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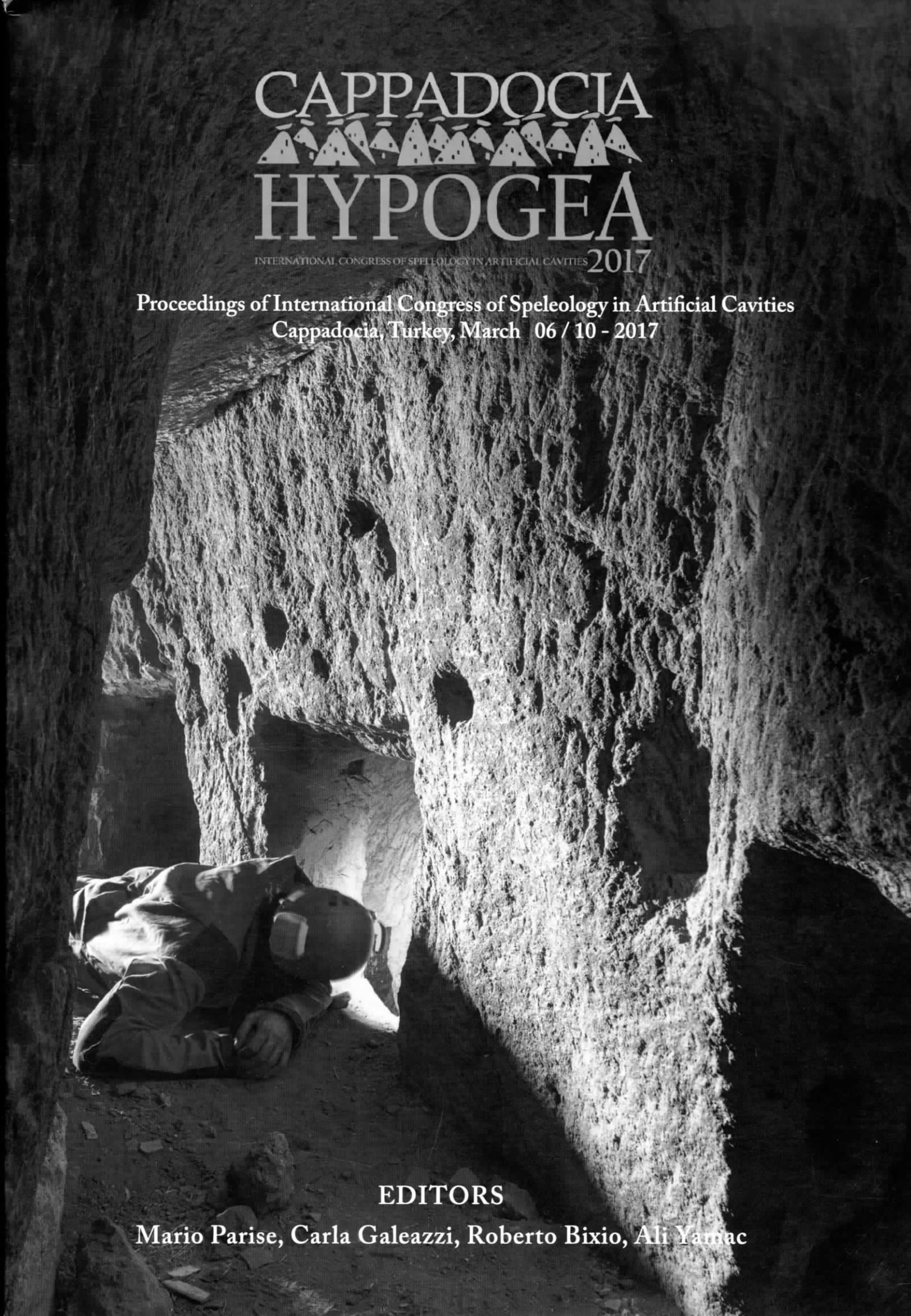

EDITORS
Mario Parise, Carla Galeazzi, Roberto Bixio, Ali Yamac

Underground Herodium: Guerrilla Warfare during the Bar Kokhba War (132–136 CE) under Herod's Royal Palace Fortress

Roi PORAT[1], Ya'akov KALMAN[1], Rachel CHACHY[1], and Boaz ZISSU[2]

[1] Herodium Expedition, Hebrew University, Jerusalem

[2] Bar-Ilan University

Abstract

Herodium, King Herod's Palace-Fortress, even though partly in ruins, served as a headquarter of the rebels' administration during the Second Jewish Revolt against the Romans (known also as the Bar-Kokhba War - 132–136 CE). Herodium was used not only as a fortress, but also as a base for guerilla warfare against the Roman units in the surroundings.

The heart of the guerilla warfare was an extensive network of tunnels hewn into the bedrock, and cut into the earthen fill of the artificial mountain and the dirt-covered structures on the slopes. The tunnels were hewn out starting from the palace fortress at the summit and dropped down the slopes in multiple levels towards camouflaged sally ports, intended for launching surprise attacks and for escape. In contrast to refuge systems in Judea, in which fighters had to crawl on hand and knees, the tunnels at Herodium were tall enough to permit a person to stand up and move fast. To conceal the existence of the tunnels the builders piled the debris into the large Herodian cisterns, into chambers and passageways in the foundations of the palace fortress, so that observers at a distance would not discern the heaps of dirt.

Digging through the fill of the artificial mountain involved a serious danger of collapse, forcing the rebels to shore up the tunnel walls and ceiling. To support the walls and ceiling of these tunnels, the rebels used wooden beams, stripped from the roofs of the Herodian palaces and structures.

Keywords: Herodium, Roman Judea, Bar Kokhba Revolt, Second Jewish Revolt, Underground Chambers, Tunnels, Cisterns

1. INTRODUCTION

The Herodium, King Herod's Palace-Fortress (Fig. 1), even though partly in ruins, served as a headquarter of the Bar-Kokhba's administration during the Second Jewish Revolt against the Romans (132–136 CE). Herodium, conveniently located at the edge of the Judean Desert, 13 km SE of Jerusalem, was used not only as a fortress, but also as a base for guerilla warfare against the Roman units in the surroundings. We learn about it not only from the accumulated archaeological data, but also from the documents revealed in the caves of Wadi Murraba'at (Fig. 2), which served at the end of the revolt as a retreat for refugees from Herodium and adjacent Judean villages.

Figure 1: Herodium: The palace-fortress looking south, from Lower Herodium (photo B. Zissu)

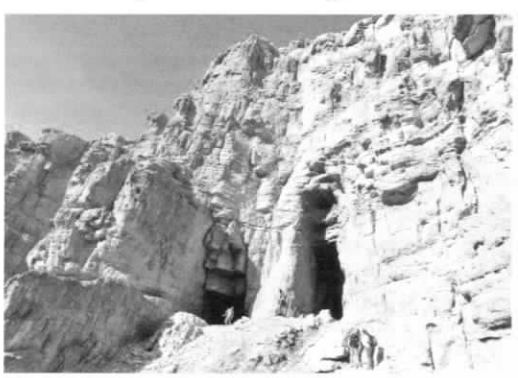

Figure 2: Wadi Murraba'at, caves 1 and 2 (photo B. Zissu)

Herodium and adjacent Judean villages. In these documents, the camp at Herodium ("מחנה שיושב בהרדיס") and its commander Yeshua son of Galgula are mentioned.

The impressive Herodian-era finds at Herodium have attracted most of the attention, shunting aside significant evidence from the Bar Kokhba War.

The archaeological data unearthed during over fifty years of excavations and the information provided by the documents found at Wadi Murraba'at allow us to reconstruct a fairly reliable picture of the events at Herodium during the war. This picture is different from what we find elsewhere in Judea and points to the unique nature of this site.

The famous description of the rebels' deployment during the Bar Kokhba Revolt provided by the Roman historian Cassius Dio fits the events at Herodium:

> To be sure, they [the Jews] did not dare try conclusions with the Romans in the open field, but they occupied the advantageous positions in the country and strengthened them with mines and walls, in order that they might have places of refuge whenever they should be hard pressed, and might meet together unobserved under ground; and they pierced these subterranean passages from above at intervals to let in air and light.

In conclusion Cassius Dio adds: "Fifty of their most important outposts and nine hundred and eighty-five of their most famous villages were razed to the ground" [*Historia Romana* 69.12.3–14.1, trans. Cary].

Herodium seems to be one of the "fifty most important fortresses" mentioned by Cassius Dio. His description of the defensive and offensive complex, which includes walls and an underground system, accurately reflects the situation at Herodium, as evidenced by the archaeological record. However, it appears that, in contrast to the popular guerrilla tactics employed by the rebels throughout Judea, with fighters emerging from the villages and rock-cut hiding places, which was primarily defensive in nature, at Herodium they conducted a coordinated offensive guerrilla warfare.

2. THE ARCHITECTURAL AND CHRONOLOGICAL CONTEXT

Greater Herodium, a construction project that engaged Herod for most of his reign, was a complex of palaces that included a fortress, an administrative center, recreational facilities and gardens, and a royal tomb compound (Fig. 3).

Three major complexes were built at Herodium during Herod's reign: the palace fortress at the summit; lower Herodium; and the structures on the northern slope, which include the royal theater and the burial site [Netzer 1981, 1999, 2006; Porat et al. 2015c].

The excavations of the past decade have revealed that, during his final years, Herod turned Herodium as a whole into a monumental burial site, with an enormous grave marker (the cone-shaped artificial mountain), a mausoleum on the northern slope, a palace fortress at the summit and a new monumental staircase running from the base to the summit, connecting all these structures [Netzer et al. 2009, 2010, 2013; Porat et al. 2015c].

The creation of the artificial mountain required dumping hundreds of thousands of cubic meters of rockfill on the slopes surrounding the fortress walls, which covered all the Herodian structures, except for the tomb compound which remained exposed. When the main opening to the palace fortress and the vaulted corridor leading to it were sealed, what was left resembled the vent of a volcano, closed in and fortified on every side.

During the decades between Herod's death and the Jewish War, the palace fortress was remodeled. The exact nature of its use remains unclear. It may have been garrisoned from time to time, without any significant rebuilding.

When the Jewish War broke out, the site became a rebels' stronghold until the Romans overran it in 71 CE. The insurgents divided the palace into residential and activity areas.

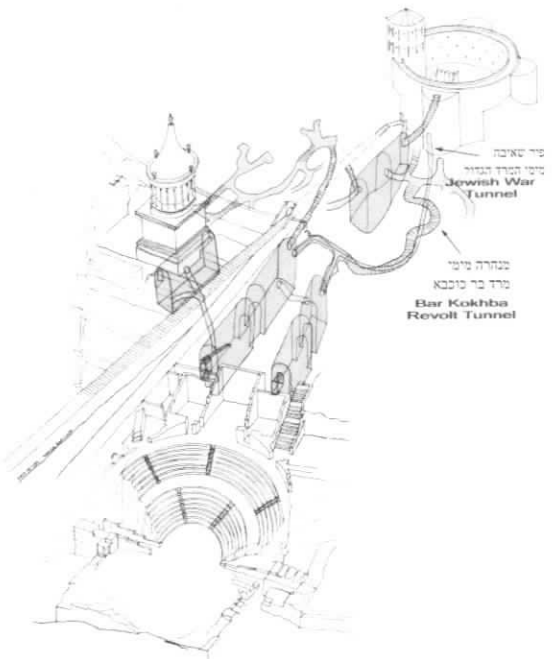

Figure 3: Artist's three-dimensional view of the tunnels, the cisterns, the monumental flight of steps, the royal mausoleum and the palace fortress (drawing R. Chachy)

They built various structures, such as ritual immersion baths (*mikvaot*), and dug a shaft and a tunnel into the mountain to create direct access to the cisterns on the slope [Netzer et al. 2011; Porat et al. 2015b].

The archaeological record suggests that a Roman garrison was briefly stationed on the spot, apparently during Trajan's reign or slightly thereafter.

After the Bar Kokhba War, the palace fortress remained in ruins for two and a half centuries, until the construction of a Byzantine monastery.

3. STUDIES OF THE BAR KOKHBA–ERA RUINS AT HERODIUM: A BRIEF REVIEW

The four seasons of excavation of the palace fortress by the Franciscans, directed by Virgilio Corbo (1962–1967), uncovered buildings and features dating to the Bar Kokhba Revolt (Fig. 4). The picture provided by these excavations is of extensive rebels' activity. However, technical and methodological limitations, notably the difficulty in clearly distinguishing remains from the Jewish War from those of the Bar Kokhba Revolt (in areas where no coins were found), made it difficult to present a well-founded picture of the site during the Second Revolt [Corbo 1963, 1967, 1989].

It seems that the rebels took advantage of the Herodian structures and built thin stone walls against them to divide the rooms into smaller units. These new walls were usually fashioned out of reused stones and architectural elements. The ceiling borne by these walls was generally light construction, supported by wooden beams.

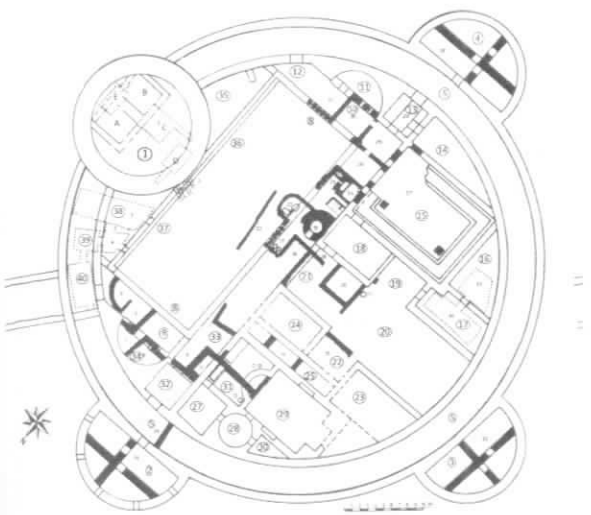

Figure 4: Map of the remains from the two revolts against the Romans, as published by Corbo [1989, Map 2]. The circled numbers refer to the Herodian buildings shown on Corbo's Map 1

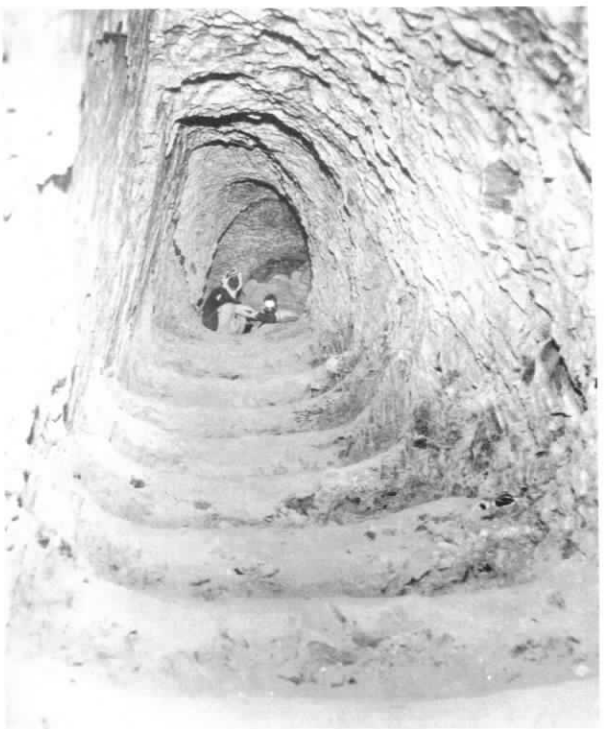

Figure 5: One of the stepped tunnels, during Foerster's excavation (courtesy G. Foerster)

The rebels used these structures mainly as living quarters, but also for storage, assembly, and worship. They include water installlations, weapons forges, and cooking and baking facilities.

Corbo's excavations in the southern exedra unearthed a series of buildings of this type. A large hoard, comprising 822 bronze coins restruck by the Bar Kokhba administration, was found under one of the floors [Spijkerman 1972]. Three human skulls were also found in this room.

Other walls built by the rebels served to stabilize debris from earlier periods in order to make it possible to use the adjacent areas. These include walls built of debris and re-used architectural elements near the main gate between the entrance hall of Herod's palace and the peristyle courtyard.

Study of the tunnel system began in 1968, under the direction of Gideon Foerster (Fig. 5) [1969, 1970, 1973]. The underground system was partly excavated by Ehud Netzer and Shimon Arazi between 1973 and 1975 (Fig. 6) [Netzer 1988].

From the 1970s until nowadays, the Herodium excavations team conducted extensive excavations of upper and Herodium, where they uncovered varied artifacts, elements of the guerrilla system as well as dramatic evidence of the battles that took place in the dying days of the revolt.

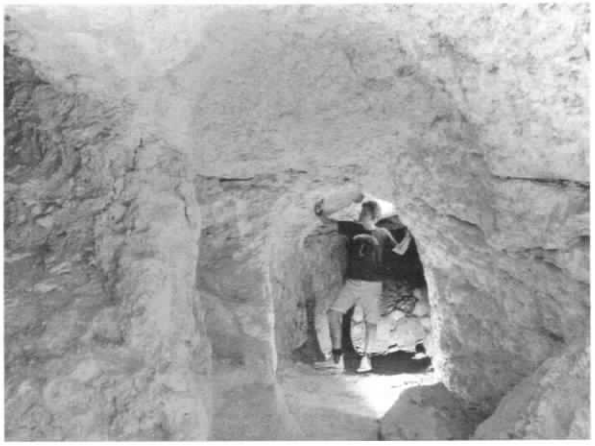

Figure 6: Typical portion of tunnel excavated by Netzer, Arazi, and the Kfar Etzion Field School (photo B. Zissu)

4. THE ARCHAEOLOGICAL RECORD

The main archaeological findings include (Fig. 7):

(1) Built and hewn-out remains; this category falls into two related and overlapping groups:

(a) an extensive system of offensive and defensive tunnels dug out and constructed below the surface of the mountain, with sally ports on the slopes. This system of tunnels stands at the center of this paper.

(b) structures that were adapted and re-used by the rebels within the ruins of the palace fortress, as explained above.

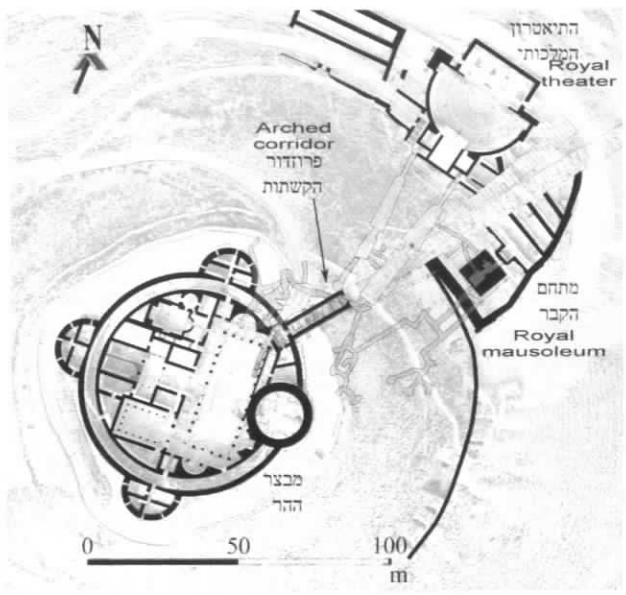

Figure 7: Plan of the Bar Kokhba revolt structures and tunnels, superimposed on an aerial photograph and the plan of the Herodian structures (photo Tatzpit; processing: M. Edelkop and R. Chachy).

(2) Various (portable) archaeological artifacts;

(3) The archaeological context: evidence of battles and associated destruction.

4.1. The Underground Tunnels

An extensive network of tunnels was hewn into the chalk of the mountain (gutting the cisterns of the Herodian palace), and cut into the earthen fill of the artificial mountain and the dirt-covered structures on the slopes. The tunnels in the interior of the mountain were hewn out starting from the palace fortress at the summit and dropped down the slopes in multiple levels towards camouflaged sally ports, intended for launching surprise attacks and for escape if necessary [Netzer and Arazi 1985; see Fig. 7]. The tunnel system was meant for both offensive and defensive purposes and was a local improvement of guerrilla tactics that permitted strategic control of the slopes. Implementation of this offensive and defensive strategy required rapid movement within the tunnels. So, in contrast to refuge systems in Judea, in which fighters had to crawl on hand and knees, the tunnels at Herodium were tall enough to permit a person to stand up, equipped with steps where they sloped, and had no tight passages. To conceal the existence of the tunnels and sally ports from the Romans, the builders piled the debris from their excavations in earlier chambers inside the mountain or in the building at the summit, so that observers at a distance would not discern the heaps of dirt. Most of the material that was excavated was dumped into the large Herodian cisterns and into the northern section of the vaulted passageways in the foundations of the palace fortress. The four Herodian cisterns were breached by tunnels (Fig. 8) and taken out of service when they were filled with hewing debris. However, there were four other cisterns under the palace fortress. It appears that only two cisterns, with a total volume of about 200 m^3, were in use during the Bar Kokhba revolt.

In a number of places where the tunnel-diggers encountered flint bands that were too hard to bore through they were forced to abandon a tunnel midway and take an alternate route.

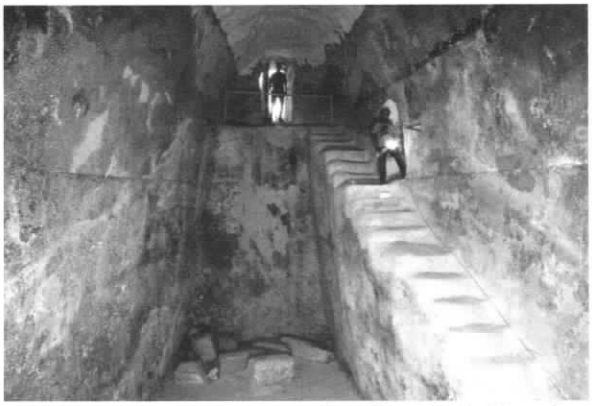

Figure 8: The largest cistern, looking north. Note the tunnel that breaches its wall on the right hand side (photo B. Zissu)

This is why, for example, the tunnel system that extended eastward was never completed. By the opposite token, digging through the fill of the artificial mountain and through creviced and crumbling rock involved a serious danger of collapse, forcing the rebels to take steps to shore up the tunnel walls and ceiling. Approximately one-third of the total length of the tunnels currently known was dug through such fill. To support the walls and ceiling of these sections, the rebels used stone or mud walls and wooden beams. Many of these beams were found in an excellent state of preservation. They were frequently set in notches cut into the rock or at regular intervals in the stone or mud walls, creating a pi-shaped (Π) support structure for the tunnel ceiling. In other cases, the ceiling itself was made of closely spaced wooden beams. Sometimes beams were placed close together in the supporting walls. Such beams were also used to build stairs and facilitate passage between levels. To supply the many wooden beams needed to support the tunnels, Bar Kokhba's men stripped the roofs of the Herodian-era structures in the palace fortress.

There were entrances to the tunnels from inside several levels of the palace fortress, near the structure's original entrance area. One of the openings to the upper level of the tunnels (dug out of the earthen fill) broke through the wall

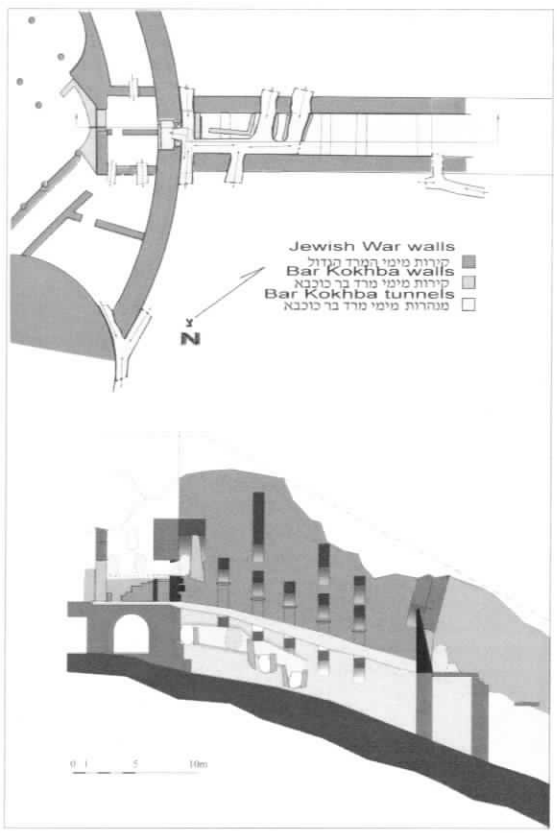

Figure 9: Plan and cross-section of the entrance hall to the palace fortress during the Bar Kokhba Revolt

Figure 10: Breaches in the eastern wall of the fortress entrance hall. Burned wooden beams in a collapsed wall. The soot-covered remains of the tunnels that pierced the walls of the vaulted corridor and the supporting wall that protected the tunnels from the earth fill in the sealed-off portion of the corridor are visible on either side of the blocked entranceway

that had been built to seal the main gate of the fortress near the end of Herod's life. Two tunnels extend from here—one going west and the other east—and pierce the walls of the vaulted corridor (Fig. 9). The entrance hall (whose opening to the courtyard was sealed, as noted above) was apparently penetrated through holes in its eastern and western walls (Fig. 10). Another opening to this section of the tunnel system was discovered just north of the eastern tower, cutting through the palace fortress's thick retaining wall. Right inside the opening, the excavation (during 2014–2015 season) turned up two Bar Kokhba coins as well as arrowheads and ballista projectiles. The main access to the lower parts of this tunnel system seems to have been via a staircase leading from the northern part of the palace courtyard at the foot of the round eastern tower down to the "middle cistern," from which tunnels extended in every direction [Netzer and Arazi 1985].

The top of this staircase, built in part of ashlars, architectural members and sections of the cornices of Herod's building, extended far above the original level of the garden and apparently reached the level of the rebels' activity above the cellars north of the eastern tower, which was recently excavated [Corbo 1967, 1989]. Other entrances to the tunnel system were located in the northern part of the vaulted cellars in the foundations of the outer walls of the palace fortress. These included passages (supported by wooden beams) between the two levels of vaults (Fig. 11) and an opening that led to the deeper underground tunnel system [Netzer and Arazi 1985].

4.2. Sally Ports Emerging from the Tunnels onto the Slopes

To date, sally port openings have been documented only on the northern slope, on several levels (Fig. 12).

Figure 11: A passageway supported by wooden beams, which linked the two vaulted cellars in the foundations of the northern section of the outer walls of the fortress. The upper vault is covered with soot from a major fire

The builders occasionally took advantage of the remnants of old structures and walls on the slope and integrated them into a sally port or used them to hide the opening. For example, three of the four original mouths of the four known cisterns that were hewn out of the mountain during Herod's time were used as sally ports; significant labor was invested to open an additional sally port through the eastern cistern (see below). The old walls and the rockfall on the upper section of the tomb compound on the slope were also used to build and hide the sally ports. One of them was discovered in the 1970s, just south of the destroyed mausoleum; another was recently found along the eastern wall of the structure's foundation. The ports were hewn into the rock and the older accumulated strata, with walls alongside to conceal the exit. Additional sally ports, all of them in a state of collapse, were discovered above the "slanted wall" above the mausoleum [Porat et al. 2015a].

Inside the eastern cistern, beneath the mausoleum, evidence was found of the rebels' attempts to break through to the surface through the mouth of the cistern (Fig. 13). They were frustrated, it seems, by the massive rocks from the destroyed mausoleum that had fallen and totally blocked the mouth of the cistern. As part of their efforts, the rebels

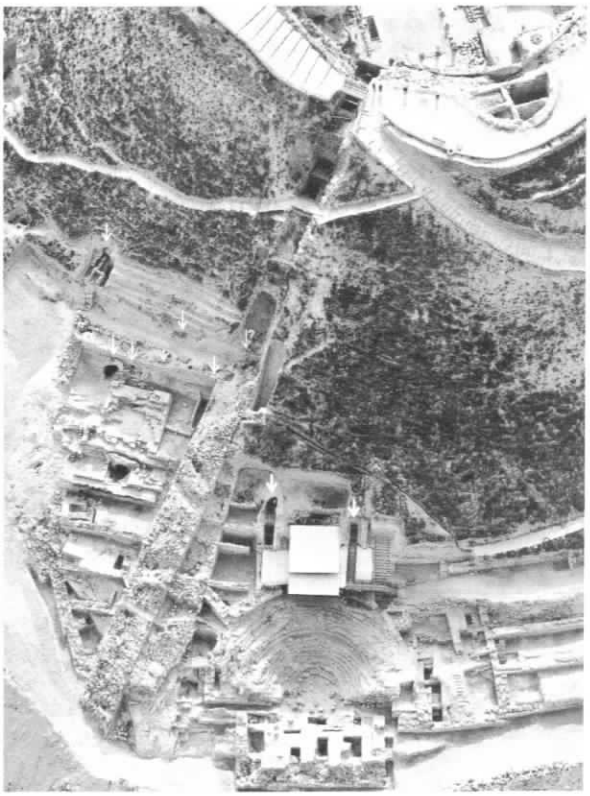

Figure 12: The layout of the sally ports on the eastern slope, superimposed on a diagonal aerial photograph (photo Tatzpit)

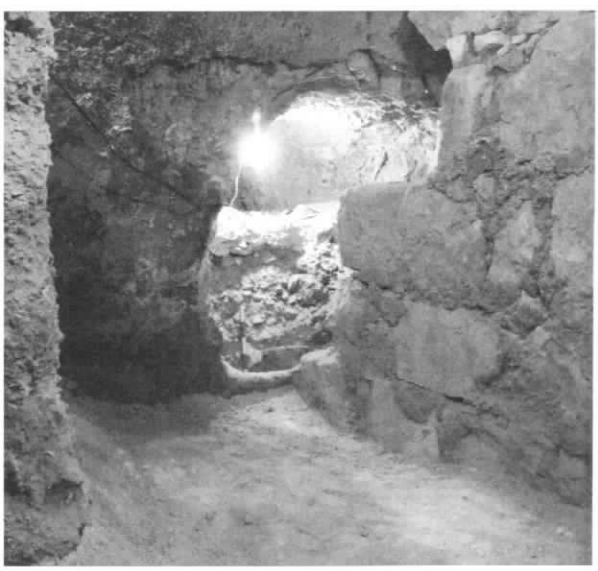

Figure 13: A tunnel that ran out from the main cistern, at the point where it breached the western wall of the eastern cistern

removed various architectural elements of the mausoleum from the inside the cistern and must have hauled them out towards the west through one of the tunnels leading to the central cistern, which is where they were discovered.

4.3. The Tunnels Uncovered During the 2014–2015 Excavations

During the course of the excavations conducted in 2014-2015, which focused on the area at the entrance to the palace fortress and its entrance hall, many segments of attack tunnels that pierce the walls of the structures and the earth fill inside and outside them were discovered (Fig. 9). Tunnels ran through the retaining wall between the eastern tower and the entrance hall of the palace fortress; they seem to have been the direct or indirect cause of the total collapse of this segment of the wall.

By the entrance to the palace fortress we found two tunnels that cut through the walls of the arched corridor that led to the gate. Under the southernmost arch of the corridor, we found a tall support wall, which ran the length of the corridor to the height of the arch and served to hold back the fill that blocked off the corridor so it would not collapse into the tunnels dug in the fill between the supporting wall and the gate (Fig. 10, above). The upper section of the Herodian blockage at the entrance to the palace fortress was apparently breached at this stage to permit access to the tunnels. The support wall was built of dozens of crosshatched wooden beams, mixed with mud and small rocks (Fig. 14). The wall was topped by a large wooden plank (3 m × 0.6 m and 4 cm thick), carefully fashioned of Jerusalem pine (*Pinus halepensis*), as identified by Dafna Langgut. We assume that the Bar Kokhba rebels took this impressive piece of lumber, like most of the other beams used in the tunnel system (most of them of cypress wood—*Cupressus sempervirens*), from various Herodian-era buildings within the palace fortress.

We obtained indirect evidence for the removal of the wooden beams from the Herodian fortress during our 2007 excavation in the perimeter corridor south of the synagogue. Under rockfall in this area, we excavated layers of dirt that appear to have resulted from a landslide and contained floors and ceilings of the upper stories, one atop the other. Judging by these finds, it is likely that some of the floors that collapsed contained coins from the Jewish War and others had coins from the Bar Kokhba revolt. At the time of the collapse, which presumably occurred because of the removal of the wooden beams from the ceiling of the corridor (or perhaps in a later earthquake), the floors collapsed in a heap, which resulted in a mix of layers because the rebels in both revolts worked on top of the floors of the rooms that had collapsed. These layers of dirt contained, *inter alia*, a Year One Bar Kokhba coin with a palm branch and lyre. Another Bar Kokhba coin, this one from the undated series, was found in situ in the upper layers [Porat, Netzer, Kalman, and Chachy 2010: 100–102].

Figure 15: A tunnel that was dug on the lower level of the arched corridor below the level of the lower arches, which was filled with earth. This section of tunnel had rough stone walls and broke through the corridor wall towards the upper cistern—the "middle cistern" (photo S. Tiram)

Similar evidence was found at the base of the northern open tower. In the large cellar, on the level of the vaulted cellars below the outer walls of the fortress, we surveyed a close-packed pile of pilaster drums that must have fallen from the top of the tower (about 20 m above) through all the tower's stories, without being stopped by the ceilings that had been dismantled. Even the narrow interior walls inside the tower had shifted and sunk slightly, apparently in part due to the removal of the wooden beams that had fastened them to the structural walls of the tower.

On the lower level of the arched corridor, under the level of the lower arches, we found stretches of tunnels breaking off a central tunnel that ran the length of the corridor and cut through its walls at four different points (Fig. 9). The fact that the tunnels ran through the corridor, which had been blocked with dirt, forced Bar Kokhba's men to employ many supports, which consisted of relatively thin stone walls and many wooden beams (Fig. 15). We make special note of a tunnel discovered below the entry to the palace fortress, whose ceiling was made entirely of horizontal beams that were placed one next to another and rested on wooden uprights (Fig. 16).

While digging in the artificial mountain east of the corridor, we discovered another tunnel that ran the length of the eastern wall of the corridor and of the "later staircase" and apparently led to the sally ports found on the slopes above the tomb compound. Note, however, that most of the sally ports of the tunnels discovered during the recent excavation seasons have yet to be located.

4.4. The Distribution of the Tunnels

Several noteworthy points emerge from the updated three-dimensional map of the distribution of the underground tunnels known as of today (Fig. 7). First, they are concentrated on the northeastern slope, alongside the path up

Figure 16: A section of tunnel roofed with wooden beams on the lower level of the arched corridor, below the fortress gate. View from the north (photo S. Tiram)

the mountain on the monumental staircase. Second, many of the tunnels open out of the old system of cisterns on the northern slope; the detritus from their excavation was dumped into the cisterns, the hewn-out sections were used for passage, and the openings on the north were used as sally ports. Third, there is a phenomenon of parallel tunnels that open onto the slope in close proximity. This is apparently meant to allow a concentrated attack, in which many fighters can converge on a point quickly and then withdraw into the fortress. In addition to the tunnels integrated with the cisterns, another group of tunnels emerge near the destroyed royal burial ground (Fig. 12). The area of the mausoleum is the only section of the slope that was not covered by the dirt fill that created the artificial mountain, so here the rebels did not have shore up the tunnels against the fill. As Netzer and Arazi [1985] demonstrated, the tunnel diggers were unable to break through to the eastern slope because of the high layer of flint in this sector [Ilani et al. 2015].

4.5. The Date of the Underground Tunnel System

The dating of the tunnels to the Bar Kokhba period is based on their stratigraphic relationship with earlier (mostly from the Jewish War) and later (Byzantine) finds. In several places, however, Bar Kokhba coins and additional artifacts from the second revolt make it possible to date the tunnels directly. In light of the new excavations, which have provided a better knowledge of the characteristics of the Bar Kokhba–period tunnels, it is also possible to date tunnel segments on the basis of typological considerations, such as the method of hewing and supports. In general, it seems that all the tunnels of this type at Herodium can be dated to the Bar Kokhba period with a high degree of probability.

As an example of the stratigraphic relationship between the tunnels and earlier remains, Netzer and Arazi [1985] emphasized that many of the tunnels cut through the steep shaft that descended from the palace fortress to the lower level of cisterns and has been dated to the days of the Jewish War. This shaft was meant to make it possible to draw water from inside the fortress without having to go outside.

Another shaft, in the northern section of the fortress courtyard near the entrance, was apparently cut during the Jewish War and used to draw water from the "middle cistern." These shafts permitted access to the water source without the need to leave the fortress to access the cistern openings on the slopes, which would have entailed exposure to the enemy.

Another example relates to the remains of the staircase that descended from the fortress courtyard to the upper section of the tunnel system (through the "middle cistern"). The head of this staircase, which Corbo excavated (Fig. 4), was built inside a layer of rockfall from the end of the Jewish War, which covered the palace courtyard, as well as an adjacent *mikveh* constructed during the the Jewish War (see below). A Bar Kokhba coin discovered in the debris above the staircase corroborates the dating to the Bar Kokhba period [Porat et al. 2010; see also discussion in Grossberg et al. 2011, and Corbo 1967]. When Bar Kokhba's men were building the staircase, they damaged a water system that had been built in the northeastern section of the palace courtyard inside the fill of the garden.

That system was apparently connected to the nearby cistern installed in one of the rooms of the palace, just the north of the base of the eastern tower [Corbo 1967: 95–97, Map 1, No. 38; all room numbers in the text are based on Corbo's numbering on this map, unless stated otherwise. See also Fig. 4]. The construction of this cistern, which altered the original purpose of this room and eliminated the doorway to the next room on the north (No. 39), was undertaken at a later stage in the history of the Herodian palace—apparently when the entrance was sealed at the end of Herod's reign.

The water system may also be related to the drainage channel, also from late in Herod's life, which was recently discovered near the entrance to the palace and led through the arched corridor to one of the cisterns on the slope. Corbo assumed that the mouth of this cistern (No. 38, which was completely clean) was sealed during the Rebellion [Corbo 1989: Figs. 53–54]. If so, it was part of the steps taken by the rebels when they created the

aforementioned staircase in order to descend into the tunnel system [Corbo 1967]

The dating of the sally ports near the tomb complex on the northern slope is also based on stratigraphy. The sally ports cut through remains from the Jewish War and the garbage dumped there afterwards. Moreover, they are clearly part of the layer, dated to the second revolt, that covered the tomb compound and included hundreds of ballista stones.[1]

The excavation allowed us to accurately date the two openings from the palace fortress into the upper section of the tunnel system. Two Bar Kokhba coins were found next to the breach alongside the eastern tower (and north of it). In addition, the opening into the tunnels cut through the material blocking the main gate (above) is on the same level as the activity area in the entrance hall that was fixed up over the debris and the archaeological layer that was formed there during the interbellum period (this follows from the coins found in it; see Fig. 10). A burnt layer in the entrance hall, beneath scorched and collapsed wooden beams and building stones, is the result of the Roman capture and destruction of the fortress at the end of the war.

4.6. The Tunnels in the Built-Up Area of the Palace Fortress and their Date

The excavations in the palace fortress have uncovered a number of short tunnels that were cut through walls; these linked the rebels' activity areas to one another and to the system of underground tunnels (Fig. 17). One tunnel of this type ran eastward from Room 13, in the southern part of the fortress, into a storage room from the same period that was located in a barrel vault in the southeastern foundations of the outer walls of the fortress (Fig. 18). This tunnel is entered from a room southeast of the synagogue (No. 14) and descends through an opening in its eastern wall to Room 13. The packed earth floor of this tunnel yielded a Bar Kokhba coin (from the undated series decorated with a lyre and a palm frond; see Porat et al. 2010), and another from Hadrian's reign (119/120 CE). The continuation of this level of activity, dated to the Bar Kokhba period, was discovered by Corbo in Room 13 (Locus 29). Corbo reported finding layers of ash and Bar Kokhba coins here [Corbo 1967; Spijkerman 1972]. Another opening down to the storerooms in the vaulted cellar was pierced from the courtyard level, through the lower section of the Herodian gate in the southeast of the large peristyle courtyard (No. 12) and adjacent to Room 31, which Corbo dated to the revolt.[2] An attempt was apparently to dig a tunnel leading

[1] For more on the remains from the Bar Kokhba Rebellion in the tomb compound, see Porat et al. 2015. For more on the pottery finds, see Gärtner 2015; for more on the weapons, see Stiebel 2015.

[2] This opening was exposed by antiquities looters during the 1980s, when the wall that blocked off the opening against the fallen rock and dirt in the outer wall of the fortress was breached. These remains were documented by Netzer and Radovan.

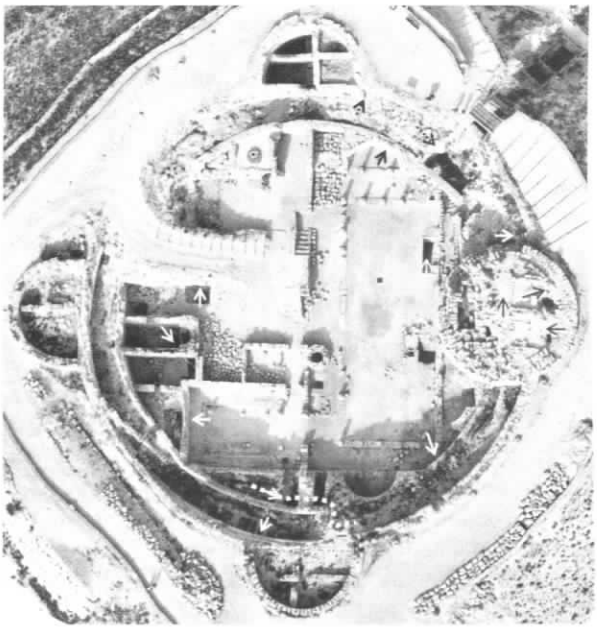

Figure 17: The locations of the breaches in the walls and the short tunnels within the palace fortress (photo Tatzpit)

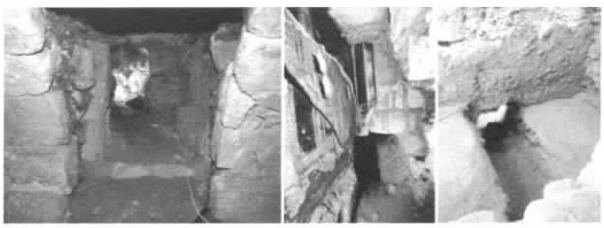

Figure 18: A tunnel that ran from Room 13 to the vaulted cellar in the foundations of the southern section of the outer walls of the fortress. Right: view eastward; center: in the passage adjacent to the original wall of Room 13, which is decorated with a fresco (photo Z. Radovan); left: view from within the cellar to the north

south from the storeroom in the vaulted cellar to outside the fortress. However, a cave-in in this area forced the rebels to shore up the section of wall that collapsed and abandon this initiative (Fig. 19).

Another short tunnel was discovered in the cruciform courtyard (Room 20, in the western section of the palace), emerging northward from a room the rebels built in the northern arm of the courtyard [Corbo 1967]. The tunnel was cut through the courtyard's Herodian wall towards the bathhouse to its north (Room 25). The floor of the tunnel is approximately one meter lower than that of the room, which it may have cut through at some point during the revolt. A Year 2 Bar Kokhba coin and an intact chalk vessel were found on top of the Bar Kokhba stratum southwest of this room, which the rebels created on top of a

Figure 19. Inside the vaulted cellar on the southern side of the outside walls of the fortress. The supporting walls are of stone, mud, and wood were apparently required by a collapse of part of the double perimeter wall caused by the opening of a tunnel.

thick layer of rockfall [Porat et al. 2010]. A chapel was built atop and within this layer during the Byzantine period [Corbo 1967].

Several more attempts to dig short tunnels of this type were discovered in the surviving upper section of the eastern round tower, but none of them was finished. These tunnels were hewn out of the tower's massive core and may have been intended to lead to the eastern slope. One of the tunnels cut through the Herodian floor that survived at the top of the tower in its northern section.[3]

Another attempted breach can be seen in the southeastern cellar, which was built in Herod's time in the sealed upper section of the tower. Corbo's excavations turned up significant remains of activity from the Bar Kokhba period in the large cistern in the tower's stone core, evidenced by coins restruck by the rebels and several burials from the days of the revolt. Several attempts to hew out tunnels of the aforementioned type are visible in the cistern's walls and floor [Corbo 1967].

Based on the height of the eastern tower relative to its surroundings, we assume that it served the rebels as a dominant position from which it was possible to observe the advance by the enemy forces and direct the guerrilla fighters, who then launched attacks through the tunnels (see below). This assumption explains the attempts to dig tunnels from the eastern tower.

A hole in the western wall of the synagogue led to the room on its west (No. 16). During the Byzantine period, this opening was sealed and supported by a wide wall so that the monks could use the former synagogue.[4] A doorway was cut from rebel living quarters established in the northern portico of the palace (No. 7) towards the perimeter corridor that runs around the ground floor of the outer wall of the fortress; this made it possible to reach the entrance hall through a breach in its western wall.[5] Two additional holes were cut in the southern wall of the western arm of the cruciform Herodian courtyard (between Rooms 20 and 17); at least the easternmost of them was cut before the chapel was built there during the Byzantine period.

5. EVIDENCE OF BATTLE AND DESTRUCTION: THE END OF THE REVOLT

Various finds reveal that the offensive and defensive system described above was also actively used throughout the rebellion. Ultimately, the fortress was captured by the Romans and destroyed.

Noteworthy among the evidence attesting to the events, are the distribution of weapons and ammunition, the many signs of fire, and the massive collapse and destruction evident throughout the fortress. The skeletal remains, as well as evidence for refugees from Herodium in the refuge caves of Wadi Murabba'at, attest to the rebels' final fate.

The distribution of the ballista stones, as studied by Stiebel [2003, 2005, 2015] suggests a massive bombardment of the rebels at the summit and around the exits of sally ports on the slopes. It is reasonable to assume that the Roman forces held dominant artillery positions surrounding the mountain, such as on the flat hill to the east.

When the Romans penetrated the fortress, they deliberately destroyed walls and tunnels. The concentration of rolling stones at the foot of the mountain may indicate the direction of the Roman attack. It appears that the caches of rolling stones found at the top of the slope, outside the walls near the west, north, and east towers, attest to preparations to turn back attacks from those directions.

Signs of a major conflagration—including charred wooden beams and a great deal of ash and soot—were found throughout the entrance to the palace fortress and the area where the rebels were active. These finds are apparently evidence of the Roman capture of the fortress. The fire in the entrance hall was so strong that some of the stones turned to lime. There is evidence of the effects of another huge blaze in the cellars of the northern section of the outer walls, and near the fortress entry.

Fragmentary skeletons were found in several parts of the fortress. Corbo's team found three human skulls in the rebels' rooms next to the southern exedra, near the location

[3] This opening was sealed during the Byzantine period, when a new mosaic floor was laid down; the floor was uncovered by Corbo and again during our 2012 excavation [Corbo 1967].

[4] For more on the Byzantine wall, see Corbo 1989: Map 3, No. 16 and Fig. 95; see also Fig. 21 in the present article. This wall was removed in the late 1960s.

[5] The breach was made above an opening in this wall, which was sealed during the Jewish War. The perimeter wall later collapsed into this breach (Fig. 22).

of the large coin hoard. Human remains were found in the large cistern in the eastern tower, alongside Bar Kokhba coins. Several graves, which also apparently date to this revolt, were found in several locations.

The artifacts and documents found in the Murabaʿat caves indicate that a large group of fighters and rebels managed to escape Herodium. The finds at Wadi Murabaʿat caves [de Vaux 1961; Benoit et al. 1961; Porat 2015] and at al-Mazia cave [Krispil 1983; Patrich 1986; Frumkin 2015] suggest that the escape had been prepared in advance.

6. DISCUSSION AND CONCLUSIONS

The archaeological record at Herodium suggests that an advanced and unique system of guerrilla warfare, which integrated a well-fortified and visible fortress, was prepared. It appears that Herod's palace fortress stood empty before the war; The rebels occupied the site and reestablished it as a military headquarter and an administrative center.

The integrated system established at Herodium differs from the typical Judean hiding systems, prepared underneath existing villages [Kloner and Zissu 2002; Zissu and Kloner 2014; Eshel and Zissu 2015].

The overall picture that emerges from the Judean sites suggests that the rebels had learned the lessons of the Jewish War. Unlike the first revolt, when the rebels tended to barricade themselves in settlements and fortresses, the Bar Kokhba rebels generally avoided prominent strongholds. They opted for guerrilla warfare in the open field and hiding in caves, avoiding direct confrontation.

The guerrilla warfare in Judea seems to have been based on popular enlistment and fighting from within villages. In other words, the revolt in Judea was a popular war that used guerrilla tactics primarily for defensive purposes and sought to wear down the enemy rather than defeat him. Cassius Dio provides support for this reading of the rebels' strategy.

The activity within the Herodium fortress during the Bar Kokhba revolt, which combined massive fortifications with a tunnels system that was clearly offensive in nature is outstanding. It is also distinguished by its scale and sophistication. In contrast to the strategy of defensive guerrilla operations followed in most of Judea, here Bar Kokhba apparently developed offensive guerrilla tactics intended to hurt the enemy and wear them down. In other words, Bar Kokhba and his fighters prepared Herodium as a base for regional guerrilla warfare.

As noted, the tunnels at Herodium permitted the fighters to make surprise exits from the hidden openings on the slopes. The guerrilla tactics apparently gave the rebels effective control of the steep slopes. Lookouts could direct the fighters to the exits that lay near the Romans' ascent routes. By taking advantage of the element of surprise and the advantage of elevation, a few fighters could engage a much larger Roman unit.

Effective use of this defensive-offensive strategy required that the tunnels be constructed in a way that permitted rapid movement. The short tunnels that were dug within the built-up area were meant to be used for fighting in the built-up area; they also permitted escape from the fortress should the enemy gain the upper hand.

To sum up, the archaeological assemblage attests to fierce resistance and to the bitter end of the fortress. The finds found in the Murabbaʿat caves suggest that a large group of rebels managed to escape Herodium and escape to the desert. Finally, the Roman army overran them, too, thereby bringing the war in Judea to an end.

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