkins establishes a chronology that also refers to the construction phases of the Christian basilica.[259] The excavation carried out by the Coptic Museum Cairo at the beginning of the 1950s focused again on the ecclesiastical buildings. However, the publication of the campaign is very short and presents hardly any new results. As in earlier publications, there is a no detailed description of the finds and their contexts.[260]

The significant turning point regarding research on the ancient pilgrimage centre is due to a project that emerged from a partnership between the German Archaeological Institute and the Coptic Museum in Cairo.[261] Under the initial direction of Schläger, the excavators concentrated in the first years on the more recent exploration of the "Great Basilica", which Kaufmann described as the 'Arkadius Basilika'. In addition, the so-called 'Südraumgruppe' was discovered, bordering directly on the largest ecclesiastical building of Abu Mena.[262] At the international workshop on the exhibition "Coptic Art", Schläger presented the findings and results of his campaigns and made it clear that not only the churches, but also the surrounding settlement was worth further investigation.[263]

From 1963 to 1967, Müller-Wiener was in charge of directing the excavation. During this period, the work concentrated on the 'Bäderbasilika', which had been misinterpreted by Kaufmann and in the course of the research was renamed as the 'Doppelbad'. The faulty interpretation was understood to be an unfortunate misreading of a travelogue. Nevertheless, during the work, a cultic interpretation was attributed to an excavated baptistery, which was thought to contain a healing bath. Moreover, in the course of the campaigns, it was possible to investigate areas to which no ecclesiastical function could be attributed in the pure sense. Although not as a main focus, the exploration of the settlement began to become relevant. For this reason, a house including a pottery workshop was investigated. Due to the size of the house, the archaeologists chose to refer to the complex as a 'Palast'.[264]

From 1969 onwards, excavations were carried out in Abu Mina under the direction of Grossmann. In the 1970s, the work focused on the exploration of the main square together with

[259] Ward Perkins 1949, 26-71.
[260] Labib 1953, 133-138.
[261] Kościuk 2009, 23.
[262] Schläger et al. 1963, 144-120; Schläger et al. 1965, 122-125.
[263] Schläger 1964, 158-174.
[264] Müller-Wiener 1965, 126-137; Müller-Wiener et al. 1966, 171-187; Müller-Wiener et al. 1966, 171-187; Müller-Wiener et al. 1967, 206-224; Müller-Wiener – Grossmann 1967, 457-480.

several pilgrims' dwellings adjacent to the pilgrims' court. Not only did the core settlement arouse the interest of the archaeologists, in the north, outside the settlement in the so-called 'Nordbasilika' (which was excavated by Kaufmann and given the name 'Coemeterialbasilika') new investigations were carried out. Furthermore, another complex, which had been interpreted as a 'Gartenkapelle' during the first excavations, was re-examined. In the course of the campaigns, the building was interpreted as a church with numerous annexes, named the 'Ostkirche'.[265]

During the campaigns in the 1980s, the greatest discoveries included numerous pilgrim accommodation facilities, such as the so-called hemicycle, the large peristyle and the small peristyle buildings. In addition, to the east of the large basilica, the so-called eastern courtyard with adjoining building complexes was explored. Further exploration of the border areas of the pilgrimage centre led to the discovery of the settlement walls including three towers. As Abu Mina was also inhabited in the Middle Ages, Kościuk's work focused on the houses to the north-west, which were built after the 7th century.[266]

In 2000, the east-west street of the settlement was precisely explored and documented.[267] Excavations in 2005 concentrated on the areas along the main street, opposite the northern baths. The findings of the rooms allowed excavators to assign to them the designation of shops. The excavations over the last 20 years have been hampered by numerous obstacles. Due to a high-water level, archaeological fieldwork had to be interrupted from 2006 to 2013.[268] In recent years, the excavators have been struggling with many difficulties connected to the rise of water level, due to which parts of the ancient pilgrimage centre as well as the excavation house remain under water.[269]

The excavation reports still form a basis for understanding the Late Antique Pilgrimage Centre today. The reports serve as a fundamental source for the contextual evaluation of the site. Certainly, the seminal work on early Christian pilgrimages by Kötting, written in 1980, must be mentioned in regard to Abu Mina.[270] The monograph aroused great interest and only a few years after Köttings publication, specialists in the field of Christian archaeology gathered at a

[265] Grossmann et al. 1970, 55-82; Grossmann et al. 1977; Grossmann – Jaritz 1980, 203-227.
[266] Grossmann et al. 1982, 131-154; Grossmann et al. 1984, 123-151; Grossmann et al. 1991, 457-486; Grossmann et al. 1994, 91-104; Grossmann et al. 1995, 389-423; Grossmann et al. 1997, 83-98; Ab del-Aziz Negem 1993; Grossmann – Kościuk 1992, 31-41; Grossmann – Kościuk 1993, 73-84; Kościuk 2009, Kościuk 2019.
[267] Grossmann – Kościuk 2001, 97-108.
[268] Grossmann – Kościuk 2005, 29-44; Grossmann – Kościuk 2006, 29-42; Grossmann et al. 2013, 45-76; Grossmann – Kościuk 2014, 59-74.
[269] This information was obtained courtesy of the employees of DAI Cairo.
[270] Kötting 1980; Kötting 1988.

conference to present numerous papers on the subject of Christian pilgrimages in Antiquity.[271] At the largest conference to date dealing with the topic, Grossman referred to his major monograph on Abu Mina.[272] Further, among his latest publications is the 2019 published book on the Ostraka House.[273]

In the last fifteen years there have been few monographs devoted to Abu Mina. Rather, various articles have republished or summarised findings from the site.[274] Nowadays, research focuses on larger contexts. Not only the individual pilgrimage sites are discussed, but the significance of early Christian pilgrimage itself.[275]

One of the greatest shortcomings that we encounter to this day in studying the Egyptian pilgrimage site is the great lack of publications.[276] As already mentioned above, the main basis for the study of Abu Mina consists of published excavation reports, while publications that deal not only with the ground plans of individual complexes but that also provide us archaeological context are largely missing. At this point, it should be noted that in the second half of the 20th century, researchers placed a very special focus on church buildings. A good example are the two major publications that have been published about Abu Mina. These are very large works on the baptistery[277] and the crypt church[278], which were issued by Grossmann. The scientific questions related to the political structures and architectural peculiarities of that time, so it may not be surprising to find the descriptions of the lavatories in the reports mostly limited to two or three sentences, often rendering their identification difficult. Therefore, the information regarding these facilities throughout Abu Mina can be rather lacking. Nevertheless, Abu Mina is a good, but not fully researched example of the largest early Christian pilgrimage centres of the Late Antique Christian world.

3.2.2. Ancient Sources

From the Constantinian era onwards, the first saints who suffered martyrdom were highly venerated around the entire Mediterranean area. They especially gained popularity in North

[271] Dassmann – Engemann 1995.
[272] Grossmann 1989c.
[273] Grossmann 2019; Grossmann published also a volume on the baptistery, for more see Grossmann 2004.
[274] Maraval 2003, 63-74; Rummel 2007, 133.134; Bangert – Gwynn 2010, 293-329; Wiśniewski 2011, 203-208; Sörries 2011, 314.317.
[275] Cf. Reekmans 1980; Kolb 1984; Noga-Banai 2008; Hartmann 2010.
[276] Only few researchers dealt with archaeological material. Ostraca were published by Wortmann 1971 and Litinias 2008. Marble findings were presented by Severin 1987. For numismatic evaluation see Noeske 2000. Other findings, which production cannot be connected with Abu Mina were published by Engemann 1987. For more concerning eulogia see Engemann 2016; Witt 2000; Török 1993; Kaufmann 1910b.
[277] See the whole publication Grossmann 2004.
[278] See the whole publication Grossmann 1989c.

Africa and Egypt – that is, in the regions which do not have a written apostolic tradition.[279] Predominantly in places where the apostles did not preach, there was a great need to strengthen the "roots" of the faith. After the end of the great persecutions of the 3rd and the beginning of the 4th century, many *vitae* – i.e., stories of saints who lost their lives in martyrdom – were composed, whose devotion to God was particularly highly valued by Christians in the later centuries.[280]

Therefore, it may not be surprising that burial places of martyrs attracted numerous pilgrims. This way, the faithful could express their devotion towards a saint in their own region, instead of taking a long journey to the Holy Land. Rather than the martyr's virtues, the intercession and healing power of the locations were far more important aspects to the ancient pilgrim. The site of St Menas, especially his martyrium,[281] became famous at the end of the 4th century, precisely because of significant healing power attributed to him. Gradually, the knowledge about the venerated site and the miraculous intercession of Menas spread through Egypt and later on to the Mediterranean region, causing a great pilgrimage movement.[282]

To this day, St Menas is considered to be one of the most important saints of Egypt. In numerous Coptic monasteries,[283] cups, flasks, and other souvenirs with his image are being sold to visitors. According to the legend, Menas suffered his martyrdom during the persecutions of Emperor Diocletian between AD 285 and 305.[284] After his death, two camels carried his body through the Mareotis desert. During the journey, the camels stopped and refused to continue crossing the desert. This particular behaviour of the animals was understood to be a sign from God. The saint was buried at the very place that the camels stopped. Due to many miracles that have taken place around his burial, the local inhabitants decided – according to legend – to erect a small building above his tomb which had a shape of a tetrapylon. Over the years, the fame of this miraculous place began to spread so much that the Patriarch Athanasius (326-378)

[279] There is an oral tradition that names St Mark as the one who brought the Gospel to Egypt. However, the New Testament does not give any information about his later life.
[280] Duval 1983, 115-147.
[281] This term is derived from the Greek noun *martus* – the witness. Christianity, however, changed the meaning of the word, in the Christian context not only a witness is called a 'martyr', but a person who has been killed due to their faith. Martyria (sg. martyrium) – shrines of the martyrs were built as a place of worship and for the adoration of the deceased. For more see: Eastman 2019, 89-93.
[282] The miracle reports confirm the popularity of the site in late antiquity, see the publication of Drescher 1946 and Jaritz 1993.
[283] When visiting the Coptic monasteries in Egypt, such as Saint Tawadros in Thebes-West or the Red Monastery, there are small gift shops where souvenirs of Saint Menas can be bought. The saint is depicted with outstretched hands and two camels lying at his feet. It clearly testifies the preservation of his iconography over the centuries.
[284] Ward Perkins 1949, 26-73; Savvidis 1999, 1223; Grossmann 1998b, 282. For more information about S. Menas see the following publications: Drescher 1946; Rein 1913; Jaritz 1993.

commissioned a church to be built on the site. The body of the saint was subsequently transferred to the crypt of the church. To this day, the two camels are considered to be attributes of St Menas, often depicted with the saint himself on various wall paintings and reliefs (fig. …).[285] The locally produced eulogies (= pilgrim flasks) can be found in most archaeological-historical museums today, which testifies to the prevalence of the pilgrimage not only in the Egyptian region but in the whole Mediterranean area, leading many to undertake the great journey to come visit the sanctuary (fig. 17).[286]

Figure 17: St Menas

Archaeological remains such as the above-mentioned eulogies are not alone in testifying to the importance of the worshipped tomb of the saint. To this day, numerous writings have been preserved, describing the miracles attributed by the pilgrims to the intercession of St Menas. Many of the miraculous stories were related to the prayers of women, very often asking for the grace of maternity. A collection of popular Arabic tales related to the St Menas and the miracles which were supposed to have happened? through his intercession was published by Jaritz[287]. Further, various miracles and stories are known to us from Nubian texts of the Middle Ages, such as "ⲅⲓⲥ ⲙⲓ̅ⲛⲁⲛ ⲛⲟⲕⲕⲟⲣ"[288].

[285] A magnificent example of the image of the saint is conserved at the Kunsthistorisches Museum in Vienna (see figure 2, Inv.No.: Antikensammlung, I 1144).
[286] Barnea 1995, 509-514; Engemann 1995, 225-228; Klausen-Notmeyer 1995, 922-927; Lindscheid 1995, 982-986; Witt 2000; Hunter-Crawley 2017, 190-191.
[287] Jaritz 1993.
[288] El-Guzuuli – Van Gerven Oei 2012.

3.2.3. Topography

As mentioned above, the ruins of Abu Mina are located in Lower Egypt in the Mareotis region (fig. 3). The city of Alexandria lies about 45km northeast of the site. The Late Antique settlement 'Marea/Philoxenite' is located north of Abu Mina. The ancient pilgrimage site can be divided into three zones. First, the ecclesiastical area with two churches, a baptistery and a residential wing for the personnel. The second zone comprised of accommodation buildings and a number of other facilities dedicated for pilgrims And, finally, a small settlement representing the third core element of Abu Mina.[289]

During the 5th and 6th century, the centre of the Egyptian pilgrimage site was expanded and enlarged (fig. 18). The burial of St Menas in the crypt of the church was considered the centre of the complex. Gradually, the site gained great popularity, leading to the decision to build a second basilica, the so-called 'Great Basilica'. Its remains are located east of the 'Crypt-Church'. No other church dating back to Late Antiquity in Egypt could compete with the basilica in size. Among the travellers, there must have been many "young" believers, not yet baptized, who were moved by the miracles or healing powers attested to the site to profess the Christian faith. This is testified by another building that was part of the central and biggest ecclesiastical complex, namely a large baptistery,[290] which flanked the western side of the Crypt-Church. The massive building took up an area that was approximately almost as big as the core of the Crypt-Church itself. Such an architectural design of a baptistery is an exception in the region. The comparison to other facilities of this kind – e.g., the baptismal font in Marea (see chapter 3.1.) – clearly shows that other Egyptian baptismal fonts were much smaller and more modest in their execution compared to this example in Abu Mina.[291]

The central sacral buildings were preceded by a large rectangular pilgrims' courtyard on the northern side, where pilgrims and devotees gathered before being admitted to the site. Access was provided through a particularly narrow entrance gate at the northern end of the courtyard, allowing believers to reach the centre of the pilgrimage site.[292]

[289] Kościuk 2009, 28.
[290] Grossmann 2002, 141-143.
[291] In North Africa, however, we can find good examples which testify to a great and splendid execution of such baptisteries, such as the baptistery at the site of Hippo Regius, in Thimgadi or Tipasa. For more see Grossmann 2002, 137-141, 143-148.
[292] Grossmann et al. 1984, 147-149; Grossmann et al. 1991, 458-459. 468h; Grossmann et al. 1995, 390-392; Grossmann 1998a, 278-279; Grossmann 2002, Grossmann – Kościuk 2005, 31-32.

Figure 18: Pilgrimage site of Abu Mina

To the west of the large courtyard, a separate living area with an L-shaped courtyard was built. Here the living units were subject to a specific, almost uniform subordination. From the separated courtyard, access to individual rooms was granted to the inhabitants. This complex was usually divided into two-space housing estates, which were probably intended for church personnel and provided rooms for administration. The additional entrance gate to the separated area probably shielded the employed staff from the noisy and often overcrowded pilgrim's yard.[293] Representative rooms were built west of the L-shaped courtyard and south of the largest church complex. The special location as well as the dimensions of the building leave no doubt about its importance. Grossmann (the latest excavation director) interprets the complex as a bishop's see.[294]

Adjacent to the southern wall of the 'Crypt-Church',[295] a crescent shaped complex extended out, namely the '*hemicyclium'*.[296] Around a square, numerous rooms – of different sizes – accumulated alongside an almost semi-circular courtyard. The thickness of the walls, as well as the remains of a staircase, are evidence of a second floor of the building. Grossmann believes it to be an *incubatorium* for sick pilgrims who hoped for healing from their illnesses through a longer stay and special practices.[297] The unusual ground plan of the building in Abu Mina was probably intended to grant every visitor equal proximity to the grave, thus accelerating the healing process.[298]

On the opposite side of the pilgrims' courtyard, located in the northern part of the pilgrims' district, the long, north-south main road spreads out. It stretches from the northern town gate to the pilgrims' courtyard. Along the main road, strictly speaking, in the northern part of the pilgrimage site, numerous shops and two bathing facilities[299] have been built. Along the southern section of the road, several pilgrims' accommodation buildings can be found, such as *xendocheia* (=hostels) of different sizes and ground plans. Adjacent to the pilgrims' courtyard,

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[293] Labib 1953, 133; Grossmann et al. 1982, 143-145; Grossmann et al. 1984, 143-144; Grossmann et al. 1995, 407-409; Grossmann 1998b, 291.

[294] In the course of the excavations, several suggestions for the function of the building were made; in the reports it is referred to as the 'Südostraumgruppe' and 'Palast' see Schläger 1963, 119-120; Schläger 1965, 124; Grossmann et al. 1970, 63-64; Grossmann – Kościuk 1992, 37-38; Grossmann 1998b, 290-291.

[295] For the excavation reports on the 'Gruftkirche' see Kaufmann 1910a, 75; Schläger 1965, 123-124; Grossmann et al. 1977, 38-43; Grossmann – Jaritz 1980, 203-212; Grossmann et al. 1982, 131-137; Grossmann et al. 1984, 123-131; further publications: Grossmann 1989c; Grossmann 2002, 401-404.

[296] For the excavation reports see Grossmann et al. 1984, 134-138; Grossmann et al. 1991, 473-476; Grossmann et al. 1995, 401-406.

[297] In the ancient world, incubation practices in special places were very common. It is not only in the Christian context that we encounter sick people who travelled to certain places to recover. Among the most important 'health resorts' of antiquity are the sanctuaries of Asclepius called Asklepieion. The most famous and well-studied is the Asklepieion at Epidauros; see Horn 2013, 117; Alwis 2012, 5. According to Christian belief a blessing shall be poured out on the living faithful through the intercession of the martyr and the resulting healing would happen to the sick pilgrim; see Dagron 1987, 103-108; Grossmann 2002, 239-241; Wiśniewski 2013, 203-208.

[298] Grossmann 1998b, 288-289; Wiśniewski 2013, 203-208.

[299] The interpretation of the building group as bathing facilities was only secured following the excavations. In earlier publications, terms such as 'Palast' and 'Brunnenanlage' are used, which refer to the northern bath, see Müller-Wiener et al. 1966, 183-184; Müller-Wiener et al. 1967, 209-216; Müller-Wiener – Grossmann 1967, 458-460. For the excavation report on the 'double bath' see: Kaufmann 1906, 78-81; Kaufmann 1908, 7-20; Kaufmann 1910a, 103-114; Schläger 1965, 127-133; Müller-Wiener et al. 1966, 173-180; Müller-Wiener et al. 1967, 209; Grossmann et al. 1995, 423; Grossmann – Kościuk 2005, 32; Grossmann – Kościuk 2006, 33-36.

once stood a large hostel, which included rooms surrounded by a big atrium.[300] The special location, the architectural design and the size of the rooms clearly show how certain lodging was supplied for different social groups. This assumption can be reinforced by literary sources. A considerable amount of literature deals with the surviving pilgrim accounts of Late Antiquity. Yet these *itineraria* were written by believers belonging to a higher social class. This testifies to the duration and the expense of travel undertaken by these people. However, there has been relatively little literature published mentioning the journeys of the poorer population. Nevertheless, several studies have revealed that it is not *itineraria*, but collections of miraculous accounts from the Holy Places that have reported on the fate of the poorer pilgrims who in fact visited such shrines in great numbers. Therefore, it can be assumed that travellers of a higher social status as Egeria[301] or the pilgrim of Piacenza[302] were looking for a resting place in similar accommodations as the 'great *xendochium*', while most pilgrims had to stop for the night in less sophisticated accommodations.[303]

The hostels serving the less affluent pilgrims bordered the 'great *xendochium*' to the north. These consisted only of large peristyles[304] and a small number of side rooms. Because of their layout, these accommodations were called 'Peristyle-House'. Looking at the individual ground plans, it is easy to recognise that such facilities offered protection only from bad weather to the very poorest of pilgrims. This way, everyone who made the journey could at least count on a roofed overnight camp.[305]

The archaeological record points to other small houses and larger villas in the immediate vicinity of the pilgrimage centre. In addition, outside the town's limits, two other churches were identified, and these were also subject to archaeological excavations. Not far from the northern city gate, a basilica was built with a courtyard in the front and other adjoining rooms. Since the

[300] For the excavation reports on the 'great xendochium' see Müller-Wiener et al. 1967, 216-219; Grossmann et al. 1970, 56-60; Grossmann – Jaritz 1980, 214-216; Grossmann et al. 1984, 139-145; Grossmann et al. 1995, 95-99; Grossmann et al. 1997, 90-92; Grossmann – Kościuk 2005, 37-44.
[301] Egeria, also called Aetheria or Etheria, was a pilgrim in Late Antiquity who travelled between 381 and 384 to the Holy Land and Egypt. She described his stay in her pilgrimage report: *Itinerarium Egeriae, Peregrinatio Aetheriae*. However, she does not mention Abu Mina in the chapters (1-6) that describe the journey to Egypt. Supposedly at the end of the 4th century, the site of Saint Menas was still a local sanctuary. For more see Sivan 1988, 59-72; Brakmann 2006, 175-185; Klein 2010, 159-174.
[302] The report of the anonymous pilgrim of Piacenza dates to 570 AD. The description of the journey begins in Constantinople from where the pilgrim travels to Cyprus, Palestine, Jordan, Northern Mesopotamia, visiting cities such as Nazareth, Jericho, or Jerusalem. For more see Donner 1979, 240-314.
[303] Grossmann 2018, 201-210.
[304] For the excavation reports on 'Peristyle-House' see Grossmann et al. 1991, 476-479; Grossmann et al. 1995, 389-401; Grossmann – Kościuk 1993, 78-80; Grossmann et al. 1997, 83-86.
[305] For a summary description of these facilities and the interpretation, see Grossmann 2018, 201-210.

excavations undertaken by Grossmann, it is called the 'Nordbasilika'.[306] East of the pilgrims' sanctuary, outside the city limits, excavators investigated a tetraconch basilica, which also had an atrium and adjoining rooms. In this case, it is called the 'Ostkirche', due to its location east of the pilgrimage centre.[307]

3.2.4. Latrines

Throughout the entire area, both within the settlement borders and in the immediate region around Abu Mina, more than 10 latrines[308] dating back to Late Antiquity have been excavated by a German team. Two of them are located in the *hemicyclium*, two in the so-called Peristyle-House, two in the double bath, one in the northern bath[309] one in the so-called Villa, one in complex belonging to the East Church, and probably one in compound of the North Church. There are also several indications of other latrines, which were found in the medieval town.[310] The dating of the Late Antique latrines was based on archaeological material and literary sources concerning the settlement of Abu Mina. The latter experienced its flourishing period between the 5th and the beginning of the 7th century. The slow decay of the pilgrimage site is associated with the Persian (619-629) and Arab (939/42) invasions during the first half of the 7th century.[311]

[306] For the excavation reports on 'Nordbasilika' see Grossman et al. 1970, 69-74; Grossmann 1977, 43-45; Grossmann – Jaritz 1980, 216-222.

[307] For the excavation reports on the 'East Church' see Grossmann et al. 1970, 76-82; Grossmann 1977, 35-38; Grossmann – Jaritz 1980, 222-224.

[308] A total number of sanitary facilities cannot be established, since only 11 latrines are documented. We lack further information regarding lavatories in private houses. For the only report mentioning further latrines in non-published facilities see Grossmann et al. 1994, 102-104, as well a note in Grossmann 2019, 19.

[309] The DAI 2006 annual report mentions a latrine, but its location remains unclear, p. 112.

[310] The excavation reports mention latrines in the following houses: PH 23, PH 7, PH 8, PH 21, WA1. For more see the complete Polish publication by J. Kościuk 2019 and the excavation reports: Grossmann et al. 1991, 470; Grossmann – Kościuk 1992, 40; Grossmann et al. 1995, 413-414. 417. 422; Grossmann et al. 1997, 91-92.

[311] The history of the settlement in Abu Mina can be divided into three phases. The first phase is characterized by the late antique structures, which were built within the sanctuary from the end of the 4th century onwards, especially in the 5th and 6th centuries. This included the construction of the church complexes, the baptistery, the pilgrims' quarters and numerous shops along the main street. This flourishing of the sanctuary is interrupted by two great historical events, namely the Persian and Arab invasions, which date back to the first half of the 7th century. The coins found in the sanctuary show that most of the population abandoned the town at that time. During this period, layers of destruction were found in the church complex, northern basilica, baths, and pilgrims' accommodation. Some of the buildings, such as the North Basilica and the baths, were never restored. From the 7th to the 9th century the center lost its importance. Many buildings, like the Hemicycle, were built over. In addition, the pilgrims' hostels lost their original function. The last phase can be dated between the 9th and the beginning of the 12th century. This is evident in the radical overbuilding of the late antique buildings. On the location of the hostels appeared medieval houses. The town was abandoned at the end of the 11th century and the beginning of the 12th century.

3.2.4.1 The *hemicyclium*

The crescent building (fig. 19) is located south of the central church of the pilgrims' shrine, namely the Crypt Church. In addition to numerous rooms, which vary considerably in shape and size from one another, a special group can be identified, taking up the eastern side of the semi-circular complex. The area is characterized by a dense underground sewerage system and numerous washbasins as well as underground cisterns. Based on the findings, Grossmann interpreted rooms 1-19 as a washing unit. Two latrines, which were identified in rooms 14 and 17, also belong to the compound. This area could be entered not only from the courtyard of the *hemicyclium*, but also directly from the Great Basilica. An additional access to the ensemble was probably also possible from the adjacent so called 'palace'.[312]

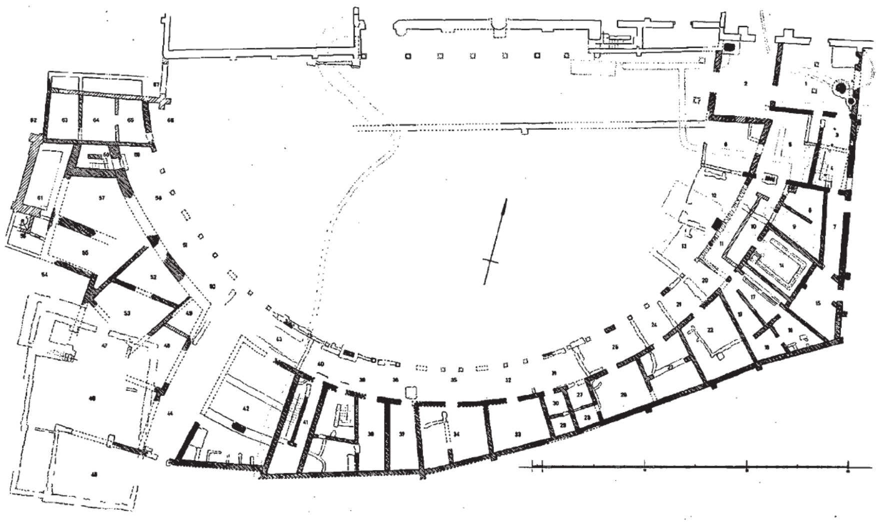

Figure 19: The *hemicyclium*

The north-eastern wing was subject to several building phases, the first two were particularly relevant for the construction of the *foricae*. In the first building stage (2nd half of the 4th century AD)[313] two latrine rooms were built, which were accessible from the courtyard. Both differ in size and design. However, during further construction work, the second phase of alterations completely redesigned the entrance to the lavatories. The pilgrims were no longer able to enter the facility directly from the semi-circular courtyard but were obliged to take a larger walkway through the eastern rooms of the complex from that point on. A partition wall separated the respective entrances to the rooms 14 and 17 and closed the original access from the courtyard.

312 For the excavation reports on the '*hemicyclium*' see Kaufmann 1910a, 90; Grossmann et al. 1984, 134-138; Grossmann et al. 1991, 437-476; Grossmann et al. 1995, 401-406.
313 Kościuk 2009, 38.

The corridors resulting from these changes, thus provided additional protection from unwanted glances. An access was created from corridor 10 to the rooms 8, 9 and 14. Corridor no. 11 led the visitor to the rooms 16-19.[314]

Due to the construction of two adjacent latrines, the excavators assumed that these were also subject to gender division. The larger latrine in room 14 (fig. 20) was equipped with three benches, which were situated along the walls. A simple, large, and deep clay container served as a water basin, which was located inside the room directly next to the entrance. This room is identified as a women's toilet due to its size and equipment.[315]

Figure 20: Latrine room 14

In the adjacent second latrine of room 17, only one bench seat was built. The row of seats ran along the eastern wall which divided room 17 from room 14.[316] Along the other walls, excavators did not find any additional basins or other evidence of water vessels. Nevertheless, a water gutter ran along the floor of the smaller latrine (room 17), which led through the entire length of the bench ending in the waste pit. This way, the water was prevented from flooding the entire room. Such gullies, which are found in the ground, served to channel the wastewater

[314] Grossmann et al. 1991, 473.
[315] Grossmann 2002, 236.
[316] Grossmann et al. 1991, 475 footnote 45.

away.[317] The water-basins, which are preserved in room 14, allow us to ascertain that water was also available to the visitors inside the facility. It is possible that in the latrine room no. 17 a water jug or another container had this function, but nothing of this has been preserved in the archaeological material.[318]

More detailed investigations allow for a better view of the sewage system of the toilets. Below the benches –in both room 14 and 17 – a deep canal was used to drain the faeces into a shaft. From there, another pit was constructed, which carried the wastewater to a large underground storage room.[319] The archaeological feature indicates that the two latrines had no supply of running water. Water access was possible from the nearby cisterns, which could be reached not far from the site. The basin in room 14 was filled with water and was therefore probably only meant to be used for washing hands. The archaeological material in this very case is too sparse and reveals little about additional equipment in the complex. In spite of the lack of archaeological evidence, it is nevertheless safe to say that the eastern part of the complex had several washrooms that were freely accessible to pilgrims who were accommodated in the *hemicyclium*.[320]

The archaeological features and findings from both latrines of the *hemicyclium* suggest that water was in fact present but access to fresh water was not guaranteed. The only preserved basin may indicate that the water collected inside the cisterns was used for this purpose. The accumulation of dirt and residual urine, as well as faeces, inside the water collector of room no. 14 was most likely unavoidable in this instance.

3.2.4.2. Peristyle-House

The large complex is enclosed by two main roads on the pilgrimage site (fig. 3). In the east, the most important road, the so-called 'processional road', runs through the site. To the north lies the wide West-East Street with porticoes.[321] The southern part of the Peristyle-House is flanked by a narrow path that was intended to lead pilgrims to the western peristyle courtyard. In addition, excavators detected two further smaller courtyards, identical in their ground plan (fig. 21). These are located towards the west and form the end of the peristyle complex with a total

[317] Similar gutters are known to us from Roman *forica*. Cf. lavatories in Ostia next to palastra delle Terme del Foro, in Timgad in the north-east corner of the *forum*, in Ephesus in Vedius Baths or in Dougga, Baths of the Cyclops.
[318] Grossmann et al. 1991, 473-476.
[319] Grossmann et al. 1991, 475-476.
[320] Grossmann 2018, 205-206.
[321] Grossmann et al. 1991, 458.

of four peristyle courtyards, two large and two small.[322] The name 'Peristyle-House' is derived from the special construction of the courtyards, each having a peristyle inside. The roofing is thought to have functioned as protection for the pilgrims from both the sun and the rain, who presumably belonged to the poorest social class and could only afford such "open-air" accommodation.[323]

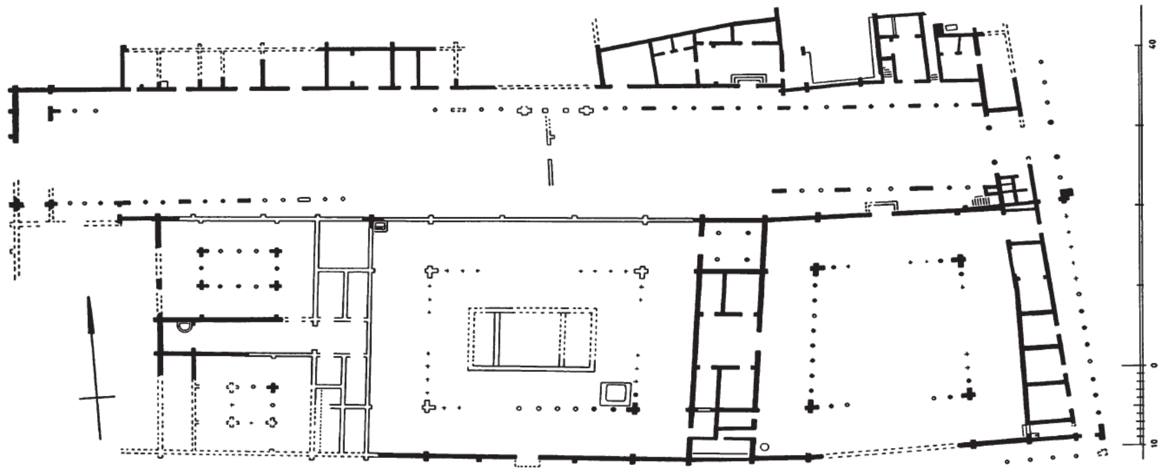

Figure 21: The so-called Peristyle House

The excavators have reconstructed the unusual division of the complex into two sections, each with two large and two small peristyle courtyards as an indication of gender division. There are several factors in favour of this: Firstly, the position of the entrances to the large peristyle courtyards. One entry was located on the West-East Street, allowing pilgrims to step into the courtyard from the north, the other access was in the south of the complex. Secondly, latrines were found, one for each peristyle. Thus, it could imply the separation between women with children and men.[324] However, it is important to mention at this point that in the rare cases where men travelled alone with children, these children had to be placed in the men's area as well. The two smaller facilities were probably open during the months when the pilgrim traffic was lighter. In this occasion, however, the division between the gender sexes was maintained as well. Thus, the importance of adhering to the rules of gender separation may reflect itself in the archaeological and architectural evidence.[325]

322 Grossmann 1997, 83-86.
323 For more concerning the interpretation see Kościuk 2009, 42; Grossmann 2018, 204-205.
324 Grossmann 1998a, 287; Kościuk 2009, 42.
325 Grossmann 2018, 204.

Access to the latrines was only possible from the interior of the respective peristyle courtyard. Considering the floor plan, it is evident that the peristyle courtyard, which was located far to the east, had an angled entrance to the latrine.[326] A long, narrow corridor led to the actual toilet on the south side (fig. 22). Therefore, a direct view into the latrine from the main facility was avoided. There was only one bench taking up the whole length of the southern wall.[327]

Figure 22: Latrine in the so-called Peristyle House

Like the *hemicyclium*, it appears that this latrine was not connected to running water. Furthermore, there are no signs of water channels or walled-in water basins, indicating the use of water vessels.[328] In fact, the courtyards were equipped with water basins from which the water could be drawn. How the faeces were removed from the toilets remains unclear. No further investigations were undertaken during the excavation of the area. The only indication of a water supply is an opening of a cistern located directly in front of the entrance to the latrine and marked on the plan as a round dot (fig. 21). The extension of the cistern is not clear; Grossmann notes in his last publication on pilgrims' accommodation that it was probably connected under the surface with the adjacent peristyle building. No archaeological evidence is found to support this theory, but it cannot be ruled out that this cistern was indeed intended to supply the two facilities with water.[329]

326 Grossmann 2002, 234-235. Fig. 24.
327 Grossmann – Kościuk 1993, 78-80.
328 Cf. sparse information in Grossmann et al. 1998, 43-56.
329 Grossmann 2018, 205.

Thus, it remains unclear which room is to be identified as the second latrine. Although the publications refer to a further lavatory, this particular latrine is never assigned a specific room.[330] Plans and published drawings allow us to consider two spots. These are the only two rooms that are accessible from the large western peristyle. One of them directly flanks the latrine of the other courtyard. However, the room is very small and seems to offer space for a low number of seats due to its dimensions. In the north-eastern corner, there is a larger room, which is only marked on the plan by four columns. The toilet bench in this case is not easy to identify. Regarding both rooms, different hypothesis can be advanced. However, they would not solve the ambiguity and, furthermore, would lead to different evaluation of sanitary facilities in pilgrimage centres.

3.2.4.3. The Double Bath

The thermal complex (fig. 23) borders on the West-East Street in the south, lying directly opposite the peristyle courtyards. During the first excavations, the structure was interpreted as a "healing" bath.[331]

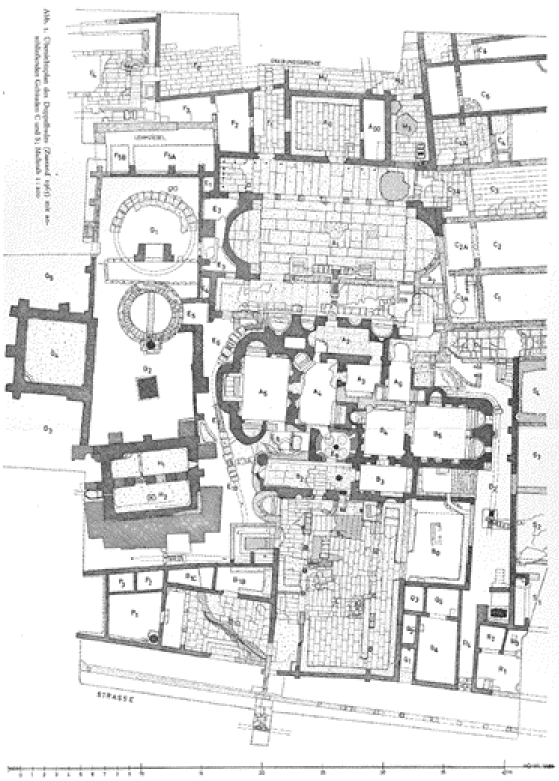

Figure 23: The Double Baths

[330] Grossmann et al. 1998, 43-56.
[331] Kaufmann 1907, 45. 64-65; Kaufmann 1908, 7. 10-14; Kaufmann 1910a, 103-122.

At the beginning of the 20th century, attempts were made to establish a connection between the bath and its purifying function, which was intended to offer a cure to pilgrims suffering from various illnesses. However, this interpretation was rejected a few years later.[332] More recent publications refer only to an average bath, as they can be found in many places in numerous sites.[333]

During the peak activity of the pilgrimage centre, the double bath was enlarged several times. In the first phase of construction, the bath had a simple floor plan with a small number of rooms such as the *praefurnium*, *tepidarium*, *caldarium*, *apodyterium* and a latrine (fig. 24).[334] Müller-Wiener dates this phase to the second half of the 5th century.[335] A few decades later, towards the end of the 5th or in the beginning of the 6th century, the whole complex was considerably enlarged and extended (see fig. 25). The premises were doubled, dividing the bath into two similar functional areas.[336]

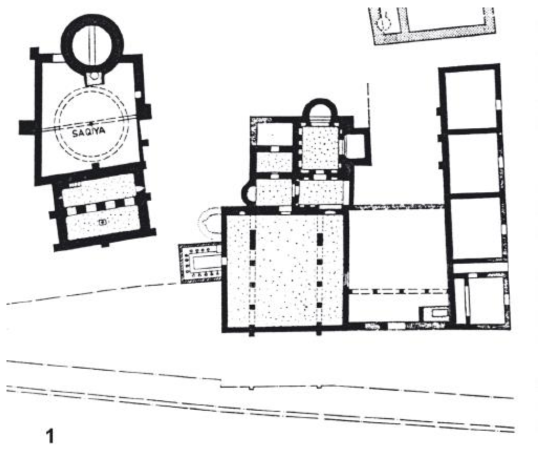

Figure 24: 1st construction phase

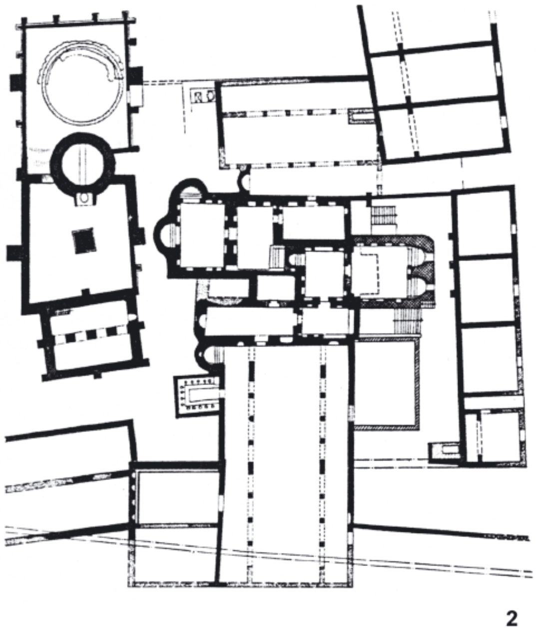

Figure 25: 2nd construction phase

[332] Müller-Wiener 1965, 127-137.
[333] Müller-Wiener 1965, 128.
[334] Müller-Wiener et al. 1966, 177.
[335] In his first report concerning the double bath make Müller-Wiener only vague assumptions in regard the dating of the facility to the 4th century, see Müller-Wiener 1965, 133. However, he proposes in his next report a later date, namely the 5th century, unfortunately without a further explanation on what ground the period seems to be propriate for the construction phase. See Müller-Wiener et al. 1966, 175.
[336] Müller-Wiener et al. 1966, 177-178.

In the later 3rd phase (fig. 23), which dates back to the 6th century[337], the bath was extended and rebuilt, including the construction of a second latrine.[338] These divisions were interpreted by the excavators in the 1960s, as well as by the archaeologists who led the excavations under Grossmann's direction, as an indication of gender division.[339] Based on the finds in the sewers in area B, namely the remains of pearls from a necklace, Müller-Wiener assumes that this area was intended for women after the reconstruction of the bathing complex, whereas area A, where no evidence of jewellery or other items of female use were found, was intended for men.[340]

The access to the first latrine B1a (fig. 26), which had already been integrated into the complex during the first construction phase, is located at the west wall of room B1. Remarkable in this context is the lack of additional corridors or any other divisions or separation walls from the hall B1. A clear parallel to the first construction phase of the *hemicyclium* can be drawn, in which toilets were accessible directly from the courtyard. Benches were placed along the three walls of the latrine.[341]

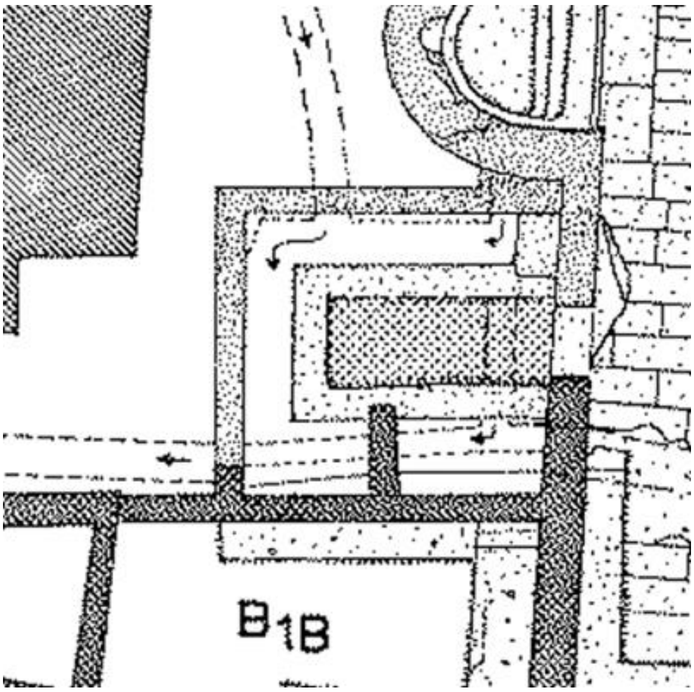

Figure 26: Latrine B1a

[337] Here, the dating of the third phase is based on the evaluation of the pottery, see Müller-Wiener et al. 1966, 178.
[338] Grossmann – Kościuk 2006, 36; Kościuk 2009, 42-44.
[339] Müller-Wiener et al. 1966, 179.
[340] Müller-Wiener et al. 1966, 173-180; Grossmann 1986, 20-21. 179; Kościuk 2009, 44; Stafford 2020, 17.
[341] The excavation report lacks more precise descriptions of the excavated context. The description presented here is based on the observations obtained from the published ground plan. Cf. excavation report including floor plan: Müller-Wiener 1965, 127-133; Müller-Wiener et al. 1966, 173-180, fig.1.

During the excavation campaigns in the 1960s, the archaeologists were able to follow the course of the sewage system of the bathing facility and identified two main channels running together in latrine B1a.[342] Water was taken from the cold-water basin of area B. The drain of a collection channel in area A was found below the latrine. There, flushed water removed the faeces from the sewage, as well as the faeces and urine. During the campaigns, however, excavators did not follow the further course of the outflow channel; nevertheless, the excavated remains indicate that the sewer was routed west of the double bath and north of the shops, before extending along the West-East Street, and ultimately ending in lower ground.[343]

In the course of further enlargement of the bath, other areas were added. In the northern part of the complex, a second toilet (fig. 27) was built in the third construction phase.[344] Access to the latrine was then provided by a narrow corridor. The toilet was flanked on three sides by benches with deep waste pits underneath.[345] Directly at the entrance, the room was also equipped with a large clay basin and small water channels running along all benches.[346]

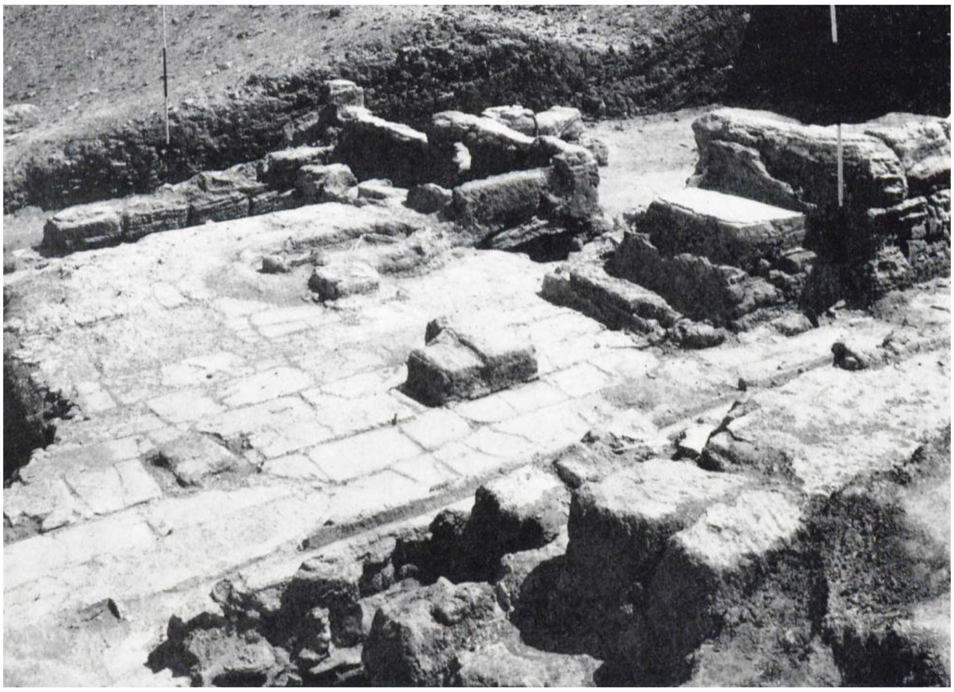

Figure 27: Latrine L4

[342] For a detailed description concerning the water supply, which was drawn from cisterns and *saqiyah*, see Müller-Wiener 1965, 131-133; Müller-Wiener et al. 1966, 174-175.
[343] Cf. Müller-Wiener 1965, 131-133; Müller-Wiener et al. 1966, 180.
[344] Müller-Wiener et al. 1966, 178-179.
[345] The following description is derived from a brief note concerning latrine F4, which was left in the excavation report, as well as from the observations made based on the ground plan and the published figure depicting the context of the archaeological finds. Cf. Müller-Wiener et al. 1966, 178-179, fig. 1; Müller-Wiener 1965, pl. XVLb.
[346] Müller-Wiener 1965, pl. XVLb.

The water was drawn from a built-in well intended for the entire complex.[347] As is known from other Egyptian baths dating to Late Antiquity (see chpt. 3.2.5.1) this complex also had several channels that led the water to and from respective basins. Due to the incomplete excavation of the larger latrine, no evidence is available allowing us to reconstruct the enlarged sewer system, which shall discharge faeces from L4. However, it is possible that human waste was transported underground and then channelled to the general waste collector.[348]

The double bath clearly shows a great difference between the latrines within the bathing facilities and other sanitary installations in the pilgrimage centre. In both the *hemicyclium* discussed above and the peristyle complex, the latrines were not connected to a sewage system containing running water. The remains may have been flushed with small amounts of water or were otherwise covered somehow. In the case of the bathing complex, the essential water supply system was used to accelerate the transport of human excreta. The water was first used in individual bathing areas and afterwards it was directed via sewers to latrine B1a.[349]

A changing concept of arrangement and prevention of odour penetration into other parts of a building can be observed in the example of the double baths at Abu Mina. Unfortunately, as mentioned above, evidence around the Abu Mina lavatories has never been published, thus information concerning latrines from this site can only be obtained from excavation reports, which are scarce in terms of descriptions and photographs. The toilets were to occupy a subordinate place, which was separated from the rest of the baths. Evidently, the first smaller toilet B1a did not meet these requirements completely, as its exit opened into the hall of the baths. We can presume that unpleasant smells entered the area of the bathing house at any time. Probably, these issues were taken into account during the planning process of the second toilet of the building, as there is a clear division between the bathing area and the adjacent toilet L4.

Also in that case, as well as in Marea, the main indications relating to the hygienic precautions taken can be obtained by means of studying the drainage of the baths, and by considering the position of the latrines on the plan of the bathing complex. The latrines in the double baths were also placed on the periphery of the building, out of which the first built toilet was not accessible directly from the outside. In contrast, the access to the latrine, which was built in the third construction phase of the bathing facility, is different. The second latrine L4 was much larger; in fact, thanks to the published photographs, we can confirm that it was equipped with gutters

[347] Müller-Wiener 1965, 131-133.
[348] Müller-Wiener et al. 1966, 174-175.
[349] Müller-Wiener et al. 1966, 174-175.

in front of the rows of seats, as well as with a container of water, which stood at the entrance to the latrine – a supply familiar to us from *foricae* in different parts of *Imperium Romanum*. Both toilets in the double bath in Abu Mina were connected to the drainage system of the baths. Similar to the *thermae* at Marea, the drainage of the baths ran through the latrines, whose sewerage system was designed along four walls. In this case the exact location where the pollutants were discharged is not known. It can be observed that in the case of Abu Mina the design was also very similar.

3.2.4.4. The North Basilica

The basilica is located in the north of the pilgrimage site, more precisely outside the town walls, adjacent to the main road that most pilgrims passed on the way to Abu Mina (fig. 18). Kaufmann in his excavation reports identifies the spot as 'Coemeterialbasilika' of the Northern Cemetery, although modern archaeologists suggest a different location.[350] According to contemporary archaeological studies, Grossmann interprets the complex as a Monophysite memorial church of St Menas.[351]

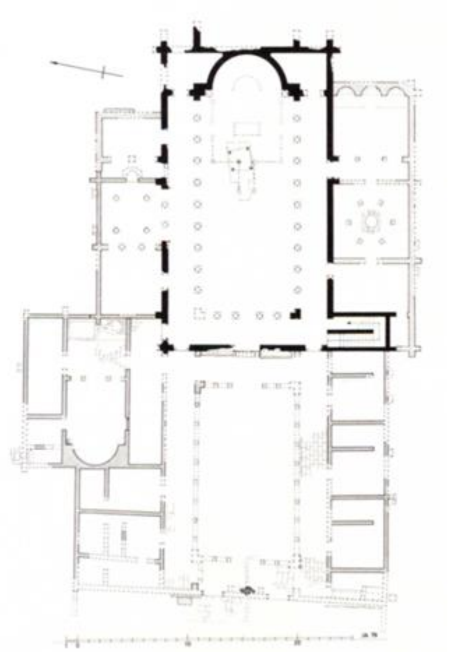

Figure 28: The North Basilica

[350] Grossmann 1977, 43-44, footnote 22; Grossmann – Jaritz 1980, 216-218, Pl. 46b; Kaufmann 1924, 169-170.
[351] The interpretation is based on the peripheral location of the complex. The church was located outside the enclosing wall of the settlement. Further a baptistery belonging to the North Church shall supports the interpretation. Grossmann's thesis is not supported by any inscriptions or literary sources that explicitly mention a Monophysite church at Abu Mina or in its immediate vicinity. For more see Grossmann 1998b, 295-296, footnote 58.

When referring to the North Basilica (fig. 28), the name includes not only the main building – the basilica itself – but the entire complex, as well as the adjoining buildings.[352] In addition to the side rooms and the baptistery, there is also an atrium, as well as an apsidal hall to the north, which is interpreted as a refectory.[353] There are other rooms adjoining the south of the atrium, with a probable latrine among them.[354]

The presumed latrine is located in the south-west corner of the atrium. The facility consists of a narrow, almost rectangular room. Along the west wall, Kaufmann excavated a deep pit, which he interpreted as a funeral trench.[355] Unlike Kaufmann's assumptions, Grossmann sees the room as a lavatory.[356] The room has an elongated floor plan. A deep trench runs along the west wall, which is divided into two areas. The division into two sections is not only made by a partition wall in the trench itself, but the room also features a separation. Although the trench contains a partition, the two areas have been connected. The trench runs the entire length of the room in the north-south direction. An outlet in the south wall connects the ditch with the outer area. Such installations can often be associated with latrine rooms, as lavatories were in many cases provided with a pitfall.[357] However, a closer look at the room suggests that the interpretation may not be correct. The unclear function of the room touches on numerous difficulties. The rooms along the atrium were excavated during the first major campaigns at the beginning of the 20th century. During this time, Kaufmann must have also excavated the questionable latrine facility (fig. 29). He originally interpreted the pits as burial shafts, which was dismissed by the later prospections.[358] In the course of the new draft of the floor plans, the access to the room on the east side of the north wall was reconstructed. In the eighth preliminary report, however, we find a correction of the ground plan after the area was cleaned again.[359] Here the entrance is now on the west side of the north wall, i.e., directly at the place where the bench has been reconstructed. The accuracy of the correction is confirmed by an additional photograph, where the remains of the north wall can be clearly seen.[360] It seems extremely irrational to place a door directly in front of the bench of a latrine. This would not only make access to the respective

352 Grossmann 1998b, 295-296.
353 Grossmann 1977, 43-45.
354 Grossmann – Jaritz 1980, 216-220.
355 Kaufmann 1924, 170-175.
356 Grossmann – Jaritz 1980, 218.
357 In examples taken from Abu Mina we can state that the pitfalls were positioned deeper than the discussed trench. Cf. Lavatories in *hemicyclium* (chpt. 3.2.4.1).
358 Kaufmann 1924, 170.
359 Grossmann – Jaritz 1980, 217, fig. 5.
360 Grossmann – Jaritz 1980, pl. 46b.

seats more difficult but would also create a direct view from the atrium into the toilet when the door was opened.

Figure 29: Latrine in the North Basilica

A similar construction, which is also attributed the function of a lavatory, is found in a monastic complex in Mount Nebo (Jordan). Next to the church of the monastery, connected to an adjacent courtyard stands a narrow, elongated room. Along its longitudinal wall runs a pit with an outlet. In this case we encounter a similar problem of interpretation. The archaeological material found *in situ* did not allow the archaeologists to determine the function as a lavatory with certainty.[361] Nevertheless, it cannot be ruled out that in the case of the two facilities (in Mount Nebo and in the North Basilica), an unusual latrines design was chosen. Since, in both cases, there are no other suggested interpretations for these rooms, nor do other rooms in the complexes appear to have functioned as lavatories, the possibility of them being latrines should not be entirely ruled out.

3.2.4.5. The East Church

Far outside the settlement limits, to the east of the pilgrimage centre stands a Tetraconch basilica named by the excavation team 'The East Church' (fig. 30).[362] Its unusual ground plan is characterized by several, almost triangular adjacent rooms. The room located at the easternmost end, which has a square floor plan, had the function of a baptistery, and possessed a baptismal font. In addition, on the west side of the church, there was a rectangular atrium. Adjacent to the atrium to the south extended a series of rooms, one of which may safely be addressed as a latrine (fig. 31).[363]

[361] Cf. Bianchi 2021, 184-187, fig. 158; Bianchi 2017, 33-34, fig. 3.
[362] Grossmann – Jaritz 1980, 222-224.
[363] Grossmann 1977, 35-38, pl. 8a.

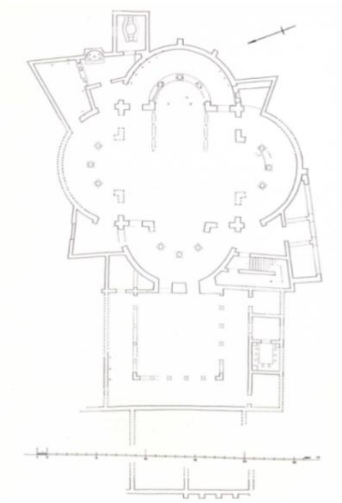

Figure 30: The East Church

The access to the toilet was not provided directly from the courtyard. First, the visitor had to enter the side room, where the entrance to the latrine was situated in the middle of the west wall. Along three walls of the latrine, three rows of benches were arranged, which provided space for a maximum of eight people.[364] Since these rooms were also excavated in the 1970s, the documentation did not contain a precise description of the features and finds of the respective excavated rooms. In the main report on the latrines, there is no references on the equipment of the room. The drainage pipe has not been examined in detail and the published photographs do not provide much information nor present us a better picture of the overall architecture.[365]

Figure 31: The latrine adjacent to the atrium of the East Church

[364] The following description is based on the observations that could be made on the basis of the ground plans and photographs. In addition to personal observations, the brief, rather unrevealing mentions of the latrine from the excavation reports were consulted. Cf. Grossmann – Jaritz 1980, 222-224; Grossmann 1977, 35-38, pl. 8a.
[365] Grossmann 1977, 37.

3.2.4.6. The Villa

The so-called villa (fig. 32) is a complex located within the settlement boundaries, namely in the western zone. It borders directly with the western gate.[366] The building is composed of an inner courtyard, which is surrounded on all four sides by irregular rooms. The remains of two staircases indicate that it was a multi-storey building.[367] The courtyard was accessed through the eastern main entrance, which consists of a small vestibule. South of the entry – still at the eastern wall – there was a small room with a piscina, behind which another entrance led into a fairly large square room. The entire southern side of the courtyard was occupied by a large oblong chapel, which was equipped with a baptismal font, an altar and an underground burial chamber. The two rooms on the western side of the courtyard were oblong in their shape – their function, however, cannot be further defined. In the north, the courtyard was enclosed by an economic tract, as well as additional stairs which led to the first floor.[368]

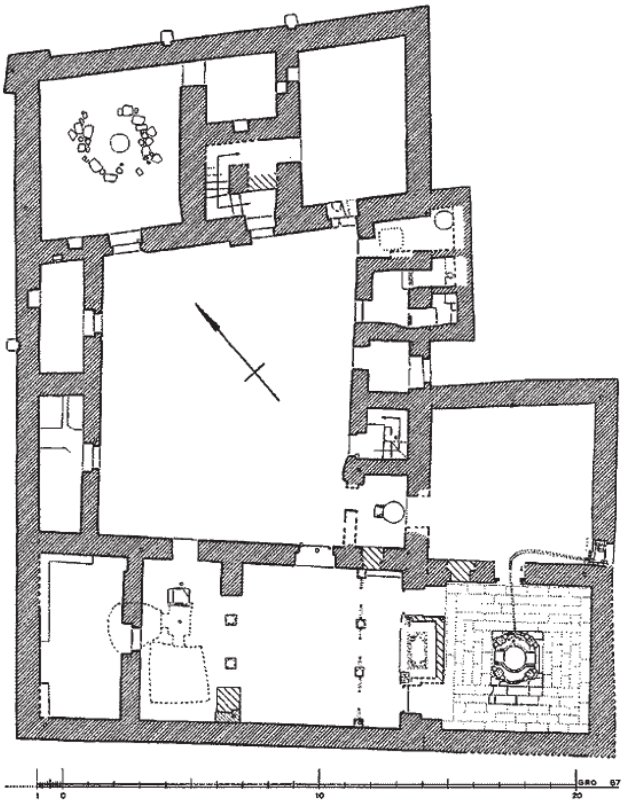

Figure 32: The villa in Abu Mina

[366] Grossmann 2018, 207.
[367] Grossmann 2002, 369-370.
[368] Abdel-Aziz Negm 1993, 129-135.

Adjacent to the main entrance in the northern part of the east wall, two more entryways opened out. The room further to the north was used as a kitchen, the southern one was divided into two smaller areas, one of which had a walled-in latrine, and the other was to be understood as a bathroom. The entrance to the toilet complex was located opposite the so-called 'bathroom'. To enter the latrine, one had to pass thorough the antechamber which also had an additional partition door (fig. 32). It is not known how the removal of the excrement was organized. An underground wastewater tank was located only in the adjacent kitchen.[369]

3.2.4.7. House with a wine press

The house with the wine press is located on the main road of the settlement, on the eastern side, prior to the pilgrims' lodgings. The house consists of several rooms and an underground chamber, which was interpreted as a water chamber and at the same time a cesspit by Grossmann. The underground chamber has an elongated rectangular floor plan. Two shafts were found on the north side of the underground chamber (fig. 33). The shape as well as the location of the shafts is understood by Grossmann as evidence for the existence of latrines on the upper floor of the house.[370] Similar shafts are known to us from Marea (fig. 34), which Kościuk also understands as an indication of latrines in private houses.[371]

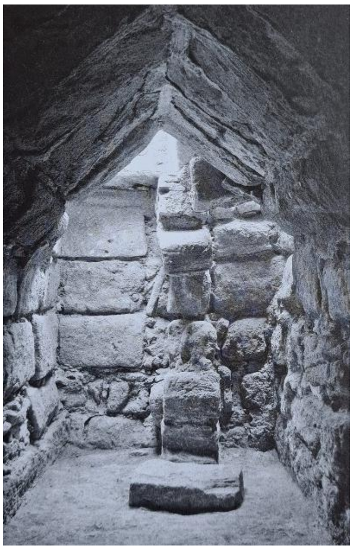

Figure 33: Cesspool in Abu Mina

Figure 34: Cesspool in Marea

[369] Abdel-Aziz Negm 1993, 130-131.
[370] Grossmann 2019, 24-25, fig. 3, Pl. 5a, 9a-b.
[371] Kościuk 2012, 32-34.

3.2.5. Comparative Examples

3.2.5.1. Latrines in Baths

The thermal baths of Abu Mina (fig. 23) are unique in many respects, not only did their construction constitute one of the main attractions of the pilgrimage site, in terms of size and facilities they are unusually large for the baths of Late Antiquity in Egypt. Most of the thermal objects of this epoch are much smaller and have more modest equipment than the great baths of the Roman period. For example, the baths at Kom Trougah[372] were only equipped with a low number of relatively small pools, despite being very lavishly furnished. Moreover, they did not offer a separate compartment for women.[373]

Another difference which distinguishes the double bath in Abu Mina is the construction of two latrines, which allowed their users to keep the gender division. In other double baths known to us, archaeological investigations have not revealed two separate toilets. Both Marea and Kom el-Ahmar (fig. 15) have only one sanitary room which was accessible to both sexes.[374]

The latrine in Kom el-Ahmar, however, shows similarity in terms of accessibility. The entrance to this latrine was located outside the thermal facility. The same arrangement can be observed in the second latrine of the double baths, namely the one located at the northern entrance. In both cases the latrines are accessible from the outside, despite being part of the complex. The entrance and/or exit to the toilet allows both to leave the thermal complex at the same time it is provided with a corridor leading to bathing facilities.[375]

The construction of the double bath is also similar to the organisation of a drainage system. Here the water from the thermal pools is led through channels to the outside, the main outlet of which runs under the latrine. In the same way a drainage system has been organised in Marea, Kom el-Ahmar and Kom Trougah.[376]

Baths presented in the thesis reveal slight differences regarding the arrangement of water supply. This variation is primarily caused by the localization of these sites. Marea, as a port

[372] The dating of the baths to the period of the Late Antiquity is not certain. Nielsen suggests 1st or 2nd century AD, however, relying on uncertain monetary interpretation. The context from which the numismatic finds originated is not clearly specified, the reference mentions loosely scattered coins within the site. Maréchal proposes a dating to the period of the Late Antiquity, he refers here to parallels, provided three years earlier by Fournet. Similarities in architectural and technical execution support the argumentation. Cf. Nielsen 1993, 35; Khashab 1957, 132-139; Fournet et al. 2017, 506; Maréchal 2020, 416.
[373] Maréchal 2020, 415-416.
[374] Maréchal 2020, 409-410. 412-413.
[375] Müller-Wiener et al. 1966, 177; Maréchal 2020, 409-410.
[376] Khachab 1957, Plan 1; Maréchal 2020, 416.

city, located on the shores of Lake Maryiut, possessed excellent access to ground water and water drawn from the lake. In the case of the double baths a nearby *saqiyah* provided the bathing facilities with water. In Marea we find a system relying on *saqiyah* in order to irrigate thermal basins. Since there was no lake near Abu Mina, one could only rely on ground water also taken from *saqiyah* in order to fill the bathing basins. In the case of Abu Mina, probably from the 6th century AD, another reservoir or cistern was added in order to meet the needs of supplying so many pools in such a dry area. The archaeological record, especially the high number of cisterns found across the whole pilgrimage centre indicate that the question of water supply posed a major challenge in maintaining the pilgrimage centre. Probably the problematic topography, especially the limited access to water, was crucial during the planning process of the bathing facility's construction.

We can observe that the Egyptian climate did not allow similar hydraulic applications that were used in other parts of Imperium. Extensive studies of latrines built at the Apennine peninsula show us a different approach towards water supply. Our knowledge gained from the study of Roman baths reveal that in some cases water for bathing facilities was drained from aqueducts. We can take the city of Rome as an example, having an almost unlimited supply of water taken from aqueducts in the 5th century AD. It was used, among other things, to irrigate numerous baths of the city.[377] In contrast to this type of installation, we find other technical applications in regard to irrigation systems throughout Egypt. Since no extensive aqueducts or rich fountains can be found in Egypt, which would enable an unlimited access to water, the different approach toward using water resources is connected to the scarcity of the resource in numerous regions.

All these facts, namely a frequent remoteness of cities from large water reservoirs (for example, Abu Mina) and the general dry climate that prevails in the territory of Egypt, can be taken into consideration when understanding of the hygienic and sanitary parameters in Egyptian bathing facilities. Unfortunately, on the basis of archaeological findings it is very difficult to reconstruct the interior of the latrines, their furnishings and general appearance, which makes the judgement on the hygienic framework very difficult to deduce. Nevertheless, an attempt to reconstruct the equipment and hygienic measurements in such facilities will be made in chapter 4.

[377] Koloski-Ostrow 2015, 75.

3.3. Kellia

'Kellia' – from the ancient Greek word 'the Cells' – belongs to one of the first Christian monastic settlements southeast of Alexandria established in Late Antiquity (fig. 35). Before turning our attention towards history of research and ancient texts concerning this site, it is necessary to introduce the reader to the specific monastic terminology. The introduction aims to explain the origins of monastic development in Egypt and the creation and organisation of the Cells.

One of the most unique and extraordinary new lifestyle is the emergence of Christian monasticism which has its origin in Late Antiquity.[378] The basis of this lifestyle is the idea of solitude and isolation from the world. The main purpose of such a practice is to alienate the mind from everyday concerns to experience a profound connection with God. Over time, specific terms have been established which define this particular movement. The expression *fuga mundi* describes a deep desire to escape from the world. This term emphasises a strong need for abandonment of one's former lifestyle.[379] Therefore, asceticism served to realise religious ideals by strictly abstemious and renunciatory living. The Greek word ἄσκησις (áskesis), meaning 'exercise' or 'training', was used to express certain mental and physical exercises which aimed to keep control over sensual pleasures. The exercise involved the monks abstaining from a regular food intake, practising silence, work, and prayer.[380]

In some cases, a faithful and devoted believer chose to pursue a radical form of asceticism. Archaeological and literary sources report a group of men called stylites – from ancient Greek στῦλος (stylos) meaning 'column' – who spent many years of their life on a column. The pillars reached heights of up to 11 m, and their occupants lived on it mostly in a standing position on a small platform, exposed to the weather, great heat during the day and unpleasant cold at night.[381]

[378] In recent decades, an extensive bibliography on the subject of "Monasticism in Antiquity" has been compiled. The monographs listed below should therefore be considered only as introductory literature on the very broad subject, which had taken on an important role in the study of ancient Christian spirituality in the field of humanities. The selected works shed light on numerous aspects of monasticism, which spread both in Egypt and on the European continent from the 4th century onwards. On Egyptian monasticism, see Douglas 1993; Dunn 2003; Krawiec 2002; Wipszycka 2018. For the monastic life of women see Elm 1994, Clark 1986. On the beginnings of monasticism in Western Europe see Lawrence 1984; Dey – Fentress 2011. For a detailed introduction on the subject of "education" in the monastery see Larsen – Rubenson 2018. Crislip 2005 writes about the first hospitals in connection with Christian monasteries. A general insight into various facets of practising the faith in monastic manner is given by Folger Caner 2002.

[379] Stewart 2011, 43-52.

[380] Crislip 2011, 37-38; Harmless 2004, 61-64.

[381] The particular form of asceticism has drawn much attention from scholars. Both literary sources and numerous archaeological legacies in the form of sites around which ancient places of pilgrimage were established over the centuries attest to the spread of the phenomenon. In addition to several ruins that testify to the existence of the

The ascetic movement and, in a more extreme way, the stylites shared a certain desire to isolate themselves from the community. The solitude was gained through their retreat – ἀναχώρησις (anachoresis) – from the world by leaving their town or village. People, who isolated themselves from city' community were usually called anchorites.[382] In Egypt during the Late Antiquity, the person who longed for a special closeness to God wandered into the desert. Hence the name of the first monks – hermit – who inhabited caves in desolated areas derives from the Greek ἔρημος (eremos), meaning the desert.[383]

The kind of monasticism we are familiar with nowadays represents only a further development of the original monastic movement. The great abbeys and monasteries that we naturally associate with the term 'monasticism' are very different from the Egyptian monks' first dwellings.[384] Initially, simple shells were used as accommodations. Over time, monasticism gained numerous followers who could arrange small habitations in the desert landscape. According to legends, Saint Antonius left his home, refused to continue his previous lifestyle, and wandered into the desert to live in solitude. The saint, who lived in the 3rd century AD, is celebrated as the first hermit of Egypt and the first monk worldwide.[385]

Following his example, more and more Christians felt an inner urge to express their devotion to God through solitude and prayer. The desire led to an increase of hermits, following diverse directions of movement. Over time, individual hermits began forming small communities. With the development of monastic movement, especially due to the increasing number of monks who desired to live in secluded places, specific buildings were established in desert areas. Hermitages – i.e., dwellings for hermits or anchorites – developed into small courtyard complexes inhabited by an older monk and his disciples. The formation of small groups living together initiated a new development leading to the origin of semi-anchorite communities. The monks would assemble in the nearby church to pray together and celebrate the Eucharist on Sundays (HM, Rufinus, c.22).[386]

About 50 years after the emergence of monasticism, a third form of secluded life had developed called coenobitic communities. The idea of a large community of monks living together – taken

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stylites, i.e., the inhabitants of such columns, numerous images have survived that depict the column together with the saint living on it. See Peña et al. 1975; Drijvers 1978, 77-113; Wright 1970, 82-107; Schachner 2010, 329-397.

[382] For a more detailed explanation of the term see Rambo 2011, 12-13; Harmless 2004, 64.

[383] Britannica Academic 2021, s. v. Hermit.

[384] Jonveaux 2014, 71-86; Dybski 2009, 208-209.

[385] An account of the life of the Saint, *Vita Antonii* was written by Saint Athanasius. In addition, several letters are attributed to Antony, which give a deeper understanding of his life. For general information on the saint, see the complete works of Rubenson 1997; as well as Yarrow 2016, 31-33; Harmless 2004, 18. 65-113.

[386] Descœudres 1989, 47-48.

from ancient Greek κοινός (koinos) 'common', and βίος (bios) 'live' – further advanced Egyptian monasticism, especially after the Arab conquest. Coenobitic communities represent the form of monasticism known to us today. During Late Antiquity, the Egyptian landscape was full of different monastic movements, whose development had taken place hand in hand. Despite the four currently functioning monasteries in the Sketis Desert region (Monastery of Saint Macarius the Great, Paromeos Monastery, Monastery of Saint Pishoy, and Syrian Monastery), the scientific research of these sites cannot contribute to a better understanding of the ascetic movement in this region, especially regarding the development of semi-anchorite communities like those in the Kellia.[387] Unfortunately, the current variable type of monasteries developed from coenobitic communities and not semi-anchoritic, which means they do not stand in the same tradition as the ancient hermitages.[388] Modern monasteries in Egypt are far from the monastic form we find in Kellia. This is due to the disappearance of such communities at the end of the 8th or beginning of the 9th century AD.[389]

3.3.1. History of research

Although many authors have conducted studies concerning the location of the famous site, the breakthrough discovery is owed to the research of Evelyn-White in the 1920s.[390] The first step in Kellia's identification was to locate the region of Nitria, followed by the author's seminal publications.[391] Thanks to the first French-Swiss archaeological mission's efforts, the Kellia region's topography has already been successfully explored in their first campaigns, which started in 1964.[392] The identification of particular lauras – Greek Λαύρα, meaning a cluster of hermitages – was facilitated by the typical Kom phenomenon in this region. The word 'kom' describes the hills created by desert sand pushed by the breeze accumulating in built-up areas. After monks abandoned the region, these places fell into decay, while the sand continued to cover the hermitages over the centuries. The resulting koms are easily recognisable in the more or less flat area surrounding Kellia.[393]

[387] Krause 1998, 174.
[388] On the problem of strict subdivision by definition between the anchorites and coenobites, see O'Connel 2007b, 241 and associated footnotes, as well as Kavvadas 2015, 32-36. On the Koinonia see Harmless 2004, 122-124.
[389] Krause 1998, 155.
[390] Kasser 1967, 7.
[391] The author has published three volumes describing monasteries in this region. The first part consisted of texts from the monastery of St. Macarius. The second volume was devoted to the history of monasteries in Nitria and Scetis. The third book described the architecture and archaeological findings.
[392] Harmless 2004, 282.
[393] Makowiecka 2007, 68-69.

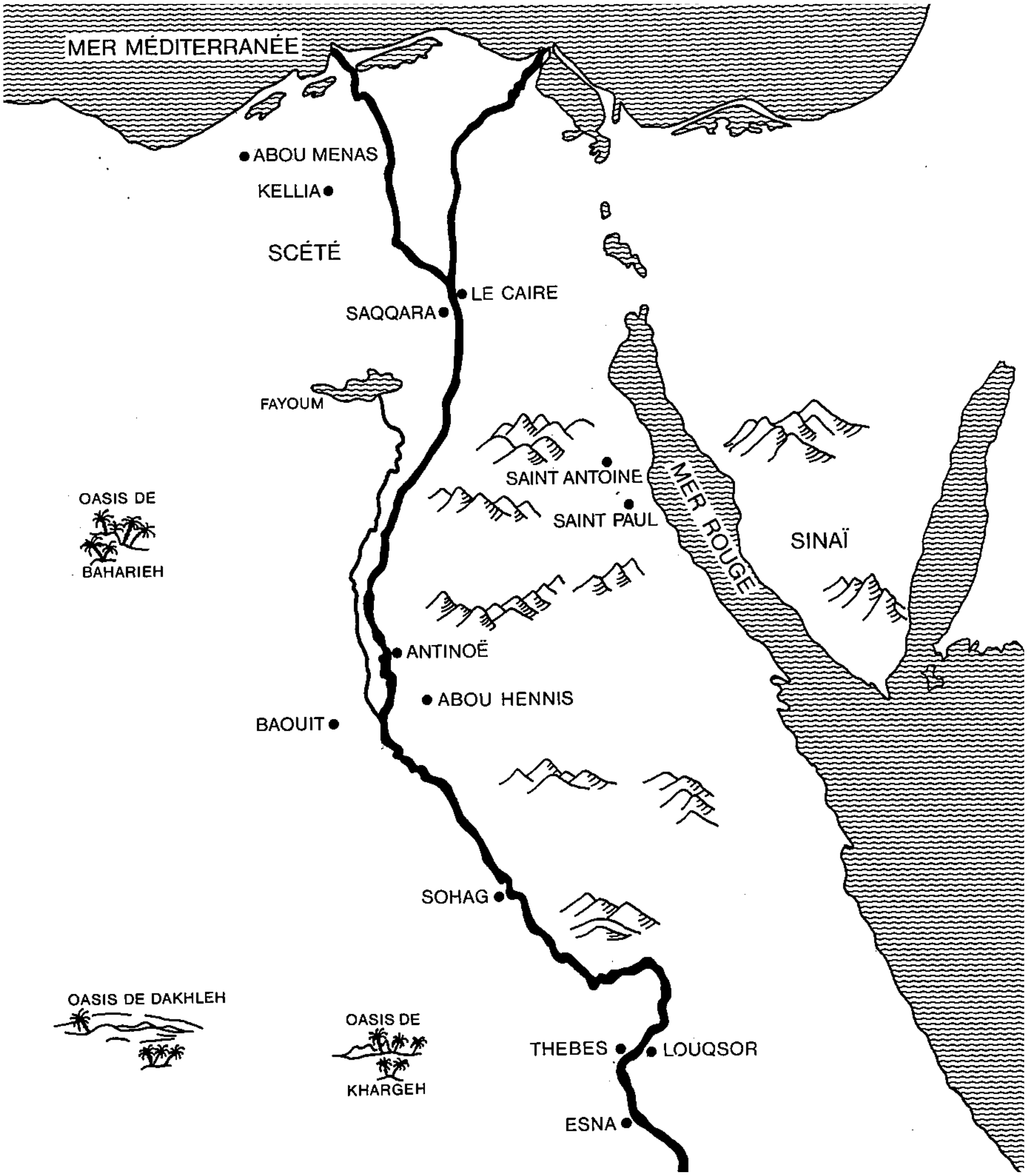

Figure 35: Location of the Cells

The use of the area for economic purposes in modern times was a challenge for archaeologists. In order to be able to investigate such a large area as quickly as possible, archaeologists divided the Kellia into five zones, allocated in parts to French and Swiss researchers. Another monastic agglomeration near Kellia, namely Pherme, was split into two smaller units. Quṣūr' Isa (QI), Qu ṣūr al-' Abîd (QA), Quṣūr al-' Izayla (QIz), Quṣūr al- Ruba'iyyat (QR) and Quṣūr al-Wahaydah (QW) belong to the Kellia area, while the Pherme regions are part of the western part Quṣūr Higayla and the eastern area Qu ṣūr' Irayma[394]. The term 'Qusur' is the plural form of the Arabic word 'Qasr', etymologically related to the ancient Greek word κάστρον, and the Latin word *castrum* describing a fortified complex or a tower. Makowiecka explains the meaning of the three names more precisely: Quṣūr 'Isa – means Jesus' fortresses, Quṣūr al-'Izayla indicates fortresses of solitude and Quṣūr al-Ruba'iyyat signifies square fortresses. In the name "al- Wahaydah" there are cores of the Arabic word الوحدة, which means loneliness or solitude. By hearing the name "al-'Abîd", the Arabic word عبد comes to mind, meaning slave. In the remaining cases, Christian meanings do not occur. It may be related to the incorrect translation of the audible Arabic words into the Latin alphabet, indicating that the terms are proper names.[395]

The French archaeological mission has conducted several excavations in the QR region. Among the most important publications is the research of Kom 219[396] and the hermitage QR 195[397]. Another 11 buildings were archaeologically examined and evaluated. These still form the backbone of the typology of the entire area. The Swiss mission undertook a fundamental investigation of the zones of QA, QIz, QI, QH and QE.[398]

3.3.2. Ancient Sources

In order to understand the importance and essence of such unique sites as Kellia, it is fundamental to reach for literary sources. In contrast to specific geographical data,[399] ancient written sources – which mention the beginnings of the Christian monasticism in Egypt – have been known since much earlier. Over time, an extensive literature has developed on ancient monastic life.[400] Theology, as well as philology, played an essential role in the emergence of Coptic studies. Philology was followed by crucial works, which were mainly devoted to the translation of Coptic texts. The Church Fathers, as well as Coptic monks, left a great wealth of written testimonies, forming a base for philological studies regarding Ancient Copts. For example, a wide choice of hagiographic sources, such as Vita of saints or Apophthegmata, is available in many translations. The most known ancient literature which can be directly associated with the site of the Kellia, is the *Apophthegmata Patrum*, the so-called "Sayings of

[394] Brooks Hedstrom 2017, 49.
[395] Makowiecka 2007, 69.
[396] Daumas – Guillaumont 1969.
[397] Henein – Wuttmann 2000.
[398] Makowiecka 2007, 63-69.
[399] Until the beginning of the 20th century, the exact location of the Kellia was not known.
[400] A detailed discussion of ancient literature is beyond the scope of this paper, so reference is made to the following works on the subject, together with their detailed bibliography: Harmless 2004, 275-308.

the Desert Fathers".[401] Several volumes contain sayings, anecdotes, and teachings of Egyptian monks mentioning the site in many cases. The knowledge and fascination for the written source led to an intensive search for the site in the 20th century.[402]

3.3.3. Topography

Kellia extends over an area of about 100km^2. The hilly landscape is located about 60 km southeast of Alexandria (fig. 35). The Sketian Desert separates the agglomerate from the city Damanhur, which lies 30 km to the north. The archaeological findings make Kellia an inestimable location among the hermit settlement group. However, the current economic situation has contributed to the site's intensive role in modern agriculture. Shortly after the first rediscovery of the site, it became clear that the entire area, which constitutes a site of exceptional cultural heritage, was facing final destruction. At the time, Egypt was challenged by innovative changes in agriculture to boost the local economy. Due to high population growth, a reorganisation of the desert area took place. Part of the Sketian Desert was used for agricultural purposes, with new irrigation systems and fields being built. Furthermore, both the railway and a major road run through the region. As a result, large areas of the hermitages are now underwater.[403]

This thesis focuses mainly on latrines from one of the best documented sites belonging to the French concession, namely laura QR 195. In a first step, the complex and its construction phases shall be presented. Afterwards, the latrines from QR 195 will be examined and compared with other toilets from the Kellia.

3.3.3.1. QR 195

Hermitage QR 195 is located in the Quṣūr al- Ruba'iyyat region. It is one of the best excavated and documented structures in Kellia. Like most complexes in Kellia, QR 195 has a rectangular ground plan. The construction of the compound took place in several stages, from which two very distinctive phases can be emphasised. In the first stage, a hermitage with a surface of 875m^2 was built. It consisted of four main areas: a dwelling to the west, a privy to the south, a well to the southeast and a garden courtyard to the east (fig. 36). The hermitage underwent a

[401] For a detailed summary of the texts' content, see Harmless 2004, 167-273.
[402] Harmless 2004, 17-23, 279-283.
[403] Kasser 1967, 7-23; Henein – Wuttmann 2000, 5-6.

significant change in layout in the second phase due to the strengthening and lengthening of the wall courses.[404]

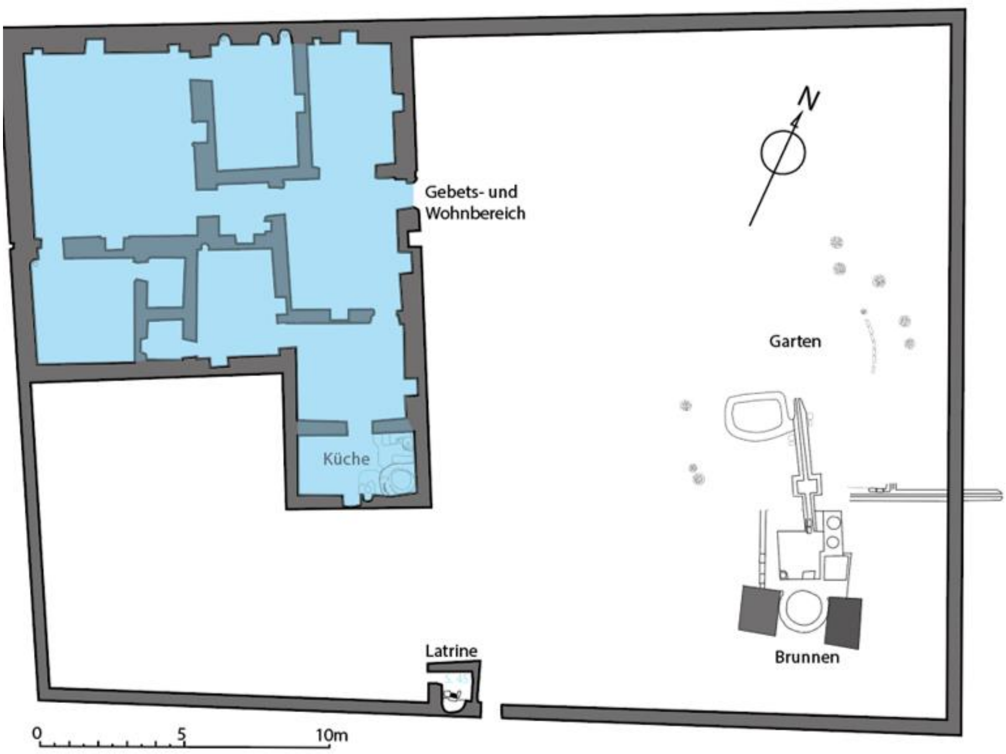

Figure 36: Ermitage QR 195

The first rooms were built in the northwest corner, containing small bedrooms, oratories, and a kitchen. To the east of the residential complex spread a large courtyard, which was equipped with a sizable well and irrigation channels. This evidence suggests that the monks had planned an agricultural use of the space from its inception. Archaeologists identified the main entrance to the hermitage in the centre of the south wall. A small latrine was built to the west of the main door. When looking at the ground plan, the first irrigation facilities and the latrine s. 45[405] appear to have an irregular structure.[406]

In contrast, the living area shows both regular walls and an orderly division of the individual rooms. However, minor changes were made to the building very soon. Several rooms were

[404] Henein – Wuttmann 2000, 17.
[405] The main publication refers to each room with an "s" derived from the French "secteur" and the corresponding number. In the present work, the room reference has been adopted.
[406] The ground plan seems to be common across Kellia. In most known cases, a square wall enclosed an area, which was partly for living purposes, partly for work, and partly for the well and garden. The latrine was never built directly adjacent to the block of flats. It usually stood as a separate annex against a wall. The laura's well was usually located in close proximity. A good comparative example is Kom 4. For more on this, see; Descœudres 1989, 33-37.

added to the southern enclosure wall, including a stove, and a flat with a large oratory built to the west. The latrine was rebuilt, and the enclosure wall enhanced.[407]

The collapse of the well triggered a significant change in the building's structure. As a result, the southern area of the hermitage was rebuilt. Access to the hermitage was blocked in the south wall. A new gate in the northern part of the east wall provided new access to the hermitage.[408] Due to the first entrance's closure, at the place of the original entry, a small gap created a urinal space. The enclosing wall was altered to the north and to the east. The modification had the effect of increasing the total area of the hermitage to 1670m^2. This way, the gained space allowed the construction of two new flats in the northwest of the complex.[409]

Due to the numerous modifications and rearrangements, the respective phases are dealt with individually. The detailed examination of the structural changes enables a better understanding of the planning and organisation of the sanitary facilities within the complex and forms an important foundation for further interpretation.

3.3.3.1.1. Construction phases

3.3.3.1.1.1. First building activities

In the first construction phase, an enclosing wall surrounded the hermitage building's entire area along four sides (fig. 37). The only entrance (0.72 m wide) stood in the centre of the south wall. The door led the visitor directly to the courtyard. From that point, one could enter all four hermitage areas: the latrine, living area, garden, and yard. Immediately west of the entrance, room s. 45 consisted of a latrine.[410] In the western part of the complex stood a multi-roomed dwelling. In the southeast area a well with associated pipes and rooms was located.[411]

The living area along the western wall was built according to the typical L-shaped floor plan, which forms the most common type of living compound in the Kellia. The entrance door led to a spacious vestibule s. 2, from which one could enter the corridor s. 4.[412] It led to a larger room

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407 Henein – Wuttmann 2000, 17.

408 No further access could be identified during the excavations. Due to the closure of the southern gate, the excavators assume a new or second entrance to be identified in the north-eastern area, which was flooded during the excavation work, Henein – Wuttmann 2000, 9.

409 Henein – Wuttmann 2000, 17.

410 In small steps, the latrine s. 46, was supplemented by room s. 46 with a urinal; the latter forms a unique piece in the architecture of the Egyptian lauras.

411 Henein – Wuttmann 2000, 18.

412 Many hermitages will only have residential annexes along the perimeter walls, which are more or less L-shaped in plan. However, a number of examples exist where the hermitages do not require a large garden area. In these cases, the site is built on in a flat pattern, often with a small space available for a garden extension only at the corners. Furthermore, one should depart from the idea that in Kellia buildings are at most one storey high. Several coms have high residential towers, as in the case of QIsa 1, QIz 44 or QIz 31, all of which date to the 7th century AD, like QR 195, see Descœudres 1998, 69-79.

s. 5, equipped with several niches. S. 5 provided access to three additional rooms s. 7, s. 6a and s. 11a. The last two chambers consist of significantly lower supporting walls than those of room s. 5.[413]

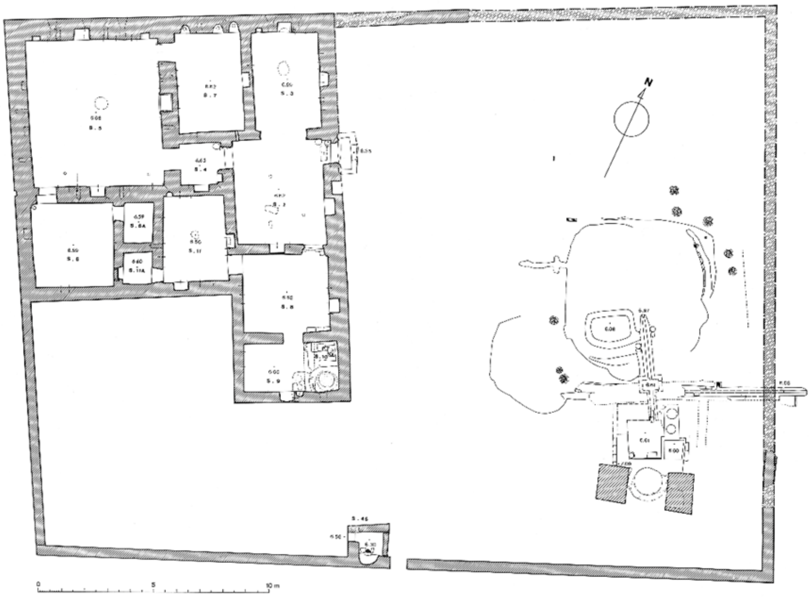

Figure 37: 1st construction phase of QR 195

The vestibule s. 2 facilitated access to another area of the flat. The foyer granted access to room s. 8. Excavators identified several furnishing elements fixed in the small room wall, such as hoes or niches. Furthermore, the remains of red plaster indicate the painting of the room.[414] Passage s. 8 connected the vestibule s. 2 with s. 11 and the rooms s. 9 to s. 10. The excavators interpreted s. 10 as a kitchen. This assignment was based on the structures found *in situ*, e.g., oven and stove. Another indication of its function as a kitchen are the soot-blackened walls.[415]

The rooms' connections, size, and furnishings allow for the reconstruction of a possible division of the living area into three parts. The bigger room group s. 4-7 probably served the elder as sleeping, prayer and recreation areas. Two smaller rooms s.11 and s.11a, one serving as a living room and the second most likely as a sleeping room, can be interpreted as rooms of the disciple. The third section consisted of utility areas, namely s. 8-10, whereby due to the preserved oven and cookers, archaeologists interpreted it as the working and cooking wing.[416]

[413] Henein – Wuttmann 2000, 19-20.
[414] Wall painting is one of the characteristics of the Lauren in Egypt. It is understood as a great artistic heritage of ancient Egyptian monasticism. Cf. Favre 1989, 79-80.
[415] Henein – Wuttmann 2000, 21.
[416] The division of the living area into three components, which separate the living area of the older monk from the younger one, is one of the standard room divisions of a hermitage in Kellia. Another area is the kitchen, which

The latrine s. 46 and the well located in the southeast area, and other hydraulic installations such as water channels were additional components of the first construction phase. The toilet was designed as a niche in the enclosure wall. A thin-walled fence separated the *necessarium* from the courtyard.[417] The well was built with fired bricks which were covered with a red, waterproof plaster as were the associated basins and water channels. Both the alignment of two gutters and the remains of black earth indicate active agricultural use of the area. Several water tanks were connected to the well, and the channels directed water into the garden area, with the excess water being diverted under the enclosing wall.[418]

3.3.3.1.1.2. The extension in the southeast

In the course of time, the hermitage seems to have welcomed new anchorites. Since the strict pattern of dividing the living areas should not be disturbed, it was decided to add new annexes to the complex (fig. 38).[419] A new room group was built along the south wall in its eastern part. The now doubled southern and eastern enclosure wall formed its boundaries—the well, together with its annexes, edge its northern part. The room group s. 21b-23 was accessed via the courtyard through room s. 23, which was the only possible passage to s. 22, from which one could enter s. 21b. Due to comparable proportions and similar construction, the excavators interpret the room group as the hermitage's third living area.[420]

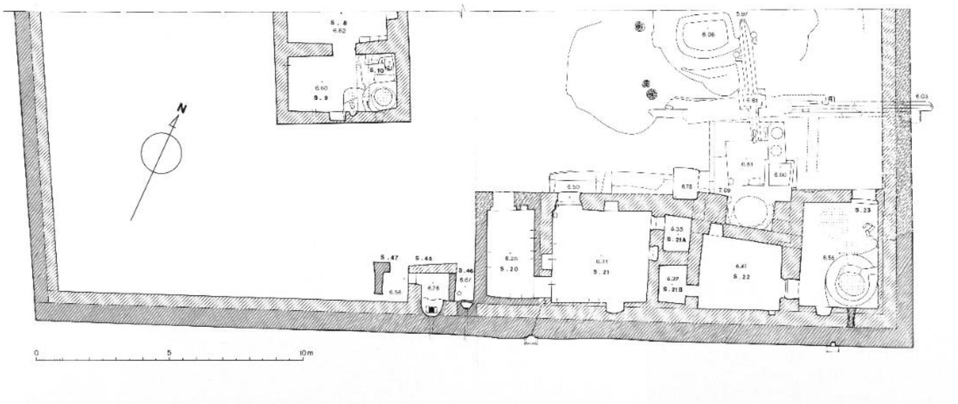

Figure 38: Extension to the southeast

was composed of two or more closed areas. The most common indicators of having a cooking area are the ovens, some of which have been preserved *in situ*, or a thick layer of black soot on the walls. Cf. Grossmann 1989, 1853-1855. For more on the interpretation, see Henein – Wuttmann 2000, 22.

[417] A discussion of the concept of 'privacy' in sanitary facilities will be taken up in Chapter 4.

[418] Henein – Wuttmann 2000, 22-23.

[419] The fact that the hermitages were designed to receive new members is attested to by numerous alterations and extensions to the individual lauras, good examples of which are provided by QH 13, QH 39-40 or QH 28, among others see Descœudres 1989, 36-42.

[420] Henein – Wuttmann 2000, 23-24.

In a later period, another room s. 20, was added to the small southern complex. It was connected to s. 21 by a door in the east wall. In the room, the excavators found several wall hoes *in situ*. Further renewal of the room group lead to the addition of a cooker and oven in room s. 23. In the southeast corner of the structure, fired bricks served to build the cooking spot.[421]

At some undefinable point, a major accident occurred, presumably at the location of rooms s. 22 and s.23. The archaeological features reveal a large layer of debris, which may indicate a ceiling collapse. Another possibility is a planned rearrangement of the area (fig. 39). S. 23 underwent a complete rearrangement. It is distinguished from other rooms by its high floor, which lies 1.5 m above the courtyard level. In the new section s. 23*bis*,[422] a latrine with two seats was built. In order to access such a high location, an additional staircase was erected in the courtyard leading to the latrine. In contrast, the adjacent room s. 22 was not rebuilt after the presumed collapse.[423]

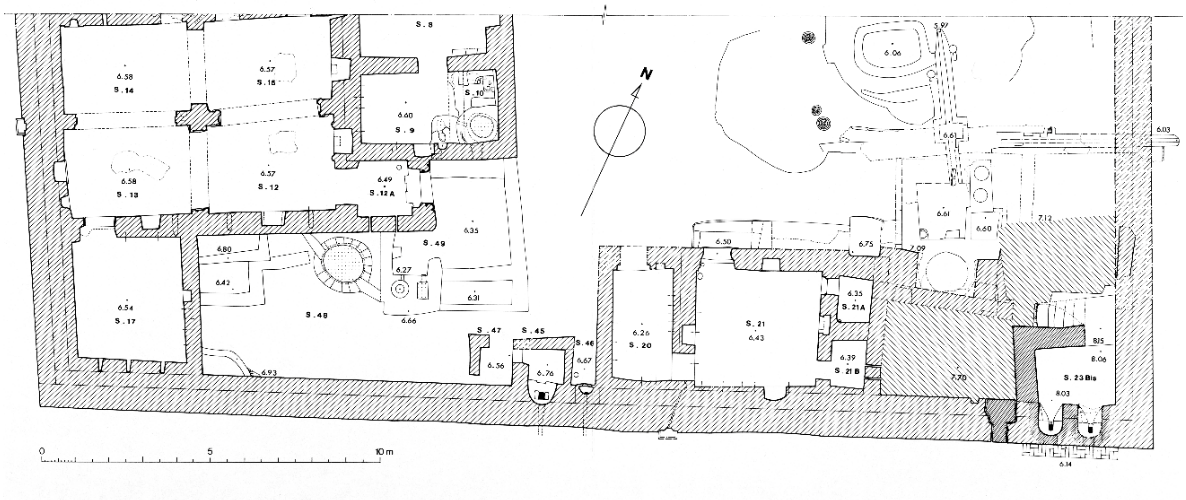

Figure 39: Further extensions to the southeast and southwest

Two other rooms s. 50 and s. 24 bordered the newly established latrine s. 23*bis* (fig. 39). While, based on the archaeological remains, the function of s. 50 is highly difficult to define, the area s. 24 may be safely interpreted as another lavatory. The restroom was built according to the same scheme as s. 23*bis*. The entire space lies 1.6 m above courtyard's ground level. An

[421] Evidence of an expansion of the economic sphere is found in numerous koms, wherein new ovens and hearths made up additional cuisine. These observations were made thanks to an extensive survey in QIz. Among the sites showing numerous extensions of the economic area are complex ri 10, ri 24, ri 27, ri 31 and ri 33. See Henein – Wuttmann 2000, 25. 27; Cf. Kasser 1981a, 116, 148, 154, 156, 164; Kasser1981b, Pl. XI, XXVI, XXVIII, XXIX, XXXI.

[422] Term 'bis' emphasises new arrangement of respective room.

[423] Henein – Wuttmann 2000, 29.

entrance staircase leads to a large room where two seats, designed in the shape of the wall's niches, are located along the east wall.[424]

3.3.3.1.1.3. The extension to the southwest

Simultaneously to the extensions along the south wall, other rooms were built in the southwest corner (fig. 39). A new area consisting of five rooms (s. 12, 13, 14, 15, 17) and an anteroom (s. 12a) was erected. It comprised a large four-part room, characterised by rich furnishings, such as niches and columns, and additional decoration consisting of wall paintings. A particular point to note here is the location, or rather the difficult access to room s. 17. Although the east wall of this room adjoins the courtyard, archaeologists have found no indications which could lead to the conclusion that s. 17 was accessible from outside. To enter this room, it was necessary to pass all the rooms belonging to this newly built group.[425]

Adjacent to room s. 12a lie two areas s. 48 and s. 49, which cannot be interpreted with certainty as separate and roof-covered chambers. Due to the poor state of preservation, it is not easy to conclude the nature of the two rooms' enclosure. S. 48 probably served economic purposes. The assumption is based on the presence of a bread oven. Much more problematic and unclear remains the interpretation of s. 49. It is a small square area equipped with two containers filled with ashes set in the ground. The finding suggests that these containers are related to the bread oven's construction. However, a more precise interpretation of the find must remain the subject of further research.[426]

In the course of the major reconstruction work, the latrine s. 46 and the urinal s. 47 were filled in. It was decided to build a new, higher facility to replace the old restrooms. The latrine s. 19, which stands 1.3 m above the courtyard level, is similar in design to s. 23*bis* and s. 24.[427]

3.3.3.1.1.4. Extensions to the north

Another enclosure was built in the north between the first building and the north wall (fig. 40); this consisted of rooms s. 39-43. Room s. 39 had a connection to s. 42. Furthermore,

[424] Site QR 195 is one of a special exception where several latrines seem to function at the same time. In most of the lauras, this phenomenon cannot be confirmed. However, this is due to the fact that most of the hermitages were documented in the course of a survey which was not excavated. For more information on the latrines of site QR 195, see Henein – Wuttmann 2000, 35-36. The plans of the survey provide information on the distribution of the latrines in QIz, cf. the entire publication by Kasser 1981a and Kasser1981b, especially the plans.
[425] Henein – Wuttmann 2000, 24, 26-27.
[426] Henein – Wuttmann 2000, 28.
[427] Other facilities in neighbouring settlements are very similar in design. For more on latrine QR 195 see Henein – Wuttmann 2000, 37-38. Latrines with two seats are known in the following coms: QIz ri 35, 36, 24, 16, 15, 12. For more on this see Kasser 1981a, 117-119, 125-131, 147-150, 168-172; and associated plates Kasser1981b, Pl. XII, XV, XVI, XXVI, XXXIII, XXXIV.

archaeologists suspect another connecting door between s. 40 and s. 41. Due to a very poor state of preservation, researchers did not make any statements regarding the function of these rooms. It is unclear whether the rooms' connections mentioned above existed, how the room's furnishing looked like, and whether other rooms adjoined the complex along the north wall.[428]

After the wall's extension, a new flat was built in the northwest corner of the hermitage. It consisted of 5 rooms, including a vestibule s. 25-26, an oratory s. 27, and two bedrooms, s. 28 and s. 29. Archaeologists interpret the largest room's construction in the entire complex as an oratory. This interpretation is based on the interior furnishings and decoration. The main argument, in this case, is the rich decoration of the east wall. A large central niche was framed by smaller columns and a decorative half-arch. Other smaller semi-circular recesses flanked each side of the central niche. Only one bedroom had direct access to the oratory; a door connected the anteroom s. 25 with the second bedroom s. 29.[429]

Figure 40: Largest extension of QR 195

[428] Henein – Wuttmann 2000, 27-28.
[429] A large oratory is not a unique feature in larger lauras. Large rooms are often built in the northern area of the laura, which are interpreted as oratories or a meeting rooms. Henein – Wuttmann 2000, 30-32; Descœudres 1989, 40-43. 53.

Adjacent to the complex, there is a double room, s. 30-31, whose furnishings allow for its interpretation as a kitchen. During excavation archaeologists found the floor covered with numerous organic remains, including animal bones and fish bones. Furthermore, countless amphora fragments were identified, covering the entire floor of the room. Besides, an oven and several cookers found there prove the validity of the interpretation.[430]

Extending into the north wing stood another group of rooms s. 32-37. It consists of a small anteroom s. 32a, which leads directly into the bedroom s. 32b, a double room s. 33-34, another double chamber s. 35-36 and an indefinable room s. 37. While s. 32-34 have floor covering and white wall plaster, these components are missing in s. 35-37. Additionally, two fireplaces could be identified in s. 36. Their existence and the undecorated interior of the two rooms point to the economical use of the complex. The lack of finds, however, does not allow a straightforward identification.[431]

3.3.4. Latrines

<u>3.3.4.1. Latrines of QR 195</u>

The construction of the latrine s. 45 was one of the first elements to Kom QR 195 (fig. 41). In the first phase, builders limited themselves into constructing a very simple lavatory. This had the form of a niche, which was recessed into the south wall. In the course of minor reconstruction work, the lavatory was partially enlarged, and the partition walls were fixed.[432]

The first significant change was the south-eastern extension of the complex. While a new residential area was built along the south wall, which served economic purposes shortly afterwards, it became necessary to rebuild the latrine s. 45 a second time (fig. 41). However, the numerous renovations of the site do not indicate a faulty construction. The latrine may have functioned excellently, but the south wall had to be strengthened, causing another rebuilding of the latrine. The reason for the reinforcement of the wall may have been the strong winds

[430] The inventory of a typical kitchen in Kellia consisted of an oven and several cookers. These were usually located in a roofed room. However, examples from the survey in QIz, such as ri 10, ri 32 and ri 33, prove that this was not always the rule. During the survey, archaeologists found complexes in which the kitchen was built into the courtyard. For the kitchens in QR 195 see Henein – Wuttmann 2000, 32-33. This is to be compared with examples from the survey in QIz see Kasser 1981a, 115-117, 158-164; Kasser 1981b, PL XI, XXX, XXXI.
[431] A good comparison is difficult to find in this case, as most publications on the Kellia research focused on the painted rooms. Most publications provide little information about the area of use, besides, there is a lack of illustrations. Cf. Henein – Wuttmann 2000, 33-35; Descœudres 1989, 40-43.
[432] Many latrines in Kellia have an almost identical structure, such as ri, 32, 54, 69, 90 or 115; on this see Kasser 1981a, 158-164, 243-245, 282-285, 328-331; and associated plates in Kasser 1981b, pl. XXX, LIII, LXV, LXXXIII, CVII. a polychrome picture of the latrine from complex QIz 90 was published in Kasser 1999, pl. 60.3. For more information about the latrine in QR 195 see Henein – Wuttmann 2000, 17-26, 37, 188, 196-197.

blowing in that exact spot. The outer side of the enclosure wall had to withstand the most weathering hazards. The doubling of the wall's thickness, therefore, required a reconstruction of the area s. 45. The latrine was rebuilt. The seat was designed in the same way as the previous one, namely, as a wall niche from which a small pipe in the form of joined amphora necks functioned as an outflow to channel impurities outside the wall. Furthermore, the access to the hermitage, situated right next to a latrine, was quickly recognised as not the best alternative. The strong and unpleasant odour and the waste accumulating on the square directly next to the hermitage entrance must have discouraged visitors from entering Kom QR 195. Whether these were the primary reasons for moving the main entrance to the east wall or whether other motives prompted the monks to move the entrance cannot be attested with certainty. The unfortunate location of the latrine, however, could justifiably give an uninviting impression. After the closure of the entry point, a small area was created between the new annexes and the renovated latrine s. 45. This space, s. 46 was used for the construction of a urinal (fig. 41).[433]

Figure 41: s. 45, s. 46 and s. 19

[433] Henein – Wuttmann 2000, 17-26, 37, 188, 196-197.

The increase in the number of residents of QR 195 is attested by the extensions along the north, south and west walls.[434] Furthermore, there was a collapse of the well, which demanded a renovation of the area. The changes required the monks to reorganise and restructure certain parts of the hermitage. A different type of lavatory emerged in the place of the previous latrine s. 45, namely a restroom with two seats s. 19 (fig. 42). A second toilet s. 23*bis* was built along the south wall on the site of a former economic area, and the corner of the southeast wall was also designated for a third latrine room s. 24.[435]

Figure 42: s. 19

All three double-room toilets (s. 19, s. 23bis, s. 24) have an identical basic structure (fig. 40). In a first step, the room's floor was raised to a height between 1.3 to 1.6 m above the courtyard level. A high additional wall enclosed the privy on all three sides. The enclosing wall formed the fourth wall of the latrines. Access to each of the elevated rooms was provided by stairs running parallel to the enclosing wall. As in the earlier phase, the seats were built into the enclosure wall in the form of a niche. The niches varied in their basic shape, with both rectangular and semi-circular recesses. The seats were equipped with additional footrests, either in the form of two triangles leading inwards from the niches' outer corners or a simple square shape extending along the seats. The entire construction of the latrine was designed to grant the steepest possible outflow of the channel. To make this possible, a sloping ramp was built at the opposite end of the wall, which connected the latrine seat to a short channel that formed a pipe

[434] Similar extensions can be seen also ri 97; cf. Kasser 1981a, 296 as well as Kasser 1981b, Pl. LXXXVIII.
[435] For detailed information about the new latrine s.19 see Henein – Wuttmann 2000, 38, 80, 87, 123, 196.

out of joined amphora necks. Not only was the drain designed as a slope, but the entire floor of the room slightly dropped towards the seat.[436]

Moisture posed a great danger. Since air-dried clay bricks were used for most walls, even a small amount of rain could cause serious damage. For this reason, surfaces exposed to frequent contact with liquid were protected either by using burnt bricks or by covering the endangered area with red waterproof plaster. In the case of the well and its fittings, both the fired bricks and the red plaster – i.e., *opus signinum* – were utilised. The partially preserved remains of the roofing testify that the installation was coated with a white lime plaster. This formed sufficient protection against the few rainy days. The water conduit ran through a vaulted construction from the roofs to the enclosure wall's outer side. In the case of the latrines, archaeologists assume the privies were not roofed over. They argue this assumption with the possibility of better ventilation of the room, whereby a small form of protection from the sun cannot be excluded.[437]

For one thing, it would explain why the entire floor and not just the lower part of the seat had a red waterproof plaster covering. This way, the space would have been protected from urine and rainfall. The slight depression of the floor allowed for the direction of the rainwater towards the seat. The wide opening below the seat provided a place for liquids to scatter, which is why a small blockade was built between the seat legs to prevent this from happening. However, a small hole was drilled in the blockage presumably to dispose of any liquid through the drain. It should have acted to prevent the water from collecting in the corner when cleaning the floor.

The pipe ended at the other end of the enclosure wall. For the QR 195 installation, one chose a very simple deposit. A ramp, built with fired bricks, directed the impurities outside, again with a slight depression in the ground. This type of construction differs from many other disposal areas in Kellia.

3.3.5. Comparative Examples

By examining the structure of the buildings in Kellia, it can be seen that all the latrines that we know of so far had a very similar design, and their location, namely always on the edge of the

[436] Cf. Henein – Wuttmann 2000, 188-203; Makowiecka 2007, 81-82.
[437] Former literature contains erroneous information on the subject of the building materials used in Kellia. Descœudres emphasises that only dried mud bricks were used for the construction of the laura. The QR 195 site, as well as the investigations in com 219, revealed a more complex architecture than previously thought. One was aware of the damage that moisture would do to a construction built using exclusively clay-dried bricks. Therefore, several precautions were taken to use fired bricks for the areas which had direct contact with water and other liquids. Cf. Descœudres 1989, 33.

laura, is a typical element of identification. In spite of many common elements, we can also see some differences in the system of removal and storage of excrements.

Thanks to numerous excavations, it has been possible to prove that many hermitages built a small underground room behind the latrine. This type of construction can be observed in the Kom 219 enclosure. In the outer wall of the complex, directly connected to the outlet of the latrine, a small chamber was built, which was enclosed with burnt bricks.[438] A similar compartment, but of a different design, was noted in the enclosure QR 167. In this case, a semi underground room has a regular square shape and was covered with white plaster.[439] Such disposals could perhaps have served as a dung chamber, with an underground compartment serving as a collection point for bodily waste; in other cases, as in the QR 195 site, it was stored in an open area to dry out. Why the latrine had no connection to an underground chamber in the case of QR 195 remains unclear.

Nevertheless, in the case of the Kom QR 195, one could assume that the human excrement was later used for horticulture. Even today, dried human excrement is being used as fertiliser. The fact that the method is not widely used in European countries and partly does not find acceptance is due to human excreta's strong connotation with the spreading of diseases. However, the images of the dirty and unclean streets of the Middle Ages, on which countless diseases germinated, were not known in Antiquity. People of that time had no qualms about using excreta as fertiliser.[440] Moreover, famous personalities who lived in Antiquity, such as Varro, describe the high quality of human waste as fertiliser (RR 1.38.2-3).[441] The work *de Re Rustica* also mentions human remains as a great aid in horticulture, emphasising the recommendation of the fertiliser made from human residues for sandy or poorly fertile soils.[442]

Looking at the surroundings of Kellia, one can easily recognise how difficult the maintenance of good quality soil had to be for the monks. At the same time, this was the main prerequisite for producing a regular supply of food. In the QR 195 site, archaeologists have not found any signs of a stable, which could imply the use of animal excrement.[443] The dry climate, the

[438] Daumas – Guillaumont 1969, 58 f., Pl. 11a-b.
[439] Descœudres 1989, 39.
[440] This assumption is not only made for the European continent. In ancient Mesopotamia, researchers suspect that human faeces were collected in containers in homes, emptying the contents later, and eventually used as fertiliser in the fields. For more on this, see McMahon 2015, 31-32.
[441] For more see Varro, RR 1.13.4.
[442] The ancient author mentions this practice on several occasions, see Columella 1.6.24; 10.84-85; 11.3.12; On further considerations and possible practical applications in the Roman world, see Wilson 2011b, 147; Scobie 1986, 413-414; Juntunen 2018, 145. 148; Taylor 2015, 81-82.
[443] Bunge 2012, 99.

hermitages' location in the desert and the lack of other possibilities to create a natural fertiliser may have led the monks to use their own waste to keep the soil more fertile.

In addition, archaeologists suspect that the latrines might not have been built by chance along the southern enclosure wall. As mentioned above, strong winds could be detected at the site during the entire period of the excavations. Evidence of this weather also being experienced in Antiquity is provided by the reinforcement of the south wall during the use of the complex as a hermitage. This area mainly warded off the strong southern wind stream—an advantage which the builders of the hermitage did not underestimate. Ventilation of the latrines was enhanced by the small windows on the walls separating them from the courtyard. The construction of the latrines and their equipment testify that contact with unpleasant odours had been unwelcome even in Antiquity. The elevation of the entire facility and a much thicker wall spared the user, at least to some extent, confrontation with the pungent stench of human organic remains. The open space, equipped with windows, also had constant natural ventilation in the form of a breeze, which blew most strongly in the very place where the latrines were located.[444]

The precautions taken in the buildings should not be underestimated. The numerous measures point towards a belief in the great importance of good ventilation throughout the rooms. Despite their location in the desert and their isolation from the world, it can be assumed that the anchorites did not lead a lifestyle that lacked order. Although the literary sources, especially the *Apophtegmata Patrum*, do not comment much on the subject, isolated indications can be found that prove how the handling of human excreta was not one of the most beloved tasks of a monk. Thus, Johannes Ephesinus mentions the cleaning of a latrine as a humiliation (Joh. Eph. Comm. Beat. Oriental. 33 [PO 18, 594]). The same author describes that this humbling work was also understood as a punishment (Joh. Eph. h. e. 3,2,12 [CSCO 106/Syr. 55, 52f]). Of course, the two passages cannot be understood as standard procedure for all monastic communities. However, they give the impression that the handling of human excreta at the time had been as unpopular as it is today. The strong smell, which causes a natural feeling of disgust in every human being, could be perceived at the smallest degree.[445]

The layout of the latrines and their construction reflect a similar sanitary system for the inhabitants of the cells. In every known case, human excrement was conducted through channels outside the laura, where it was most likely collected in special underground chambers or left to dry in the open air. Using the specific design of the toilets, faecal matter could be

[444] Henein – Wuttmann 2000, 93.
[445] Brashear – Breitenbach 2006, 802-803.

automatically drained away, and the cleaning of the latrines was also facilitated by the slightly sloping floor and a small channel, which allowed water to drain into the latrine sewer. Due to the lack of archaeological material at the site, we are unable to determine whether each toilet was supplied with water.

3.4. St Catherine Monastery

The monastery of St Catherine in Sinai has a long history that lasts until today.[446] Built during Late Antiquity, it is situated in Wadi ad-Dayr mouthing Mount Sinai, also known as Mount Moses. The complex was erected at the behest of Emperor Justinian I by the master-builder Stephanos of Aila in the mid of the 6th century AD. Since then, it has been inhabited continuously. To this day, a monastic community of Greek Orthodox monks still resides in the monastery complex (fig. 43).[447]

Figure 43: St. Catherine Monastery

[446] Even though the monastery is nowadays dedicated to St. Catherine, the saint was not identified with the place in the first centuries after the establishment of the fortress. It was not until the 9th century that the legend spread associating St. Catherine with Mount Sinai. For more on the legend and the origin of the cult see Atiya 1950, 13-25; for more regarding the Sinai Studies see Nelson 2010, 1-14.

[447] Atiya 1950, 13; Hughes 1996, 17-19.

3.4.1. History of research

Astonishingly, the archaeological research conducted on the monastery has a short history. This fact is strongly connected to the extraordinarily long duration of the monastery, which is still active to this day. Although research into the architecture and the first Justinian complex has only been carried out for a few decades, it is important to highlight the long history of research into the monastery's icons and manuscripts, which makes an important contribution to the understanding of Christian art.[448]

Despite the lack of excavations, the remains of the Justinian building have been researched in regard to its architecture. The first to study the Byzantine architecture of the complex in detail were Forsyth and Weitzmann, who published a book on the architecture of the complex in 1973.[449] The work, however, only contained an introduction to the planned text volume, which never appeared. It was not until 1990, when the book "Sinai. Treasures of the Monastery of Saint Caherine" was published, which dedicated a chapter to the architecture of the monastery.[450] In recent decades, a slight increase in the number of publications examining the Byzantine legacy of monastic architecture can be observed. Outstanding in the study of the complex are Koufopoulos and Myriantheos-Koufopoulou, who made an important contribution to our understanding of the emergence and construction of the first phases of the monastery. Particularly impressive was their work involving the partially well-preserved enclosure wall. Their devoted studies in this area eventually enabled the reconstruction of the defensive wall.[451]

3.4.2. Ancient sources

Before going on to describe the topographical location of the monastery of St Catherine, it is important to refer to biblical and ancient sources in order to understand the nature of this place. Although, at first sight, the events discussed in the source texts below have little or nothing with regard to the main topic of the work, which is hygiene and sanitation, they do allow one to understand the context and the reason for which the monastery was built. This context forms

[448] Among the most important contributions regarding the history of research concerning the manuscript collection as well the study itself, the following publications can be mentioned: von Tischendorf 1846; von Tischendorf 1862; Beneševič 1917; Beneševič 1937; Black – Davison 1981, 9-15. On the study of icons see: Kondakov 1902; Soteriou – Soteriou 1956; Lidov 1999.

[449] Forsyth et al. 1973.

[450] Manafis 1990.

[451] Koufopoulos – Myriantheos-Koufopoulou 2011; Koufopoulos – Myriantheos-Koufopoulou 2010, 48-54; Koufopoulos et al. 2004, 563-572.

the basis for further interpretations and reflections on the concept of hygiene in monastic complexes.

The site gained its fame in the first centuries AD. Even before the declaration of Christianity as the main religion of the Roman Empire, Christian pilgrims travelled to the Mount Sinai searching for the place where the Lord had made himself manifest through the burning bush.[452] Furthermore, Mount Sinai was considered a place where God commissioned Moses to deliver the People of Israel from the bondage of Pharaoh and to guide them to the Promised Land. Information regarding both encounters between Moses and God are given in the Bible. Those events form an essential starting point of the Book Exodus. Mount Sinai does not specify just a place where Moses received divine command. It was here, following the successful exodus from Egypt, where the People of Israel received the tablets of the Decalogue. Subsequently, the Israelite tribe spent 40 years in the desert waiting to be led to the Promised Land. Despite his many efforts in liberating the people of Israel from Egypt and guiding them for 40 years through the desert, Moses did not live to experience the actual arrival in the Promised Land. His brother Aaron led the people into the land they believed that God had prepared for them (Ex 19-20).[453]

The significant site, which played an essential role for Judaism, Christianity[454] and Islam[455], was not given a monumental building until thousands of years after the described events, namely in the mid of the 6th century AD. Yet, the emergence of monasticism in the Sinai region goes back considerably further. A few references on monks living in this region can be found in literature dating back to the 4th century AD. Pilgrimage reports, in particular, shed light on the holy site, which attracted Christian pilgrims at least from the middle of the 3rd century onwards.[456]

The first surviving pilgrimage account mentioning the mountain dates towards the end of the 4th century AD and was written by the pilgrim Egeria.[457] Among other places, Egeria visited

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452 Elsner – Wolf 2010, 50; Kalopissi-Verti – Panayotidi 2010, 78.

453 Skrobucha 1959, 14-19; Elsner – Wolf 2010, 51-52; Kalopissi-Verti – Panayotidi 2010, 75.

454 The place was considered of a high importance for Christian believers, fore more about the deeper meaning of the site, cf. Taft 2010, 144-146.

455 The site bears also a mosque, several carvings also testify to the fact that Moses is recognised as a prominent prophet by the Muslims, see Kalopissi-Verti – Panayotidi 2010, 78-79.

456 Atiya 1950, 15.

457 The pilgrim Egeria (also Etheria) is one of the best-known ancient authors of a pilgrimage account. The pilgrim spent four years travelling to the holy places associated with Christianity. Her journey is dated approximately to the end of the 4th century. Leaving Constantinople, she began her journey to the most important cities of Christianity. Her journey takes her to Jerusalem, Mont Nebo, the East Bank of Jordan, southern Syria and Chalcedon. During the itinerary, she also makes a special excursion to Egypt. Her account is divided into two parts. In the first section she describes her entire journey, the second part focuses on the description of the liturgical

the site of the burning bush where God revealed himself to Moses.[458] Based on her report, we gain an insight into the appearance of the revered place.

> "*Properata autem ad caput ipsius vallis exire nos necesse erat, quoniam ibi errant monasteria plurima sanctorum hominum, et ecclesia in eo loco, ubi est rubus; qui rubus usque in hodie vivet et mittet virgultas… Hic est autem rubus, quem superius dixi, de quo locutus est Dominus Moysi in igne, qui est in eo loco, ubi monasteria sunt plurima et ecclesia in capite vallis ipsius. Ante ipsam autem ecclesiam hortus est gratissimus, habens aquam optimam abundantem, in quo horto ipse rubus est… Et sic, quia sera erat, gustavimus nobis loco in horto ante rubum cum sanctis ipsis: ac sic ergo fecimus ibi mansionem.*" (Aeth. 4, 6-8)[459]

The report describes a bush growing in the middle of a garden. Based on Egeria's description, we can reconstruct in rough outlines the situation found by the pilgrims in the 4th century. The place where the monastery is positioned, was arranged in a different way in the 4th century AD. Egeria describes a garden in which the Burning Bush could be seen. Her report also mentions a nearby church. The location of the sites, which were difficult to reach, posed a great challenge to the ancient pilgrims. Because of the great distance to the nearest towns or villages, a trip to the holy places took more than a day. Knowing that an expedition to the Holy Bush could last more than a day, some pilgrims decided to set a camp near the sacred place. In an earlier excerpt, we also read:

> "*Nos ergo sabbato sera ingress sumus montem, et pervenientes ad monasteria quedam susceperunt nos ibi satis humane monachi, qui ibi commorabantur, prebentes nobis omnem humanitatem; nam et aecclesia ibi est cum presbytero.*" (Aeth. 3,1)[460]

The hermits who lived there made it their responsibility to accompany the pilgrims on their way to the holy places and to offer them protection at night. Egeria also describes the hospitality of the hermits, thanks to whom she was able to spend the night, probably in Deir al Arbain, without

activities in Jerusalem. Researchers debate the identity of the pilgrim up to the present day. It is assumed that Egeria was a nun or a woman from the upper classes who probably had a higher education. For more about the person and her work see Atiya 1950, 15; Krüger 2000, 65; Donner 1979, 138-145, Felber 2013, 135; Röwekamp 1995, 11. 22.

[458] Elsner – Wolf 2010, 46-48.

[459] "It was necessary for us to come out at the head of the valley, because there were very many cells of holy men there, and a church in the place where the bush is, which same bush is alive to this day and throws out shoots (…) This is that bush which I mentioned above, out of which the Lord spoke in the fire to Moses, and the same is situated at that spot at the head of the valley where there are many cells and a church. There is a very pleasant garden in front of the church, containing excellent and abundant water, and the bush itself is in this garden (…) Then, as it was late, we took a meal with the holy men at a place in the garden before the bush." Translated by McClure – Feltoe 1919, 7-8.

[460] We reached the mountain late on the sabbath, and arriving at a certain monastery, the monks who dwelt there received us very kindly, showing us every kindness; there is also a church and a priest there. For the translation see McClure – Feltoe 1919, 3.

any worries. The hospitality described here was a common phenomenon among the monks, who saw Christ in every pilgrim and endeavoured to welcome them warmly by showing the important sites of the region.[461]

The foundation of the church mentioned by Egeria is attributed to the monk Julianos Sabas and his companions. Theodoret of Cyrus portrays the events in his Religious History, which is a continuation of the Ecclesiastical History of Eusebius of Caesarea. According to Theodoret's account, Julianos Sabas, along with other monks, made a pilgrimage to the site in 363 AD, ultimately founding the church which was described later in several travel accounts.[462] Apart from Egeria, another pilgrim who mentioned the church in his itinerary is the Anonymous Pilgrim of Piacenza[463], who visited Sinai presumably in the 60s of the 6th century. From his and Egeria's writing we learn that back then the pilgrims considered Mount Horeb and Mount Sinai to be two mountain peaks within the Sinai-Peninsula.[464]

However, in the travelogues we do not find any information regarding the large monastery enclosed by high walls. Searching for evidence concerning the construction of the monastic complex, we have to reach sources of other authors. The antique history writers Procopius indicate that the Eastern Roman Emperor had a new church built on the site[465]:

> "*ἐν τούτῳ δὲ τῷ Σινᾷ ὄρει μοναχοὶ ᾤκηνται, οἷς ἐστιν ὁ βίος ἠκριβωμένη τις μελέτη θανάτου, ἐρημίας τῆς σφίσι φιλτάτης ἀδεέστερον ἀπολαύουσι. τούτοις δὴ τοῖς μοναχοῖς Ἰουστινιανὸς βασιλεὺς (ἐπεὶ οὐκ εἶχον οὐδὲν ὅτου ἐφεῖντο, ἀλλὰ κρείσσους τῶν ἀνθρωπείων ἁπάντων εἰσίν, οὐδέ τι κεκτῆσθαι οὐδὲ θεραπεύειν τὰ σώματα, οὐ μέντοι οὐδὲ ἄλλου ὁτουοῦν ὀνίνασθαι ἐν σπουδῇ ἔχουσιν) ἐκκλησίαν ᾠκοδομήσατο, ἥνπερ τῇ θεοτόκῳ ἀνέθηκεν, ὅπως δὲ αὐτοῖς ἐνταῦθα ἐξῇ εὐχομένοις τε καὶ ἱερωμένοις διαβιῶναι. ταύτην δὲ τὴν ἐκκλησίαν οὐ κατὰ τοῦ ὄρους ἐδείματο τὴν ὑπερβολήν, ἀλλὰ παρὰ πολὺ ἔνερθεν· ἀνθρώπῳ γὰρ ἐν τῇ ἀκρωρείᾳ διανυκτερεύειν ἀμήχανά ἐστιν, ἐπεὶ κτύποι τε διηνεκὲς καὶ ἕτερα ἄττα θειότερα νύκτωρ ἀκούσονται, δύναμίν τε καὶ γνώμην τὴν ἀνθρωπείαν ἐκπλήσσοντα. ἐνταῦθά ποτε τὸν Μωσέα φασὶ πρὸς τοῦ θεοῦ τοὺς νόμους παραλαβόντα ἐξενεγκεῖν. ἐς δὲ τοῦ ὄρους τὸν πρόποδα καὶ φρούριον ἐχυρώτατον ὁ βασιλεὺς οὗτος ᾠκοδομήσατο, φυλακτήριόν τε στρατιωτῶν*

[461] Röwekamp 1995, 11-22.
[462] Kalopissi-Verti – Panayotidi 2010, 76.
[463] The report of the anonymous pilgrim of Piacenza dates back to 570AD. The description of the journey begins in Constantinople. The pilgrim travels to Cyprus, Palestine, Jordan, Northern Mesopotamia, and Egypt, visiting cities such as Nazareth, Jericho or Jerusalem. More about the person and his work see Donner 1979, 240-257.
[464] Information on the exact location of the mountains varies in ancient literature. In the Onomasticon, Hieronymus does not exclude the possibility of the mountains being the same (Onom 948); Cf. Röwekamp 2017, 333.
[465] Kalopissi-Verti – Panayotidi 2010, 77-78.

ἀξιολογώτατον κατεστήσατο, ὡς μὴ ἐνθένδε Σαρακηνοὶ βάρβαροι ἔχοιεν ἅτε τῆς χώρας ἐρήμου οὔσης, ᾗπέρ μοι εἴρηται, ἐσβάλλειν ὡς λαθραιότατα ἐς τὰ ἐπὶ Παλαιστίνης χωρία"[466] (Prok. aed. 5.8. 4-9)

In his work *De aedificis*, Procopius attributes the monastery's foundation to Emperor Justinian I. His description points to the existence of a large fortress with an assigned garrison of troops. These defensive measures were intended to protect this site from Saracen incursions. Curiously, in Procopius' description we do not find any information regarding the Burning Bush. The church mentioned by the author is associated with Moses receiving the tablet of the law. Procopius does not describe precisely how the fortress looked. However, from his report, one can infer the foundation of a secure bastion to protect the monks from Saracen incursions.[467] Considering the architecture, it becomes clear that the fort, compared to other imposing buildings of the time, does not rank amongst the securest establishments of the 6th century. The fact may not be surprising given that the construction of the massive enclosing wall was strongly related to the religious relics present in that place. Architects were limited in creating a complete complex plan, the main reason for this was the preserved sanctuary containing the Burning Bush. For this reason, the fortress is situated in a very vulnerable depression formed around the place of divine revelation.[468]

Procopius' description is not the only source providing evidence of the building' process. Eutychios, patriarch of Alexandria,[469] provides us with a more detailed account, relating the events both before the erection of the monastery and immediately afterwards.[470] According to his reports, monks dwelling in caves on Mount Sinai sent an envoy to the emperor asking for protection against the Ishmaelite Arabs, who posed a threat to the hermits. Emperor Justinian is therefore said to have commissioned a fortress to be built in order to protect the recluses from enemy attacks. Interestingly, Eutychius describes not only the events, but also the advantages

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466 "On this Mt. Sina live monks whose life is a kind of careful rehearsal of death, and they enjoy without fear the solitude which is very precious to them. Since these monks had nothing to crave – for they are superior to all human desires and have no interest in possessing anything or in caring for their bodies, nor they seek pleasure in any other thing whatever – the Emperor Justinian built them a church which he dedicated to the Mother of God, so that they might be enabled to pass their lives therein praying and holding services. He built this church, not on the mountain's summit, but much lower down. For it is impossible for a man to pass the night on the summit, since constant crashes of thunder and other terrifying manifestations of divine power are heard at night, striking terror onto man's body and soul. It was in that place, they say, that Moses received the laws from God and published them. And at the base of the mountain the Emperor built a very strong fortress and established there a considerable garrison of troops, in order that the barbarian Saracens might not be able from that region, which, as I have said, is uninhabited, to make inroads with complete secrecy into the lands of Palestine proper." Translated by Dewing 2002, 357.

467 Kalopissi-Verti – Panayotidi 2010, 77.

468 For a more detailed comment on the source see Forsyth 1983, 50-57.

469 Griffith 2005, 1.

470 Kalopissi-Verti – Panayotidi 2010, 82; Mayerson 1978, 36-38.

and disadvantages of founding the monastery in a hollow between two mountains. In his account, the architect is said to have chosen the site for several reasons. First, the spot was selected regarding the position of the Burning Bush. This way monks could spend their time off from prayer and work close to the holy place. Second, the climatic conditions were decisive for the choice of fortress location. The valley stretching between two mountain peaks made it possible to efficiently collect rainwater directly inside the monastery complex. In such an arid and barren environment, access to water was crucial for the survival of the monks (Eutychius Annales 17,6).

Despite these arguments, the emperor was allegedly extremely outraged by the construction of such a poorly defensible fortress, leading to the beheading of the envoy who informed him about the outcome of his order. In fact, directives of the ruler to build a fortified monastery had not been properly implemented. Although the monastery was surrounded by a wall, its high walls did not provide sufficient protection against attacks from above. The monastery, located in a hollow, could easily be reached by the enemy's archers. Due to many weaknesses and deficiencies of the entire monastic building, and to provide additional support for the monks and travellers, the emperor had relocated hundreds of Roman and Egyptian slaves near the monastery where they were ordered to build houses for themselves and their families. The complex inhabited by the slaves was to be provided with a castle, named Deir el Abid (Eutychius Annales 17,7).

Despite possessing a very vivid description, Eutychius' report contains several inconsistencies. His record is not coherent regarding the foundation date of the monastery. According to his account, the monastery was founded in 527; in another passage, the year 557 is mentioned as the foundation date. It is unclear whether the different dates simply reflect the author's disinformation, which could have led to confusion, or whether Eutychius intention was to emphasise and chronicle different events by giving varying dates. One could assume that the year of the envoy and the Justinian decree – to build a monastery – should be set for the year 527. The actual consecration of the monastery could be therefore scheduled for 557. However, due to additional ambiguities, the exact date cannot be precisely defined.[471] (Eutychius Annales 17, 6-7)

Relying just on literary sources poses a great challenge to define how long the building process took. Presumably, immediately after the visit of the Anonymous Pilgrim, a large monastery was

[471] Kalopissi-Verti – Panayotidi 2010, 82.

built, designed as a fortress. Since the accounts of the Anonymous Pilgrim date to the 60s of the 6th century, and as mentioned above, there are no references to the Justinian fortress in his descriptions, scholars assume that the Anonymous Pilgrim visited the sacred site before the construction of the Justinian complex was finished. However, another account, dating to around 570, informs us of a pilgrim Antoninus Martyrus, who visited the newly built monastery. According to his account, the spring, in which Moses fed his sheep with water, was incorporated within the monastery wall. Therefore, we can assume that the monastery was planned and completely built between the years 557 and 565 (the year of the death of Emperor Justinian I).[472]

3.4.3. Topography

The Monastery of St. Catherine is located on the Sinai Peninsula in its northern part, which nowadays belongs to the Arab Republic of Egypt. The Mediterranean Sea defines the headland in the north. To the south, the Red Sea forms the natural boundary. The monastery is situated in Wadi el Deir (the monastery valley), the same valley visited by pilgrim Egeria. According to her itinerary it is the place of the biblical Burning Bush at Mount Horeb and, at the same time, the spot where Moses received the stone tablets. Mount Sinai surrounds the valley, whose peaks have numerous names, due to different traditions and dialects, such as Mount Horeb, Mount Musa, Gebel Musa or Jabal Musa. In English, the most common name for the highest summit is Moses' Mountain. The two other enclosing mountains are the Gebel Aribeh and the peak of St. Episteme.[473]

The first documented architectural construction in the valley is a tower that dates back to the 4th century AD. The building is interpreted as a shelter for the hermits, who required a safe place to protect themselves from raids in times of threat.[474] Therefore, the tower could have formed the only architectural building in the region for over 150 years (fig. 44). Between the 4th and 6th centuries, monks settled in the area and converted the numerous caves into their hermitages. Presumably, the region developed into a prominent place, not only serving as the hermits' settlement but also forming an essential destination for numerous pilgrims. The high

[472] Koufopoulos – Myriantheos-Koufopulou 2010, 116.
[473] Koufopoulos – Myriantheos-Koufopoulou 2011, 22, 27; Forsyth 1983, 49.
[474] Surprisingly, Egeria does not mention any tower or keep in her accounts. Nevertheless, the lack of literary information does not provide a sufficient disproof argument for some researchers. The entire account of Egeria is mainly focused on the sacred site. In many cases, the traveller only roughly mentions the adjacent monuments, or in some cases, these find no place in her accounts. On the other hand, a lack of mentioning such a significant building might lead to the assumption that the keep was actually erected after Egerias visit. See Koufopoulos – Myriantheos-Koufopoulou 2011, 48.

profile of the monastic community, which spread widely in the Byzantine period, is reflected in the foundation of the monastery complex by the Eastern Roman Emperor Justinian in the middle of the 6th century.[475]

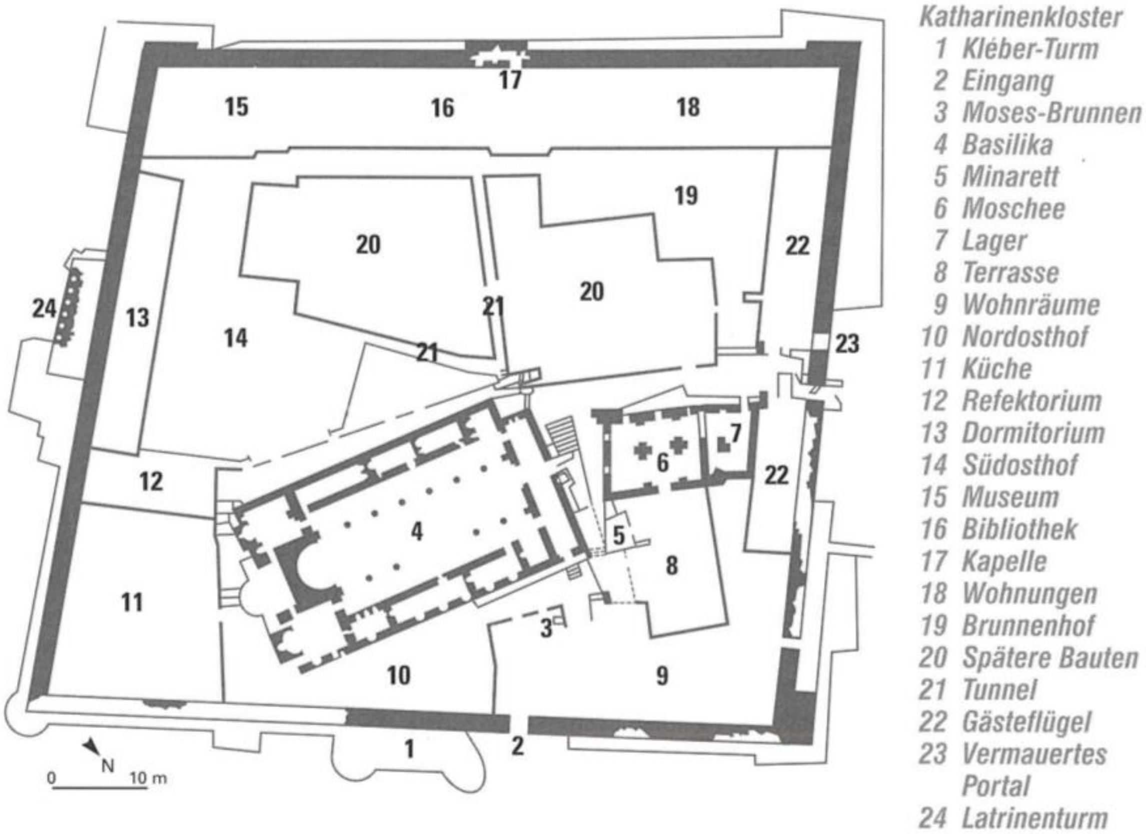

Figure 44: Plan of the St Catherine Monastery

The centre of the Justinian complex consisted of a three-nave church with side chapels and an east-facing apse. An open courtyard stood directly behind the apse equipped with an access leading to two side chapels. The church's orientation was intended to accentuate the importance of the distinctive Burning Bush, which very likely stood next to the basilica at the time of its construction. Unfortunately, the exact position of the Burning Bush, in common with the remaining parts of the site, is neither described in the pilgrims' accounts nor can it be completely reconstructed through archaeological excavations.[476] However, we can assume that its layout did not change entirely during the course of time.[477] Besides the ecclesiastical core building,

[475] Cf. Chapter 3.4.1.

[476] The main reason for the lack of archaeological excavations on the site are the numerous buildings that form part of the current monastery.

[477] This assumption is based mainly on preserved parts of the monastery which date back to the first phase of construction of this object, for example, parts of the defence wall. The observation of these walls allows us to state that the borders of the monastery have not been changed. Another ambiguity is the question regarding the rebuilding or reconstruction of the monastery, which led to considerable changes in the architectural design.

one could also find a place for pilgrim's accommodation. The guest house, built in front of the church's narthex, belongs to another complex dating to the 6th century. The details of the once two-storey edifice cannot be reconstructed with certainty since, as of today, a mosque stands on its foundation walls. Presumably, the guest house was converted into a prayer house in the 11th century, partly rebuilt and adapted to face Mecca.[478]

Only a few remains of the Justinian Monastery can still be found within the convent (fig. 44). Among the bulky remnants is a rainwater channel, which was probably responsible for feeding water to the garden. In the north-western area, remains of an arched vault were identified in the foundations. Although only incomplete and in small parts, the enclosure wall is one of the best-preserved testimonies of Justinian architecture in the Monastery of St. Catherine. The construction dating to the 6th century can still be seen today on almost all sides of the wall. The exterior wall has been preserved almost at its original height on three sides, where the granite blocks can still be seen on the southwestern side. The ground plan of the defence wall is a remarkable construction that cannot be compared to the fortress architecture of the time. The peculiarity is the lack of side towers, which would have provided additional protection of this type of fortifications. Additionally, the main entrance to the monastery was relatively small and built into the northwest wall, where the exact outline of the large portal can be seen in the wall repairs to this day. In addition, a small chapel was constructed in the southwestern wall. Besides the main entrance and the chapel, another particular device was enclosing the south-eastern side of the wall, namely a lavatory.[479]

3.4.4. Latrine

Looking at the plan of the monastery one can observe a difference in the layout between the exterior fortification walls (fig. 45). While the three sides consist of no additional structures, a rectangular flanking tower precedes the middle section of the south-eastern wall. Currently, just the lowest section of the annex wall has survived, bearing six peculiar outlets. Although the existing remains of this section are in a very poor state, it is possible to interpret the flanking annex as the latrine tower. The lavatory can be identified by the drainage channels in the

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Although later sources do not describe the exact development of the monastery, it is possible to reconstruct some of the alterations and even to establish the century in which they were carried out. For the changes within the monastic architecture one can establish a *terminus ante quem* which is 1216. In the very year, the literary sources document the visit of Magister Thietmar, a German pilgrim. His report "Peregrinatio" records a Burning Bush chapel, which was not existent in the time of the first construction phase. Nowadays visitors are led into a chapel where only the remaining relics of the Burning Busch are kept. For more see Forsyth et al. 1979, 52.

[478] Forsyth et al. 1979, 55-56.

[479] Koufopoulos – Myriantheos-Koufopoulou 2011, 48-54.

reinforcement of the wall. Unfortunately, it is not possible to reconstruct the facility's design due to its current location and the numerous reconstructions along the fortification. The part of the outer wall was rebuilt in the 14th century after the earthquake of 1312. As a result, no traces of the original latrine seats have been preserved inside the monastery.[480]

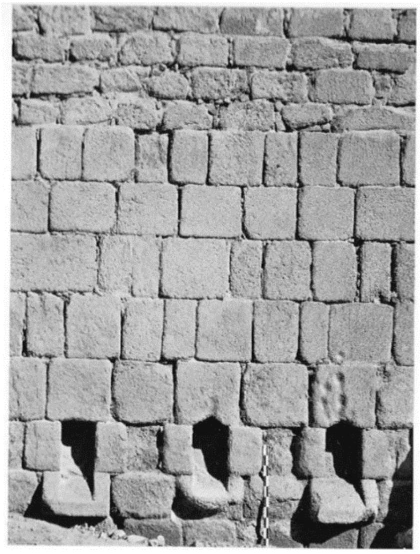

Figure 45: Latrine's outlets

3.4.5. Comparative Examples

It is difficult to find comparative examples in which the historical, monastic, and geographical context corresponds to St Catherine's Monastery. The monastic complex can be considered as unique, taking into account its location in a desert environment and in its function as a religious building designed and based on a defensive system.[481] This correlation of these two factors is not usually found in archaeological remains of Late Antiquity, for which reason the following comparative examples will be taken from both an earlier and a later period. Restricting the comparative study only to the Egyptian region might pose a big challenge in the context of defensive constructions. Therefore, in order to get a better idea of the sanitary systems of fortresses, some references will be made to sites in Europe with a similar function.

<u>3.4.5.1. Ecclesiastical and monastic Complexes</u>

A large number of monasteries are known to us across Egypt, some of which were founded as early as the 6th or 7th century. In most cases they were expanded during the Middle Ages due to

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[480] At the place, I want to thank Father Justin for the clarification regarding the actual state of preservation of the latrine tower.
[481] Cf. Chpt. 3.4.2.

increasing taxation. Smaller monasteries began to disappear and the monks belonging to less significant monastic communities returned to urban life or sought a place in a larger and more prosperous monastery. This economic situation led to the major rebuilding of individual monasteries, with earlier buildings being demolished and replaced by structures adapted for the growing enrolment of monks. Looking at the archaeological remains it is not difficult to conclude that the present ruins of some monastic buildings in Egypt can be dated to a period no earlier than the 11th or 12th century. In such monasteries designed for a larger group of monks we can observe that the latrines were built next to each other, constructed as a row of seats. In all known medieval examples, latrines are located inside monastic complexes. Such construction can be observed in St Simeon Monastery which had a separate sanitary facility presumably surrounded by an additional wall. On a ground plan a longitudinal bench extends which is marked by ten round openings. Unfortunately, the map, which was published in the 1920s, is not accurate enough to state whether or how the seats were separated from one another.[482]

Figure 46: Keep of the Epiphanius Monastery with preserved shafts

[482] Monneret de Villard 1927, 28-29.

In the case of other monastic sites, we find a vast number of preserved keeps, where a separate room was reserved for a toilet. Epiphanius Monastery, dating to the 7th century, provides a good example of a latrine incorporated within a tower (fig. 46). The eastern tower is located in the centre of the monastic complex and possess a small latrine with two seats, probably on the second floor. The only remains of the structure can be traced due to an outlet inside the outer wall. The impurities were stored underneath the tower and had to be removed from time to time.[483]

Abu Makar, dated to the end of the 12th century AD, incorporated a one-person latrine within the walls of a keep. On the first floor of Deir el Baramus, dating to the 7th century, one detected a latrine room. However, in some cases we are aware of latrines positioned on a terrace, as it is the case in Deir el Moharrate.[484]

Unfortunately, none of these examples shows how the monks handled the disposal system. The only known architectonic solution in the Egyptian region, similar to the latrine in St. Catherine monastery—can be found in the Kellia (see chpt. 3.3.). Looking at the ground plan, we can see that outlets of the waste disposal system were placed behind the walls. It is worth noting, that there are no underground chambers in the case of the monastery in Sinai, allowing collecting and hiding human excreta. Such a phenomenon can be considered an exceptional case. In most cities like Marea or Alexandria and in the pilgrimage centre of Abu Mina, the archaeological remains proved various cesspits and cesspools connected to a lavatory. Even in St. Epiphanius Monastery the human impurities were collected underneath the main tower, not next to it.

In contrast to the usual solution, the monastery of St. Catherina settled on a different way of handling impurities, presumably by leaving it to dry out in the sun. It is not easy to understand the primary reasons behind the architectural solution. Comparing St. Catherina monastery with other monastic buildings makes it difficult to find a proper answer to that question. There are several reasons for that. In most Late Antique monasteries, no latrines have been preserved until the present day. The only comparative example is the nunnery at Horvat Hani in Israel, where during an excavation campaign archaeologists detected an outlet interpreted as a latrine' drain. Based on archaeological material, archaeologists reconstructed an elongated separate room,

[483] Observations made during a stay in Egypt.
[484] Walters 1974, 86, 87, 90, 92.

accessed from a side courtyard equipped with a cistern. The position of the outlet suggests that impurities were not collected in an underground cesspit but fell along a downhill slope.[485]

Although not located in Egypt, a similar row of latrines, as in the case of St Simeon Monastery, has also been found in a monastic context. In Sudan, in Bayud desert, archaeologists discovered two rows of latrine seats. One dates to the 7th century; the other was built around the 10th century. The latrines in Ghazali Monastery had a clear separation between individual seats. Access to the area was gained through a common courtyard, from which separated doors led to individual latrines. A long sewer channel extends along the seats. However, it is not clear how the waste was removed.[486]

Considering the building mode of latrines in the presented monastic complexes, it is challenging to define a uniform construction system of lavatories as well their location within monasteries. By comparing Late Antique and Medieval monasteries, it can be stated that none of them follows a similar construction or sanitary system. Each Egyptian monastery has its own way of dealing with disposal of human waste. In the case of St Catherine Monastery, we lack any archaeological information regarding the sanitary facilities within the enclosure wall.[487] Furthermore, due to the small number of well-documented latrines in monastic buildings, which would fit into the temporal and geographical framework of this work, it is difficult to make any conclusions concerning the concept of hygiene in Egyptian monasteries dating from the period of Late Antiquity.

An additional issue in drawing conclusions in relation to the Christian approach towards hygiene is the unique historical context connected with the establishment of the monastery. Relying on ancient sources, we can suspect that anchorites living in Sinai did not play a significant role during the erection of the monastic fortress. Given the role intended to be provided by the thick walls, one can assume that a more important point during the planning process was the consideration as how to incorporate ecclesiastical facilities into a complex based on a defence system. On the grounds of this consideration, it seems pointless to conflate the pragmatic approach towards the defensive function of the monastic edifices with Christian views regarding hygienic behaviour. As a result, St Catherine's Monastery does not pose a good basis for understanding monastic views on cleanliness and hygiene.[488]

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485 Dahari – Zelinger 2014, 185-186.
486 Obłuski et al. 2018, 269; Obłuski et al. 2017, 367, 373, 376.
487 Forsyth et al. 1973, Pl. VII B-C.
488 Cf. Forsyth 2003, 62-73.

The fact that human excreta were disposed outside the monastery is probably related to a pragmatic decision made by an architect in charge. For this reason, a comparison of the monastery with fortresses can help us in understanding why the outlets of latrines in St. Catherine's monastery were supposed to dispose of human waste outside the fortification' wall.

3.4.5.2. Fortifications

We shall not forget that the monastery of St. Catherine was built as a fortress to improve the monks' safety. Although we lack comparative buildings from that period, taking a look at Roman, medieval, or even later fortresses could help us understand how a proper fortification system could have looked like and what kind of risks were connected with latrines on defence walls.

Figure 47: Latrine of the Roman fortress at Caerleon

Considering numerous examples, one cannot define one way of building latrines within a fortress. For instance, the Roman fortress at Caerleon was equipped with a multi-seated latrine (fig. 47), which was not directly attached to an outside-walls drainage system. Instead, according to Knight and Cadw, the conduit was connected to the main sewer system.[489] Another example of a lavatory inside fortification walls is a latrine in Corfe Castle in Dorset, England, dating back to the 11th century. The outlets of the drainage system led the impurities into a courtyard. However, in most cases, latrines were constructed as rooms with a long pit falling outside the castle or as oriels connected with short shafts or long ducts. The latter solution had

[489] Bishop 2012, 30.

proven to be unfortunate in the case of Chateau Gaillard on the River Seine in France. The castle, built by Richard I by the end of the 12th century, had to withstand a siege during which invaders used the long shaft to enter the fortress.[490]

A similar layout of a sewer outlet to the one we find in St. Catherina in Sinai, can be found at the priory of the medieval Portchester Castle. There, the interior of the latrine has not been preserved. The only indication of a former lavatory, which stretched along a fortification wall, are the outlets mentioned above. Those too, stayed in similar intervals from one another, leading the waste directly outside the wall, where the existence of a previous moat or ditch could not be proven.[491] Although, there are no remains of the interior of the latrine, the small gaps between the slots indicate that the seats were placed adjacent to each other. Probably the latrine was a single room with the seats against the wall and not separated from each other.

By comparing the latrine of St. Catherine's monastery with other toilets in both monastic and fortified buildings, we can only partially reconstruct the interior of this building. With a high degree of probability, it is possible to state that the monastery of St. Catherine had one sanitary room containing six latrines. We are not able to determine whether the seats were separated from each other, as examples in medieval monasteries would suggest (see latrines at Ghazali Monastery and St Simeon Monastery). The small spacing of the sewer outlets suggests that the seats were placed at very close intervals from each other, which probably complicated the erection of dividing walls. This may indicate that the seats had no partitions or that the compartments were constructed of wooden beams, not occupying much space.

Unfortunately, the lack of any archaeological remains does not give us any basis for determining the supply of latrines. We do not know whether this room was equipped with *amphorae* containing water or a water basin. We are unable to answer the question of how or if the floor was cleaned at all. The only basis for interpretation gives us a small part of the preserved defensive wall. Thanks to the wall's remains and comparisons with other castles, we can speculate here that the main reason for the creation of this type of drain was related to the defensive aspect of the monastery. Thanks to this system, human excrement could have been an additional obstacle to enter the fortress. Probably only by chance, this drainage system only prevented the spread of bacteria in the toilets facility of the monastery.

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[490] Cartwright 2018, 1.
[491] Fairman 2008.

4. Synthesis

4.1. Hygiene parameters in Egypt during Late Antiquity

In order to answer the question concerning the hygienic measures, the following chapter deals with the equipment, the possible cleaning process within the sanitary facilities, their installation context and finally, the water supply of the latrines. Based on the observations, conclusions should be drawn regarding the measures contributing to maintaining cleanliness within the sanitary facilities.

4.1.1. Equipment

On the basis of the material available to us, it is not possible to make any precise statements regarding the furnishings of the latrines. Although an intentional desire for separation between the clean and dirty areas can be noted from the findings, in fact this is one of the few statements that the archaeological material allows us to make. Complete isolation may not have been fully achieved, as indicated by the basins and gutters of the *foricae*.[492] In fact, the communal latrines pose evidence of large basins containing water for cleansing. Unfortunately, archaeological evidence gives us an insufficient indication of how the water was drawn from the containers. It is not clear whether the users of the latrines drew fresh water directly by entering the room or did incidents occur where the water was exposed to direct contact with unclean hands. Further, the question arises of how the gutters in the *foricae* were used, which, according to some archaeologists, also disposed of running water.[493] On the question of the method regarding drawing water from the washing channels, Wilson concludes as follows: "One way of doing this might have been simply by dipping one's hand into the gutter and scooping up water with which to wash one's bottom. Small jars or dipper juglets found in some latrines may also have served this purpose".[494] Although, as emphasised several times, archaeological material from Egyptian archaeological sites is very sparse, finds from *forica* in Marea prove a possible use of small jugs for cleaning oneself. Such juglets were found both in the large *forica* EKL and in the cellar of room 30, which probably had the function of a pitfall.[495]

[492] Cf. Neudecker 1994, 49-50.
[493] Koloski-Ostrow 2015, 28; Wilson 2011a, 104.
[494] Wilson 2011a, 103; Mertens 1995, 219-220; Annese et al. 2000, 253.
[495] Cf. Chapter 3.1.4.3 and 3.1.4.5. For further information regarding jugs see Dedra et al. 2020, 541-542, fig. 12.

It is not possible to give a general answer to questions regarding the degree of cleanliness in the gutters and water basins within lavatories.[496] However, the location of the basins, namely usually at the entrance to the latrine, suggests that the users served themselves with water directly as they entered the room. Nevertheless, in this respect, we do not know what kind of utensils were accessible to the users in order to scoop water. The ancient sources do not provide us with information regarding how the water was drawn from the water basins. Only one passage refers to a sponge stick available to users in public latrines within *Imperium Romanum*. The only text that provides information of this kind is Moral Letters to Lucilius. In fact, in Seneca's work, we read:

> "*Ibi* ***lignum*** *id, quoa ad emundanda obscena adhaerente* ***spongia*** *positum est, totum in gulam farsit et interclusis faucibus spiritum elisit. Hoc fuit morti contumeliam facere. Ita prorsus; parum munde et parum decenter; quid est stultius quam fastidiose mori?*"[497] (Sen. epist. 70.20)

This passage describes a suicide act of a Germanic *bestiarius* (=arena performer) who had previously been sentenced to death. In order to escape punishment, the convict asked for the opportunity to relieve himself. After entering the latrine without supervision, he used the sponge stick to end his life.[498]

Although Seneca's passage is the only source that reveals information about the sponge stick, which was available for latrines' users, researchers assume that this object was present in most public lavatories.[499] Furthermore, the particular shape of toilet seats in *foricae* – that is, with a slot on the frontal side of the seat[500] – is understood as evidence of the widespread use of sponges in the *Imperium Romanum* in connection with sanitary facilities.[501] Additional openings in the seat are interpreted as holes through which the stick with the sponge was passed to clean the intimate area.[502]

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[496] For Egypt, we lack studies of the eggs of intestinal parasites, which may be found in the latrines. For results from parasitological investigations in Carnuntum see Jansen et al. 2011, 163; in Sagalassos see Beaten et al. 2012, 1155-1157; Mitchell et al. 2017, 37-42.

[497] "While so engaged, he (the German) seized the **stick of wood**, tipped with a **sponge**, which was devoted to the vilest uses, and stuffed it, just as it was, down this throat; thus he blocked up his windpipe, and chocked the breath from his body. That was truly to insult death! Yes indeed; it was not very elegant or becoming way to die; but what is more foolish than to be over-nice about dying?" Translated by Gummere 1920, 66-69; Cf. Koloski-Ostrow 2015, 87. 228; Koloski-Ostrow 1996, 79-86.

[498] Koloski-Ostrow 2015, 86-88.

[499] Koloski-Ostrow 2015, 86-88; On other mentions concerning the sponge stick, but with no direct connotation to latrine see Wilson 2011a, 102-103.

[500] Neudecker 1994, 49; Hallier et al. 1982, 66.

[501] Wilson 2011a, 109.

[502] For further indirect sources regarding the sponge on a stick cf. Wilson 2011a, 102-104.

Unfortunately, no indications of using such utensils could be established in the cases presented above. No remains of the sea sponges were identified in any of the four case studies. Due to the poor state of research and the lack of publications, especially on the latrines at Abu Mina and in St Catherine Monastery, the presence of the sponges cannot be proven but also shall not be excluded. If one accepts Wilson's assumption, which states that a narrow slot in the front of the seat might be an indicator for the use of the sponge stick, this hypothesis does not support the argument that in Egyptian latrines, the sponge stick was used for cleaning. The presented argument is not to be disputed in this case, rather the archaeological material does not offer us any evidence to confirm Wilson's assumption, as in none of the presented cases were the seat benches found (except in Kellia). In this context, the archaeological material cannot help us clarify what utensils – apart from the small jugs – were available to users for cleaning their intimate areas in latrines in Egypt during Late Antiquity.[503]

4.1.2. Cleaning process

Due to the lack of a solid archaeological base and scant literary evidence regarding the equipage within the *foricae*, it is challenging to precisely assess how the washing process took place after relieving oneself.[504] Although, based on archaeological evidence, especially the jugs found in Marea,[505] it can be assumed that the visitors used such juglets to draw water from the water basins. However, it is not possible to draw such conclusions with certainty since no containers have been preserved in the contexts in which the jugs were found.[506] Nevertheless, we can at least imagine that the jugs may have been intended for drawing water.[507] Based on the hypothesis, it can also be considered that the jugs were used more often by several visitors during the day. From today's Eurocentric perspective, this statement could be an indicator to claim that the public latrines were far from any hygienic standards we know today since jugs were used by many people and were exposed to contact with polluted hands.[508] However, as already emphasized in the introduction, the thesis does not refer to the modern view or

[503] On other possible utilities which might had helped to clean oneself after urination or defecation see Wilson 2011a, 102.
[504] In places where the evidence of archaeological excavations was well published, such as the archaeological site at Marea, the state of preservation of the latrines was very poor. At St Catherine's Monastery, the Late Antique latrine was completely rebuilt. The latrines at Kellia give us very few clues regarding cleaning due to the lack of findings *in situ*. In the case of Abu Mina, we lack publications that could provide information regarding the archaeological situation.
[505] Cf. Babraj – Szymańska 2012, 68-70; Dedra et al. 2020a, 541-542, fig. 12.
[506] Although the jugs were found in a public latrine (EKL), we have an extremely limited idea of the possible internal fittings of the *forica*, due to the poor state of preservation. Cf. Derda et al. 2020a, 541-542.
[507] More about usage of juglets in *Imperium Romanum* see Wilson 2011a, 102.
[508] Jansen et al. 2011, 162.

understanding of the concept of hygiene. For this reason, the presence of the jugs can serve as further evidence to illustrate that people in Late Antiquity attempted at least not to pollute the water stored in the containers. It is possible that small jugs were used to fetch water even before using the toilet, thus making their bodies clean in order to protect themselves from the pollution of others.

4.1.3. Public sanitary facilities

Another point that may help us interpret the approach towards hygiene and sanitation during Late Antiquity is the consideration of the position of the latrine in relation to a communal complex, be it a *thermae* or other building open to the public.[509] Based on the close observations made during the presented study, it can be concluded that also, in this case, the isolation of the sanitary facility from the core building was a significant consideration during the design and building process of public spaces. Such separation can also be understood as an indication of hygienic precautions since – in many cases, latrines' outlying position possibly prevented the spread of unpleasant odours over other rooms belonging to the respective building.[510]

The public facilities analysed in the thesis and those which were accessible to a large crowd in the Egyptian provinces during Late Antiquity include, among others, *forica*, which did not pertain to a superior edifice, such as the public latrine EKL in Marea[511]; bathing facilities, including those in Abu Mina[512] Marea[513] and Alexandria[514]; pilgrim shelters, which involve the peristyle buildings[515], *hemicyclium*[516] and a further *xenodochium*[517] in Abu Mina, as well as the

[509] On consideration regarding location and context of toilets in *Imperium Romanum* see Jansen et al. 2011, 113-122.
[510] On repelling odours within fortresses and military stations see Juntunen 2018, 146; On unpleasant smells within bathing facilities see Dodt 2018, 61.
[511] Cf. chapter 3.1.4.5. For excavation reports and further publications see Babraj et al. 2014, 46-52; Derda et al. 2020b, 8-11; Kościuk 2012, 31. Fig. 2, 34.
[512] Cf. Chapter 3.2.4.3. For excavation reports concerning the 'north bath' see Müller-Wiener et al. 1966, 183-184; Müller-Wiener et al. 1967, 209-216; Müller-Wiener – Grossmann 1967, 458-460. For the excavation report on the 'double bath' see Kaufmann 1906, 78-81; Kaufmann 1908, 7-20; Kaufmann 1910a, 103-114; Schläger 1965, 127-133; Müller-Wiener et al. 1966, 173-180; Müller-Wiener et al. 1967, 209; Grossmann et al. 1995, 423; Grossmann – Kościuk 2005, 32; Grossmann – Kościuk 2006, 33-36.
[513] Cf. Chapter 3.1.4.1. For excavation reports see Babraj – Szymańska 2001, 37-45; Babraj – Szymańska 2002, 47-58; Babraj – Szymańska 2003, 41-45; Fakharani 1983, 175; Rodziewicz 2009, 198.
[514] Woźniak 2008, 41-44.
[515] Cf. Chapter 3.2.4.2. For excavation reports on 'peristyle-house' see Grossmann et al 1991, 476-479; Grossmann et al. 1995, 389-401; Grossmann – Kościuk 1993, 78-80; Grossmann et al. 1997, 83-86.
[516] Cf. chapter 3.2.4.1. For excavation reports see Kaufmann 1910, 90; Grossmann et al. 1984, 134-138; Grossmann et al. 1991, 437-476; Grossmann et al. 1995, 401-406.
[517] Cf. 3.2.3. For excavation reports on the 'great *xendochium*' see Müller-Wiener et al. 1967, 216-219; Grossmann et al. 1970, 56-60; Grossmann et al. 1980, 214-216; Grossmann et al. 1984, 139-145; Grossmann et al. 1995, 95-99; Grossmann et al. 1997, 90-92; Grossmann – Kościuk 2005, 37-44.

so-called *villa rustica*[518] near Marea. Further smaller *foricae* were built next to churches, as lavatories in Marea near the Great Basilica[519] or toilets in Abu Mina near the East-Church[520] or North-Basilica[521].

Lavatories in most public edifices are located on the perimeter of the building.[522] Regarding this aspect, it is worth asking how dealing with unpleasant odours inside a public building looked like during Late Antiquity. Most cases had shown us that lavatories were preceded by a corridor, which separated the latrine from the rest of the building.[523] It seems safe to assume that this arrangement maintained a particular private area and prevented unpleasant odours from entering the building's core.[524] If this assumption is valid, we can also conclude that odour and preserving distance to places where unpleasant aromas were unavoidable was considered during public buildings' design process.

It is difficult to ascertain how odours were eliminated since the presented archaeological material does not give us any basis for detailed interpretation. The problematic state of knowledge is strongly connected to the fact that, in any case, external walls were found *in situ*. Therefore, no information regarding the ventilation systems of the sites is available. Unfortunately, the archaeological findings do not allow us to support a hypothesis of an existing ventilation system within lavatories by giving any examples found in Egypt dating back to Late Antiquity.[525] The main reason for scant evidence is the state of preservation of public buildings from that time period. For example, many of the known examples of toilets in the Egyptian baths and pilgrims' accommodations are not preserved enough to determine whether any openings were made in the walls, which would allow air to circulate.[526]

Despite the lack of archaeological evidence regarding ventilation systems in public latrines, we can state that such solutions were widely available and popular in Late Antiquity, especially in Egypt. On the example of laura at Kellia, it is possible to observe that ventilation arrangements

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518 Grossmann 2002, 243-245. 394-395. Fig. 10.

519 Cf. Chapter 3.1.4.2.2. For excavation reports see Babraj et al. 2021, 1; Babraj – Szymańska 2006, 62-63; Babraj – Szymańska 2010, 75.

520 Cf. Chapter 3.2.4.5. For the excavation reports on the 'East Church' see Grossmann et al. 1970, 76-82; Grossmann 1977, 35-38; Grossmann – Jaritz 1980, 222-224.

521 Cf. Chapter 3.2.4.4. For the excavation reports on 'North Basilika' see Grossman et al. 1970, 69-74; Grossmann 1977, 43-45; Grossmann – Jaritz 1980, 216-222.

522 The location could be observed in Marea in all public latrines, as well as in the double baths in Abu Mina, the '*hemicyclium*', the 'peristyle house'. The latrines also occupy a peripheral location in the courtyards of the 'East Church' and the 'North Basilica'.

523A corridor could be spotted in the following toilets: Double baths in Marea, in double baths, the 'peristyle house', the '*hemicyclium*', the 'East Church', at the villa in Abu Mina and at the so-called *villa rustica*.

524 For similar suggestion see Wilson 2011a, 100.

525 For parallels from latrines within *Imperium Romanum* see Koloski-Ostrow 2015, 29.

526 Cf. Considerations regarding repellent smells in Egyptian military facilities Juntunen 2018, 146.

were well known at that time.[527] In order to avoid heat, which resulted from a hot climate in Egypt, ventilation shafts often replaced windows or represented an additional part of the architecture. Not only kelliotic accommodations can be considered. Examples from many monasteries dating to Late Antiquity or early Middle Ages demonstrate such architectural solutions. During excavations in the Pauloskloster, ventilation shafts were detected in several rooms.[528] Further, in the so-called monastery of Qurnet Murrai air shaft (fig. 47) has been preserved till today.[529]

Figure 48: Ruins of the so-called monastery in Qurnet Murrai

The position of the toilets – situated in the outer area of the complex – may have been chosen to ensure good access to fresh air. Such an interpretation is presented by the archaeologists who have studied the kelliotic complexes.[530] In most koms, the latrines were built along the outer wall, exposed to the strongest air gusts. Unfortunately, in other presented cases, it is not known whether such a statement would be accurate. Nevertheless, it may be suggested that during the construction process, the architects and builders placed the latrines, which accumulated unpleasant odours, in places that allowed for good air circulation. Therefore, selecting the place for sanitary facilities within a complex may not be considered random. Assuming that the placement of latrines was intentionally chosen for the outer edge of the buildings, it can be

[527] Henenin – Wuttmann 2000, 17-26, 37, 188, 196-197.
[528] Publication by Eichner in preparation.
[529] Observation made in course of author's survey and during several excavation campaigns. For more information regarding Pauloskloster see Eichner et al. 2009, 92-106.
[530] Henein – Wuttmann 2000, 93.

presumed that the rooms were equipped with either windows or air shafts, through which the obnoxious aromas were at least partially eliminated due to air circulation. Based on the considerations mentioned above, one can predicate that, even though the awareness of bacteria and pathogens did not exist in ancient times,[531] the supposed ventilation would also partially reduce the spread of pathogens.

4.1.4. Water supply

The peripheral position of latrines is also, to some extent,[532] linked to the layout of the drainage system in a given building. However, it is worth noting that the conclusions drawn about the position of the latrines and the related layout of the sewer system are based only on the toilets built in the baths and *forica* EKL.[533] The reason why the public latrines in Abu Mina remain unaccounted for is that these toilets were not connected to the sewerage system but had underground chambers for waste disposal.[534]

As mentioned previously, the detachment of the latrines from the main parts of the complex reflects the desire to isolate the most polluted area. The lateral location also played a crucial role in the expulsion of pollutants from the baths. The drainage system in the baths was designed in such a way that the used pool water ran through the latrine belonging to the given bath. On the one hand, the peripheral arrangement of the lavatories enabled the reuse of polluted water and, on the other, prevented human waste from flowing into other rooms of the baths since latrines were the last room through which the drainage channel extended out of buildings' premises.[535]

Despite the baths' popularity, their dimensions suggest that they were not, in most cases, as extensive and opulent as their Roman predecessors.[536] Therefore, we can only speculate about the reason for their reduced equipment programme. Sadly, based on literary texts and archaeological findings, we cannot determine in all confidence why Egyptian baths occupy a

[531] Jansen et al. 2011, 158; Labisch – Koppitz 2005, 446.
[532] In this case, only public latrines are meant, as the toilets in the houses were not connected to the sewage system, including the latrines in the villa in Abu Mina, in the houses in Marea, in the hermitages in Kellia and also in St. Catherine's Monastery. Furthermore, some public toilets possessed only a cesspit and were not flushed with running water, including all the latrines in Abu Mina with the exception of the toilets in the baths, as well as lavatories in Marea adjacent to the Great Basilica.
[533] Cf. Chapters 3.1.4.1.1.; 3.1.5.1.; 3.1.5.2., 3.2.4.3. and 3.2.5.1.
[534] Underground cesspools were detected in the '*hemicyclium*' and the 'house with a wine press'. Information regarding sewage systems is lacking from the 'East Church', the 'peristyle house' and the 'villa'.
[535] On considerations regarding lavatory' position within bathing facilities see Dodt 2018, 61; Jansen et al. 2011, 116-119.
[536] With exception of imperial baths in Alexandria.

significantly smaller surface area than those in other regions of the Empire.[537] One possible reason behind the reduced design of pools in the baths of this region can be attributed to the unique geographical and climatic situation in Egypt, namely the dry climate, resulting in a limited water supply.[538]

In summary, we can state that the baths played an essential role in the daily life of the inhabitants of Egypt. Besides pools, which provided for personal cleansing, it is often possible to locate sanitary facilities, which were usually separated from the rest of the baths.[539] The unpleasant smells and the accumulation of human faeces were separated from the section devoted to personal cleaning treatment. Furthermore, regular rinsing of the latrines with used water from the baths also prevented the partial spread of bacteria.[540]

4.2. Access to sanitation in Egypt during Late Antiquity

In order to understand the transformation and continuities towards access to sanitation in Late Antiquity, it is necessary to take a brief look at the research's outcomes regarding sanitation facilities dating back to the first centuries AD. In addition, the investigation on latrines built in the Roman imperial period can further serve as a basis for understanding changes as well as certain constants concerning the accessibility of such facilities in Late Antique Egypt.

The research conducted by Neudecker and Koloski-Ostrow revealed that men mostly frequented public sanitary facilities.[541] This statement is mainly based on the fact that the splendid lavatories – i.e. representative and richly decorated latrines – as well as various other *foricae,* were usually built near public places, which were mainly reserved for men as public space.[542] Neudecker stresses that the latrines were probably frequented by merchants, traders and the working class, whereby the lowest social class may not have had access to latrines.[543] Koloski-Ostrow, however, assumes that the public latrines were accessible to a broader crowd. She interprets the construction of the facilities as the desire of the upper class to maintain a semblance of a "clean" city.[544] In this context, Koloski-Ostrow states:

> "When the ruling classes wished to eliminate certain unseemly behaviours from the public sphere, such as using obscenities, unbearable noisemaking, frenzied dancing, indulging in sloppy

[537] Especially bigger cities as Rome, Ephesus, Side, Ostia, Leptis Magna, Sabratha were extensive in design and possessed luxury latrines.
[538] For more regarding the climate see Sampsell 2010, 27. 30-33.
[539] For example baths in Abu Mina, Alexandria, Marea, Kom el-Ahmar and Kom Trougah.
[540] Dodt 2018, 61.
[541] Neudecker 1994, 65; Koloski-Ostrow 2015, 25-26, 30-31.
[542] Neudecker 1994, 64-65.
[543] Neudecker 1994, 65; Keil 1929, 29-31; Börker – Merkelbach 1979, Nr. 454.
[544] Koloski-Ostrow 2015, 97-98.

drunkenness, and the resultant vomiting, urinating, and so forth, the reveling was likely to be assigned to a restrict place at a specific time and occasion. The undesirable behaviours of revelers, of course, could never be completely contained or controlled by such domination, but the elite's desire to confine it represents their attempt to legislate behaviour. Likewise, public latrines provided a place where the nasty bodily functions of the dispossessed *privati* could be hidden away from sight."[545]

We can conclude that access to latrines was probably partly restricted for particular social groups in the Roman Empire.[546] The observation of *foricae* gives reason to believe that women were largely restricted in their use of public latrines.[547] The main argument making such an assumption valid is the status of women and the fact that most females were often excluded from public life.[548] Furthermore, there is reason to suspect that the lowest social class was not provided with sanitary facilities of high quality. The poorer provision of sanitary facilities, most likely frequented by the lower social classes, is well established through the archaeological record. This assumption is linked to the fact that public toilets were most often located in city centres, i.e. in places most frequented by a specific clientele.[549]

In contrast, there are no sanitary buildings near theatres, stadiums or other public places visited by the lower class.[550] However, baths were an exception. Therefore, it is reasonable to assume that *thermae* belonged to few places where sanitary facilities were widely available. Despite the widespread access to bathing facilities, archaeologists suspect that the lowest class and women rarely used the public baths.[551]

The situation reflected in the sites of Egypt, where latrines have been dated to the period of Late Antiquity, indicates that women probably had greater access to public toilets than during the Roman Empire. Based on archaeological findings and interpretations of archaeologists, who support their assumptions using ancient sources, there is reason to assume that gender-divided toilets existed in pilgrimage sites and cities. The public toilets at Abu Mina[552], Marea[553] and the so-called *villa rustica*[554] are examples of such facilities, in which archaeologists assume gender-

[545] Koloski-Ostrow 2015, 97.
[546] Neudecker 2011, 131-135.
[547] Schöllgen 1995, 182-194.
[548] More on womens' civic identity in Roman Antiquity see Peppe 2017, 23-38.
[549] Neudecker 2011, 133-135.
[550] Neudecker 2011, 131.
[551] Schöllgen 1995, 182-194.
[552] Public facilities with double restrooms include the *hemicyclium*, the peristyle house and double bath.
[553] Public lavatories with presumable gender division could be the *forica* EKL and the lavatories next to the Great Basilica.
[554] Grossmann 2002, 243-245. 394-395. Fig. 10.

segregated restrooms. Moreover, the research results at Abu Mina – i.e., a pilgrimage site – reveal public toilets that were also accessible to people of low income.[555]

4.3. Gender question in the context of body care

Consulting the evidence taken from baths in Egypt, we can state that thermal complexes were well known and popular during Late Antiquity.[556] Looking at the archaeological evidence from other parts of *Imperium Romanum*, we can state that the concept of visiting thermal baths was derived from the Roman model.[557] The numerous bathing facilities found in Egyptian towns and pilgrimage centres suggest their regular use by citizens or, in the case of Abu Mina, by pilgrims visiting the tomb of the saint Menas.[558]

The phenomenon of the increasing number of double baths in the period of Late Antiquity should be addressed below.[559] As mentioned above, we have very little evidence of ancient double baths based on current knowledge. The Hadrian's Baths at Leptis Magna can be taken as an example of a double thermal facility, which also features a latrine in each of two bathing wings.[560] However, Neudecker does not interpret the doubling of the areas as an indication of a separate women's space. The author sees it rather as a regulation in the case of an exceptionally high attendance of visitors. In that case, Neudecker believes that the additional wing was not accessible every day. Furthermore, the author emphasises that in bathing facilities, "the staged care of the body had something to do with masculinity".[561]

In contrast, Salza Prina Riccotti assumes a bathing wing for women.[562] If we may leave this question – whether the Hadrianic baths were subject to gender division or not – unanswered in the present thesis, we can nevertheless state that double baths were infrequent until the 5th century. Therefore, it seems legitimate to raise the question of the actual users of the baths in the *Imperium Romanum*. Looking at the ancient literature which informs us about the baths' visitors, we can see that both women and men were granted access to the baths.[563] However, the fact that the use of the facilities was not taken for granted by both sexes as a matter of course, although not directly, can be proven by numerous passages of ancient literature.

555 Grossmann 2018, 205-206.
556 Maréchal 2020, 420.
557 Fournet et al. 2017, 301-309.
558 Cf. Baths in Marea in chapter 3.1.4.1., *thermea* in Abu Mina chapter 3.2.4.3.
559 Maréchal 2020, 222. graph 13.
560 Neudecker 2011, 132.
561 Neudecker 2011, 132.
562 Riccotti 2001, 180-186.
563 Koloski-Ostrow 2015, 31; Neudecker 1994, 64; Berger 1982, 29.

In many cases, the secondary literature emphasises that bathing is more attributable to men than to women. As quoted above, Neudecker claims that going to the baths had a connotation with masculinity.[564] Furthermore, Berger states in his book on the Byzantine baths, "Women's bathing thus probably took place more in small baths far away from large public places"[565] and "despite frequent complaints about men and women bathing together in one bath, it can also be assumed that men predominantly visited the large baths".[566] Based on the statements supported by archaeological evidence and literary sources in the publications by Neudecker and Berger, it can be said that public personal hygiene was more the preserve of men than women.

In addition to the citations and reasons brought forward by the two authors, which were directly addressed in ancient literature – it should be emphasised that the passages cited by Berger represent more a men's perspective – I would now like to address the possible factors that women considered as obstacles to visiting a bath. In doing so, I draw on the ancient text passages cited by Berger and try to project them onto the woman's perspective. The investigation should make it clear that the statements made by Neudecker, and Berger are essentially correct[567] and serve as a basis for assuming that the creation of the double baths gave women more open access to personal hygiene in Late Antiquity. In a broader sense, it would mean that women had better access to places where 'hygiene' mattered.

On the one hand, it might seem challenging to find an answer on why a woman in Late Antiquity was reluctant to visit a communal bathroom; on the other, it is self-evident considering the contemporary issues related to public toilets and public spaces in chapter 1.4. Especially regarding harassment of women mentioned in the introductory chapter, one can assume that women in Antiquity also felt harassed by men. Unfortunately, we know very few sources that address this issue. Therefore, we have no literary or archaeological evidence that could serve as a basis to state with certainty that assaults on women were common in ancient sanitary facilities. However, we do find passages that explicitly describe assaults on women. For example, Epiphanios of Constantia mentions that a virgin girl was molested by a man while bathing.[568] Although we do not learn what kind of assault it was and where the bathing took place, this passage can prove that women in Antiquity were harassed similarly as they are today (see chapter 1.4). Furthermore, let us look at the *balea mixta* (= mixed baths) from the

[564] Neudecker 2011, 132.
[565] Berger 1982, 43.
[566] Berger 1982, 29.
[567] Cf. Berger 1982, 29; Neudecker 2011, 132.
[568] Cf. Berger 1982, 41-42.

perspective of a place where possible assaults and harassment could be expected. We can imagine that at least a percentage of women who had such an experience or heard of similar incidents chose not to visit the public baths.

Abstracting from the church's position on the subject,[569] we should address the Christian texts concerning bathing as these were also aimed at a female audience and may have appealed to and influenced some women. Origines mentions in his speech that men should protect themselves from lustful looks.[570] Athanasios of Alexandreia also recommends women to not go to the baths to not fall into seduction there since virgins are sanctified to the Lord.[571] If we understand remarks of this kind as a reflection of current issues at the time, we can assume that curious glances from men did actually sometimes accompany women in baths. One can imagine that such behaviour was often considered unsettling. Therefore, it can be imagined that a certain percentage of women naturally wanted to protect themselves from such discomfort by refraining from bathing.

Another reason that could have prevented women from visiting *balea mixta* can be mentioned based on a legal decree. In the reign of Justinian, we have evidence that the bathing of a married woman with foreign men was considered grounds for divorce.[572] Such a legal basis could possibly have prevented many women from bathing who lived in difficult marital situations and were afraid of losing their status from giving their husbands a reason to apply for divorce. Enactment of such a law also testifies to the fact that such complaints were known at the time and led to the dissolution of a marriage contract.

To summarise, the literary sources give us reason to suppose that a certain proportion of women may have been restricted in their attendance at the communal baths.[573] Such reasons could be the fear of intrusive looks, harassment or, in extreme cases, the threat of divorce. Taking these factors into account, we may suspect that at least a certain percentage of women did not want to attend shared baths. Looking at the arguments mentioned above, we can assume that the baths, which were divided into male and female sections, allowed women with certain objections to visit public bathing facilities in order to undergo body care.

[569] Schöllgen was able to convincingly demonstrate in his study that the church's view of the mixed baths shall not be understood uniformly. For more see Schöllgen 1995, 182-194.
[570] Cf. Berger 1982, 40.
[571] Berger 1982, 39.
[572] Berger 1982, 44.
[573] Berger 1982, 29-44.

4.4. Final remarks

The study concerning hygiene and sanitation in Late Antique Egypt presents evidence that can be interpreted in two strikingly different ways from today's perspective. On the one hand, it can be established that sanitary facilities hardly protected against the spread of pathogens;[574] on the other, sanitary accommodations indicated a desire to prevent contamination, as the lavatories attest a longing to isolate impurities and dirt.

In my view, precisely this intended desire to isolate human waste indicates a hygienic and sanitary measure to keep oneself and one's surroundings clean in Egypt during Late Antiquity. In all presented case studies, in every place and at each lavatory, the isolation of impurities constitutes the main characteristic of the facilities. The toilets were always constructed in such a way as to prevent direct contact with human waste, as faeces and urine were passed through channels or ended up in deep pitfalls.

[574] Cf. Labisch – Koppitz 2005, 446.

Zusammenfassung

Die vorliegende Arbeit beschäftigt sich mit dem Konzept der Hygiene im Zusammenhang mit den sanitären Anlagen, welche auf dem Gebiet des heutigen Ägyptens in der Zeit zwischen dem 4. und 7. Jh. n. Chr. errichtet wurden. Aufgrund des Mangels an wissenschaftlichen Auswertungen der Abortanlagen, die in die Spätantike datieren, werden den LeserInnen vier Fallbeispiele vorgelegt, die die Aufstellung der Toiletten in unterschiedlichen Kontexten präsentieren, nämlich eine spätantiken Stadt (Marea), ein Pilgerheiligtum (Abu Mina), eine Mönchssiedlung (die Kellia) und ein Klosters (der hl. Katharina).

Im Mittelpunkt der Masterarbeit liegt die Frage: Was kann als eine hygienische Maßnahme in der Spätantike angesehen werden und wie trugen die sanitären Anlagen zum Bewahren von Reinheit und Sauberkeit bei? Die Untersuchung der Abortanlagen in den vier Fallbeispielen dient als Basis, um die Fragestellung der vorliegenden Arbeit zu beantworten.

Die Studie ergab, dass als markanteste hygienische Maßnahmen innerhalb der sanitären Anlagen die Isolation von Exkreten angesehen werden darf. Dieses intendierte Bestreben, menschliche Exkremente zu separieren, lässt sich an jedem präsentierten Ort und in jeder vorgestellten Latrine beobachten. Auf diese Weise wurde der direkte Kontakt mit menschlichen Verunreinigungen verhindert und bildet somit das Hauptmerkmal der sanitären Einrichtungen.

Abbreviations

AA	Archäologischer Anzeiger
AJA	American Journal of Archaeology
AntTard	Antiquité tardive. Revue internationale d’histoire et d’archéologie
ASAE	Annales du Service des antiquités de l'Égypte
BABESCH	Bulletin antieke beschaving. Annual Papers on Classical Archaeology
BASOR	Bulletin of the American Schools of Oriental Research
BSAC	Bulletin de la Société d’Archéologie Copte
BSR	Papers of the British School at Rome
BSAA	Bulletin de la societe archeologique d'Alexandrie, Alexandire
^{L}DNP	Der Neue Pauly. Enzyklopädie der Antike
DOP	Dumbarton Oaks Papers
EtTrav	Études et travaux. Studia i prace. Travaux du Centre d'archéologie méditerranéenne de l'Académie des sciences polonaise
FuBerBadWürt	Fundberichte aus Baden-Württemberg
JbAC	Jahrbuch für Antike und Christentum
JEChrSt	Journal of Early Christian Studies. Journal of the North American Patristics Society
JNES	Journal of Near Eastern Studies
JRA	Journal of Roman Archaeology
JSJ	Journal for the Study of Judaism
MDAIK	Mitteilungen des Deutschen Archäologischen Instituts, Abteilung Kairo
MededRom	Mededelingen van het Nederlands instituut te Rome
ÖJh	Jahreshefte des Österreichischen Archäologischen Institutes
PolAMed	Polish Archaeology in the Mediterranean
^{L}RAC	Reallexikon für Antike und Christentum
RE	Paulys Realencyclopädie der classischen Altertumswissenschaft
TAVO	Tübinger Atlas des Vorderen Orients
ZPE	Zeitschrift für Papyrologie und Epigraphik

Primary Sources

Aeth.	Aetheria, *Aetheriae peregrinatio ad loca sancta*
Ling.	Varro, *De Lingua Latina*
Plaut. Curc	Plautus, *Curculio*
Prok. aed.	Prokopios von Caesarea, *De Aedificiis*
RR	Varro, *Res Rusticae*
Sen. epist	Seneca, *Epistulae Morales ad Lucilium*

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