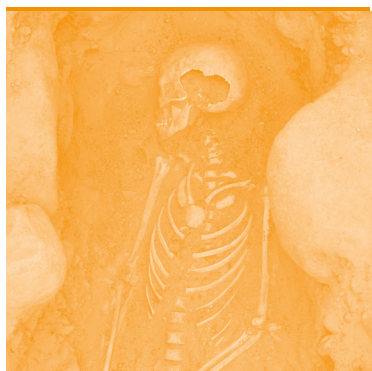


Burying the dead on the Red Sea coast: bioarchaeological research in Lower Aynuna in the 2015–2017 seasons of fieldwork



Abstract: The archaeological site of Aynuna, located in northwestern Saudi Arabia, is believed to be the ancient Leuke Kome, a port linked by a caravan route with the Nabatean capital Petra. Architectural remains suggest that it may be identified as an emporion, a trading outpost receiving freight from foreign lands to be transmitted further north. Archaeological excavations conducted by the Saudi-Polish Archaeological Mission have revealed the existence of multiple burials, not only within the cemeteries, but also inside buildings dated from the 1st to the 7th centuries AD. Most of the tombs were ransacked and the burials were almost completely destroyed. There is some internal uniformity in terms of the architectural outline of the tombs, but otherwise the two cemeteries, Necropoleis 1 and 2, show no mutual similarities, which may indicate a different dating or cultural affinity. Meanwhile, better preserved human remains from inside the buildings can probably be dated to the early Islamic period. Two large stone cairns, containing three burials, were situated in the middle of the courtyard of Khan 1. However, most of the burials were interred directly on the walking level in Khans 1, 4, and 5, and covered with stone rubble. While three out of four burials presented a position of the body extended on its back, the head facing southeast, and provided with a stone installation to protect the remains. In the case of the fourth, a pregnant woman, the skeleton was found lying face down, calling into question the intentionality of the burial.

Key words: burial, bioarchaeology, Saudi Arabia, Aynuna, cemetery, Nabataean

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Excavation of Aynuna, an archaeological site in Tabuk province, Saudi Arabia, was undertaken in 2015 as a joint project of the Polish Centre of Mediterranean Archaeology, University of Warsaw (PCMA UW) and the Saudi Commission for Tourism and National Heritage (SCTH) (Gawlikowski, Juchniewicz, and Al-Zahrani 2020; forthcoming). The site lies approximately 3 km from the Red Sea coast, in the vicinity of Khurayba Bay [Fig. 1], and consists of two locations: so-called Lower Aynuna, situated at the foot of a fossil coral-reef cliff, and Upper Aynuna, set a few dozen meters higher up, on a flat plateau overlooking Wadi Aynuna. While the former was probably a Nabataean emporium, that is, a trading outpost and customs point receiving

freight from foreign lands to be transported further north, the site on the plateau can be considered probably as a *frouion*, that is, a fortified settlement. Previous surveys indicate Nabataean/Roman period occupation at the site (Ingraham et al. 1981: 76–79; Al-Ghabbân 2011: 182–183), which is confirmed by current fieldwork, both in terms of the pottery assemblage and radiocarbon dating results.

Fieldwork in the 2015–2017 seasons was concentrated mostly on buildings in the central part of Lower Aynuna, which have tentatively been designated as khans based on layout and the presumed trading activity at the site. Archaeological testing in the adjacent necropoleis uncovered several burials in various contexts and exhibiting various forms of interment.

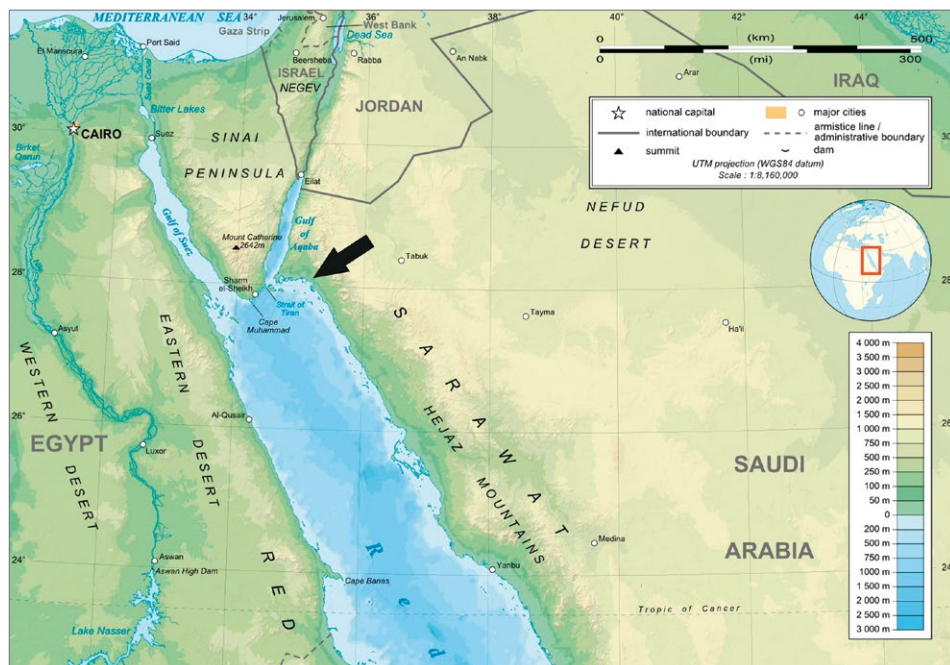


Fig. 1. Map of the northern Red Sea area showing the location of the Aynuna site (https://commons.wikimedia.org/wiki/File:Red_Sea_topographic_map-en.jpg, author E. Gaba – Wikimedia Commons user: Sting)

NECROPOLIS 1

Located directly west of residential structures, Necropolis 1 is separated from Khan 1 by the bed of a small wadi running north–south [Fig. 2]. The region, in which it lies, is made up of hills occupied by sites of different function, separated by the beds of smaller wadis feeding the main stream of Wadi Aynuna. The boundaries of the cemetery are difficult to establish, but the area covered by the graves is an estimated half of a hectare. The graves are marked by roughly square or rectangular stone superstructures, not exceeding 0.30 m in height. Most of these have been badly destroyed by robbers. The location on an elevated part of the plateau saved the burials from the rav-

ages of seasonal rivers, but the state of destruction of the overground features indicated heavy plundering, an impression further confirmed by the archaeological investigation of the burials, detracting from the informative value of the finds.

The first to be investigated, Tomb 1 (AY17/N1/001) was located at the highest point of the mound and presented a relatively well preserved superstructure. The longer axis of the rectangular feature (3.10 m by 2.75 m) was aligned east–west. It consisted of a frame of large boulders set in the surface layer and filled in with smaller pebbles, earth and gravel [Fig. 3]. Another structure was located under the southern corner of this superstructure,

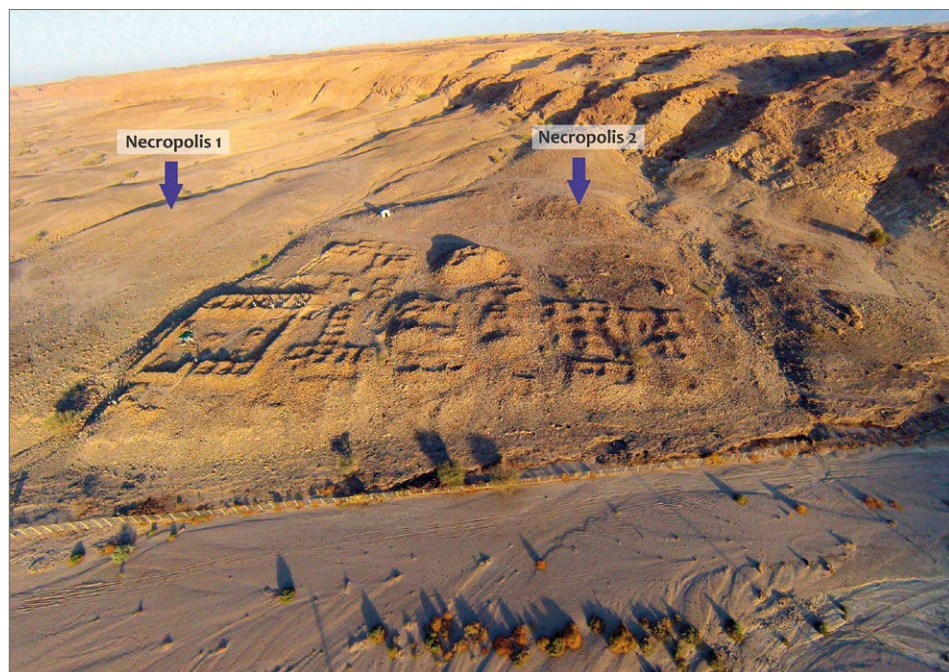


Fig. 2. Location of the two burial grounds investigated in Lower Aynuna; in the foreground, the remains of khans on the northern side of Wadi Aynuna (at bottom) (PCMA UW Aynuna Project | photo J. Kaniszewski).

extending southwest beyond the latter's outline [Fig. 4 left]. A funnel-shaped burial pit was lined with smaller boulders, reinforcing the wall. At its southern end, the pit tapered in toward the bottom, while retaining relatively straight side walls on the east and west. The inside of the substructure was filled in its upper part with stones similar to those comprising the feature itself, which might have resulted from robbers penetrating the tomb.

A single burial was found at the bottom of the pit, in the southern part of the structure [Fig. 5]. The remains belonged to a child, approximately 12 years of age at death, laid in a contracted position, on the left side, with head to the west and facing north. The use of a coffin was not observed and there was no funerary equipment accompanying the burial. Except for a partly healed fracture of the right femur (initial phase of callus

formation), no pathological lesions were observed.

The body was squeezed into the southern end of the pit, which was evidently not wide enough to accommodate the interment. The mode of burial perpendicular to the main axis of the overground feature is difficult to explain in the circumstances, considering that such a big space was left unused. It could be speculated that the child was buried in lieu of the projected owner for whom the structure had been prepared. Another explanation is that robbers destroyed the main burial without reaching the skeleton at the bottom of the pit.

Interestingly, the substructure and superstructure of the tomb overlap only in part [Fig. 4 right]. The most plausible explanation is that the burial chamber was filled in and covered with soil and its extent was not marked on the surface when the con-



Fig. 3. Superstructure of Tomb 1, Necropolis 1 in Lower Aynuna, looking south (PCMA UW Aynuna Project | photo J.A. Ciesielska)

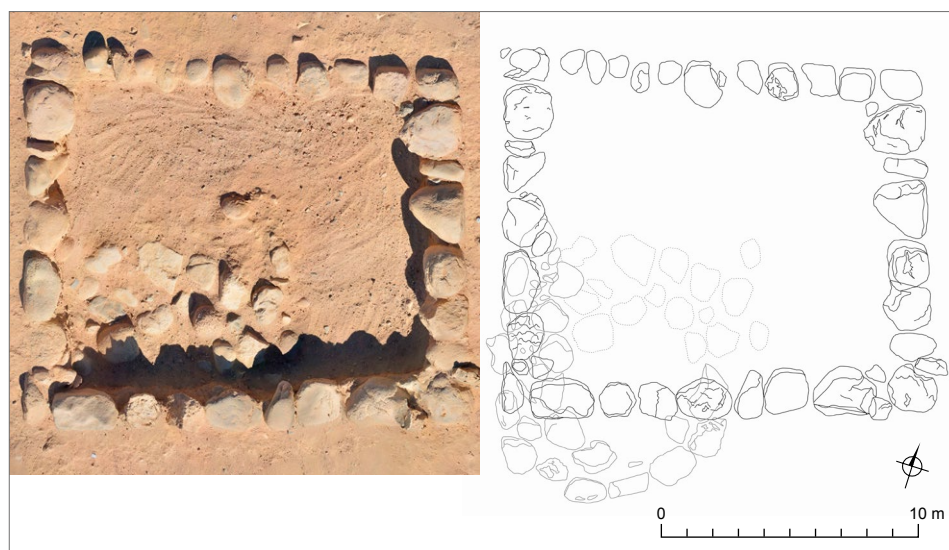


Fig. 4. Tomb 1, Necropolis 1: right, top view of a rectangular outline of the superstructure and substructure in the southwestern corner; left, oval substructure visible underneath the southwestern corner of the rectangular superstructure (PCMA UW Aynuna Project | photo and drawing J.A. Ciesielska)



Fig. 5. Burial of a child (approximately 12 years old) at the bottom of the pit in Tomb 1, Necropolis 1 (PCMA UW Aynuna Project | photo J.A. Ciesielska)

struction of the superstructure began. If the location was known only approximately, it is viable that the builders of the overground marker shifted the position of the funerary monument slightly off mark by mistake.

Tomb 2 (AY17/N1/002) in this cemetery was situated approximately 50 m southeast

of the tomb described above, and it was already at the foot of the hill occupied by the latter. The box-like monument (4.40 m by 2.90 m, approximately 0.60 m in height) was slightly skewed to the east, resulting in a rhomboidal rather than rectangular plan [Fig. 6]. The superstructure was con-



Fig. 6. Superstructure of Tomb 2, Necropolis 1 in Lower Aynuna (PCMA UW Aynuna Project | photo J.A. Ciesielska).

structed of large boulders forming a frame filled with large and middle-sized stones, as well as pebbles and gravel. Looting of the tomb had severely destroyed its north-western corner, permitting the rectangular outline to be reconstructed solely on the basis of the dimensions of the remaining part. A significant hollow was also observed in the eastern side of the superstructure, to the south of its midline, directly above the burial pit underneath.



Fig. 7. Cooking pot beside the superstructure of Tomb 2, Necropolis 1 (PCMA UW Aynuna Project | photo J.A. Ciesielska).

A complete globular pot with two handles was found on the western side of the superstructure [Fig. 7]. It was a cooking pot, evidently used prior to its deposition in a funerary context, as indicated by the sooted lower part of the body. The vessel had been placed on top of a large storage jar or amphora sherd. It probably contained an offering of some kind for the deceased. The Project's ceramologist Marcin Wagner dated it based on morphological features to the 1st–2nd century AD.

Only a few undiagnostic and undatable pottery sherds and some small fragments of bones were found in the fill, probably constituting what remained of the burial. The fact that the burial pit is located directly under the destroyed part of the superstructure indicates that it was penetrated by grave robbers. The north-western corner of the superstructure was probably the first to be demolished. Not finding the burial chamber, the robbers made another effort to enter the chamber in the southeastern part, this time successfully, destroying the burial in effect.

NECROPOLIS 2

The second cemetery identified at Aynuna covers the vicinity of the so-called Tower, a feature in the middle of the site, made up of a pile of dry stones and boulders a dozen meters high, presumably concealing the most prominent structure there. The cemetery lies northeast of this building, on a piece of relatively flat land and an adjacent mound rising at the foot of the *gebel* [see Fig. 3].

The site was, and is, heavily plundered, as is the case of most of the tombs in Aynuna. It could be identified as a

funerary site because of the looting that occurred sometime between the 9th or 10th centuries AD and today. However, its extent cannot be easily established due to the loose stones and sand strewn all over this area. Judging from the outlines of walls visible on the ground surface, there is no clear divide or gap between the residential and funerary structures.

Feature AY17/N2/001 was presumed to be a tomb superstructure based on its square outline and proximity to other

funerary features at the burial ground. An area measuring roughly 6 m by 6 m is demarcated by short linear stone arrangements in the middle of the northern, eastern and western sides [Fig. 8]. On the south, the stone setup is not as easily traced despite the stones extending along the entire length of this side of the feature. Two rows of stones can be distinguished—one running east from the southwestern corner of the structure and the other one in the eastern part, shifted to the south and skewed at its western

end. It seems that the latter was a secondary structure built over the original “wall”. It should be noted that the observed arrangements can hardly be called ‘walls’ since they are composed of a single course of stones each. The entire feature seems to be uniformly covered with silt mixed with gravel and small pebbles, but a shallow cut (roughly 0.35 m deep) was noted in the middle of the square structure. Its outline was not easy to trace on the surface. It may be what remains of a robber’s trench.

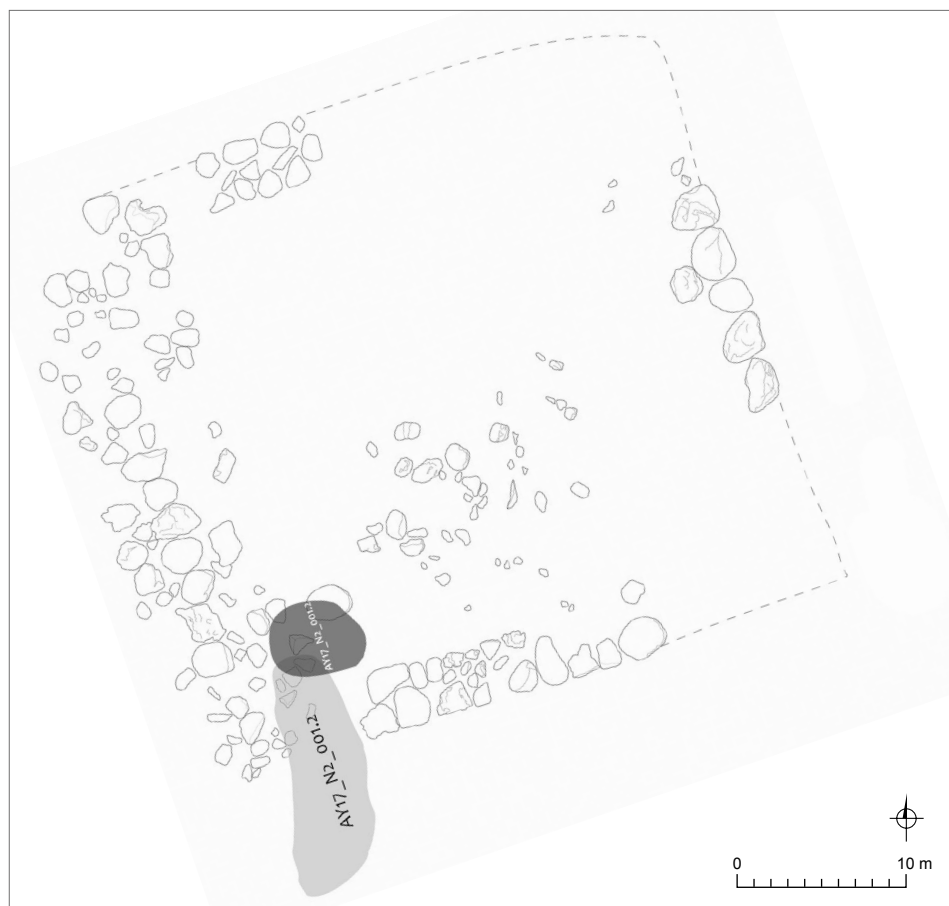


Fig. 8. Feature 1, Necropolis 2: location of two burials in the southeastern corner of the square overground structure (PCMA UW Aynuna Project | drawing J.A. Ciesielska)

Some fragmented and disarticulated remains of a newborn (AY17/N2/001.1) were discovered in the southeastern corner of the feature. Age-at-death could not be established due to the extremely poor preservation of the bones.

Another burial (AY17/N2/001.2) was identified, its feet protruding from the southeastern corner of the feature [Fig. 9]. The skeleton was placed under an arrangement of stones in the corner of the square outline, however the disarray of the stones here indicated an episode of looting, following which the remains were covered with loose rubble. The deceased, an adult male 18–22 years of age, was laid in an extended position, aligned east–west, with head to the east. However, considering the fact that the body was found lying face down, legs on the side (left extended, right bent), left hand under the pelvis, right arm folded and right palm placed under the right clavicle, it seems rather unlikely that this was the original position of the interment. The body appears to have been dragged out of

its original burial pit within the outline of Feature 1, destroying the burial of the child in the process.

Situated a few meters north of Feature 1, the second formation investigated in this cemetery (AY17/N2/002) resembles a residential structure more than a funerary one. Like the former feature, it is demarcated by a set of linear stone arrangements, all one course-high [Fig. 10]. A single stone “wall” runs along the northern side of the whole feature and turns south at its western end, encircling the area. The feature is partitioned into two rectangular parts by two perpendicular walls aligned north–south and running down the middle. A gap between the two creates a passage from the western to the eastern part. A perpendicular division runs east from the northern of the two walls. In the northeastern corner, a short linear arrangement of stones, perpendicular to the main north wall, must have once adjoined it, forming the northeastern corner of the structure. Today, there is



Fig. 9. Burial 2 (AY17/N2/001.2) in Feature 1, Necropolis 2 in Lower Aynuna (PCMA UW Aynuna Project | photo J.A. Ciesielska)

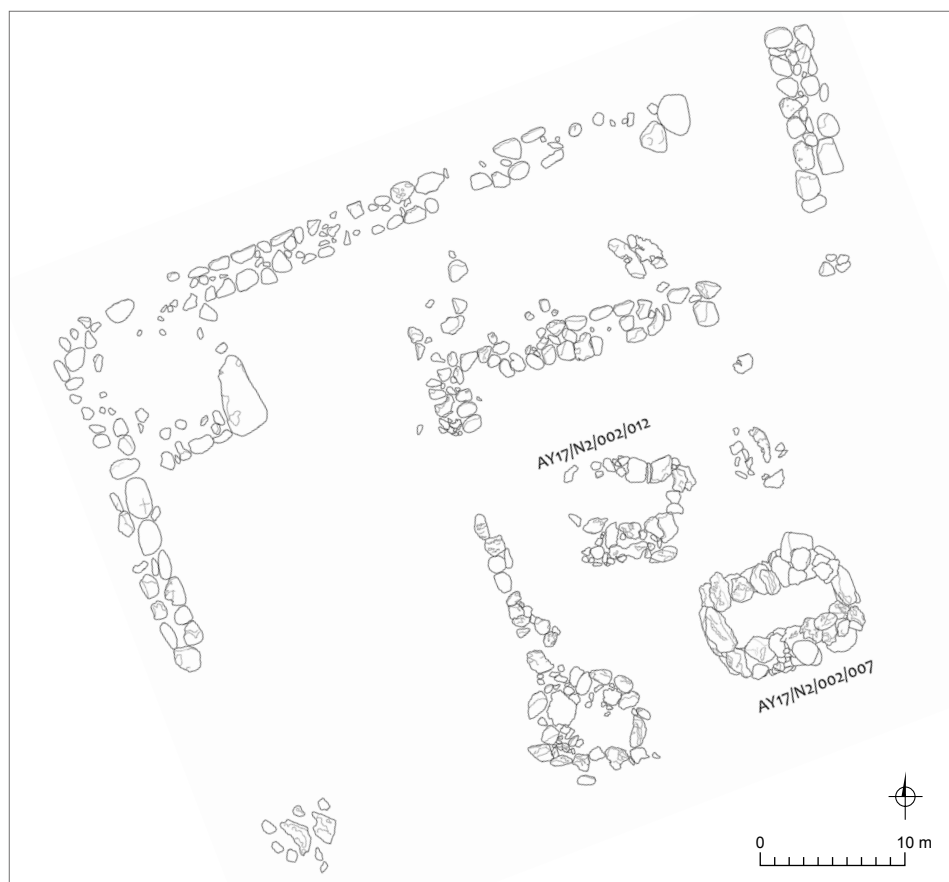


Fig. 10. Feature 2, Necropolis 2: location of two stone cist tombs (PCMA UW Aynuna Project | drawing J. Ciesielska)

a significant gap between the two. Additionally, a small podium or pedestal was constructed in the inner northwestern corner of the feature, adjoining the peripheral wall.

At least two structures of a tentatively funerary nature were identified. A well-preserved stone cist AY17/N2/002/007, constructed of large, flat dry stones, measuring roughly 1.50 m by 1.30 m, approximately 0.50 m high, was located in the eastern part of Feature 2 [Fig. 11]. The tomb was heavily plundered and the human remains were



Fig. 11. Cist tomb AY17/N2/002.7 in Feature 2, Necropolis 2 (PCMA UW Aynuna Project | photo J.A. Ciesielska)



Fig. 12. Location of burials within buildings in Lower Aynuna (PCMA UW Aynuna Project | digitizing J. Kaniszewski)



Fig. 13. Khan 1 before the excavation of the two cairn tombs in the middle of the courtyard (PCMA UW Aynuna Project | aerial photo J. Kaniszewski)

almost completely destroyed. The burial was pushed to the western side of the chamber and most of the bones were probably removed during the robbery. The commingled remains belonged to an adult (AY17/N2/002.1), but no precise estimation of age or sex could be provided because no diagnostic parts of the skeleton were present.

Another oval stone cist, registered as AY17/N2/002/012, was found 0.50 m to the northeast. The structure, composed of unworked stones, was 1.55 m long east–west and 1.45 m wide north–south; the height was similar to that of AY17/N2/002/007. The fill yielded only a small number of very fragmented human bones belonging to an adult.

STONE CAIRN BURIALS

A preliminary survey and mapping of the area of Lower Aynuna distinguished a few tentative structures, the best preserved among them being Khan 1 in the southwestern part of the site [Figs 12, 13]. With its two rows of square rooms flanking the central courtyard, the building was initially interpreted as consistent with the layout of commercial struc-

tures, hence the name. Archaeological excavations are still underway, however the work conducted so far has yielded an abundance of material evidence, which is still being processed in order to establish its original function. Based on radiocarbon dating, it can be said that the building was founded at the beginning of the 7th century AD.



Fig. 14. Cairn tomb (Feature 5) with a burial chamber in the center, courtyard of Khan 1 in Lower Aynuna (PCMA UW Aynuna Project | photo K. Ochnio)

Two large heaps of stone(s?) were identified roughly in the middle of the courtyard, to the right and left of the central passage [see *Fig. 12*, marked with red circles]. A large mound of stones, designated as Feature 5, was identified in

the eastern part of the courtyard. It was annular in shape, roughly 5 m in diameter, constructed of coral-reef limestone ashlar and boulders, supplemented with smaller pebbles and dry stone set in greyish silt [*Fig. 14*]. Cleaning of the central

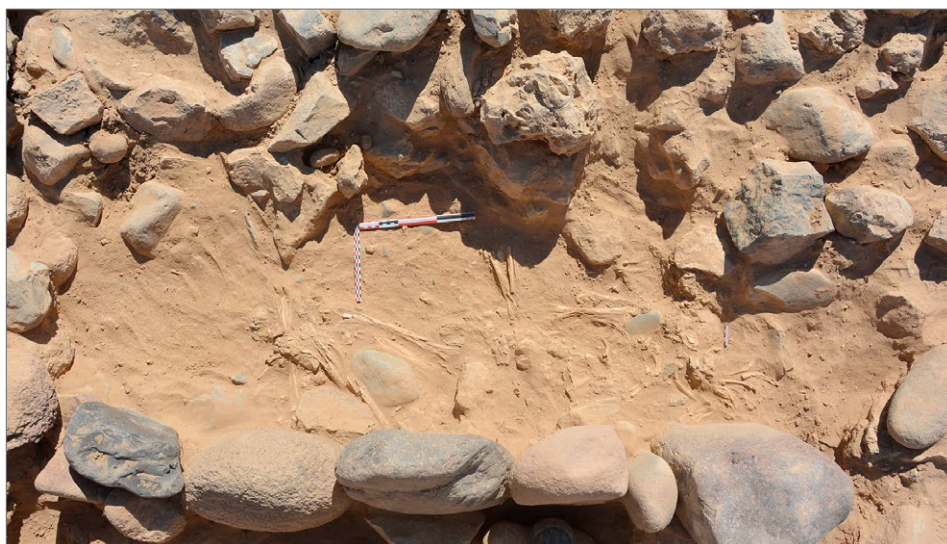


Fig. 15. Burial 1 in Feature 5, Khan 1 in Lower Aynuna (PCMA UW Aynuna Project | photo K. Ochnio)



Fig. 16. Burial 2 in Feature 5, Khan 1 in Lower Aynuna (PCMA UW Aynuna Project | photo K. Ochnio)

depression revealed a linear arrangement of irregularly shaped cobbles running medially east–west. An adult individual was interred on the northern side of this installation. The skeleton was found lying in a crouched position, on its right side, facing south, knees bent and the lower parts of the legs pulled up toward the hips, left arm bent at right angle and right arm folded with hand in front of the face [Fig. 15]. The individual could not be precisely sexed or aged due to the poor preservation of the skeletal remains.

Another burial was found a few dozen centimeters lower down, deposited in an oval cist lined with flat cobbles [Fig. 16]. An adult individual (probably female), over 50 years of age at death, was also buried on the right side, but extended with the right arm alongside and the left bent across the pelvis. Multiple pathological changes caused by mechanical stress in weight-bearing joints were recorded. Severe lesions on the bodies and articular facets of the vertebrae, the right humeral head, as well as both hand and

foot phalanges point to osteoarthritis as the underlying causal factor.

On the opposite side of the courtyard there was another cairn, designated as Feature 8, similar in construction to the previously described tomb. It was irregularly oval in plan, 8.40 m east–west by 4.50 m north–south, and 0.65 m high. The hollow sunk in the center corresponded to a roughly rectangular burial pit, measuring 1.35 m by 0.35–0.55 m, cut in bedrock and lined with oval cobbles. After interment, the grave was refilled with excavated material and greyish silt. The bones were of an adolescent (most likely a teenage girl), an estimated 16–18 years old at death, interred supine with head pointing west and facing south [Fig. 17]. The right arm was laid alongside the body, while the left hand was placed on the right wrist, the forearm across the pelvis, legs slightly bent, leaning to the right. The right elbow of the deceased showed traces of significant, still active at the time of death, pathological alteration of the distal humerus and the proximal radius and ulna. Dental hypoplasia, that is, lines



Fig. 17. Burial of an adolescent in Feature 8, Khan 1 in Lower Aynuna (PCMA UW Aynuna Project | photo K. Ochnio)

of deficiency in enamel density, indicating repeated episodes of systemic stress caused by malnourishment or childhood illness, were also identified. No burial equipment was found; however, small fragments of a mat woven of palm fibres were recovered from the fill. The mat must have been used to cover the burial.

As stated, the dating of the two tombs is presently unclear. However, two fragments of oil lamps were found during the excavation of the stone superstructure of Feature 5. A characteristic decoration of the nozzle identified one of the fragments as a Jerash-type lamp from the 6th–7th century AD (Kehrberg 1986).

BURIALS WITHIN RESIDENTIAL STRUCTURES

Burials were also made directly on the floors of the deserted buildings [see *Fig. 12*, marked with an “x”]. Altogether, four such burials have been found to date.

Trench 9 was established inside Khan 5 lying north of Khan 1. A small room in the northeastern corner of the building was covered with stone ashlar and windblown sand. Removal of loose stones from the surface revealed an oval concentration of stone blocks located in

the western part of the room [*Fig. 18*]. Underneath was a layer of loose grey silt with large quantities of dry stones. A human skeleton was discovered in the lowermost part of the layer, lying directly on the walking surface.

The remains belonged to an adult female, about 45–55 years of age at death. Poorly preserved skeletal remains of a foetus were observed below the abdominal region. Judging from the only



Fig. 18. Trench 9 before excavation; pile of stones covering the burial in the middle (PCMA UW Aynuna Project | photo M. Truszkowski)

preserved indicator of age, the length of the long bones, the prenatal age could be estimated at 30 weeks. The woman was lying face down, the head slightly tilted to the left (to the south), the knees slightly bent to the right and hands under the hips [Fig. 19]. Some purple discoloration on the femurs and tibias was attributed to soil staining (House 2008) or post-mortem fungal activity (Cole and Waldron 2016).

Two sets of human remains were discovered in two of three rooms lying in a row in the southeastern part of Khan 1.

Both the corner room (Trench 19) and the room next to it (Trench 18) were filled with stone tumble composed of grey silt with stone debris covering the occupational levels. Next to the central part of the south wall of Trench 19, an accumulation of stone fragments marked the location of a single burial [Fig. 20]. An adult individual seems to have been interred in an extended, supine position, although the body might have shifted in the process of decomposition. The deceased was aligned east–west with the head to the west, turned to the right, facing south.



Fig. 19. Burial of a woman, Trench 9, Khan No. 5 in Lower Aynuna (PCMA UW Aynuna Project | photo J.A. Ciesielska)



Fig. 20. Burial, Trench 19, corner room of Khan No. 1 in Lower Aynuna (PCMA UW Aynuna Project | photo J.A. Ciesielska)

The legs were side by side, and the right arm lay alongside the body, while the left crossed the pelvic area. The skeletal remains belonged to an older female over 50 years old at death. Healed fractures of the third and fourth right ribs, resulting

in the fusion of the two, were observed, as well as rather pronounced muscle attachments on all the long bones present, indicating a life of physical activity. A single bead was found in close proximity to the burial.

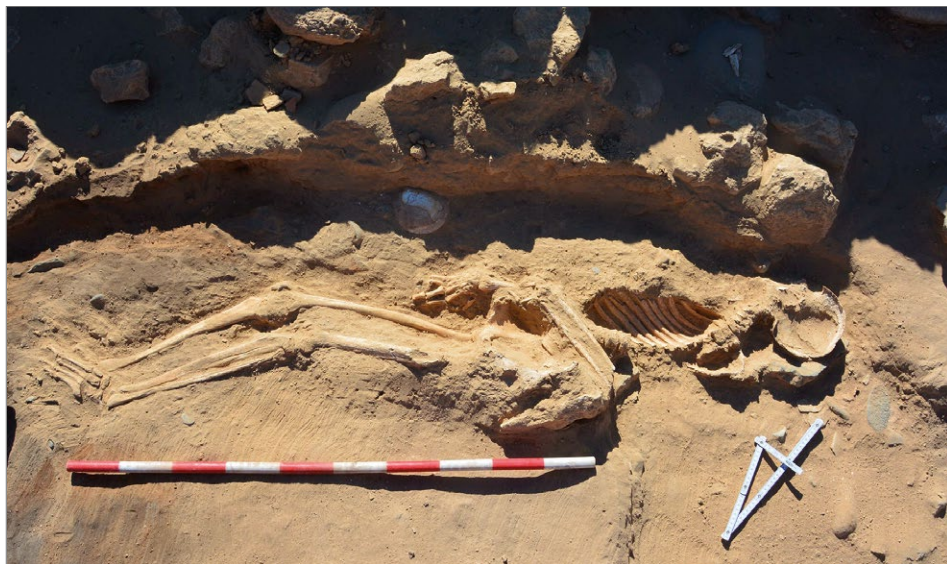


Fig. 21. Burial, Trench 18, Khan 1 in Lower Aynuna (PCMA UW Aynuna Project | photo J.A. Ciesielska)



Fig. 22. Burial, Trench 20, Khan 4 in Lower Aynuna (PCMA UW Aynuna Project | photo K. Juchiewicz)

In Trench 18, a narrow bench was uncovered along the south wall of the chamber. Two oblong boulders were set perpendicularly on top of a thick layer of dark grey ash next to the central part of this bench. Along with a few smaller stone ashlar adhering on the eastern side, the stones were later identified as marking a burial of an adult individual, probably male, approximately 35–45 years old at death [Fig. 21]. The human remains were deposited directly on the occupational level, extended, on the right side along an east–west axis. In similarity to the previous interments, the head of the individual pointed west, facing south. No major pathological changes were observed. Neither were there any burial goods with the exception of a single shell located between the burial and the stone mastaba, next to the pelvis. However, considering the context of the find, the intentionality of its placement in connection with the burial may be called into question.

Finally, the fourth set of human remains buried within the structures of the Lower Aynuna settlement was discovered in Trench 20 in the southern part of Khan 4. Again, the body was deposited directly on the walking surface, in this case a threshing floor made of brown silt mixed with an abundance of animal dung, chaff and other organic inclusions. No distinct superstructure covering the burial could be distinguished. The only installation connected to the burial was a linear arrangement of three stones along the right side of the upper part of the body [Fig. 22]. The skeletal remains belonged to an adult male, 35–45 years at death. The individual was interred supine in an extended position, with head pointing east and facing south, the right hand placed on the femur and the left on the pelvis. No burial goods were found.

SUMMARY AND CONCLUSIONS

A preliminary survey of the site revealed the existence of multiple cemeteries or at least clusters of tombs in the vicinity of two residential and commercial sites in Upper and Lower Aynuna. Necropoleis 1 and 2, which were tested between 2015 and 2017, are virtually impossible to date at this point in the face of the absence of any dating material of substance from the tombs excavated so far. It is reasonable, however, to link them with the first major occupation phase of the site between the 1st and 4th centuries AD, when the settlement functioned as a transit hub and customs post. Arriving cargo was probably unloaded from the ships, subjected to

import duties and loaded onto camel caravans to be transported further north to Petra and other Transjordanian markets.

While the archaeological material testifies to no major activity taking place at the site in the next 300 years, the first half of the 7th century AD marks not only a revival, but also a transition from the ancient commercial transit point of Leuke Kome to an agricultural production centre under the name of ‘Aynūna (Musil 1926: 124). This transition is in line with observations of economic processes taking place in the hinterland in the early Islamic period (Haiman 1995a; 1995b; Avni 1996; Magness 2003: 4–5).

Ultimately, the site became one of the stops on the Egyptian *hajj* route running from a Cairo rally point across the Sinai to Aqaba and south along the eastern Red Sea coast (Al-Ghabbân 2011). By the 9th century AD, however, the site must have already been deserted. It was then that it was heavily plundered.

Most of the burials from this phase recorded in Aynuna so far were found outside of regular funerary contexts and within the settlement boundaries. Uniformity in body position, extended supine or on the side and facing south, suggests the deceased were probably of the Muslim faith, which would place the burials at least after AD 622. Four out of the six were deposited directly on top of walking levels and covered with stone collapse from the surrounding walls, while only two were provided with 'proper' funerary monuments. All of the burials on the floors in Khans 1 and 4 would have had to be interred soon after the buildings went out of use, since no pits dug especially for the purpose of the interment were evidenced in the archaeological sequence; it would mean that the bodies of the deceased were deposited on relatively clean floors. The same can be said of the burial of a woman in Khan 5, although her body position indicates that she probably died on the spot and was then covered with some stones forming a small heap. Considering the fact that most of the residential structures were used only for a short period of time within this second phase of occupation, it is quite conceivable that the burials can

still be dated to the early Islamic period, that is, about the 7th–8th centuries AD. It is possible that some of the chambers had been sequestered for the purpose of burial, while the others were still in use, but no evidence of these being sealed off in any way was found.

The same may apply to the stone-cairn tombs in the middle of the courtyard of Khan 1. An analogous structure was found in Dawqira, 25 km southwest of Turayf. Based on the recorded pottery assemblage and by comparison to other domestic structures of a similar architectural layout, the building was identified as an early Umayyad house (Field 1960: 158–160). The authors of the publication of the Saudi Arabian Reconnaissance of 1976 have suggested that such structures, including the one in Dawqira, could have been connected to the pro-Byzantine Ghassanids in the centuries immediately preceding Islam. At the same time, however, they agree with an early Umayyad date being equally plausible (Adams et al. 1977: 37, see Pl. 10B).

Hitherto, the corpus of mortuary remains from the second occupation phase excavated at the Aynuna site is comprised mostly of chance finds in ambiguous burial circumstances. Considering their place in the stratigraphic sequence, as well as the arrangement of human skeletal remains, most of them can probably be dated to the early Islamic period. However, some time must have passed after the adoption of the new faith to allow for the custom of interment facing Mecca to spread among the local tribes.

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