

Dying in the Mines: Necropoleis and Funerary Practices During the Late Antique Period in the Smaragdos (Egyptian Eastern Desert)

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This article documents the Late Antique necropoleis in the Smaragdos, a region known in antiquity for its emerald mines. The study analyzes the features of the necropoleis and tombs identified in them within the general context of the funerary practices of the desert communities that lived in the Eastern Desert between the fourth and the seventh centuries CE. Hundreds of these tombs have been identified along the wadis and in the surrounding hills. Unfortunately, it is extremely hard to find any undisturbed tombs, as they have almost all suffered from severe looting. Far better evidence has been recovered since the 19th century from the necropoleis in the Sudanese part of the Eastern Desert, although those have predominantly been royal and elite tombs. The present overview of burial areas and practices in the Smaragdos region of the Egyptian Eastern Desert is based on an archaeological survey conducted by the Sikait Project in the Wadi el-Gemal National Park from 2018 to 2024, which studied more than 800 graves in several necropoleis in this region, mainly from the Late Antique period. It offers one of the most extensive reviews ever conducted of funerary practices in this period in the Eastern Desert.¹

INTRODUCTION

The Smaragdos region was one of the Roman empire's primary sources of emeralds. Strabo, Pliny the Elder, Claudius Ptolemy, Olympiodorus, the fourth-century monk and bishop Epiphanius, and the sixth-century monk

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Cosmas Indicopleustes all provide details of emerald mining in this region, which they called ὄρος Σμάρραδος.²

This area of archaeological interest corresponds roughly to the modern-day Wadi el-Gemal National Park, in the Egyptian Eastern Desert (fig. 1), and was originally identified during the surveying and excavation work performed by the team led by S.E. Sidebotham from the University of Delaware during the first years of the 21st century.³ This work was continued in 2018 by the Sikait Project, directed by Joan Oller Guzmán, from the Universitat Autònoma de Barcelona. These latest seasons have generated a far better understanding of the ancient mining communities that lived and worked in the region, thanks mainly to the extensive excavation of the main site at Sikait but also to surveys elsewhere in the Wadi el-Gemal National Park.⁴

The findings to date suggest that emerald extraction began during the Hellenistic period, though industrial-scale operations did not begin until the Roman conquest, in the late first century BCE, and they continued through the Late Antique period—fourth to seventh centuries CE—and even into the Islamic period, albeit on a smaller scale.⁵ As a result, from the first century BCE, a large network of settlements started appearing in the area, most of them dedicated to the extraction and trade of emeralds (fig. 2).

Interestingly, the settlement pattern seems to have varied from period to period. Excavations at the main site in the area, Sikait, where more than 30 archaeological trenches have been dug, have revealed a pre-eminence of Late Antique materials and structures. The same can be said for most other sites in the region, with a clear majority of ceramic materials from late antiquity.⁶ However, there is undeniable evidence that the Early Roman period was also one of intense activity in the region, as shown by the consistent presence

of pottery dating from that era. Sikait, and particularly the area known as Middle Sikait, again provides key evidence in this regard, for detailed exploration of its emerald mines indicates that extraction began in the Early Roman period, with direct involvement of the Roman army.⁷

However, although emerald mining began in the Early Roman period, most of the structures found date from the Late Antique period. We suspect that this is due to the type of extraction conducted in the area. The absence of any major permanent settlements at Sikait or in other areas in the Early Roman period implies that the only direct investments were in the infrastructure required for mining operations, such as pathways, ramps, cairns, watchtowers, and wells, together with buildings used for administrating the mines, for sacred purposes, or even for housing miners. There is nothing comparable to the forts and mining villages identified, for instance, in the imperial quarries at Mons Claudianus and Porphyrites, which leads us to believe that emerald mining was a seasonal endeavor based around temporary camps.⁸ Interestingly, the constructions that can be dated back to the beginning of the extractive operations include the temples and shrines, reflecting the importance that the miners must have attached to religious aspects.⁹

Among the strongest pieces of evidence for these hypothetical changes in settlement patterns in the Smaragdus are its necropoleis. Numerous burial sites have been documented in the region, with hundreds of tombs identified. To date, hardly any of these tombs have offered any clear evidence of an Early Roman origin, for almost all of the associated ceramics recovered date from the fourth to seventh/eighth centuries CE. This is further proof that, at least in the Smaragdus, there were no major or permanently settled mining communities in the Early Roman period. Instead, the miners were probably seasonal workers from other areas such as the Nile Valley assisted in their operations by temporary labor drawn from the local population. If that was the case, both communities would have preferred to bury their dead in their homelands, as supported by documents such as the Koptos tariff,

² Strabo, *Geog.* 17.1.45; Pliny, *HN* 37.17.65, 37.18.69; Claudius Ptolemy, *Geog.* 4.5.8; Olympiodorus, *Fontes Historiae Nubiorum* 3.309; Epiphanius, *Fontes Historiae Nubiorum* 3.305; Cosmas Indicopleustes, *Christian Topography* 11.21. See Oller 2022b.

³ Rivard et al. 2002; Sidebotham et al. 2004; 2008; 2019; Foster et al. 2007.

⁴ Oller et al. 2019; 2021a; 2021b; 2022b; 2023; Oller 2022a.

⁵ Oller et al. 2021a.

⁶ For general information about these sites: <https://desert-networks-dev.huma-num.fr/>.

⁷ García-Dils de la Vega et al. 2022.

⁸ Oller et al. 2021b, 31–32.

⁹ Oller 2022c; Oller and García-Dils de la Vega 2023.

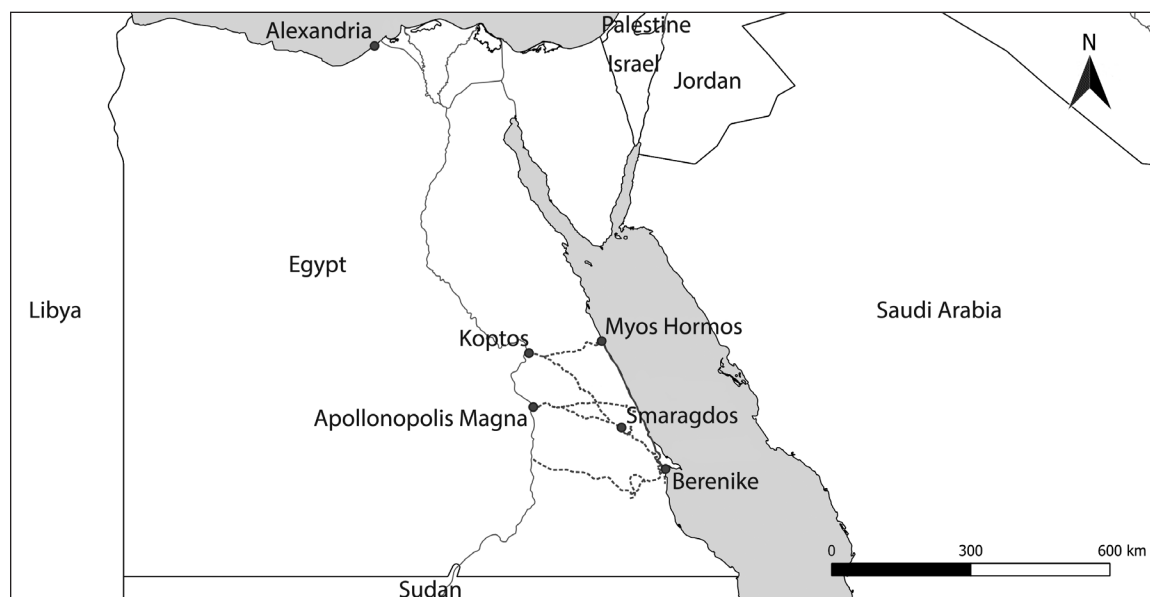


FIG. 1. Map of the Red Sea area showing the location of the Smaragdus region and some other ancient sites.

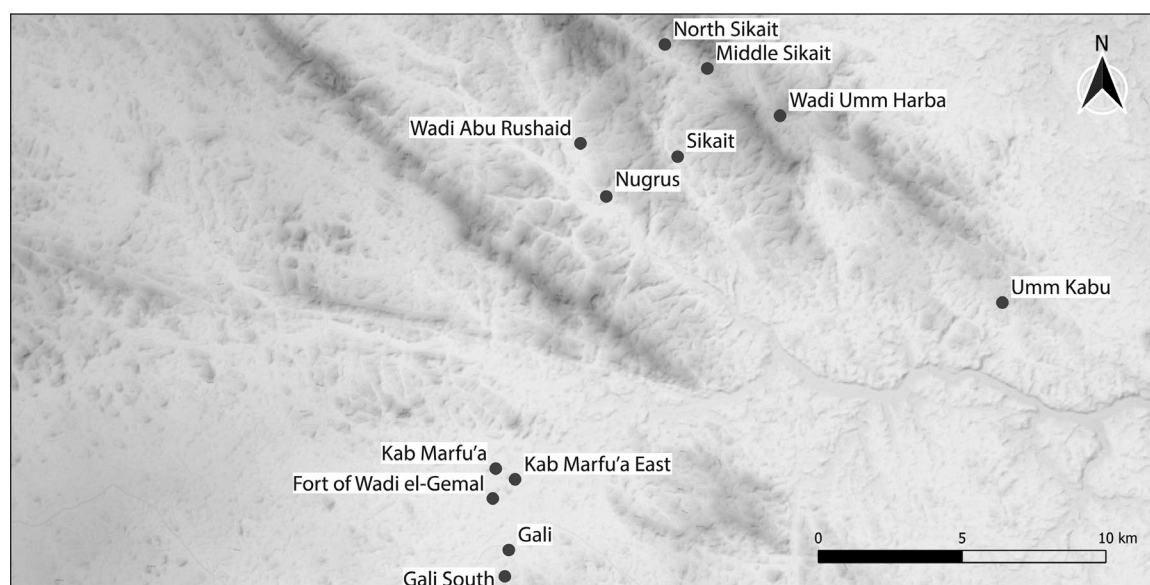


FIG. 2. Main archaeological sites documented in Wadi el-Gemal National Park.

which includes a reference to the cost of transporting corpses across the desert.¹⁰

The necropoleis, then, are fundamental for understanding not only the funerary rites and practices in the area but also its settlement pattern. The large number of such graves throughout the area provides a

considerable corpus of data for the study of these aspects. In fact, a few of these necropoleis were totally unknown prior to our survey, allowing us to recover almost untouched contexts. However, aside from these few, almost all the tombs had clearly been systematically looted, including the best-concealed ones, and hence their true contexts have been altered. It is hard to say when this happened, although some scholars have proposed specific periods of time as the most likely

¹⁰ Burkhalter-Arce 2002, 223; Sidebotham 2011, 264.

for this systematic looting, such as the so-called “gold rush” of the ninth century CE.¹¹ In the absence of more accurate data, we assume that the tombs were probably sacked shortly after their construction, given their isolated location and the constant movement of nomadic and Bedouin tribes around the region. Modern-day looting can safely be ruled out due to the absence of any evidence of metal detectors being used.

NECROPOLEIS IN THE SMARAGDOS: OVERVIEW AND PROPOSED TOMB TYPOLOGY

Considering the number of documented tombs and their poor state of preservation, the overview presented here is based on the survey work conducted by the Sikait Project, essentially during the five seasons from 2020 to 2024. Unfortunately, as yet, extensive excavations have not been conducted of the tombs in the area. An exception is a single grave at Middle Sikait in 2011, with interesting results that we discuss below.¹²

All the data was collected from the necropoleis in four main areas: Wadi Sikait Northeast, South, and Southeast Necropoleis; Wadi Nugrus South Necropolis; Gali Northern and Southern Necropoleis; and Kab Marfu’a. During the 2024 season, the necropoleis in the Gebel Zabara area were also surveyed; however, as they mainly date from the Islamic period, we do not include them in this study. In total, these locations have yielded 870 graves. Methodologically, the documentation procedure was the same for every tomb: assignment of a number, GPS positioning, photographic documentation, description, and detailed measurements (in the case of the best-preserved graves, as the looting degree prevented this step in many tombs).

The Wadi Sikait area is the most extensively studied to date and is the source of most of our information. Its burial areas were already noted during the earliest archaeological work at the site, basically at what we now define as the Northeast Necropolis. Sidebotham had already proposed the possibility of additional tombs, considering the size of Sikait.¹³ Indeed, two more necropoleis have since been added: the Southeast and South Necropoleis (fig. 3). The Northeast Necropolis contains 110 tombs, located approximately 200 m northeast of the main Sikait site. It spans a total area of some 15 ha around UTM 36N 681829, 2725699

(see fig. 3).¹⁴ It is well hidden and is accessed by departing from the highest point of the eastern slope of the settlement of Sikait to cross a secondary wadi and climb a 410 m hill. The graves are distributed from the hilltop and all the way down its eastern slope as far as the wadi floor.

The Southeast Necropolis is reached by following the same secondary wadi that leads to the Northeast Necropolis, but to the southeast. After 500 m, another small wadi enters the hills to the northeast, which is the point where the first of 102 documented tombs can be found, spread across approximately 2 ha of the slopes of the surrounding hills, centered at UTM 36N 682221, 272507 (fig. 4). Finally, the South Necropolis is located in the main Wadi Sikait area, 470 m to the south of the southernmost building, behind a rocky outcrop at wadi level. Only 14 tombs were identified in this necropolis, which are not included in the general analysis because they are so severely damaged; all that remains is a series of large holes with almost no associated materials, which prevents a chronological approach. However, its position in the main wadi might even suggest a later chronology, maybe being related to local Bedouins.

The second area of interest is in the Wadi Nugrus, which runs parallel to Wadi Sikait, where there was also significant emerald mining activity associated with two main sites: Nugrus, and Nugrus West.¹⁵ Sidebotham’s team documented 60 looted graves across both sites, but most of our work was done in a newly discovered necropolis on the southern side of the wadi, the South Necropolis. From a large standing building, a path leads off into the hills to the northwest, where a series of clusters of tombs has primarily been documented around UTM 36N 679721, 2723400 (online fig. 1).¹⁶ Due to the significance of the recovered materials and the typology of the graves this necropolis is included in the study, although more detailed documentation is still needed.

The final area included in this study lies at the end of Wadi el-Gemal, one of the main routes between the Red Sea and this part of the desert, where several archaeological sites have been identified. In January

¹¹ Castiglioni et al. 1997, 163.

¹² Rivard et al. forthcoming.

¹³ In Foster et al. 2007, 341.

¹⁴ Sidebotham and Wright 2019, 137–45.

¹⁵ On Nugrus: Sidebotham and Wright 2019, 130–36. On Nugrus West: Sidebotham and Wright 2019, 156–59.

¹⁶ Online figures are available at <https://doi.org/10.1086/735610>.

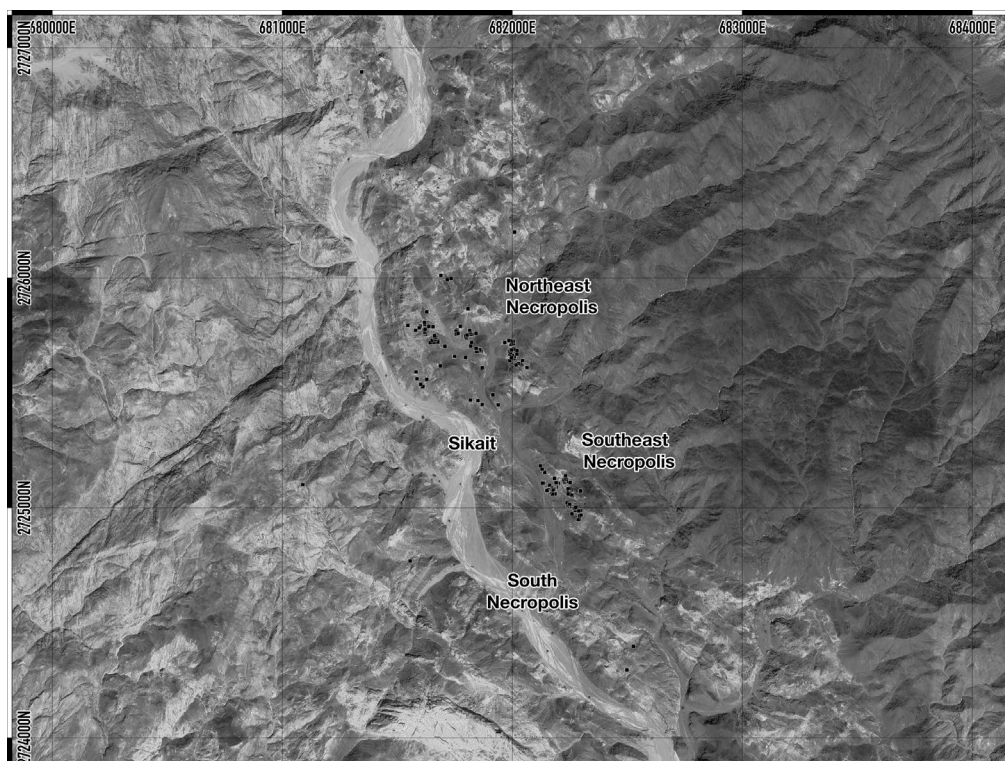


FIG. 3. Necropoleis at Wadi Sikait. Documented tombs are marked with black dots. The South Necropolis is only generally located due to its level of destruction.



FIG. 4. View of the Southeast Necropolis at Wadi Sikait from the south. Burial areas are circled in red.

2023, an extensive survey was conducted at two locations. One of these is Kab Marfu'a, together with an associated site called Kab Marfu'a East,¹⁷ which have about 130 and 75 buildings, respectively, dating from the Early Roman to the Late Antique period. At both sites, several graves were identified around and inside the settlements, specifically 14 tombs in Kab Marfu'a East in the 2023 survey.¹⁸ However, the main site at Wadi el-Gemal is Gali, which lies on its western limits and has 115 discrete buildings and an astonishing number of graves, 522, distributed across two large burial areas: the Northern Necropolis and the Southern Necropolis (fig. 5). The Northern Necropolis spans an area of approximately 27 ha, centered at UTM 36N 273444, 493593, while the Southern Necropolis covers about 66 ha, centered at UTM 36N 273927, 492167. Several of these tombs had already been identified,¹⁹ but the 2023 survey substantially increased the available data.²⁰ Some of the tombs may also be related to a newly discovered site, Gali South, some 430 m south-southwest of Gali in a secondary dead-end wadi, which has 20 extraordinarily well-preserved buildings dated to the Late Antique period, the fifth to sixth centuries CE.²¹

In total, the documentation from all the necropolises in this area provides a corpus of more than 800 graves, and hence forms a strong empirical basis for a case study of Late Antique funerary practices in the Egyptian Eastern Desert. Here, we use the data collected from these burial areas to propose a typology to facilitate the analysis and study of graves in this region.²² However, we do not include all the tombs in our analysis; for instance, we exclude those from the necropolis between Nugrus and Nugrus West, and some 54 tombs from the Gali area, as they were only visually surveyed due to lack of time, as well as others such as those in the South Necropolis at Sikait due to their severely damaged condition. A final total of 759 tombs were included in this proposed categorization.

We are not the first to propose a typology of this nature: Krzywinski, and particularly Lassány, attempted

to classify Eastern Desert graves into types.²³ Krzywinski has proposed four types of tombs—ring graves, disk-shaped *akerataheils*, fishtail *akerataheils*,²⁴ and Muslim graves—only two of which correspond with two of our proposed types. Lassány's typology is more detailed, with six types of tombs. However, although some types can be matched to some of our proposed types (e.g., Lassány's Types 2 and 3), we introduce relevant distinctions in other, similar cases (e.g., his Type 1), while other types are not present in our area of study (his Types 4, 5, and 6). Thus, although we consider their approaches perfectly valid, ours is specifically adapted to the available evidence at the Smaragdus sites, showing important regional variations in the burial customs that must be highlighted.

To begin by detailing their location: the tombs are generally found in the hills surrounding the main sites, although some are as much as a kilometer away. They are normally concentrated in rocky outcrops, which is logical as these provided the material required for their construction. This position, concealed behind or amid the mountains, also indicates an evident interest in avoiding detection by travelers moving around the area. This is certainly the case at Wadi Sikait, Wadi Nugrus, and Gali–Gali South, but not for the South Necropolis at Sikait or the “ring cairn” or Type VI tombs (see below), which were located at wadi level and easily accessible from the road. We believe this variation may be because the latter are from a later date, as we can see similar patterns at Islamic sites such as Zabara and Ibayd, and also in modern Bedouin graves, which also tend to be located close to main roads, at wadi level.

Some tombs were built in extremely steep locations, and considerable effort must have been required to get the bodies and boulders to these points (online fig. 2). This may have had some unknown ritual significance, but we suspect that the main motivation was to conceal the tombs from looters. Tomb dimensions vary depending on type and position but, as detailed below, within a single type their characteristics are usually quite similar. Interestingly, in other well-studied southern areas, such as the Late Antique necropolis at Wadi Qitna, the graves are generally bigger than they are in the Smaragdus. Also, several tombs at Wadi Qitna are

¹⁷ Sidebotham and Wright 2019, 123–30.

¹⁸ Oller et al. 2024.

¹⁹ Sidebotham and Wright 2019, 121–23.

²⁰ Oller et al. 2024.

²¹ Oller et al. 2024.

²² We do not propose this to be a general typology for the whole Eastern Desert.

²³ Krzywinski 2012; Lassány 2012.

²⁴ The circular platform tombs known as *akerataheils* are discussed below.

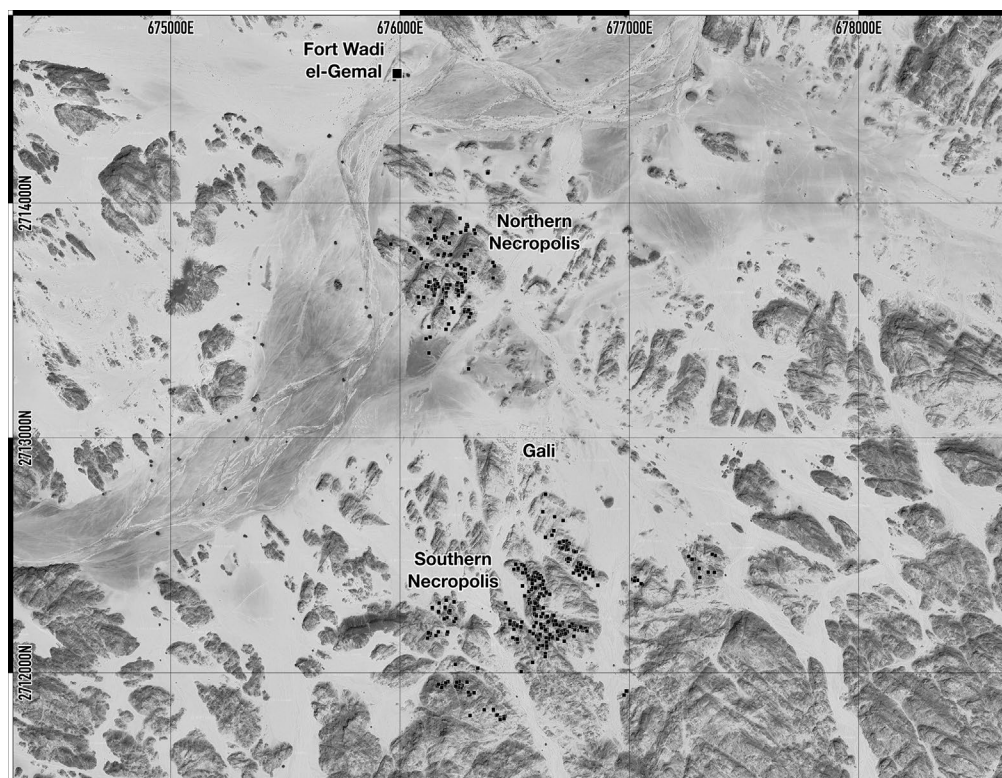


FIG. 5. The two main burial areas at Gali–Gali South. Documented tombs are marked with black dots.

surrounded by an enclosure,²⁵ but this feature does not occur in our region of study.

From our documentation work in the Smaragdus area we were able to identify seven tomb types, which we number from I to VII (table 1). However, we stress once again that almost all the graves have suffered significant destruction, so precise measurements and descriptions cannot be given in most cases.

Type I is the second most common documented type (20.29% of the total) and consists of a tumulus made of locally sourced boulders. At its center is a rectilinear rock-cut or sand-cut pit or cist containing a funerary box made of flat schist or granite stones (fig. 6, online figs. 3, 4). The tombs of this type in the Southeast Necropolis at Sikait have boxes of varying dimensions, ranging from small spaces that are just 0.9 m long x 0.55 m wide (SKP-NEC-SE-T64), to larger ones that are 1.27 m long x 0.65 m wide (SKP-NEC-SE-T67). As most of these tombs are filled with sand, they will need to be excavated in order to determine their depth. Generally, the funerary boxes are not especially large,

TABLE 1. Total number of tombs in the survey by type and as a percentage of the total.

Type	No. of Tombs	% of Total
I	154	20.29
II	423	55.73
III	36	4.74
IV	41	5.40
V	19	2.50
VI	10	1.32
VII	15	1.98
Other/not defined	61	8.04

suggesting that the body was placed in a contracted or fetal position, an issue discussed below. Despite these differences in box size, any variations in the external diameter of the tumuli are barely perceptible. This measurement is usually no more than 2.5 m, although, depending on the state of preservation, some may be larger. This type of tomb is quite common in both the Northern and Southern Necropoleis in the Gali area, and also at Sikait. This type is similar to Lassány's

²⁵ Strouhal 1984, 90–93.



FIG. 6. Type I tomb located in the Southeast Necropolis at Wadi Sikait (SKP-NEC-SE-T24). The damaged tumulus allows the rectangular funerary box to be visible; scale = 1 m.

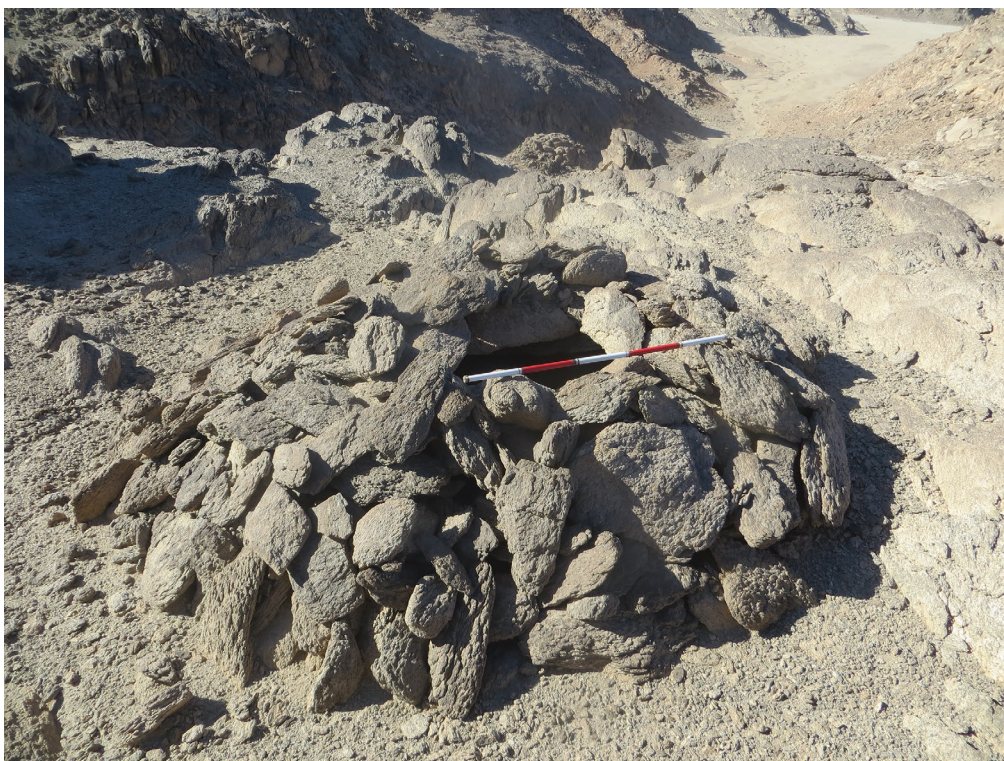


FIG. 7. Example of a heavily looted Type II tomb located in the Northeast Necropolis at Wadi Sikait (SKP-NEC-E-T84); scale = 1 m.

Type I; however, in his case the place for the body is a crevice in the bedrock, while in our Type I the pits are largely human-made.²⁶

Type II is clearly the most common type of tomb in this area (55.73% of the total), as it is throughout the Egyptian Eastern Desert, as observed by previous authors.²⁷ It is also simpler than Type I, which probably explains why it was so popular. It consists of a tumulus made of locally gathered boulders with a circular space in the center, or in some cases a hole dug in the sand. As with Type I, widespread looting makes it especially difficult to determine the general dimensions of these tumuli (fig. 7), but their external diameters normally range from 2 to 3 m, and their internal diameters from 1 to 1.60 m. A few well-preserved examples of Type II, such as structure GAL-667 (online fig. 5), provide details about their construction, which involved several rows of boulders being placed around a central space for the body. The internal walls were crowned by a roof consisting of several flat schist stones covered with more boulders, thus completing the tumulus.

Types I and II account for 76% of all the graves documented in the Smaragdus. However, in some cases, the tombs are so badly damaged that it is hard to know to which of these types they should be assigned. They can normally be distinguished by examining the base: Type I has a rectangular or square funerary box, while in Type II the base is circular. This suggests that in Type I the funerary box was built first and then covered with the tumulus, while in Type II the tumulus was constructed directly over the body. The many examples where it was too difficult to differentiate between these two types are categorized as Type I-II.

Type III consists of a tomb directly cut into the rock, but in this case without a funerary box (fig. 8) and covered with a tumulus made of local boulders. These rock-cut tombs are normally rectangular and of widely varying dimensions, from 0.5 to 1.1 m long x 0.45 to 0.7 m wide. In terms of volume, they are generally smaller than Types I and II. In the few cases where these tombs are not full of sand or stones, it can be observed that they are up to about 40 cm deep. Type III tombs are far less common than I and II, constituting just 4.74% of the total, but are especially numerous in the Northeast Necropolis at Wadi Sikait.

Type IV is another of the less common tomb types, appearing in a similar proportion to Type III (5.40%



FIG. 8. Type III tomb located in the Northeast Necropolis at Wadi Sikait (SKP-NEC-E-T3); scale = 1 m.

of the total). Also, like Type III, it is mainly found in the necropoleis at Sikait. We believe this may be due to the prevalence of talc schist rocks in Wadi Sikait, which facilitated the formation of crevices by natural erosion. These crevices were used to inter the deceased, after which the grave was normally covered by a partial tumulus made of boulders, not unlike Type I in Lassány's classification,²⁸ and some of the graves at Wadi Qitna.²⁹ In some cases, these crevices could be slightly modified by carving the bedrock to enlarge them or to provide a more adequate shape for the burial. They can be located on either a horizontal or a vertical surface. Some of the finest examples of Type IV can be found in a small wadi in the Southeast Necropolis at Wadi Sikait, although the best preserved of all was not identified at a burial site but close to Middle Sikait, some 3 km to the north of the main Sikait site (see fig. 2). There, a large semicircular crevice in the rock, 2 m long x 1 m high x 0.60 m deep, was used as a grave and covered with several rows of local boulders, and a small circular niche of unknown purpose was carved into the northern side of the structure (fig. 9). Although Types III and IV are quite similar, they offer two main differences: first, Type III has only been documented on horizontal surfaces, meaning the bedrock floor; second, Type III are always human-made structures while Type IV are natural formations that, in some cases, were modified by carving the bedrock.

²⁶ Lassány 2012, 262.

²⁷ Krzywinski 2012, 150; Lassányi 2012, 263, type 2.

²⁸ Lassányi 2012, 262.

²⁹ Strouhal 1984, 15.



FIG. 9. The Type IV tomb documented at Middle Sikait (structure SKP-MSK-NEC-T15).

Type V is an extremely interesting but also very uncommon type of tomb (2.50% of the total). It is what we call a “funerary house” and can be divided into two categories. Type V-a consists of a single specimen found in the Northeast Necropolis at Wadi Sikait: structure SKP-NEC-E-T1 (fig. 10). The building is somewhat reminiscent of a *skopelos* (watchtower) in its hilltop location above an artificial stone terrace and partially built against a small rocky outcrop to the east. It is enclosed by two walls made of local boulders on the north and west sides, with an open entrance on the south. The walls reach a maximum preserved height of 1.30 m and each has a small window. The entrance has a small courtyard or hall (1.60 x 1.60 m), and the interior of the structure measures 1.50 m north–south x 1.40 m east–west. These features suggest a watchtower or a small building of unknown function. However, in the middle of the building’s interior we identified a tomb similar to those of Type I, with a rock-cut rectangular hole, 1.40 m long x 0.70 m wide x 0.30 m deep, containing a funerary box built with schist slabs. Like most of the tombs, this one had been looted, and all we could recover from inside and elsewhere in the building were items of Late Antique pottery and a few bone fragments.

Although this space had clearly served a funerary purpose at some point, it was hard to determine more about its history. The building may have been built to protect this specific tomb, but the presence of features like windows makes this possibility less likely. Another interpretation could be that the building had originally served some unknown purpose and was later reused as a funerary space, hence the tomb was added afterward.

This would explain why what is otherwise a Type I tomb was built without a tumulus, because the walls already provided sufficient protection. However, in the other category, Type V-b, we find examples inside buildings that do have tumulus-type tombs.

Ten examples of Type V-b tombs were documented in the Northeast Necropolis at Sikait and six at the Gali South site. In both cases, all the buildings are located in places that are difficult to reach on the highest part of the hills near the wadi. The buildings are very different in terms of construction patterns and dimensions, ranging from small, single-room structures to large multiroom edifices with open courtyards or artificial terraces, which in some cases are interconnected and in some cases are not. The only feature they all share is the presence of several tumuli among the rubble inside the buildings. The bone fragments and scattered pottery sherds that were found in the buildings suggest these tumuli were graves. As usual, they have all been looted, so it is hard to differentiate the tumuli from the rubble and thus be sure exactly how many there are in each building.

The size of the tumuli also varies tremendously between Type V buildings, with some having a diameter of only about 0.5 m, while others are over 3 m. The concentration of tumuli within a single building is sometimes astonishing, especially in Building 226 at Gali South. This large rectangular edifice features a central courtyard and a row of three rectangular rooms accessed from the east, along with a fourth room to the northeast. The general dimensions of the building are 19.1 m long x 11.5 m wide. The three rectangular rooms are full of these tumuli, sometimes more than 10, together with many fragments of human and animal bones and pottery sherds (online fig. 6).

The buildings at Sikait are usually smaller than the ones at Gali South, with some exceptions, but they are among its best-preserved structures. They have the same features as most of the edifices at that site, namely one or several rooms above an artificial terrace and built with local schist stones without mortar. They vary from single-room buildings to a large complex over 20 m in length with four rooms and at least nine tumuli (structure SKP-NEC-E-110). The general pattern is the same as at Gali South, with several tumuli of different sizes among the debris inside the building. Depending on how big the houses are, one room can contain from one to even five or six of these tumuli. Most of them are circular with a diameter between 0.5 and 1 m. In one case (structure SKP-NEC-E-103),

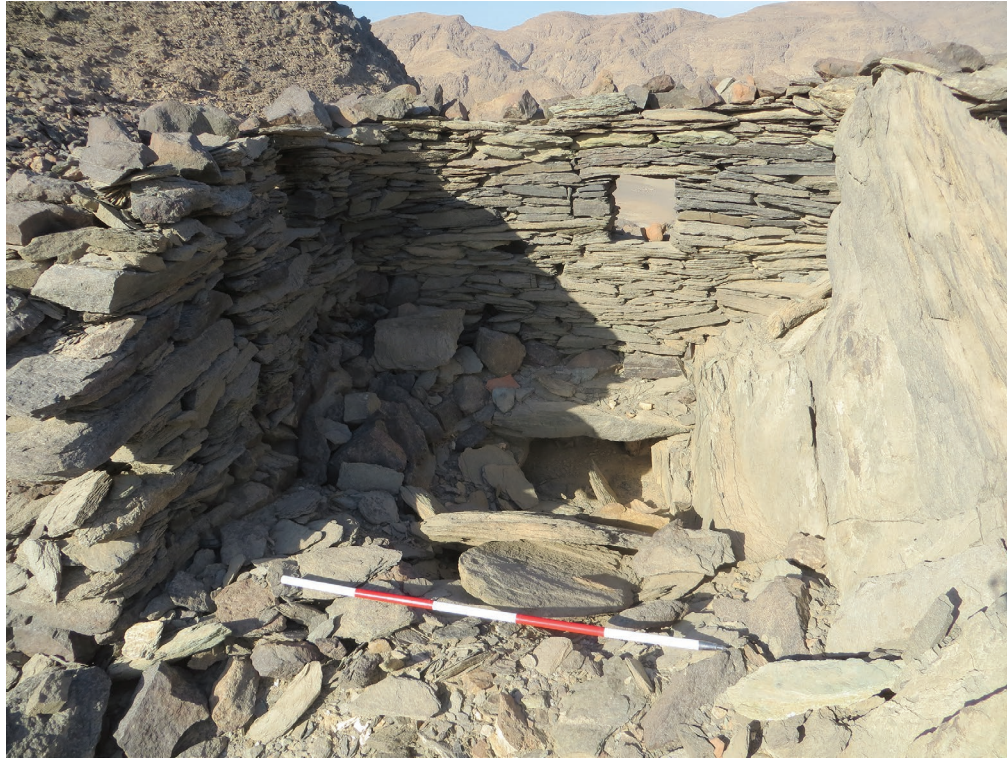


FIG. 10. Structure SKP-NEC-E-T1 located in the Northeast Necropolis at Wadi Sikait, with the tomb in the center; scale = 1 m.

there is a large and fairly well preserved single tumulus inside a building that is 3 m long x 1.10 m wide x 0.50 m high (fig. 11).

Again, these buildings are not easy to interpret. We cannot rule out the possibility that they have a funerary *raison d'être* or that they were built for another function and were subsequently repurposed in the Late Antique period. Several aspects seem to support this second hypothesis. For instance, the reuse of rubble to build the tumuli would suggest that the buildings had already been abandoned before the graves were created. Moreover, although most of the ceramic material corresponds to the Late Antique period, there are also some Early Roman amphoras and fragments of cooking ware around these buildings in Sikait that hint they might have been used in the earlier period. Finally, it is also interesting that structures at both Sikait and Gali South present evidence of later modification, such as blocked doors and windows, which suggests that an already existing space was adapted for use in relation to burial practices.

Our hypothesis is that these funerary houses were, in fact, originally houses or watchtowers that were later abandoned before being rehabilitated in the Late



FIG. 11. The large tumulus inside structure SKP-NEC-E-103 located in the Northeast Necropolis at Wadi Sikait. The hole through which the tumulus was looted is visible in the center; scale = 2 m.

Antique period for funerary purposes. Their protected positions would have been useful for deterring looters, while their structures offered ideal spaces for burying groups belonging to the same family or clan. Thus, even if the tombs are mainly Type II, this specific

location in a protected spot makes us consider them a different category, involving a larger investment and a different social, economic, and religious significance. However, future excavation of some of these buildings should shed further light on their function and evolution.

Type VI is one of the best-known categories of burial spaces in the region. Known as “ring cairns,” “circular platform tombs,” or “*akerataheils*,” they can be found throughout the Eastern Desert, from Eritrea to Egypt,³⁰ including such exceptional cases as Nubt, where 1,354 *akerataheils* were documented.³¹ These tombs consist of a circular structure with external stone walls that have vertical flat slabs around their bases. The central funerary chamber consists of a circular pit dug into the sand, but they are so badly damaged that it is difficult to determine whether they had contained a funerary box. In several excavated examples in Sudan, it has been proposed that the body was either deposited in a hole in the sand or inside a stone funerary box.³² The area between the funerary chamber and the outer walls is filled with stones of pebble to cobble size to form an extremely compact structure. The external diameters of the cases documented in the Smaragdós range between 4 and 6 m, while their funerary chambers vary from 2 to 2.50 m. The tombs are usually between 0.50 and 1 m high.

As mentioned earlier, Type VI is the only type of tomb that is consistently to be found only at wadi level, where they are normally more visible and easy to access than the other types. However, as they are not typically part of a broader necropolis but tend to be scattered around the territory, either in isolation or in small groups, they are more difficult to find. As a result, only 10 have been documented in the area so far (1.32% of the total). Their distribution and positions could also indicate a later chronology, closer to the Bedouin Islamic period and more modern tombs. Although the almost total absence of associated materials hinders clear chronological identification, they have generally been dated to the first millennium CE and, more specifically, the Late Antique period.³³

The best examples of Type VI tombs identified in the Smaragdós during the survey were found at Gali

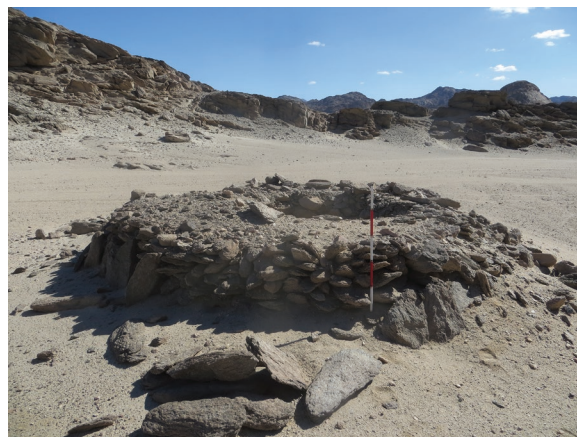


FIG. 12. Type VI tomb located in the North Necropolis at Gali (structure GAL-300); scale = 1 m.



FIG. 13. Type VI tomb located at Kab Marfu'a East (structure KME-126); scale = 50 cm (S.E. Sidebotham).

(fig. 12) and Kab Marfu'a East (fig. 13). The latter is especially remarkable, being a massive, well-preserved tomb in the middle of the site, measuring 4.8–4.9 m in diameter with a height of 1.25 m.³⁴ The tomb's central position hints that the settlement had already been abandoned, so its terminus post quem would be the fifth century CE.

The final category, Type VII, is a cluster tomb, meaning a group of tombs included in the same structure. Similar graves found in other areas of the Eastern Desert were identified by Lassány as his Type 3. Lassány suggested a family or other social connection between the individuals buried in the cluster and a chronology somewhere around the fifth and sixth

³⁰ Lassány 2012, 263.

³¹ Krzywinski et al. 2020, 22.

³² Castiglioni et al. 1997, 164.

³³ Krzywinski 2012, 148; Lassányi 2012, 263.

³⁴ Sidebotham and Wright 2019, 130.

centuries CE.³⁵ Such tombs are not especially common in our area (only 1.98% of the total), with just a few examples documented at Wadi Sikait and Gali, normally with only three or four tombs together. Our threshold for consideration as a cluster is the presence of at least three connected tombs.

However, the recent discovery of the South Necropolis at Nugrus may have changed our understanding of this type of tomb. While most of the tombs at that site are Type VII, they are unlike any other examples found elsewhere. For instance, structures SKP-NUG-NEC-T1 and SKP-NUG-NEC-T4 have more than 20 and 30 graves in the same cluster, respectively. The first survey of these tombs recovered a large number of materials, including hundreds of pottery sherds (several with *dipinti*), fragments of glass, nicely decorated incense burners, and figurines of horses made of pottery and terracotta. The ceramic items suggest a chronology around the fifth to seventh centuries CE, while the presence in the vicinity of a large building with Coptic inscriptions (still under study) and the recovery of a horse figurine bearing a cross suggest that there was once a Christian community in the area (fig. 14). This newly discovered necropolis could play a key role in furthering our understanding of these clustered tombs and their layout.

Although further surveys and excavations of Type VII tombs will shed new light on the social and cultural features of the people buried in them, what we do know is that there is much variation in terms of size and number of tombs. At Sikait and Gali, the clusters have a diameter of around 3 to 5 m, while in the largest clusters at Nugrus this figure can exceed 20 m. The tombs inside the clusters are primarily a mix of Type I and mostly Type II tombs arranged side by side (fig. 15). As usual, they are in well-concealed locations in the hills surrounding the wadis. In other necropoleis where clusters are present, such as those at Wadi Qitna, it has been proposed that a nuclear tumulus was built first and then surrounded by the other ones.³⁶ Although we can also consider that the Type V-b tombs are some kind of cluster, the totally different structural forms lead us to propose two different categories. However, we cannot discount the possibility that they were both reflecting similar social

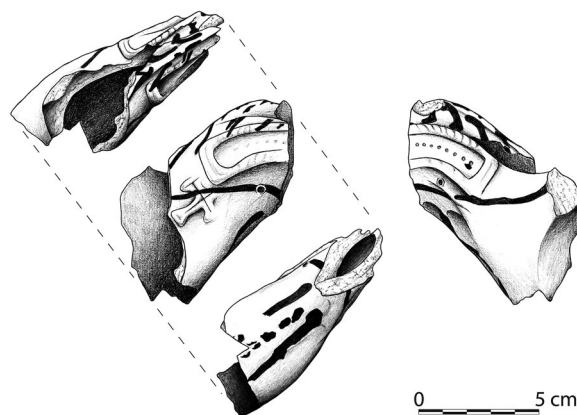


FIG. 14. Fragments of one of the horse figurines recovered from the Nugrus necropolis, showing the horse's neck and the Coptic cross (drawing by Maria Lausz).



FIG. 15. Structure SKP-NUG-NEC-T1 at Nugrus, a cluster of 26 Type II tombs; scale = 1 m.

and cultural dynamics involving the concentration of graves belonging to related groups.

This overview of tomb categories Types I–VII concludes by noting that several graves combine elements of different types. Hence, some of them have been categorized as, for example, Type I-II, I-III, or II-III. In other cases, looting was so severe that no categorization was possible, with 8.04% of the total number of tombs eventually not being included in any of the seven categories.

MATERIAL CULTURE OF THE NECROPOLEIS

Ceramic Analysis

A brief commentary on the method used for ceramic analysis is necessary to contextualize this next section. We analyzed the material from the necropoleis using

³⁵ Lassányi 2012, 264.

³⁶ Strouhal 2020, 84–86.

the Full Quantification Method,³⁷ in conjunction with the Class-Division System.³⁸ Each class was quantified by counting and weighing the number of rims, handles, bases, and body sherds, respectively. Class division is an excellent method for comparing distribution patterns between sites and overcomes the limitations of a typology-only approach. This method is consistent with the unified one applied in fieldwork at other sites in the Eastern Desert.³⁹ Meticulous description of the four most common pottery classes is necessary before proceeding with statistical analysis of the pottery distribution below. This was achieved by means of macroscopic observation with basic optical tools and a Dino-Lite Premier digital microscope.

The first class in the assemblage is Aswan Kaolinitic Clay Ware (ASW), which is characterized by hard-fired, compact, well-sorted clay. The distinctive pink color of all ware included in this class is a result of firing iron-rich kaolinitic clay. This class includes all categories produced in the Aswan region and all the vessels in this class were wheelmade. External and internal surfaces are usually reddish yellow (7.5YR 7/6) while the slip that is often applied has a darker reddish yellow (5YR 5/6) tinge. Cross-sections present a highly distinct rainbow-like spectrum of pink colors (from 7.5YR 8/3 to 2.5YR 4/6).

The second most frequent class is Eastern Desert Ware (EDW). Vessels in this class are made from a sandy, gritty, and poorly sorted clay, frequently with voids in the matrix. External surfaces of the vessels included in this class are usually burnished and richly decorated, while the internal surface is a rough, sandy texture. Decorations include incised or painted geometric shapes, or combinations of both. The dyes used in the painted examples are always white and red. This class originates from the Eastern Desert, although no pottery kiln has ever been found. Barnard notes four different fabrics in this class,⁴⁰ which all share the following characteristics: frequent fine to medium angular white limestone inclusions, frequent very fine to medium rounded transparent quartz crystals, and the occasional presence of mica. External and internal surfaces may vary from light reddish brown (5YR 6/4) to very dark gray (10YR 3/1). A fresh cross-section re-

veals a very dark gray core (10YR 3/1) with a brighter yellowish red (5YR 5/6) external margin.

The third most common pottery class is marl wares (MARL), which includes all vessels made of marl lime-rich clay sourced from various production sites on the Egyptian limestone plateau. This class includes all categories of vessels. The clay is usually poorly sorted and porous, with the frequent presence of elongated voids that indicate the addition of organic matter to the raw clay mix. The fabric is characterized by abundant very fine to coarse angular or subangular white limestone inclusions and frequent fine to medium rounded transparent quartz crystals. External and internal surfaces appear in two color variants: light yellowish brown (2.5YR 6/3) or red (2.5YR 5/8).

The final class in the assemblage is Nile Alluvial clay wares (NALU), which includes all vessel categories made of Nile alluvial clay sourced from various production centers in the Nile Valley. In this case, the clay is rather hard, poorly sorted, and features occasional elongated voids that suggest that organic matter was added to the raw mix. The fabric is characterized by frequent very fine to fine rounded transparent quartz crystals, occasional fine to medium flakes of golden mica, and occasional very fine to fine angular white limestone particles, with considerable variation from one production center to another. External and internal surfaces tend to be dark brown (7.5YR 3/2) in color, but the cross-sections are dark grayish brown (10YR 4/2) to red (2.5YR 5/6). Amphoras imported from the Mediterranean and Early Roman intrusions also appear sporadically but are outside the scope of our classification. For the purposes of statistical analysis, both groups are clustered separately to facilitate data presentation.

Northeast and Southeast Sikait Necropoleis

From 35 graves in the two Sikait necropoleis, Northeast and Southeast, 227 pottery fragments were recovered, weighing a total of 12.186 kg. These sherds are exceptionally well preserved, having a very high average weight of 53.9 g, with the majority (58.1%) being considered diagnostic pieces, thus conferring major insights into the chronology of the necropolis. Statistics describing sherd origin are based on a division by trade distance into local, regional, and interregional, as suggested by Romanowska et al.⁴¹ Local material is

³⁷ Solheim 1960.

³⁸ Kennet and Krahel 2004.

³⁹ Bartos et al. forthcoming.

⁴⁰ Barnard 2008, 25.

⁴¹ Romanowska et al. 2021, 35–36.

traditionally considered to be produced on site or in the immediate vicinity.⁴² However, this is a troublesome issue in the Eastern Desert, where no pottery workshops or ceramic wasters have ever been found. We therefore need to consider communal identity as an aspect that might indicate locality. Eastern Desert Ware is the only class of material that has, to date, been associated with the indigenous Blemmyes people who lived in the Eastern Desert from the first century CE onward.⁴³ Even though no precise production center has ever been found, this class is scattered across all sites in the Eastern Desert, from Wādī al-Ḥammāmāt to northern Ethiopia,⁴⁴ from the Red Sea coast to the Nile Valley, and even in Sudan.⁴⁵ Due to its close association with the indigenous people of the Eastern Desert, it is the only class that we regard as local, and it is treated separately as a unique phenomenon.

Regional material refers to that produced in the region surrounding the studied sites and reflects direct economic connections between the site and other neighboring settlements. In the pottery assemblage from the Sikait Northeast and Southeast Necropoleis, this group includes three classes: ASW, MARL, and NALU. All products from outside the local and regional scope are classed in the interregional group, which is divided into the two major sources of pottery material imports in the Late Antique period: Mediterranean amphoras (LRA1, Agora G199, LRA3, African amphoras, Gauloise 4) and transport containers from the Western Indian Ocean, the only inclusion in this group being some South Arabian organic-tempered jars. The vast majority of the material comes from local and regional sources (90.7%; table 2), which is a much higher rate than in the pottery assemblage excavated at Sikait in seasons 2021–23 (80.1%).⁴⁶ Interestingly, exotic imports (9.3% of the total assemblage; see table 2) only consisted of transport vessels: amphoras and transport jars.

Local and regional materials are much more diverse in category and form. ASW products are the most frequent, followed by MARL and EDW (table 3). The most common category is plain ware (52.86% of the total assemblage), followed by fine wares (35.24% of

the total assemblage). Considering the absence of a pottery production center in the area, we observe a clear preference for acquiring vessels of specific categories. A large majority of the fine wares (89%) consists of white and red-slipped bowls or large painted basins obtained from the Aswan production center. Meanwhile, the plain ware bowls, basins, and liquid vessels were mostly made of marl clay (58.8%). Rather surprisingly, there are very few NALU vessels: only 6.1% of the total assemblage across all categories. This is in stark contrast to the Sikait settlement, where it is the most prevalent type (40.9% to 56.9%, depending on the category). Meanwhile, EDW is statistically much more prevalent in the necropoleis than elsewhere in the Sikait settlement, where it represents a mere 2.1% of the total assemblage excavated in the 2021–2023 seasons.⁴⁷

A closer look at the pottery forms represented in the assemblage shows that the deceased in these tombs were primarily equipped with different types of tableware. Vessels used to serve and drink liquids, such as jugs, strainer jugs, flasks, and cups, make up 47.6% of the total assemblage (table 4). The high percentage of cups, and the fact that they were made exclusively of EDW (compare tables 3 and 4), would appear to be a clear indication that they were purposefully used in the funerary context. The second largest group consists of all kinds and sizes of bowls and basins, accounting for 33.9% of the total assemblage. The rich collection of fine and plain ware forms may have been used in the funerary context as equipment for the dead, for food and drink, or as libation containers. Amphoras and other containers like kegs make up only 12.3% of the total assemblage, which contrasts with the much higher proportion of these at Sikait as a whole (48.3%). Kitchen ware and storage vessels are almost completely absent, suggesting that their presence in the necropolis is accidental.

From these findings, a standard set of funerary equipment in the Sikait necropoleis emerges. Pottery material in a single grave would have typically consisted of one liquid container, plus bowls and/or cups. By class distribution, we observe that most of these items would have come from pottery workshops in the Aswan region and limestone-rich areas of Upper Egypt. Analysis of material origin yields evidence for strong regionality, so we may infer that the people

⁴² Priestman 2021, 172.

⁴³ Barnard 2008.

⁴⁴ Manzo 2014, 244.

⁴⁵ Barnard 2002, 54; Barnard and Strouhal 2004, 30–34, Barnard et al. 2005, 50–54.

⁴⁶ Oller et al. 2022b; 2023.

⁴⁷ Oller et al. 2022b; 2023.

TABLE 2. Pottery distribution at the Sikait necropoleis by origin.

	Local and Regional	Interregional: Mediterranean	Interregional: Indian Ocean
Sherd count	209	16	2
% of total	90.7	8.4	0.9

TABLE 3. Distribution of wares and pottery categories/groups at the Sikait necropoleis.

Class/Distribution Group Name	Amphoras	Fine Ware	Kitchen Ware	Storage Jars	Plain Ware	% of Total
ASW	—	70	1	1	10	36.1
MARL	—	4	2	—	67	32.1
EDW	—	—	—	—	39	17.1
NALU	6	5	1	—	2	6.1
Interregional: Mediterranean	16	—	—	—	—	7.0
Interregional: Indian Ocean	2	—	—	—	—	0.8
ER Residual Intrusions	4	—	—	—	—	1.8
% of total	9.25	35.24	1.76	0.88	52.86	100.00

TABLE 4. Distribution of pottery forms at the Sikait necropoleis.

Form	Bowls and Basins	Jugs and Flasks	Cups	Amphoras and Transport Containers	Storage Jars and Pithoi	Other and Not Defined	Cooking Ware
Sherd count	77	76	32	28	6	4	4
% of total	33.9	33.5	14.1	12.3	2.6	1.8	1.8

buried in the Sikait necropoleis were local. Interestingly, EDW is not present in every grave, which raises questions as to whether its presence was related in some way to the preference or maybe identity of the deceased. The scarcity of NALU is surprising, as this is the predominant class elsewhere in the Sikait settlement, prompting consideration that certain kinds of pottery were specifically used in funerary rituals. NALU materials, despite their abundance at Sikait, were presumably not deemed appropriate items for use in burials.

Material recovered from a trash dump at the Sikait Southeast Necropolis warrants separate consideration. The dump consists of a small natural platform of about 25 m² in the central area of the necropolis. Remarkably, not one grave or any other structure can be documented anywhere nearby. However, the ground is

covered with hundreds of pottery sherds (fig. 16). Fine ware is predominant in this part of the necropolis and indicates an interestingly late chronology. Unlike the material from the graves, no ASW fine white-slipped bowls were recorded, but there are many different fine red-slipped ASW and MARL forms that may be from as late as the second half of the sixth century CE. The most frequent types here are fine red-slipped ASW bowls and basins with a highly pronounced out-turned rim that are dated to the sixth–seventh centuries CE. Otherwise, the trash dump materials consist of the same classes and categories as elsewhere in the necropolis: EDW cups, MARL liquid containers, amphora sherds, and NALU coarse ware sherds. However, the character of the assemblage is clearly mixed and lacks any definite pattern. The high percentage of fine ware and amphora sherds in this location may be due to a



FIG. 16. Trash dump area in the Southeast Necropolis at Wadi Sikait; scale = 1 m.

secondary dump being created after the tombs were looted, or possibly the vessels used in funerary rituals may have been deliberately dumped here.

Amphora material found in the Sikait necropoleis consists of singular nondiagnostic fragments of NALU LRA7 amphora and a few fragments of ASW transport or table amphoras.⁴⁸ Imports from the Eastern Mediterranean consist of the standard range of types found throughout the Eastern Desert in this period: LRA1 wine or olive oil containers from Cilicia⁴⁹ and LRA3 wine amphoras from Ephesus.⁵⁰ All six of the imported items found in the area are dated to around the fourth to sixth centuries CE. Interestingly, an almost complete rim of a Gauloise 4 amphora produced in the Narbonne region was found among a small assemblage of transport vessels inside tomb NEC-SKP-T6, and a second example of a Gauloise import was recovered from the trash dump. This first- to second-century CE type is uncommon in the Eastern Desert, although many containers for Mediterranean goods have been found at consumption sites in the Nile Valley and Red Sea regions, as well as unique examples found in India.⁵¹ Due to their scarcity, it is impossible, at least for now, to link these amphora sherds securely with any funerary use.

Overall, the chronology of the pottery assemblage found in the Sikait necropoleis is ambiguous but would seem to span from the fourth until the late

sixth century CE, and especially the late fifth and early sixth centuries CE (figs. 17–19; tables 5–7). The earliest Late Antique forms, such as MARL costrels and a decorated handmade bowl, may indicate the beginning of burial practices, but could just as easily be residual finds in an area that was used intensively in the late fifth century CE. The latest material, such as the MARL strainer jug with a collar, the ASW fine red-slipped basin with an out-turned ribbed rim, and the ASW/NALU amphoras, are a clear indication that the necropoleis were no longer in use by the late sixth century CE. There is no pottery evidence to suggest that use of this space continued into the Early Islamic period. The occasional deposits of Early Roman sherds would appear to be intrusive, for it is patently evident that these necropoleis were primarily used over a span of at least 200 years in the Late Antique period.

The Necropoleis at Gali

During the survey at Gali, 226 pottery sherds weighing a little over 15 kg were collected from a total of 36 different tombs across the site. These fragments consist of a maximum of 172 vessels based on matching fragments, and 46 vessels based on rim fragments. These were analyzed in the same manner as the pieces from Sikait in order to facilitate comparison between the two assemblages.

Three-quarters of the pottery from Gali are local and regional wares from Egypt (table 8), ranging from vessels made of Aswan, Nile silt, and marl clays to Eastern Desert ware. The pottery from outside Egypt can be divided into wares from the Mediterranean, which account for over a sixth of the assemblage, and the remaining almost 5%, which were imported from the Indian Ocean network.

A more detailed analysis is obtained if we divide the assemblage by wares (table 9). The different wares from the Nile Valley (i.e., ASW, MARL, and NALU) are present in very similar quantities, while fine wares and amphoras from Aswan account for only a small percentage. The distribution of pottery groups by wares clearly indicates that specific types of vessels were left in the tombs. ASW items are predominantly fine wares followed by amphoras, while amphoras are the most common type from NALU and the Mediterranean. Kitchen ware is mainly from NALU and the Indian Ocean, specifically Aksum. The only MARL items are plain wares. This overview provides considerable insight into the distribution of wares and the vessels that were chosen for use as tomb furnishings.

⁴⁸ Dixneuf 2011, 200–6.

⁴⁹ Pieri 2005, 81–87.

⁵⁰ Pieri 2005, 100–1; Bezeczky et al. 2013, 164–66.

⁵¹ Laubenheimer 2001, 58; Tomber 2009, 153.

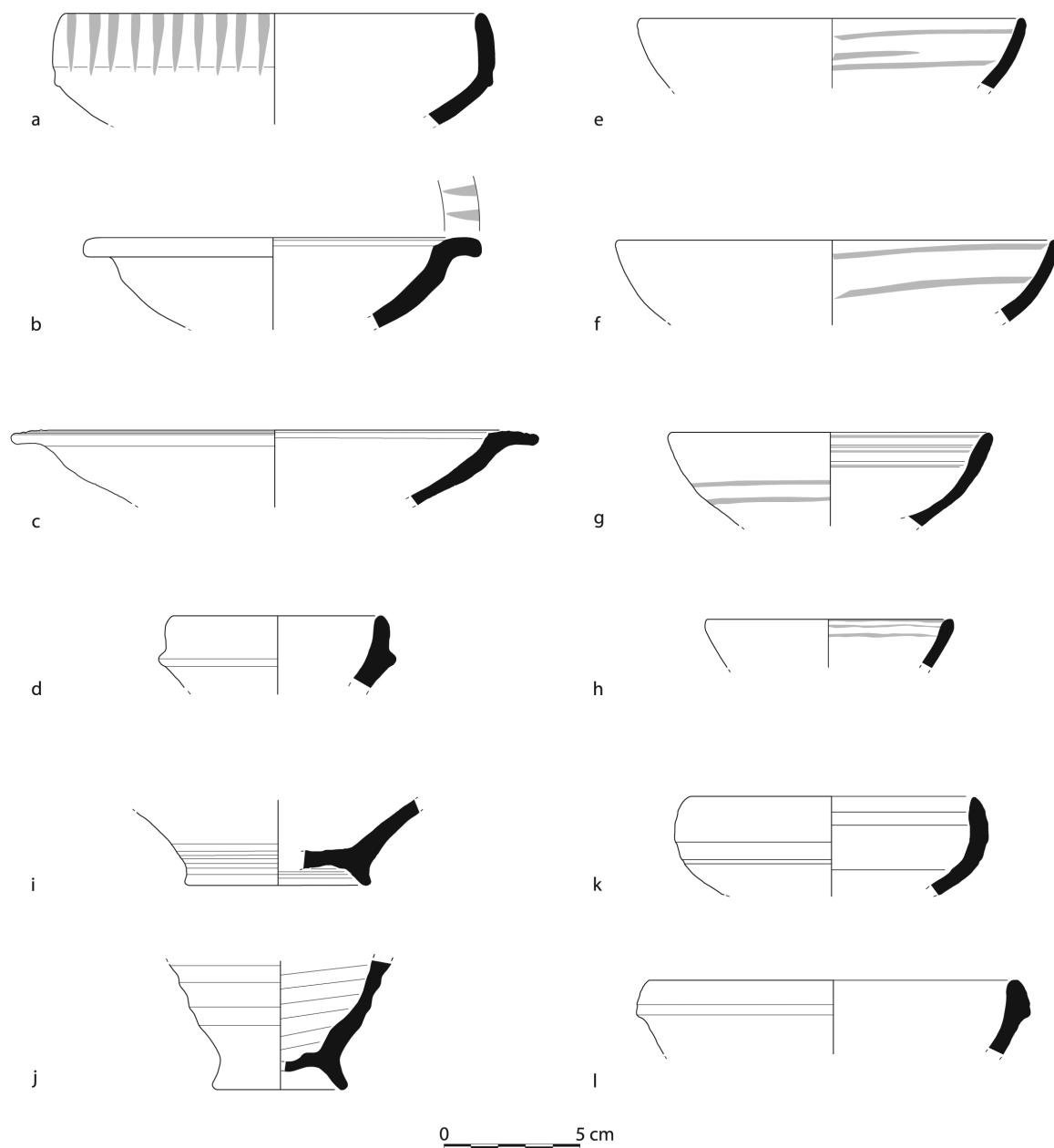


FIG. 17. Pottery from Sikait necropoleis described in table 5 (drawing by Maria Lausz).

We now concentrate on the pottery items that were used as tomb furnishings at Gali (table 10). Amphoras and other transport containers are by far the most frequent, accounting for over 40%. This is the main difference from the pottery assemblage from the necropoleis at Sikait, where amphora comprise only 9.25% (see table 3). However, the pattern discerned at Sikait, where burials contain a vessel for liquids, is also visible at Gali, although amphoras take precedence over jugs or flasks. As noted earlier, these vessels were

sourced either from Egypt or the Mediterranean. The amphora group (see table 9) consists of 17 Aswan, 34 LRA1, 4 LRA3 (both LRA1 and 3 fall under the Mediterranean group), and 13 LRA7 (out of 30 NALU amphoras). Of this group, 8% are kegs used for transporting water across short distances, as opposed to the amphoras, which were designed for longer distances. The second largest group are the bowls and basins, which account for just over 20%. Of these 31 fragments, 23 are Aswan, five of which are white-slipped

TABLE 5. Pottery from Sikait necropoleis illustrated in fig. 17.

	Class	Form	Tomb No.	Dating (century)
a	ASW	red slipped, painted bowl	SKP-NEC-E-T10	From fifth to beginning of sixth CE
b	ASW	red slipped, painted bowl	SKP-NEC-E-T10	From fourth to mid fifth CE
c	ASW	red slipped bowl	SKP-NEC-E-T10	Sixth CE?
d	ASW	white slipped, painted bowl	SKP-NEC-E-T49	End of fourth to second half of sixth CE
e	ASW	white slipped, painted bowl	SKP-NEC-E-T96	End of fourth to sixth CE
f	ASW	white slipped, painted bowl	SKP-NEC-E-T96	End of fourth to sixth CE
g	ASW	white slipped, painted bowl	SKP-NEC-E-T96	End of fourth to sixth CE
h	ASW	basin	SKP-NEC-E-T96	End of fourth to sixth CE
i	ASW	red slipped jug base	SKP-NEC-E-T3	From fourth to seventh CE
j	MARL	jug base	SKP-NEC-E-T3	From Early Roman to Late Antique period
k	NALU	red slipped bowl	SKP-NEC-E-T12	From fifth to sixth CE
l	ASW	red slipped bowl	SKP-NEC-E-T14	Late sixth to seventh CE

type T 316, while the others are red-slipped and mainly type T 608,⁵² all dating from the late fourth to sixth centuries CE. The single red-slipped African ware bowl is Hayes 67 type and can be dated to after the mid fifth century CE.⁵³ Cooking pots and casseroles are the third most prevalent group and account for 18.14% of the assemblage. These fragments are from just five vessels: three from the Nile Valley, one from Aswan, and one from Aksum. All other groups only play a minor role in the funerary assemblages at Gali. There is also a large group of undefined vessels for which insufficient diagnostic features have been preserved, meaning they could not be ascribed to a specific form. About two-thirds of these fragments are from closed vessels and the other third from smaller, open vessels, such as cups or bowls.

Overall, the pottery assemblage suggests that the necropoleis at Gali were used in the Late Antique period, which aligns with previous dating of the Gali settlement in general to the same era.⁵⁴ None of the material collected from the tombs at Gali can be dated to the Early Roman or Islamic period. However, material was collected from (or present in) only 36 of the more than 500 tombs in the area, therefore the

assemblage is not representative of the necropoleis as a whole. Even though the sample size does not exceed 7% of the tombs, numerically the amount of pottery and tombs studied is very nearly the same as in Sikait. Therefore, comparative research is deemed useful, with the aforementioned caveat in mind. Further research should yield additional data to that presented here, which might make the overview of the Gali necropoleis more comprehensive.

The signature of pottery assemblages used as tomb furnishings in the Gali cemetery clearly differs from the material used in the Sikait tombs and the main settlement at Gali,⁵⁵ mainly consisting of liquid containers and fine ware bowls or cups, while cooking wares are uncommon. It is interesting that imports from the Indian Ocean network reached this far into the Eastern Desert, for although the vessel from Aksum is the only example found in the Gali tombs, others were recovered from the main settlement. However, this is not direct evidence that traders from the kingdom of Aksum actually traveled to these sites, because the vessels might have been traded and transported by caravan through the desert. The same holds for the Eastern Desert ware and other vessels in the tombs.

⁵² For these types, see Gempeler 1992, 199.

⁵³ See Hayes 1972.

⁵⁴ Oller et al. 2024. Pottery found from the survey will be covered in detail in a publication in preparation by R.C.A. Geerts.

⁵⁵ Oller et al. 2024; Geerts in preparation, *supra* n. 54.

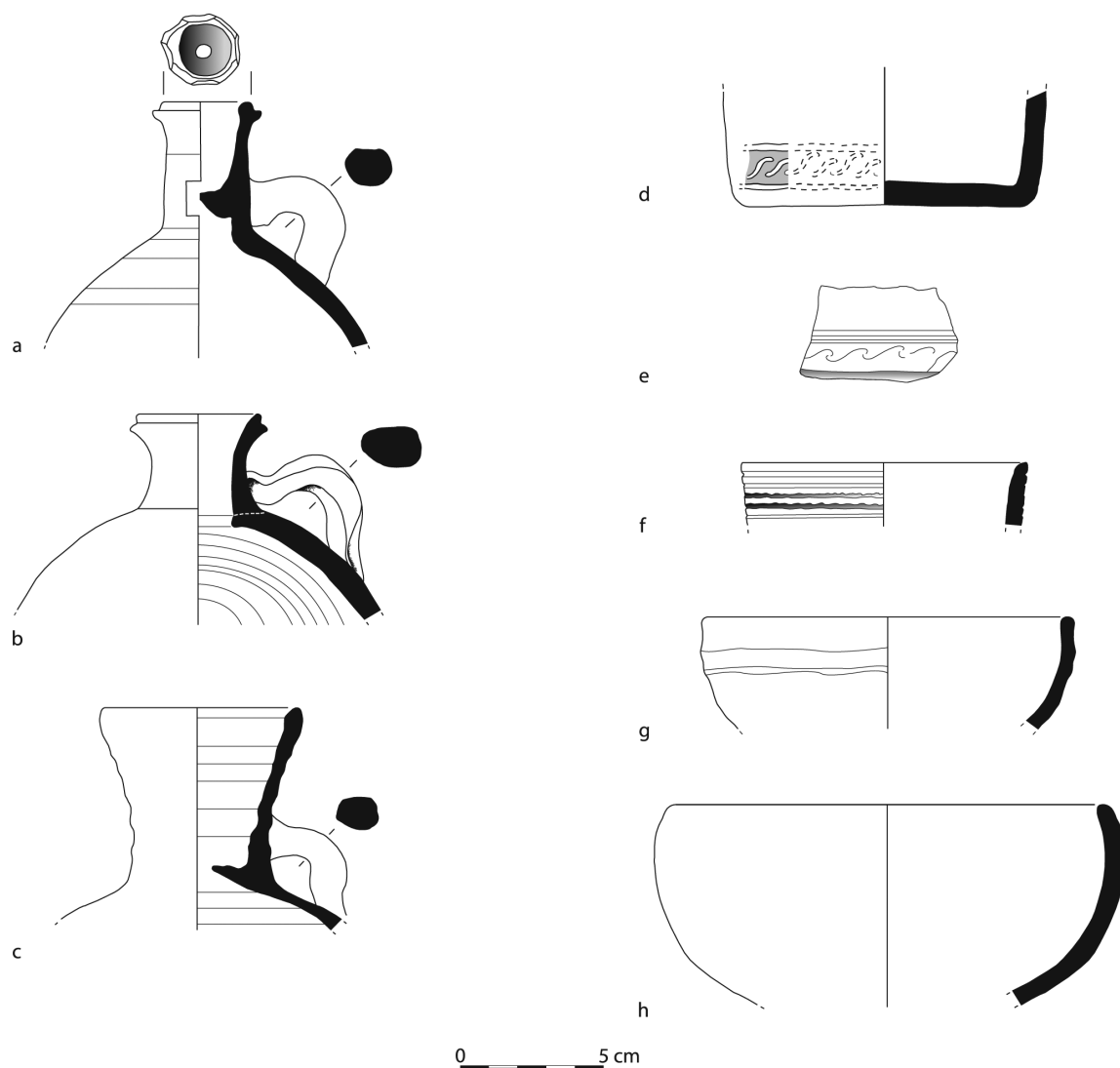


FIG. 18. Pottery from Sikait necropoleis described in table 6 (drawing by Maria Lausz).

TABLE 6. Pottery from Sikait necropoleis illustrated in fig. 18.

	Class	Form	Tomb No.	Dating (century)
a	MARL	strainer jug	SKP-NEC-E-T42	Fourth to sixth CE
b	MARL	costrel	SKP-NEC-E-T65	End of fourth to beginning of fifth CE
c	MARL	strainer jug	SKP-NEC-E-T65	From fifth to sixth CE
d	EDW	cup base	SKP-NEC-E-T49	From late third to sixth CE
e	EDW	cup body sherd	SKP-NEC-E-T39	From late third to sixth CE
f	EDW	cup	SKP-NEC-E-T39	From late third to sixth CE
g	not identified	red slipped bowl	SKP-NEC-E-T96	From late third to sixth CE
h	EDW	basin	SKP-NEC-E-T39	From late third to sixth CE

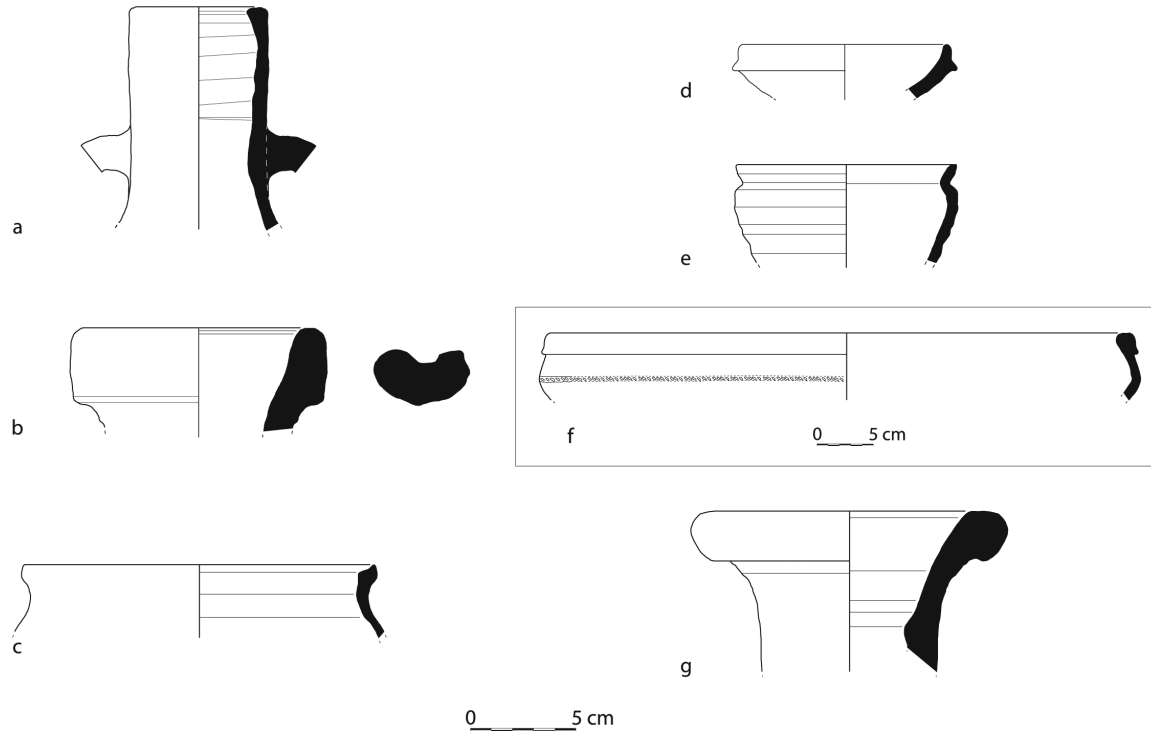


FIG. 19. Pottery from Sikait necropoleis described in table 7 (drawing by Maria Lausz).

TABLE 7. Pottery from the Sikait necropoleis illustrated in fig. 19.

	Class	Form	Tomb No.	Dating (century)
a	ASW/NALU (mixed)	transport amphora	SKP-NEC-E-T1	Fifth to sixth CE
b	Gauloise 4	transport amphora	SKP-NEC-E-T7	First to third CE
c	NALU	cooking pot	SKP-NEC-E-T7	Fifth to fifth CE
d	ASW	red slipped bowl	SKP-Trash Dump	End of fourth to second half of sixth CE
e	MARL	carinated cup	SKP-Trash Dump	Fourth to sixth CE
f	MARL	basin	SKP-Trash Dump	Fifth to eighth CE
g	Gauloise 3	transport amphora	SKP-Trash Dump	First CE

DISCUSSION

The data introduced on the previous pages offer an interesting framework for a better understanding of the funerary practices of the communities living and working in the Smaragdus, and also help to draw a clearer picture of some of their social features. Chronologically, there is no doubt that these necropoleis were used in the Late Antique period, and particularly the fifth century CE. This inevitably links them to the arrival and dominion of the emerald mines by the

Blemmyes, as noted by authors such as Olympiodorus, Epiphanius, and Cosmas Indicopleustes.⁵⁶

The Blemmyes were a group of desert dwellers that, especially from the third century CE on, raided the Egyptian Eastern Desert, posing a challenge to Roman control of the region. After the Roman withdrawal to the north under Diocletian, the Blemmyes expanded into the desert, becoming one of the most important political (and probably economic) powers

⁵⁶ Supra n. 2.

TABLE 8. Pottery distribution at the Gali necropoleis by origin.

	Local and Regional	Interregional: Mediterranean	Interregional: Indian Ocean
Sherd count	176	39	11
% of total	77.88	17.26	4.87

TABLE 9. Distribution of wares and pottery categories/groups at the Gali necropoleis.

Class/Distribution Group Name	Amphoras	Fine Ware	Kitchen Ware	Storage Jars	Plain Ware	% of Total
ASW	17	30	1	–	–	21.24
MARL	–	1	2	–	53	24.78
EDW	–	–	–	–	15	6.64
NALU	30	1	20	1	5	25.22
Interregional: Mediterranean	38	1	–	–	–	17.26
Interregional: Indian Ocean	–	–	11	–	–	4.87
ER Residual Intrusions	–	–	–	–	–	0.00
% of total	37.61	14.60	15.04	0.44	32.30	100.00

TABLE 10. Distribution of pottery forms at the Gali necropoleis.

Form	Bowls and Basins	Jugs and Flasks	Cups	Amphoras and Transport Containers	Storage Jars and Pithoi	Other and Not Defined	Cooking Ware
Sherd count	46	10	1	97	1	30	41
% of total	20.35	4.42	0.44	42.92	0.44	13.27	18.14

in the region.⁵⁷ There is copious literary, epigraphic, and archaeological evidence of this, mainly in the Smaragdus but also in the ancient city and port of Berenike, where recent excavations have clearly shown that there was once a significant Blemmyan presence. For instance, two inscriptions referring to Blemmyan kings were recovered in the so-called Northern Complex,⁵⁸ while a small shrine dedicated to a falcon god of probable Blemmyan attribution was also documented.⁵⁹

⁵⁷ On the Blemmyes: Török 1985; Updegraff 1988; Dijkstra 2012; Pierce 2012; Cobb 2021; Cooper 2021; Cuvigny 2022a; Oller et al. 2022a.

⁵⁸ Ast and Radkowska 2020; Ast et al. 2022.

⁵⁹ Oller et al. 2022c.

However, the most interesting findings in relation to our own study come from the recent excavation work conducted in the Late Antique necropolis at Berenike. Another of the main references for Late Antique funerary practices in this part of the Egyptian Eastern Desert, this site has two main burial areas with hundreds of graves, one in the northwestern corner of the town and a second scattered in the surrounding hills to the west and southwest.⁶⁰ The latter has about 853 graves,⁶¹ most of which have been looted, and serves as a direct parallel to the necropoleis at Sikait, Nugrus, and Gali. Survey of the area identified a large

⁶⁰ Sidebotham et al. 2008, 228–31; Sidebotham 2011, 264.

⁶¹ Gwiazda et al. 2024.

number of tumulus-type tombs occurring alone or in clusters, built in the same manner as those at the Smaragdos: mainly Type II graves, and with diameters of between 1 and 3 m.⁶² We are therefore dealing with a similar type of necropolis with the same Late Antique chronology.

The northwest necropolis at Berenike has yielded some fascinating data regarding the area's inhabitants in the late period. It has 11 large rectangular-shaped tombs, two of which (N1-3 and N2-1) were recently excavated. These tombs clearly differ from the tumulus graves, and they could perfectly fit in the category of our Type V, funerary houses. They were constructed of coral heads, like most of the buildings in Late Antique Berenike, and they exhibit two phases of use in the fourth to fifth centuries CE. They are a combination of different types of tombs, including stone chests with multiple burials, shaft burials within an enclosure, and even ossuaries.⁶³ Of particular note is the richness of the items accompanying the deceased, including incense burners, hundreds of beads, pieces of jewelry, and large votive deposits of ceramic vessels,⁶⁴ all of which is in stark contrast to the evidence from the tumuli in the other tombs to the west and southwest. Although widespread looting of the graves prevents any precise description, there was clearly a gap in status between the two interred groups, the authors positing that the people buried in the northwest necropolis were those who governed the commercial activities in Berenike.⁶⁵ However, the similarity in terms of funerary rituals hints that they may have belonged to the same cultural unit.

In the Smaragdos, we have no doubt that the hundreds of documented graves can be connected to the same funerary tradition as that of the indigenous tribes of the Eastern Desert, as is the case at Berenike and other necropoleis that have been studied in the region, such as Wadi Qitna and Bi'r Minayh.⁶⁶ In the Late Antique period, these desert dwellers can be linked to the Blemmyes described in historical sources, although this term probably encompassed several tribes and

communities and should be used with caution. However, the existence of specific references in classical sources stating that the emerald mines were controlled by the Blemmyes, together with the archaeological evidence and comparisons with sites such as Berenike, do strongly suggest that our study is indeed dealing with Blemmyan necropoleis.

The issue of the social status of the buried people is somewhat harder to address, as there has been hardly any excavation to date of the tombs in the Wadi el-Gemal area. The general similarity of most graves, together with the lack of well-preserved funerary contexts due to looting, make it hard to discern any social differences between the interred. The only remarkable variation is in the shapes of the tombs. The dimensions of clusters (Type VII) could be linked with the burial of families or related groups, as has been proposed previously.⁶⁷ At Wadi Qitna, it has been suggested that the largest clusters were used to bury tribal chiefs and their families, and hence entailed complex social stratification.⁶⁸ However, such a hypothesis can only be supported with evidence from further excavation of the clusters. In the Smaragdos, we have the case of the South Necropolis at Nugrus, with clusters of more than 20 and 30 tombs, which may have been some kind of family tumulus that was used over a long period of time. This example is also interesting because of the presence of Coptic inscriptions and materials in and around the Nugrus South Necropolis. We believe that this may be a case of Christian communities adapting the local funerary traditions to their own ritual practices, although this hypothesis wants further research. The large size of the *akerataheils* (Type VI) cannot be deemed evidence per se that people of higher social status were buried in them, and the fact that they are so numerous at sites such as Nubt further reduces the likelihood that they were for elites.

Of greater interest to us are the Type V funerary houses, which we have observed to be the only type that is markedly different from the others, with large buildings located in specific locations that must have required a considerable amount of effort to construct. These have yet to be excavated, so they cannot be dated precisely, but if they are comparable to the funerary buildings in the northwest Berenike necropolis,

⁶² Gwiazda et al. 2024.

⁶³ Then-Obluska 2024, 252.

⁶⁴ Gwiazda et al. 2024; Then-Obluska 2024, 252.

⁶⁵ Gwiazda et al. 2024.

⁶⁶ On Wadi Qitna: Strouhal 1984. For the case of Bi'r Minayh: Lassányi 2008; 2010.

⁶⁷ Lassányi 2012, 265.

⁶⁸ Strouhal 2020, 89.

then they may well have been used to bury the wealthiest groups or families. If we assume that they were purposefully built to serve a funerary function, then this hypothesis seems even more likely. The presence of tumuli built out of rubble might suggest different phases in the life cycle of these buildings, as was also the case at Berenike. Again, excavation of some of these edifices would be the only way to confirm this idea.

If the buildings were not originally intended for use as burial spaces and were only repurposed at a later date, another question arises: where were the elites of the Smaragdos buried? Again, if we accept that the people buried in the funerary buildings at Berenike were of the highest social and economic rank due to their direct control over trade activities, then it would not be unusual for the same situation to prevail at Sikait, which oversaw such a lucrative market as the emerald trade, as evidenced in texts by Epiphanius and Cosmas Indicopleustes in reference to the Blemmyes.⁶⁹ One theory is that the overseers of the emerald mining operations did not live, at least permanently, in Sikait but instead settled elsewhere in the region, most probably in Berenike. This would explain why the people buried around Sikait, Gali, and other similar locations could be mainly miners and other workers and relatives engaged in the settlements' activities, who not only shared the same funerary tradition, but also a similar social and economic status.

Another interesting aspect relates to funerary practices in our study area, where the lack of excavated tombs and intact funerary contexts is a major limitation. However, several ideas can be proposed based on the currently available evidence. One of the most intriguing aspects of the Smaragdos tombs is their size. They were generally too small to accommodate an extended adult body. One hypothesis is that these were tombs for children, but the classical author Agatharchides offers further clues on this matter. He describes the burial rituals of the Troglodyte tribes of the Eastern Desert, which involved binding the neck to the legs with a plant, placing the body on a mound, and covering it with stones.⁷⁰ Of course, this description relates to an earlier period but would be a perfectly feasible explanation for why our graves are so small, as

the bodies would have been deposited in a flexed position.⁷¹ In fact, excavations by archaeologists such as the Castiglioni and Sadr in Nubia have confirmed this contracted position, with the head facing a cardinal point and some kind of leather matting below the body.⁷² The same situation was noted at Wadi Qitna and has been associated with a well-established Nubian burial tradition.⁷³ In both cases, we are dealing with tombs of Late Antique chronology. More recently, this hypothesis has been further supported by the aforesaid excavations in the northwest cemetery at Berenike, such as in the undisturbed burial chest in Tomb N1-3, where six subadult individuals were deposited one above the other in a flexed position.⁷⁴

However, we cannot discard other options, such as secondary deposition of the bodies after some kind of postmortem treatment. Again, the existence of such practices can be confirmed by the recent excavations at Berenike, where the authors concluded that the "bleached appearance of the osteological material" meant the bodies must have been exposed to the sun for about a year.⁷⁵ They also identified ossuaries containing a number of human bones,⁷⁶ which may be further evidence of secondary burials after the corpses had been processed in some way. This may link to another of the issues concerning the Smaragdos graves, namely the astonishing lack of bones detected in most of them. Looting and natural erosion would be logical explanations, but the practice of processing bones is a plausible interpretation, too.

On this matter, we turn to the only excavation to date of a grave in the Smaragdos area. During the 2011 season of the Berenike Project, some archaeological work was done at Middle Sikait to document a tomb (T1) in a small cemetery at the bottom of the wadi, to the east of the main mining area (fig. 20). As usual, this tomb had been looted and a pit was dug in the middle of the structure. Its shape clearly matches the tumulus type or Type II. The work involved carefully

⁷¹ In this regard, we must highlight the recent work conducted at sites such as Bir Samut, where archaeological and epigraphic evidence is suggesting a direct link between these Troglodytes and the Blemmyes; Cuvigny 2022b.

⁷² Castiglioni et al. 1997, 164.

⁷³ Strouhal 1984, 90; 2020, 43–46.

⁷⁴ Gwiazda et al. 2024.

⁷⁵ Gwiazda et al. 2024.

⁷⁶ Gwiazda et al. 2024.

⁶⁹ *Supra* n. 2.

⁷⁰ Preserved in Diod. Sic. 3.33.1–2; and see Burstein 1989, 113.

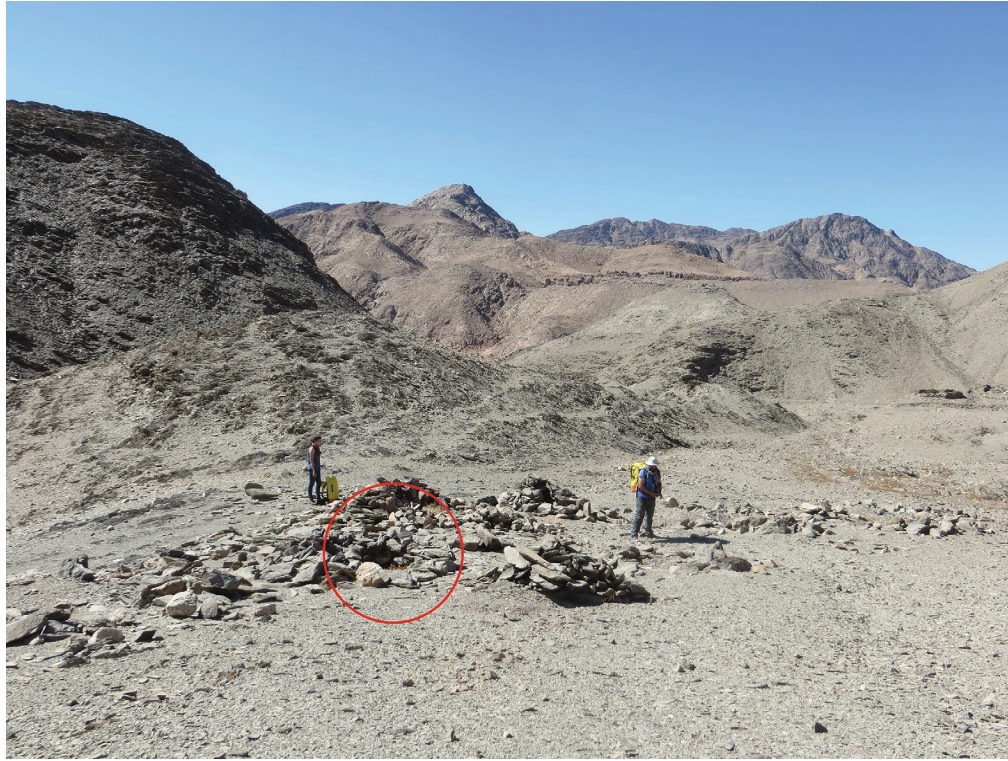


FIG. 20. Middle Sikait necropolis, with the tomb excavated in 2011 circled in red (photograph taken during our 2022 survey of the necropolis).

documenting the layers inside this looting pit.⁷⁷ The most interesting findings were two layers of ash inside the grave, together with several burnt bones among the materials discarded by the looters. Although the pottery suggests an Early Roman chronology, which is typical of Middle Sikait, the typology of the tomb is directly associated with the local burial tradition. And this is not the only place where cremated bones have been recovered, for they were also found in several of the Gali graves, although detailed documentation and study of these fragments is still needed.

This leads to the possibility of cremation rituals in the region. If this was the case, it provides an interesting solution for the conundrum of the small tombs and scarcity of bones in the necropoleis. Documentation of this grave suggests an *in situ* cremation as, apart from the burnt bones, burnt metallic fragments—which the authors believe may belong to the deceased's clothes—and remains of a glass bottle with evidence of burning were found in the ash. There is also discoloration of the

bedrock that could be from the heat of an *in situ* cremation fire, after which a tumulus would have been built over the remains of the pyre. A funerary ritual like this would not have been easy in a desert area like the Smaragdus due to the lack of wood. However, the available evidence does seem to suggest that cremation was at least sometimes a feature of funerary rituals in the region. Only by further documenting these necropoleis, and especially by the excavation of more tombs, could the presence and extent of this practice be confirmed.

Finally, we can discuss the funerary rituals in the Smaragdus conducted after the body had been deposited, which mainly means the grave goods and the rituals in honor of the deceased. We have already seen that a large number of goods were laid next to the body, our survey suggesting that the most important of these were pottery vessels. However, almost all the tombs had been looted, so the richest goods were probably stolen. This can be confirmed by the excavation of the Berenike necropolis, where a considerable number of luxury materials such as foreign beads, pieces of glass, jewelry, silver, coral, and so on were recovered from

⁷⁷ Full data available in Rivard et al. forthcoming.

undisturbed tombs,⁷⁸ as was the case with the Nubian tombs excavated by the Castiglioni and Sadr in the Wadi el-Ku area. One of those tombs contained several pieces of gold, glass beads, and a jewel consisting, interestingly, of an emerald on a gold chain. That tomb was an *akerataheil* used to bury a 12- or 13-year-old boy next to a dog.⁷⁹ This is one of the finest examples of the existence of a well-defined inherited social hierarchy among these local communities in the Late Antique period, and it has been dated to before the eighth century CE. The presence of these rich grave goods might also explain the systematic looting of the necropoleis, probably shortly after the tombs were built, as the local inhabitants would have known that they contained valuable materials. The presence of these goods need not imply the interment of elite persons. In the case of the Smaragdōs, as we have seen, the necropoleis' features are not pointing to this option. However, we consider it probable that some number of relatively precious objects were buried in the tombs—at least, we should expect pieces of jewelry containing emeralds—and that would be inviting enough to attract plundering of the graves.

Analysis of the pottery found in the graves in our survey can also provide important evidence regarding the rituals conducted after the body was deposited. The predominance of vessels related to drinking and eating—mainly of regional origin and differing from the pottery most commonly recovered from the settlements—suggests, as noted earlier, that these vessels specifically served as funerary items. This is a comparable situation to the graves excavated at Berenike, where Aswan bowls, marl clay bottles, and EDW pottery, especially and logically amphorae such as LRA1 and 7, were found, some of them deposited in an up-ended position.⁸⁰ Although such amphorae are not usually found in the Sikait necropoleis, they frequently appear to have been used as ritual offerings in other buildings at the settlement.⁸¹ In the tombs excavated at Bī'r Minayh, or by the Castiglioni and Sadr, the pottery assemblages were not especially remarkable, with materials mainly found around the structures, including the aforesaid LRA1 and LRA7 amphorae, and EDW.

The closest parallel to the Sikait material is the pottery assemblage from the Wadi Qitna necropolis, where fine ware bowls, plates, and marl vessels seem to be just as common,⁸² as well as EDW in significant quantities.

The local scale, and particularly the statistically significant presence of EDW, reinforces the idea that these tombs were related to desert dwellers, probably the Blemmyes. The vessels may have served to provision the dead for the underworld and also may have been for the celebration of funerary rituals, such as libations. Regarding the first option, it is not unusual to find flasks around some of the graves in areas such as Sikait. Although this is not strange in funerary Late Antique contexts, we suggest that these desert communities envisioned an underworld in which water was in short supply, hence the presence of flasks, amphorae, and liquid vessels to accompany the deceased into the afterlife. We have little evidence of the rituals that these tribes might have performed during their burial ceremonies; however, we can again make reference to Berenike, where there are altars and burners inside the funerary buildings that indicate some form of ritual to honor the dead that, considering the different phases of the buildings, could have continued for some time after the actual burial.⁸³

At Smaragdōs, we have very little evidence to support such funerary rituals. The most revealing space in this regard might be the trash dump in the Southeast Necropolis at Sikait, discussed above. There is no simple explanation for the large concentration of pottery in this location, as there are no tombs there. Interestingly, however, this part of the necropolis has the latest chronology. We propose two possible explanations: first, this area presents evidence of the systematic looting of the necropolis shortly after Sikait was abandoned, and the looters might have used this platform to break open the vessels and steal their contents; a second option is that this area was used for unknown funerary rituals, perhaps feasts in honor of the dead, and was one of the latest features added to the necropolis. Issues such as the lack of known parallels for this type of practice and the absence of animal bones or other ritual materials, such as incense burners, mean we are inclined to believe that the first hypothesis is the more likely of the two. However, we should also

⁷⁸ Then-Obluska 2024.

⁷⁹ Castiglioni et al. 1997, 164–65.

⁸⁰ Gwiazda et al. 2024.

⁸¹ Oller et al. 2023, 19.

⁸² Strouhal 1984, 102–5, 130.

⁸³ Gwiazda et al. 2024.

note the recovery of two incense burners in the South Necropolis at Nugrus, which very much resemble the traditional burners from the Eastern Desert dated to the first millennium CE.⁸⁴

Finally, we can go back to Agatharchides and his description of Trogodyte funerary rituals, which ended with a goat horn being placed on the top of the grave.⁸⁵ Although we did not find any goat bones in our necropoleis, it is interesting to note that during our excavation at Sikait we documented a small shrine in the upper part of the Large Temple where an untouched offering was left, consisting of a large keg filled with hundreds of goat bones, mainly horns, together with a complete flask.⁸⁶ This is exactly the same type of keg as those used as ossuaries in the tombs at Berenike, suggesting that these vessels were commonly used to store bones in ritual or funerary contexts. So goat bones, and specifically horns, did have some ritual or votive meaning for the desert dwellers, but the damaged condition of the graves in our survey area means we are unable to fully confirm Agatharchides' words.

CONCLUSIONS

The Smaragdus is one of the most archaeologically rich areas of the Egyptian Eastern Desert, particularly with regard to its tombs. This study has presented an initial survey of the necropoleis in the region, which entailed intensive work to document a corpus of more than 800 graves, essentially from the Late Antique period. Several hypotheses regarding their features and significance can be drawn from the findings.

First, from an ethnic and cultural point of view, the necropoleis are clearly related to the funerary traditions of the local people of the Eastern Desert in this era, specifically the communities of desert dwellers that expanded into the area and governed it for two centuries, and which the classical sources refer to as the Blemmyes. The material culture recovered both in and around the graves, but also elsewhere at Sikait, seems to confirm this assumption.

Second, we have identified seven types of tombs. Our categorization is merely intended to facilitate the analysis and study of these necropoleis and does not claim to be a general typology for the whole Eastern

Desert. Indeed, comparison with other areas seems to suggest a general pattern based on tumulus or ring-cairn tombs, but with local and chronological variations. However, such tombs would appear to reflect a long cultural tradition that started long before classical antiquity and continued at least into the first millennium CE.

Regarding the social status of the deceased, unlike at the excavations in the northwest necropolis at Berenike, which suggest the existence of a social hierarchy among the members of the community, we are unable to corroborate this with any certainty in the Smaragdus without further excavations. In Berenike, the obvious differences between the northwest cemetery, with its rectangular-shaped buildings, and the tumuli around the city are clear evidence of such hierarchization, probably related to the presence of Blemmyan elites overseeing trading activities. To date, no evidence has been found for such a differentiation between the interred in the Smaragdus, perhaps indicating that the elites who controlled the extraction and trade of emeralds did not live, or at least were not buried, in the mining settlements. However, more extensive study of the category we designate funerary houses could provide new evidence in this direction.

We also propose that most of the people buried in these necropoleis were somehow related to the emerald mines, at least in the Wadi Sikait–Wadi Nugrus area. While it is impossible to determine whether they were actually miners, the coincidence between the appearance of the large settlements in Sikait and Nugrus and the creation of these large burial areas, in the same chronological frame in the case of Sikait, suggests that this population was directly linked with the dominion and exploitation of the mines by the Blemmyes.

Funerary rituals are not easy to trace in these Eastern Desert regions due to the meagerness of available evidence, although classical sources such as Agatharchides did mention some of them. Archaeology has confirmed this rituality to a certain extent on the basis of the dimensions of the tombs and their associated altars, incense burners, and pottery assemblages. Although these rituals cannot be described in detail yet, the more complete picture that is emerging in the Egyptian Desert suggests a vibrant, intense funerary rituality that can be associated with these communities of desert dwellers.

Finally, as we mentioned at the beginning of the article, this survey work is merely an initial approach.

⁸⁴ Meyer 2017.

⁸⁵ Burstein 1989, 113.

⁸⁶ Oller 2022c, 261–63.

Only by continuing to survey and especially to excavate tombs in the area can a more complete understanding be obtained of the funerary practices and beliefs in the Smaragdus in the period between the fourth and seventh centuries CE.

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