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לארכיאולוגיה והיסטוריה של אזור ההר
ולחקר חללים תת־קרקעיים

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A Monumental Fortification Tower and Militaria: Late Hellenistic and Early Roman Military Architecture and Equipment Discovered at Khirbet el-Maqatir, Israel

Mark A. Hassler, Katherine A. Streckert and Boyd V. Seevers

Abstract

At Khirbet el-Maqatir in the northern Judean highlands, archaeologists discovered a monumental fortification tower and military equipment from the Late Hellenistic and Early Roman periods. The tower's megaliths, thick walls and massive base made it one of the largest towers in Israel during the late Second Temple period. The military equipment at the village emerged gradually throughout the archaeological project, and included hobnails, slingstones and ballista balls, a sling pellet, arrowheads, a javelin head, metal blades, and equestrian fittings. All these elements fit within their historical and cultural milieu, and reinforce the excavators' conclusion that the settlement was founded in the second century BCE, demolished by the Romans in 69 CE during the First Jewish Revolt, temporarily occupied by Roman soldiers soon thereafter, and then resided in by a small Jewish population that reused the hiding complex during the Second Jewish Revolt (132–135 CE), before being abandoned until the Late Roman and Byzantine periods.

Keywords: military, tower, Early Roman, Hellenistic, Jewish Revolt, Khirbet el-Maqatir

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Introduction

Khirbet el-Maqatir lies in the central hills 16 km north of Jerusalem and immediately east of Route 60, near Deir Dibwan. The site is 866–878 m above sea level, with a view of the Mount of Olives, Jordan Rift Valley, Transjordanian highlands, Dead Sea, and nearby Jabel Abu ʿAmar. The ancient occupational history of the site includes a small Bronze Age fortress, a modest Iron Age I–II settlement, a Late Hellenistic (ca. 100–63 BCE) and Early Roman (ca. 63 BCE–69 CE) fortified village, and a Byzantine ecclesiastical complex (Byers et al. 2016; Wood 2016). The Late Hellenistic and Early Roman village (fig.1) covered approximately 2 hectares (ITM 17378/14690) and featured a monumental fortification tower. The tower employed megalithic construction and thick walls (some of them 2.5 m thick). The massive base (28×16 m = 448 m^2) made this one of the largest towers in Israel during the late Second Temple period. The base was even bigger than that of Jerusalem's Phasael Tower, as described by Josephus (*Jewish War* 5, 166), and the largest tower at Herodium (Netzer 1981, 92–96). The militaria at the site included hobnails, slingstones and ballista balls, a sling pellet, arrowheads, a javelin head, metal blades, and equestrian fittings.

Figure 1: Late Hellenistic and Early Roman ruins (center left) at Khirbet el-Maqatir, view to the north, 2016 (photo: D. Silverman)

The fieldwork spanned 22 years and 15 seasons, with an intermission (1995–2000 and 2009–2017).[1] The fortification tower was first published by Brian Peterson and Scott Stripling (2017, 63*–68*). Here we present more detail, including the numismatic evidence, carbon-14 results, and architectural data. We show how the Early Roman fortification tower and the seven types of Late Hellenistic and Early Roman military artifacts fit within their ancient setting. Our research adds to the body of knowledge concerning the military architecture and culture of the southern Levant in the late Second Temple period.

The Fortified Tower

Two towers bolstered defenses at the northern end of Khirbet el-Maqatir. In 2015 and 2016 the larger tower (28×16 m), which abutted the town's perimeter wall (fig. 2), was excavated in order to reveal its blueprint, purposes, and date. From topsoil to bedrock, the greatest depth excavated was 2.4 m.

Figure 2: Tower (center) and fortification wall (left), 2016 (photo: B. Kramer)

1 The excavation directors were Bryant Wood (1995–2013) and Scott Stripling (2013–2017). Wood's license numbers by year: 0719 (1995), 0744 (1996), 0769 (1997), 0806 (1998), 0842 (1999), 0896 (2000), 1163 (2009), 1188 (2010), 1217 (2011), 1223 (2012), and 1248 (2013). Stripling's license numbers by year: 1248 (2013), 1275 (2014), 1303 (2015), and 1327 (2016–2017). Mark Hassler is the project's director of publications. The excavation was sponsored by the Associates for Biblical Research under the auspices of the staff officer of the Civil Administration of Judea and Samaria.

The excavators uncovered five rooms (figs. 3–4). Room A had three doorways: the outer doorway of the tower and two internal doorways providing access to Rooms B and C (fig. 5). A lower socket stone, found in situ and measuring 50×50 cm, supported a door in Room A. Just above the socket stone, the metal detector found an arrowhead stuck in the wall.

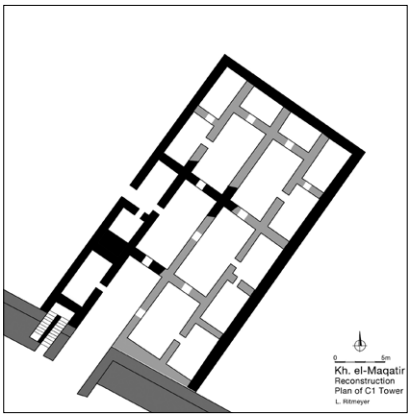

Figure 3: Tower with conjectured staircase (drawing: L. Ritmeyer)

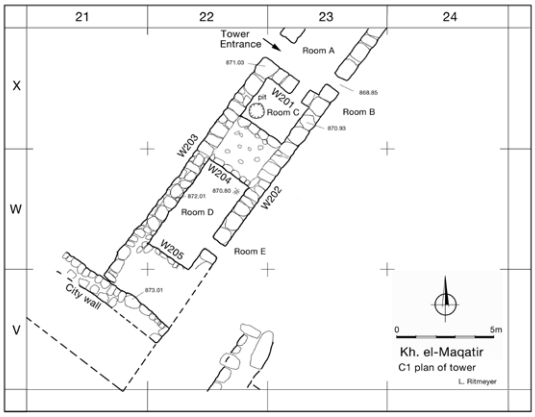

Figure 4: Rooms A–E of the tower (drawing: L. Ritmeyer)

Figure 5: Room A with socket stone (center), view to the southeast, 2015 (photo: M. Luddeni)

In Room B, two Early Roman storage jars (nos. 2476 and 2477) were found in situ near the door (fig. 6), resting against the southeast face of Wall W202. The height of one jar was 52 cm, its girth at the widest point 93 cm, and its rim diameter 11 cm. The other jar, of similar proportions, lacked a restorable rim.

Figure 6: Storage jars from Room B

Room C (2.3×2.1 m) contained one entryway. In the southwest corner of the room was a pit dug out of bedrock; its mouth, 85 cm in diameter, lacked a capstone. The installation did not constitute a sealed locus. The excavators did not find plaster or a channel system, so it may have served as a silo, but its precise purpose remains a mystery because by season's end, only 88 cm of the fill had been removed. Vandalism deterred the excavators from clearing out the rest of the pit the following season.

Floor level in Rooms A, B, and C was 869.0 m above sea level. The excavators did not find intact flooring in these chambers, but they did deduce floor level by ascertaining the top elevation of the in-situ socket stone, the bottom elevation of the two in-situ storage jars, the top of the threshold joining Rooms A and B, and the top of the pit, all of which seemed to be almost the same.

Room D (5.2×2.1 m) constituted the southeast corner of the tower (fig. 7). An entrance provided access to Room E. Both rooms showed in-situ shale flooring at the same elevation: 870.8 m above sea level (fig. 8). Thus floor level in Rooms D and E was about 2 m higher than in Rooms A, B, and C due to the slope of the hillside.

Figure 7: Rooms D (center) and E (right), view to the north, 2016 (photo: M. Luddeni)

Figure 8: Shale flooring in Room D (photo: M. Luddeni)

The tower walls sat on bedrock. They used boulder-and-chink construction with cobbles, semi-hewn stones, and megaliths over 1.0 m long. The outer wall of the tower (W203)

was 1.4 m thick, and the thickest walls (W204 and W205) measured 2.5 m. The greatest preserved height was the top of W204, 2.4 m above the bedrock (fig. 9).

Figure 9: Wall W202 (center), Room B (left), Room A (right foreground), and northern face of Wall W204 in Room C (right rear), 2015 (photo: M. Luddeni)

The tower yielded 517 analytic potsherds. Five hundred of them (97%) date from the Late Hellenistic or Early Roman periods (specifically, 20 percent are Late Hellenistic and 80 percent Early Roman).[2] The ceramic remnants originated in unsealed loci containing a mixture of Late Hellenistic and Early Roman sherds. The two in-situ storage jars at floor level date from the Early Roman period. The rimmed vessel (see fig. 6 above) is a typical storage jar from the first century CE, with its plain rim and a ridge at the bottom of a long neck (cf. Geva 2017a, 120, pl. 6.2: 2; 2017b, 179–180, pl. 12.2: 1).

In addition, 145 coins were found in the tower (see Appendix A). Almost all the coins came from mixed fill within the rooms of the tower. The coins date from Antiochus III (early second century BCE) until the First Revolt. At least 92 of the 145 coins (63%) were of Alexander Jannaeus or his successors (85 BCE or later). Of the 14 coins found at or beneath floor level (in unsealed loci), 9 are from Alexander Jannaeus or his successors,

2 Unfortunately, the pottery plates are still being prepared and are not ready for publication.

with the latest of this group (no. 2386; fig. 10) dating from 30 CE (Tiberius). Significantly, the coinage ceased suddenly in 69 CE. Ten coins were minted in year two of the revolt and one in year three (67–69 CE). The "Year 3" coin (no. 2857; fig. 11) came from the fill in the tower.

Figure 10: Coin of Tiberius, no. 2386 (photo: M. Luddeni)

Figure 11: Coin of the First Jewish Revolt, "Year 3", no. 2857 (photo: M. Luddeni)

The Military Equipment

The military artifacts at Khirbet el-Maqatir fit into seven categories: hobnails, slingstones and ballista balls, sling pellets, arrowheads, javelin heads, blades, and equestrian fittings. Though the majority came from loci with mostly Early Roman pottery, the collection contains artifacts spanning from the Late Hellenistic period to the mid-third century CE, as will be demonstrated below (for a detailed list, see Appendix B).

Hobnails

Like many sites exhibiting an Early Roman presence, Khirbet el-Maqatir yielded a substantial number of hobnails, also called *sandal tacks* or *shoe tacks*. The excavators recorded 55 hobnails, with head diameters of 3 to 20 mm and total lengths up to 19 mm (fig. 12; for hobnail parallels see Volken et al. 2011, 336, 356–387).[3] During the Roman period, both civilians and soldiers

3 The excavators also uncovered nearly 50 additional hobnails but did not keep them due to their poor state of preservation.

wore hobnailed shoes. Although nailed footwear was strongly associated with the Roman army, the use of hobnailed shoes spread throughout Israel. Jewish civilians wore hobnails until they were prohibited, most likely during the Second Jewish Revolt (132–135 CE; see Mishnah, Shabbat 6, 2; Babylonian Talmud, Shabbat 60, a–b; Roussin 1994, 188, 190).[4]

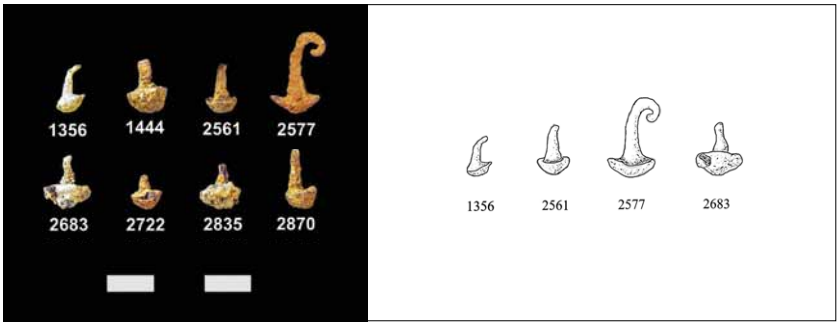

Figure 12: Hobnails, ca. 60 BCE–260 CE (photo: M. Luddeni)

With heads ranging in diameter from 3 mm to 20 mm (not taking into account possible mass loss from wear or corrosion), the nails from Khirbet el-Maqatir may date from 60 BCE to 285 CE.[5] However, the smaller and possibly later examples appear very flat, suggesting significant wear. In contrast, the best-preserved, slightly worn examples have a medium head diameter (11–12 mm originally) and may date from 20 CE to 180 CE (groups D–K in Volken et al. 2011). Their date range may, in fact, be even narrower: 40–80 CE when these

4 Finds from the Qumran area suggest that Jewish civilians used hobnails at least into the Early Roman period; see Stiebel 2003, 223.

5 Foundational research on the dating of hobnails has been undertaken in Switzerland by Marquita Volken, based on widespread consistency in nail measurements from the strata of a Roman road (Volken et al. 2011). Though few excavation reports record the measurements of hobnails, and the research required to support Volken's theories in a Near Eastern context would exceed the scope of this paper, the application of Volken's typology to the hobnails from Khirbet el-Maqatir is worth noting. The typology splits the nails into chronological groups based on weight and dimensions, group A being the earliest and group P the latest (ibid., 336). According to Volkin, the hobnails from Khirbet el-Maqatir can be assigned as follows: Objects 1356 (groups I–O), 1444 (groups D–K), 2561 (groups D–O), 2577 (groups C–I), 2683 (groups D–K), 2722 (groups G–M), 2835 (groups C–L), and 2870 (groups I–O). The date ranges for groups I–O and C–L are expanded, taking into account possible loss of mass.

head measurements seemed to be used exclusively (groups E–F).[6] Three of four hobnails from Gamla, which can be dated confidently to the Roman attack in 67 CE, also exhibit head diameters of 11 mm with worn head heights of 5–6 cm (Stiebel 2014, 80–81). The excavators of Khirbet el-Maqatir have suggested that the Romans attacked the site in 69 CE and that a small detachment of soldiers may have remained there until sometime before the Second Jewish Revolt (Peterson & Stripling 2017, 80*; Raviv & Stripling forthcoming). Along with the numismatic and ceramic evidence, the above interpretation of the site's hobnails supports this historical reconstruction.

The rocky terrain of Judea contributed greatly to the loss of hobnails from Roman footwear (Stiebel 2015, 432), and thus many sites have yielded parallels. Major sites from the First Jewish Revolt at which hobnails have been reported include Herodium, Masada and the Roman Camp A below, Jotapata, and Gamla (Stiebel 2003, 223; 2007, 1, 372; 2, III.2/D.1, III.20a/D; 2014, 80–81; 2015, 432–434). Numerous other sites in Israel have also yielded hobnails from both before and after this time period.[7] Given the seemingly wide time span of the assemblage of hobnails at Khirbet el-Maqatir, the examples add most meaningfully to this corpus of First Revolt finds.

The information gleaned from the hobnails at Khirbet el-Maqatir contributed additional detail to the history of the site. Three of the excavation areas yielded concentrations of hobnails (fig. 13). The largest concentration (26 hobnails) was discovered in and around a large dwelling at the center of town dating to the first century CE. The quantity of hobnails, combined with a lapis lazuli die (Object 1476) also discovered in this mansion, suggests that the Romans may have occupied the building as a barracks or headquarters following the siege (Peterson & Stripling 2017, 80*). The northern fortified tower and a modified natural cave (Cavern 1) yielded four hobnails each. The findings from Cavern 1, which was used as part of a hiding complex in the Great Revolt, are perhaps the most compelling. Other sites

6 As with the group delineations, this time span is based on the typology of Volken. The advanced wear of many of the hobnails at Khirbet el-Maqatir makes the conjectured original mass and head diameters somewhat subjective and the resulting dates inconclusive.

7 For hobnails from the Herodian period at Jericho and Samaria, see Stiebel 2007, 2, I.4/D.1, I.6/D.1–2. For hobnails from the Second Revolt at Tel Shalem, Legio and the Cave of the Sandal, see ibid., V.2/D.1, V.3/D.1, V.14/D.1.

with hiding complexes in the Bethel Hills include el-Q'ada, Jaba, Khirbet en-Najama, and Khirbet Nysia, although these cannot be definitively dated; however, Great Revolt hiding complexes with tunnel structures similar to those at Khirbet el-Maqatir can be found at Nesher-Ramla and Khirbet ʿEtri (see references in Peterson & Stripling 2017, 74*–75*; Raviv & Stripling forthcoming). The citizens of Khirbet el-Maqatir first used Cavern 1 in the first century CE as an olive-oil processing installation and later as a hiding complex. Remnants include five human skeletons and a hiding tunnel in one wall.[8]

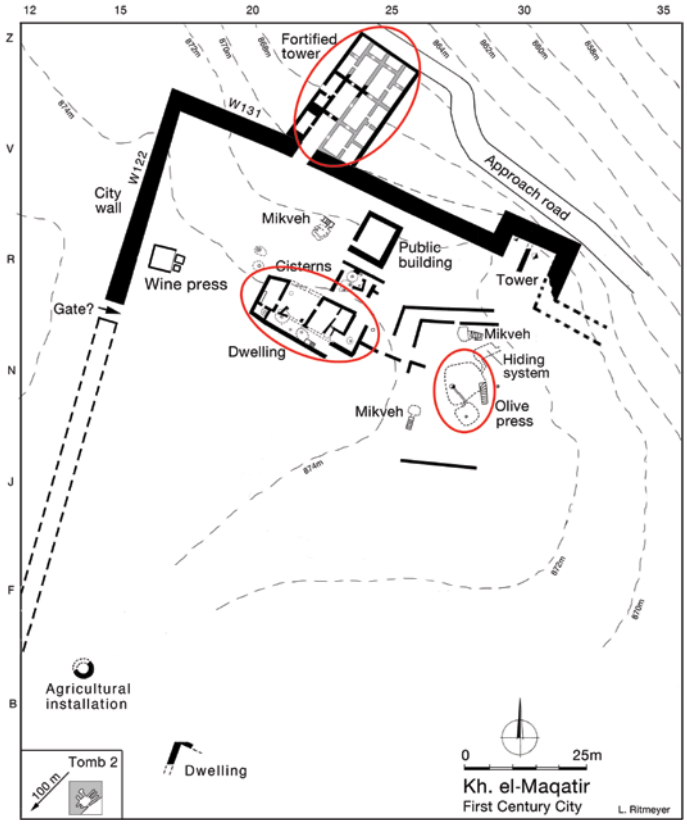

Figure 13: Late Hellenistic and Early Roman settlement showing three concentrations of hobnails

8 Cavern 1 contained the skeletons of an adolescent male and female, a woman of 20–30 years, a child, and an elderly adult. In the cave connected to it (Cavern 3) the remains of two more women, one 16–20 years old and one elderly, were found (Wood 2018, 32).

As the Roman army marched south to Jerusalem in 69 CE, the town was likely in its path. In fact, some scholars have suggested that Khirbet el-Maqatir was the town of Ephraim mentioned in Josephus's account of Vespasian's conquest of the Judean highlands (Peterson & Stripling 2017, 82*–83*). If so, then according to Josephus, Vespasian's army would have come from Caesarea into the hill country, decimating the districts of Gophna and Acrabata before taking Bethel and Ephraim. Supporting the idea that Roman soldiers remained at Khirbet el-Maqatir after its fall, Josephus records that Vespasian left garrisons in these towns before continuing to Jerusalem (*Jewish War* 4, 550–551). Apparently, some women, children, and elderly citizens of Khirbet el-Maqatir retreated to the underground olive-press-turned-hiding-complex during the siege, where the Roman soldiers eventually found and killed them. The hobnails found in the cave argue for Roman involvement in the fate of these civilians and their hometown, or perhaps they indicate that the Romans also used Cavern 1 after the town fell (although, as mentioned, the Jewish population, too, may have worn hobnails at this time). It is plausible that the Roman soldiers occupied Khirbet el-Maqatir until the end of the revolt and were then recalled to Jerusalem.

Slingstones and Ballista Balls

The excavations at Khirbet el-Maqatir yielded 300 rounded stone balls distributed throughout the Bronze Age, Iron Age, Late Hellenistic, and Early Roman strata, most weighing 250–350 g, with the largest at 1.96 kg. The majority are flint, though some limestone examples were present, including the largest stone. They all have a pecked surface, the result of chipping the stone into shape with a hard implement, such as another stone. The long history of Khirbet el-Maqatir made dating the stones difficult, especially as the majority of the slingstones were found in mixed contexts. Due to a major battle at the site in the Bronze Age and the fact that many balls came to light in this strata, the excavators assumed the majority were slingstones from this era reused as projectiles or pounders in later periods (Seevers forthcoming). However, some of the balls under 655 g could have been slingstones from the Roman attack. Likewise, stones weighing over 655 g could have been Roman ballista balls (Stiebel 2013a, 299–300).

The largest rounded stone from Khirbet el-Maqatir, weighing 1.96 kg with a diameter of 11 cm, was likely a Roman ballista ball (fig. 14). It was recovered just outside the apparently Late Hellenistic and Early Roman wall on the western side of the site, at the highest elevation in that area, along with four slingstones and a hobnail. The pottery found with this artifact is mostly early, although two Early Roman sherds were present. The ball weighs exactly 6 libra, one of the smaller calibers listed by Vitruvius (Marsden 1971, 191), suggesting that the Romans may have made it for the attack on Khirbet el-Maqatir in 69 CE.

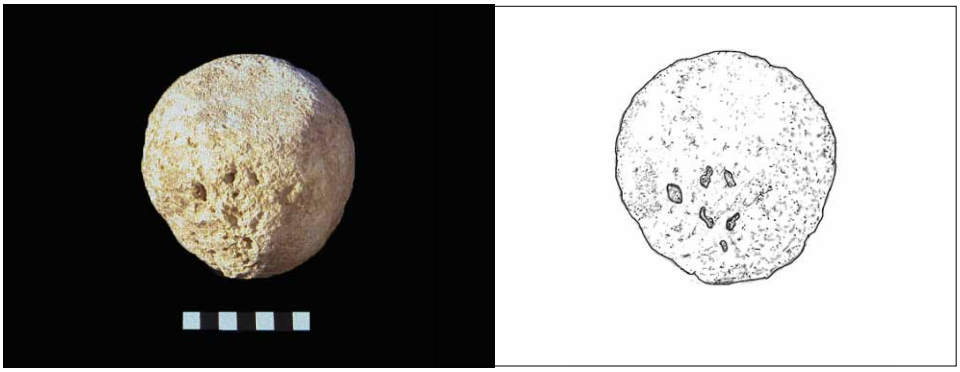

Figure 14: Ballista ball (photo: M. Luddeni)

Another ball, apparently a ballista ball, weighs 0.92 kg and appears about 90 percent complete. It does not fit so neatly into known Roman weights for such projectiles. At 0.92 kg, it weighs about 7 percent less than 3 Roman libra, but Vitruvius did not give 3 libra as a caliber. The closest caliber is 4 libra, or 1.31 kg, 42 percent heavier than the extant stone. The ball came to light at a higher elevation some 120 m to the northwest, at the highest point in the vicinity, where the Byzantine monastery later stood. It was found with a slingstone and mostly Byzantine pottery.[9]

9 Although this ballista ball may have been out of context, it would have been quite logical for the Romans to camp at the high point and make slingstones and ballista balls there, and then to attack the wall down where the larger ballista ball was found. Perhaps the Roman soldiers attacked the city wall to the west and the tower to the north and then converged at the mansion at the center of town.

As mentioned in the discussion of hobnails, the surprising number of sandal tacks and the discovery of a lapis lazuli die in the first century BCE mansion suggest that Roman soldiers occupied the building for an unknown period of time after the attack. Furthermore, Romans often used war machines, like ballistae, to lay siege to small settlements, as well as large cities and fortresses (Stiebel 2005, 100). Khirbet el-Maqatir, with its towers and walls, could well have been such a target. Though the evidence of the ballista balls and the artifacts found with them is too sparse to determine the plan of attack used by the Romans at Khirbet el-Maqatir, the corpus at least suggests that this reconstruction was possible. Other sites with 6-libra ballista balls include Masada and Gamla (Holley 1994, 357; 2014, 39), while Herodium, the fortified settlement of Meroth, and Jotapata have yielded ballista balls of other small calibers (Stiebel 2003, 217; 2005, 100; 2007, 2, III.1/M.1, III.2/M).

Sling Pellets

In addition to slingstones, the excavators uncovered one lead sling pellet at Khirbet el-Maqatir (fig. 15). Pellets of this type found in Israel are mostly Hellenistic, although Early Roman examples are documented, dating from the first century CE, if not later. Elsewhere, Romans used lead sling pellets into the second century CE (Bishop & Coulston 2006, 135; Stiebel 2013a, 299). Considering Khirbet el-Maqatir's long history and the mixed Late Hellenistic and Early Roman context in which the artifact was found, this pellet could be either Hellenistic or Roman. Though both the Greeks and Republican Romans often molded words or symbols on sling pellets, the practice ended by the mid-first century CE (Stiebel 1997, 302; Feugère 2002, 160; Bishop & Coulston 2006, 58). No clear sign of an inscription appears on this pellet; this may be indicative of an Early Roman date (Stiebel 2007, 2, III.14).[10]

Sling pellets were typically made in a two-part mold with biconical cavities connected by sprues to form a tree-like product (fig. 16). After lead was poured into the mold and cooled, the pellets would be snapped off the "branches" for use (Stiebel 1997, 301). The

10 Many thanks to Roman military scholar Raffaele D'Amato for his help in dating and identifying several of the artifacts discussed in this article, including the sling pellet, *sica* and socketed blades, and the possible equestrian fittings.

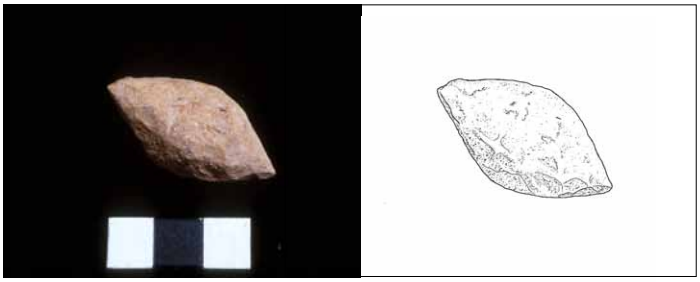

Figure 15: Sling pellet with hammer marks
and apparent break from the sprue on upper left

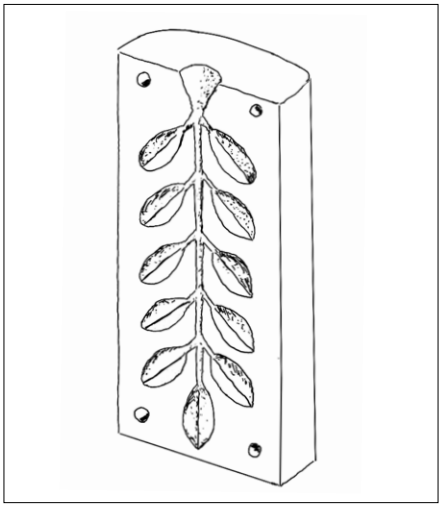

Figure 16: Reconstructed sling pellet mold (after Stiebel 1997, fig. 2)

pellet from Khirbet el-Maqatir seems to display a telltale scar on one end. Additionally, its surface is rough, suggesting it was hammered after production to perfect its biconical shape. Lead sling pellets have been found throughout Israel, including at Jerusalem, Jotapata, Jericho, and Gamla (Sivan & Solar 1994, 173; Stiebel 2007, 2, III.2/K, III.14/K.1–2; 2013b, 293; 2014, 98). The pellet from Jericho is the best parallel to the one from Khirbet el-Maqatir, with its hammered surface and very similar dimensions (3.6×2.3×1.9 cm).

Arrowheads

Khirbet el-Maqatir yielded four arrowheads from the Late Hellenistic and Early Roman periods (fig. 17). Three of them (nos. 2425, 2429, and 3037) appear to be of the Roman bodkin-tanged variety—square or triangular in cross section and approximately 4 cm long (Coulston 1985, 265). The best examples from Khirbet el-Maqatir measure 4.8 cm and 4.4 cm in length and exhibit a square cross-section. Object 2429 (fig. 17: 3) appears to have been bent due to impact. Both were found in or near the Roman tower entrance, with Object 2425 (fig. 17: 2) being lodged between the stones of the entryway. Similar bodkin arrowheads came from Gamla, Meroth, Magdala, and the City of David (Stiebel 2005, 100; 2007, 2, III.1/I.4–6, III.4/I.1; 2013a, 297; Magness 2014, 28–30). A third possible bodkin arrowhead from Khirbet el-Maqatir (no. 3037) is smaller than the others at 2 cm, with a less pronounced square cross-section (fig. 17: 1). Though smaller, the head bears a striking resemblance to a bodkin arrowhead found at Ein Feshkha (Stiebel 2007, 2, V.5/I). Both Objects 2425 and 3037 were discovered in clearly Roman contexts. Although Object 2429 came to light in a mixed Late Hellenistic and Early Roman context, its distinctive bodkin form dictates a Roman dating. Object 1018 (fig. 17: 4) may be a bent, flat-bladed arrowhead, but not enough information was available to say this conclusively (Coulston 1985, 265). It measures 4.7 cm, though it seems to be missing a tang or socket. It appeared in a mixed Late Hellenistic and Early Roman context. Similar flat-bladed arrowheads have been found at a Hasmonean/Herodian fortress at Ein Rachel, in Cave 1 of the Second Revolt site Wadi Murabbaʿat (Stiebel 2007, 2, IV.6/I, V.16/I.6), and at Gamla in a First Revolt context (Type B in Magness 2014, 24–25).

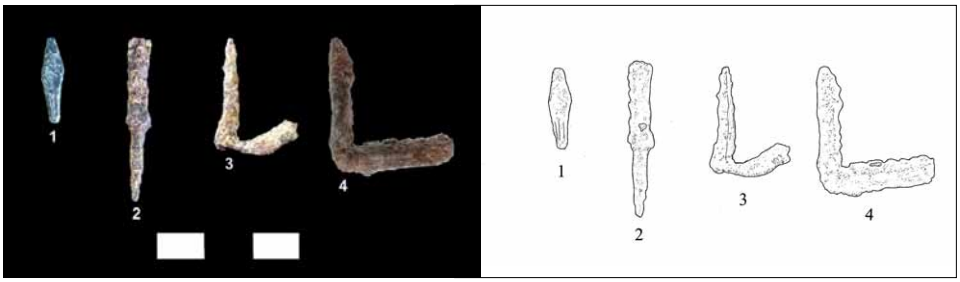

Figure 17: Roman arrowheads

Javelin Heads

One possible Roman javelin head was discovered on the floor of the Early Roman tower (fig. 18). It measures 7 cm long and 1.3 cm wide at its center and weighs 11.54 g. It is missing a socket or tang. Though the terms *spear* and *javelin* are somewhat interchangeable, spears were usually used for close combat, while javelins were lighter and meant for throwing (Stiebel 2007, 1, 138). As javelin heads and spearheads could range from 6–8 cm to 40 cm, the example from Khirbet el-Maqatir fell at the lower end, even if one added a presumed tang or socket (cf. Feugère 2002, 132). However, in the Gamla excavation reports, Jodi Magness (2014, 30) categorized projectile heads over 12 g as spearheads, taking into account a 20 percent loss to corrosion. At an adjusted 13.85 g, the projectile from Khirbet el-Maqatir just fit within this category. It was found inside the northern tower, making it likely to have been a javelin head or small spearhead rather than a civilian tool.

Figure 18: Broken javelin head

Parallel javelin heads of somewhat similar size from the First Revolt have been found in Cave FQ37 near Khirbet Qumran and at Masada (Stiebel 2007, 2, III.18/H.1, III.19/H2). Inter-revolt and Second Revolt examples of similar dimensions are known from Kurnub, Ein Rachel, and Tel Shalem (ibid., IV.3, IV.6/H.1–2, V.2/H.1–11), although these later examples appear to be Nabatean.

Blades

Khirbet el-Maqatir yielded what appear to be many poorly preserved blade fragments from Late Hellenistic and Early Roman contexts, ranging in length from a tip piece 1.1 cm long to a middle section measuring 16.8 cm. Most were found in mixed Late Hellenistic

and Early Roman contexts; four of them (nos. 1128, 1219, 2841, and 3097) were found with primarily Early Roman pottery. Pieces of particular interest include a partial blade with socket (no. 1048) and two partial blades with tangs (no. 2559 in two pieces, and no. 2926; fig. 19). Object 1048 may have been a knife blade or spearhead, although its open socket resembles a catapult bolt (compare Stiebel 2007, 2, I.4/M.1b; Magness 2014, 26). However, only a fragment of Object 1048 remains, making it difficult to determine whether its head had the square cross-section of a catapult bolt.

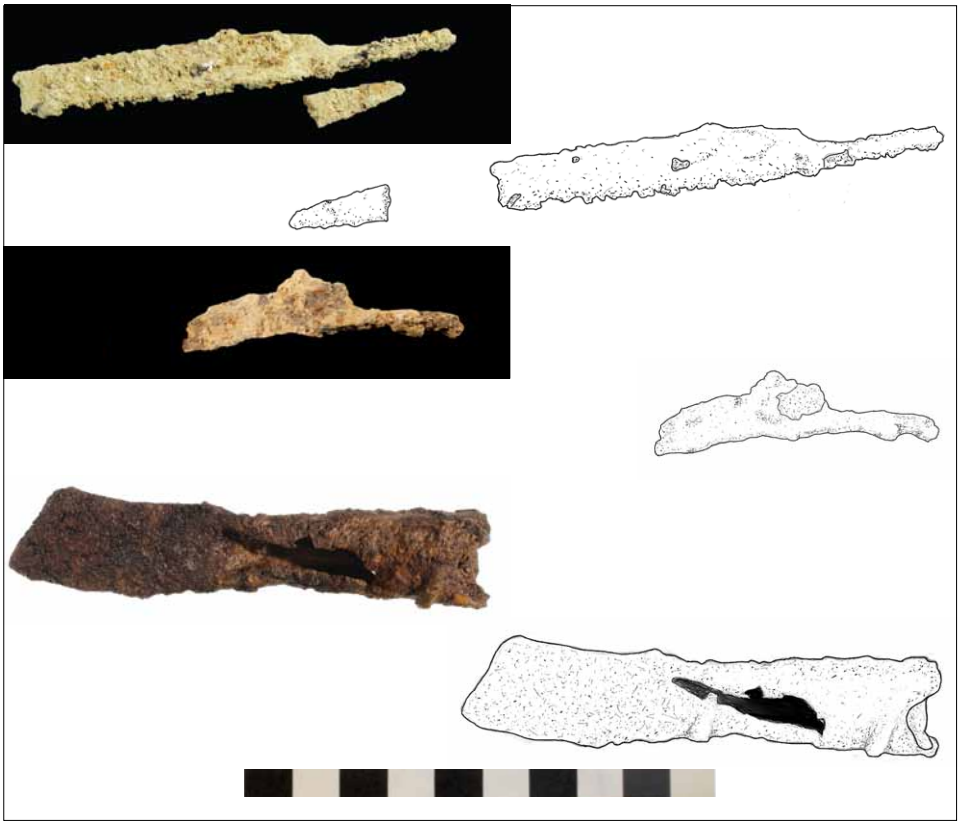

Figure 19: Blade fragments, nos. 2559 (top), 2926 (center) and 1048 (bottom)

The second of the latter blades was straight-backed, while the first was somewhat curved. Jews used straight-backed daggers in the revolts, though perhaps with longer blades than these (Stiebel 2007, 1, 110, 112). Interestingly, both blades from Khirbet el-Maqatir were

found in or near the first-century CE house. Perhaps they were Jewish weapons, although they could just as easily have been domestic tools, or even tools used as weapons during the siege. Another possibility is that these knives were used by Roman soldiers after the attack, especially if they later occupied the mansion.

Object 1049 (fig. 20) may be a fragment of a *sica* sword—a short, curved sword associated especially with the Jewish rebel group known as the Sicarii in the First Jewish Revolt (cf. Stiebel 2007, 1, 112–113). Only two other *sica* blades have been recovered in Israel: one at Nahal David, Cave 2, and the other at Khirbet Qumran (ibid., 2, I.8/F, III.17/F). The former is a close parallel to the blade from Khirbet el-Maqatir, with the same intact pin (which would have secured the handle) as well as remnants of a central rib and a similar, somewhat curved shape. It was found in a Late Hellenistic and Early Roman context near the Bronze Age gate, along with three other metal fragments (nos. 1046, 1047, and 1048). The gate chamber was used as an industrial installation in the Early Roman period, and these artifacts may have been gathered to be melted down.

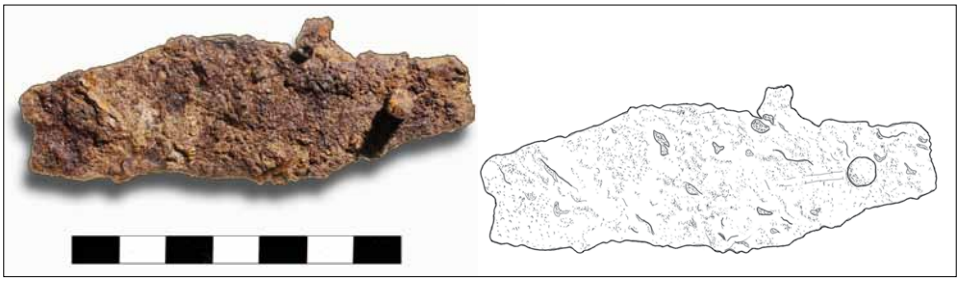

Figure 20: Possible sica blade fragment (no. 1049)

Equestrian Fittings

Two small metal objects from Khirbet el-Maqatir bear a distinctive, eight-petaled flower motif somewhat similar to Roman phalerae (fig. 21). This pair of artifacts came to light in

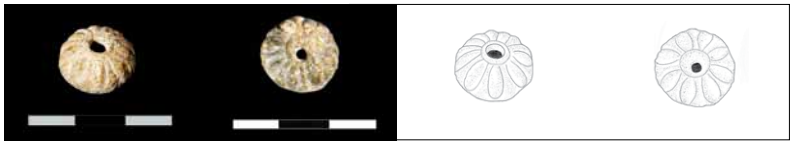

Figure 21: Possible harness phalerae: no. 1590, top view (left); no. 1588, bottom view (right)

a silo inside the first-century CE mansion. Both are rounded on top and nearly flat on the bottom, with a hole in the center. Though much smaller than the usual Roman equestrian phalerae (about half the size) and lacking the usual surrounding flange (Bishop 1988, 95), they may have been a type of non-standard phalera, perhaps attached with a rivet to decorate the reins or muzzle. A similar flower pattern is known from a small equestrian fitting (3.2×1.0×1.2 cm) from Samaria (Kenyon 1957, fig. 108: 6; Stiebel 2007, 2, I.6/Q.1–2). Roman equestrian fittings were generally made of copper alloys, some bearing a white silver coating (Bishop 1988, 94). The possible phalerae from Khirbet el-Maqatir may be lead or perhaps bronze or brass, with remnants of silver.

Discussion

The excavation results call for a discussion of the occupational history of the tower and village. A consideration of analogous towers situates the Khirbet el-Maqatir tower in an Early Roman context.

Construction of the Settlement and Tower

The settlement thrived in the Late Hellenistic period, but the tower was not erected until sometime after the building of the settlement's fortification wall. We know this because the tower abutted the fortification wall and did not interlock, as revealed by a probe trench in Square V21 (fig. 22). Furthermore, a town map omits the northern tower from its blueprint. The absence of the tower from this anepigraphic and iconic map carved on the smooth surface of a boulder (fig. 23; Stripling 2015, 81) suggests that the map was carved before the tower was built. This remarkable artifact stands out as an archaeological anomaly. Although not a direct parallel, a drawing of the Iron Age fort at Arad appears on the so-called Arad fortress seal (Schniedewind 2019, 40).

The numismatic analysis establishes the earliest possible date for construction of the tower. A coin (no. 2861) found in a sealed locus (W202) dates from 80 BCE or later (Alexander Jannaeus or his successors). Because the metal detector found the coin deep in the mortar in the wall, the wall could not have been built before the coin was stamped.

Figure 22: Western wall of the tower (left) abutting the perimeter wall of the village (right) (photo: M. Luddeni)

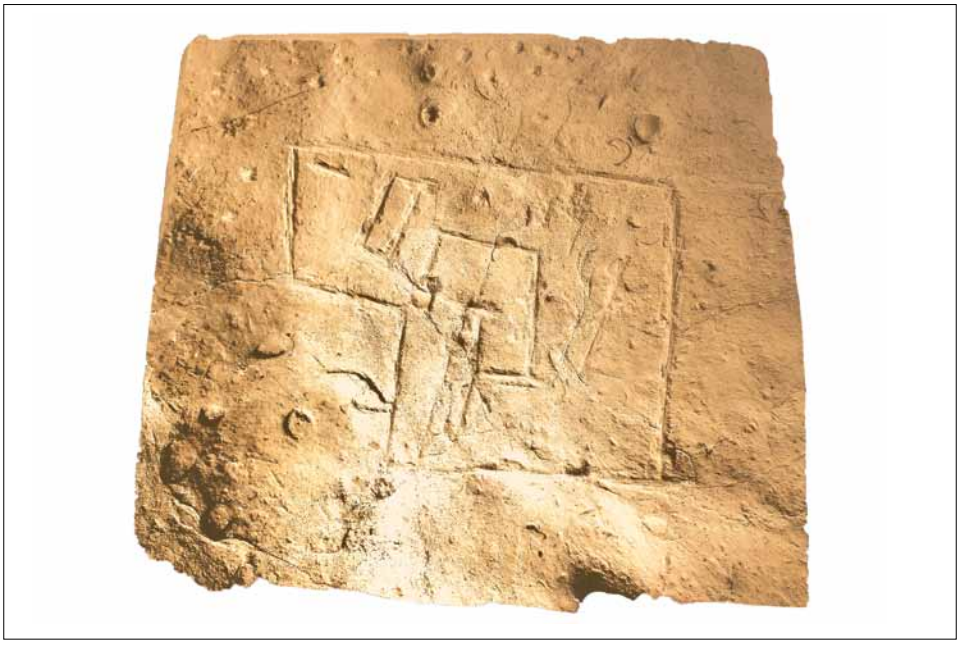

Figure 23: Village map of Khirbet el-Maqatir engraved in limestone (photo: M. Luddeni)

Moreover, a coin of Alexander Jannaeus (no. 2373; fig. 24) lay on bedrock near the two in-situ storage jars from the Herodian period. So the numismatic evidence sets the *terminus post quem* for construction of the tower at 80 BCE.

Figure 24: Coin of Alexander Jannaeus, no. 2373 (photo: M. Luddeni)

Comparable Towers of the Second Temple Period

At Khirbet el-Maqatir, the base of the tower measured 28×16 m (=448 m^2), making it the largest known tower base in Israel during the late Second Temple period (fig. 25). There are several parallels with slightly smaller dimensions: the Phasael Tower in Jerusalem (21×21 m [=441 m^2] based on the long cubit [52 cm] or 18×18 m [=324 m^2] based on the short cubit [44 cm]; *Jewish War* 5, 166), Ḥorbat Ṣalit (20×19 m [=380 m^2]; Alon 1986, 94–95), Khirbet el-Beiyudat (Archelais) (17×17 m [=289 m^2]; Hizmi 2008, 1600), the largest tower at Herodium (254 m^2; Netzer 1981, 92–96) and Ḥorbat Maẓad (18×12 m [=216 m^2]; Fischer 2012, 24–25).

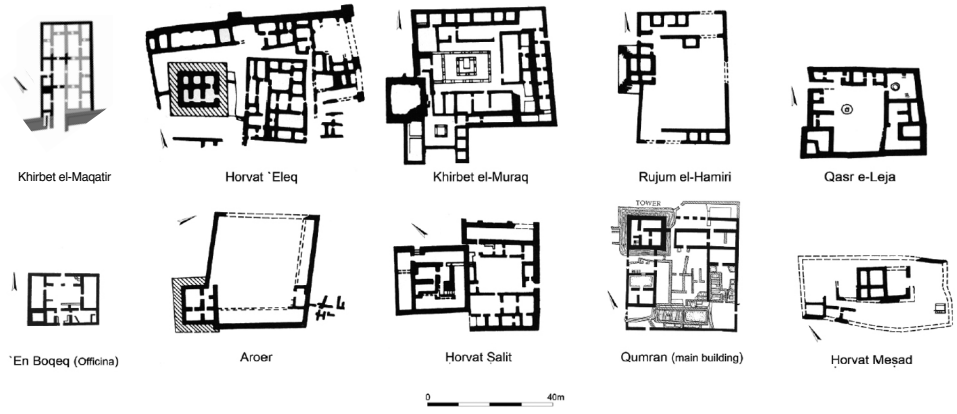

Figure 25: Early Roman tower at Khirbet el-Maqatir (drawing: L. Ritmeyer) and other examples of architectural complexes with Early Roman towers (after Fischer 2012, fig. 2.37)

Other towers in the late Second Temple period averaged 8–14 m^2 (e.g. *Jewish War* 5, 163, 170; Tzaferis 1974, 85; Dar 1986, 10; Aharoni 1993, 85; de Vaux & Broshi 1993; Gibson 1994, 213–214; Fischer & Isaac 1996, 244; Riklin 1997, 95; Fischer et al. 2000, 6, 17, 20; Hirschfeld 2000, 687–690, 709–711, 716–717; Damati 2008, 1962; Yavor 2010, 17–20; Taxel 2011, 316–322; cf. Tepper & Peleg-Barkat 2014).

The height of the Khirbet el-Maqatir tower and the number of stories are difficult to estimate. Only wall stubs remain, so we can only guess on the basis of similar towers. In the Roman period, towers along fortification walls tended to rise one story above the wall, and fortification walls averaged 9 m in height (Johnson 1983, 37–39; Lander 1984, 47). The height of the perimeter wall at Khirbet el-Maqatir remains unknown; however, if the tower matched the norms, it would have stood about 13 m high (two to three stories). Vassilios Tzaferis regarded two-story towers as typical:

> Massive two-storied towers, similar to the tower at Giv'at Shaul, were in wide use in the Hellenistic and Roman periods. They were built either alone, for observation or garrisoning, mostly along roads or highways, or as part of a fortress (Tzaferis 1974, 86).

Although two-story towers (with 12×12 m bases) were common, the Khirbet el-Maqatir tower may have been even taller (fig. 26), given its unusually large base, use of megaliths, and wide

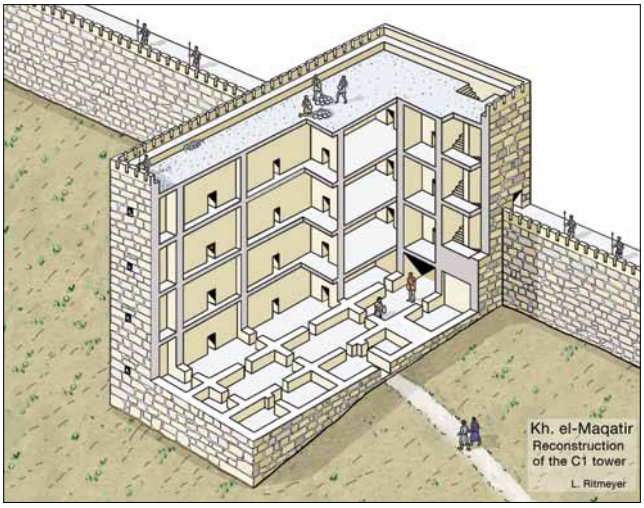

Figure 26: Reconstruction of the fortified tower at Khirbet el-Maqatir (drawing: L. Ritmeyer)

interior walls, some of them 2.5 m wide. The smaller but comparable tower at Ḥorbat ʿEleq, for instance, is conjectured by the archaeologist at 4–5 stories and 20–25 m (see Hirschfeld 2000, 687–690). The Phasael Tower in Jerusalem, whose base approaches the size of the one at Khirbet el-Maqatir, stood 47 m tall (about nine stories) using the long cubit, or 40 m tall (about eight stories) using the short cubit (*Jewish War* 5, 166–167). In Diocaesarea, Turkey, a tower with a base measuring 16×13 m (=208 m^2) had six stories preserved (McNicoll 1997, 178–181). Regardless of the number of stories, the Khirbet el-Maqatir tower would have been a few meters higher along the northern face due to the slope of the hillside.

The Purposes of the Tower

Towers in the late Second Temple period served multiple purposes (Hirschfeld 2000, 692). Obviously, one purpose was fortification. At Khirbet el-Maqatir, this function is evident because the tower was affixed to the outside of the perimeter wall and because of its megalithic construction. The ancient builders constructed the tower with numerous megaliths, in addition to cobbles and one-man stones. Some megaliths seem to have been salvaged from the ruins of the Bronze Age fortress on site.

The tower also served as a dwelling, as attested by the presence of domestic and cosmetic implements. Moreover, it provided storage facilities for food or water, as is apparent from the subterranean pit (silo or cistern) and the two in-situ storage jars. Similarly, the tower at Ḥorbat ʿEleq had food storage jars at floor level in situ (Hirschfeld 2000, 690), and the tower at Givʿat Shaʾul contained a cistern (Tzaferis 1974, 86).

Psychologically, the large Khirbet el-Maqatir tower served to intimidate antagonists, especially given its placement on the slope of the hillside. Jerusalem would have been visible from the roof, just as it was from other vantage points at the site, 866–878 m above sea level.

Ethnicity of the Inhabitants

The tower yielded three fragmentary chalkstone vessels and ten revolt coins, indicating Jewish occupation. This suggestion is corroborated by discoveries from all over the site, such as a subterranean tomb with ossuary fragments, ritual chalkstone vessels, and three mikvaot (Peterson & Stripling 2017, 68*–75*). The notable absence of pig bones provides additional confirmation. In 2017 osteologists Abra Spiciarich and Lidar Sapir-Hen of

Tel Aviv University examined 768 bones from Late Hellenistic and Early Roman loci at the site, and according to their unpublished report, only one bone came from a pig.[11]

Destruction of the Settlement and Tower in 69 CE

The settlement fell in about 69 CE. Evidence for this dating comes from ash pockets in a silo, coins in sealed loci, radiocarbon dates of human skeletons discovered in an underground hiding complex, and an abundance of slingstones at the site (Peterson & Stripling 2017, 78*–81*).

The tower fell all at once. We know this from three lines of evidence. First, the most recent ceramics date from the Early Roman period. For instance, the two in-situ storage jars sitting at floor level against the wall date from the Early Roman period (see above). Second, the 145 coins in the tower, which were among 1300 or so coins at the site, maintain a consistent representation from Antiochus III until their sudden termination at the First Jewish Revolt (see Appendix A). The newest coins from the tower and the site as a whole were minted in years two and three of the revolt. So the coins fix the latest possible date for the destruction of the tower at precisely 69 CE. And third, a charcoal sample from the floor level of Room D underwent carbon-14 testing by Elisabetta Boaretto at the Weizmann Institute. According to her unpublished 2018 report, for ±1σ there was a 68.2 percent probability of 50–86 CE, and for ±2σ there was a 95.4 percent probability of 23–125 CE.[12] Another report by her confirms that the charcoal came from the same period as the human bones in Cavern 1 (Peterson & Stripling 2017, 90*–91*).

The Roman army demolished the village and tower during the First Revolt, before ultimately sacking Jerusalem in 70 CE. During the revolt, the Romans also destroyed the fortification at Khirbet Kefar Mur just 2 km to the southeast (Aharonovich 2016, 90).

Inhabitants and Events at the Site after 69 CE

Given the large concentration of hobnails discovered at the site, the lapis lazuli die, and the reference by Josephus to the establishment of a garrison at Ephraim, it seems likely

11 Thank you to Abra Spiciarich and Lidar Sapir-Hen for providing the unpublished data.

12 Thank you to Elisabetta Boaretto for supplying the unpublished information.

that Roman soldiers occupied Khirbet el-Maqatir after they took the site in 69 CE. How long they stayed is unknown. The settlement at Khirbet el-Maqatir was severely reduced in size after the Great Revolt, and though the ceramic evidence is insufficient for determining the scope of any subsequent occupation at the site, the presence of roof tiles and surface fragments from between the revolts suggests at least some form of occupation during this period. It is clear, however, from the numerous Bar Kokhba–era sherds uncovered that a small population, perhaps a few dozen people, reoccupied the hiding complex during the Second Revolt. This group seems to have abandoned Khirbet el-Maqatir by the end of the revolt. The site was then resettled in the Late Roman and Byzantine periods by non-Jews (Raviv & Stripling forthcoming).

Summary

At Khirbet el-Maqatir, archaeologists uncovered an Early Roman monumental tower and Late Hellenistic and Early Roman military equipment—hobnails, slingstones and ballista balls, sling pellets, arrowheads, javelin heads, blades, and equestrian fittings. Overall, the discoveries reinforce the excavators' conclusion that the Late Hellenistic and Early Roman settlement was founded in the second century BCE, demolished by the Romans in 69 CE, and temporarily occupied by Roman soldiers until sometime before the Second Revolt (132–135 CE). A small Jewish population then reused the hiding complex during the Second Revolt before the site was abandoned. It was then populated again in the Late Roman and Byzantine periods.

Our research makes three contributions to archaeological and historical knowledge. First, it reveals Early Roman Judean military construction. The tower used megalithic construction and thick walls. Its massive base made it one of the largest towers in Israel during the Second Temple period. Second, the Roman militaria adds to our understanding of the dates of the settlement and helps to reconstruct the Roman army's strategy in the 69 CE attack. And third, the research contributes to our knowledge of historical events, namely, the process of the Roman conquest of Judea and the period between the revolts, including the Jews' use of hiding complexes then.

Bibliography

Aharoni 1993
Aharoni, M., 1993. Arad: The Israelite Citadels. In: E. Stern (editor), *The New Encyclopedia of Archaeological Excavations in the Holy Land*, vol. 1. Jerusalem, pp. 82–87.

Aharonovich 2016
Aharonovich, E., 2016. Khirbet Kefar Mur – A Jewish Early Roman Period Settlement at Bet-El Mountain. *In the Highland's Depth* 6, pp. 85–106 (Hebrew).

Alon 1986
Alon, D., 1986. Ḥorvat Ṣalit (Kh. Salentaḥ). *Hadashot Arkheologiyot: Excavations and Surveys in Israel* 5, pp. 94–96.

Bishop 1988
Bishop, M.C., 1988. Cavalry Equipment of the Roman Army in the First Century A.D. In: J.C.N. Coulston (editor), *Military Equipment and the Identity of Roman Soldiers: Proceedings of the Fourth Roman Military Equipment Conference*. Oxford, pp. 67–195.

Bishop & Coulston 2006
Bishop, M.C. & Coulston, J.C.N., 2006. *Roman Military Equipment: From the Punic Wars to the Fall of Rome* (2nd edition). Oxford.

Byers et al. 2016
Byers, G.A., Stripling, D.S. & Wood, B.G., 2016. Excavations at Khirbet el-Maqatir: The 2009–2011 Seasons. *Judea and Samaria Research Studies* 25, pp. 69*–109*.

Coulston 1985
Coulston, J.C.N., 1985. Roman Archery Equipment. In: M.C. Bishop (editor), *The Production and Distribution of Roman Military Equipment: Proceedings of the Second Roman Military Equipment Research Seminar*. Oxford, pp. 220–336.

Damati 2008
Damati, E., 2008. Muraq, Khirbet el- (Ḥilkiya's Palace). In: E. Stern (editor), *The New Encyclopedia of Archaeological Excavations in the Holy Land*, *vol. 5: Supplementary Volume*. Jerusalem, pp. 1961–1963.

Dar 1986
Dar, S., 1986. *Landscape and Pattern: An Archaeological Survey of Samaria 800 B.C.E.–636 C.E.*, part 1. Oxford.

de Vaux & Broshi 1993
de Vaux, R. & Broshi, M., 1993. Qumran, Khirbet and 'Ein Feshkha. In: E. Stern (editor), *The New Encyclopedia of Archaeological Excavations in the Holy Land*, vol. 4. Jerusalem, pp. 1235–1241.

Feugère 2002
Feugère, M., 2002. *Weapons of the Romans*. D.G. Smith (translation), Stroud.

Fischer 2012
Fischer, M., 2012. *Ḥorvat Meṣad: A Way-Station on the Jaffa–Jerusalem Road*. Tel Aviv.

Fischer & Isaac 1996
Fischer, M. & Isaac, B., 1996. Gazetteer. In: M. Fischer, B. Isaac & I. Roll, *Roman Roads in Judaea II: The Jaffa–Jerusalem Roads*. Oxford, pp. 113–288.

Fischer et al. 2000
Fischer, M., Gichon, M. & Tal, O., 2000. *ʿEn Boqeq: Excavations in an Oasis on the Dead Sea, vol. 2: The Officina – An Early Roman Building on the Dead Sea Shore*. Mainz am Rhein.

Geva 2017a
Geva, H., 2017. Local Pottery of the Early Roman Period from Area Q. In: H. Geva (editor), *Jewish Quarter Excavations in the Old City of Jerusalem: Conducted by Nahman Avigad, 1969–1982, vol. VII: Areas Q, H, 0-2 and Other Studies – Final Report*. Jerusalem, pp. 119–125.

Geva 2017b
Geva, H., 2017. Local Pottery of the Hellenistic and Early Roman Periods from Area H. In: H. Geva (editor), *Jewish Quarter Excavations in the Old City of Jerusalem: Conducted by Nahman Avigad, 1969–1982, vol. VII: Areas Q, H, 0-2 and Other Studies – Final Report*. Jerusalem, pp. 176–191.

Gibson 1994
Gibson, S., 1994. The Tell ej-Judeideh (Tel Goded) Excavations: A Re-appraisal Based on Archival Records in the Palestine Exploration Fund. *Tel Aviv* 21, pp. 194–234.

Hirschfeld 2000
Hirschfeld, Y., 2000. *Ramat Hanadiv Excavations: Final Report of the 1984–1998 Seasons*. Jerusalem.

Hizmi 2008
Hizmi, H., 2008. Beiyudat, Khirbet el- (Archelais). In: E. Stern (editor), *The New Encyclopedia of Archaeological Excavations in the Holy Land, vol. 5: Supplementary Volume*. Jerusalem, pp. 1600–1602.

Holley 1994
Holley, A.E., 1994. The Ballista Balls from Masada. In: J. Aviram, G. Foerster & E. Netzer (editors), *Masada: The Yigael Yadin Excavations 1963–1965, Final Reports*, vol. IV. Jerusalem, pp. 349–365.

Holley 2014
Holley, A.E., 2014. Stone Projectiles and the Use of Artillery in the Siege of Gamla. In: D. Syon (editor), *Gamla III: The Schmarya Gutmann Excavations 1976–1989, Finds and Studies*, part 1. Jerusalem, pp. 35–55.

Johnson 1983
Johnson, S., 1983. *Late Roman Fortifications*. London.

Kenyon 1957
Kenyon, K.M., 1957. Miscellaneous Objects in Metal, Bone and Stone. In: J.W. Crowfoot, G.M. Crowfoot & K.M. Kenyon (editors), *The Objects from Samaria*. London, pp. 439–468.

Lander 1984
Lander, J., 1984. *Roman Stone Fortifications: Variation and Change from the First Century A.D. to the Fourth*. Oxford.

Magness 2014
Magness, J., 2014. Arrowheads and Projectile Points. In: D. Syon (editor), *Gamla III: The Shmarya Gutmann Excavations, 1976–1989, Finds and Studies*, part 1. Jerusalem, pp. 21–33.

Marsden 1971
Marsden, E.W., 1971. *Greek and Roman Artillery: Technical Treatises*. Oxford.

McNicoll 1997
McNicoll, A.W., 1997. *Hellenistic Fortifications from the Aegean to the Euphrates*. N.P. Milner (revision), Oxford.

Netzer 1981
Netzer, E., 1981. *Greater Herodium*. Jerusalem.

Peterson & Stripling 2017
Peterson, B. & Stripling, S., 2017. Kh. el-Maqatir: A Fortified Settlement of the Late Second Temple Period on the Benjamin Plateau. *In the Highland's Depth* 7, pp. 61*–91*.

Raviv & Stripling forthcoming
Raviv, D. & Stripling, S., forthcoming. The Hiding Complex at Kh. el-Maqatir: Eastern Bethel Hills.

Riklin 1997
Riklin, S., 1997. The Courtyard Towers in the Light of Finds from 'Ofarim. *'Atiqot* 32, pp. 95–98 (Hebrew).

Roussin 1994
Roussin, L., 1994. Costume in Roman Palestine: Archaeological Remains and the Evidence from the Mishnah. In: J.L. Sebesta & L. Bonfante (editors), *The World of Roman Costume*. Madison, pp. 182–190.

Schniedewind 2019
Schniedewind, W., 2019. Commander of the Fortress? Understanding an Ancient Israelite Military Title. *Biblical Archaeology Review* 45, 1, pp. 39–44.

Seevers forthcoming
Seevers, B., forthcoming. The Iron Age: Slingstones/Pounding Stones. In: B.G. Wood & B. Seevers, *Excavations at Khirbet el-Maqatir, Israel, 1995–2001 and 2009–2016, vol. I: The Bronze and Iron Ages*.

Sivan & Solar 1994
Sivan, R. & Solar, G., 1994. Excavations in the Jerusalem Citadel, 1980–1988. In: H. Geva (editor), *Ancient Jerusalem Revealed*. Jerusalem, pp. 168–176.

Stiebel 1997
Stiebel, G.D., 1997. "… You Were the Word of War": A Sling Shot Testimony from Israel. *Journal of Roman Military Equipment Studies* 8, pp. 301–307.

Stiebel 2003
Stiebel, G.D., 2003. The *Militaria* from Herodium. In: C.G. Bottini, L. Di Segni & L.D. Chrupcala (editors), *One Land – Many Cultures: Archaeological Studies in Honour of Stanislao Loffreda, OFM*. Jerusalem, pp. 215–244.

Stiebel 2005
Stiebel, G.D., 2005. "Dust to Dust, Ashes to Ashes…": Military Equipment from Destruction Layers in Roman Palestine. In: W. Jobst (editor), *Archäologie der Schlachtfelder – Militaria aus Zerstörungshorizonten, Akten der 14 (RoMEC): Wien, 27–31 August 2003*. Wien, pp. 99–108.

Stiebel 2007
Stiebel, G.D., 2007. *Armis et Litteris: The Roman Military Equipment of Early Roman Palestine, in Light of the Archaeological and Historical Sources*, vols. 1–3. Ph.D. Dissertation, London.

Stiebel 2013a
Stiebel, G.D., 2013. The Military Equipment. In: D. Ben-Ami (editor), *Jerusalem: Excavations in the Tyropoeon Valley (Givʿati Parking Lot)*, vol. 1. Jerusalem, pp. 297–304.

Stiebel 2013b
Stiebel, G.D., 2013. The Military Equipment from the Hasmonean and Herodian Palaces at Jericho and Cypros. In: R. Bar-Nathan & J. Gärtner (editors), *Hasmonean and Herodian Palaces at Jericho, Final Reports of the 1973–1987 Excavations, vol. V: The Finds from Jericho and Cypros*. Jerusalem, pp. 290–298.

Stiebel 2014
Stiebel, G.D., 2014. Military Equipment. in: D. Syon (editor), *Gamla III: The Shmarya Gutmann Excavations, 1976–1989, Finds and Studies*, part 1. Jerusalem, pp. 57–107.

Stiebel 2015
Stiebel, G.D., 2015. Military Equipment from the Area of the Mausoleum and the Theater at Herodium. In: R. Porat, R. Chachy & Y. Kalman (editors), *Herodium: Final Reports of the 1972–2010 Excavations Directed by Ehud Netzer, vol. 1: Herod's Tomb Precinct*. Jerusalem, pp. 432–453.

Stripling 2015
Stripling, S., 2015. Khirbet el-Maqatir: On the Border between Benjamin and Ephraim. *Qadmoniot* 150, pp. 78–83 (Hebrew).

Taxel 2011
Taxel, I., 2011. Stratigraphy and Architecture. In: Y. Thareani, *Tel ʿAroer: The Iron Age II Caravan Town and the Hellenistic–Early Roman Settlement – The Avraham Biran (1975–1982) and Rudolph Cohen (1975–1976) Excavations*. Jerusalem, pp. 315–341.

Tepper & Peleg-Barkat 2014
Tepper, Y. & Peleg-Barkat, O., 2014. The Fortified Complex at Ḥorvat ʿEleq in Ramat HaNadiv: A Reappraisal. In: M. Aviam (editor), *"From Watch Tower to Fortified City": Forts and Fortresses in Northern Israel from the Canaanites to the IDF*. Tzemach, pp. 65–74 (Hebrew).

Tzaferis 1974
Tzaferis, V., 1974. A Tower and Fortress near Jerusalem. *Israel Exploration Journal* 24, pp. 84–94.

Volken et al. 2011
Volken, M., Paccolat, O. & Volken, S., 2011. Les clous de chaussures du site de Pfyngut: Les bases d'une typo-chronologie. In: O. Paccolat (editor), *Pfyn – Finge, Évolution d'un terroir de la plaine du Rhône: Le site archéologique de "Pfyngut" (Valais, Suisse)*. Lausanne, pp. 315–387.

Wood 2016
Wood, B.G., 2016. Locating ʿAi: Excavations at Kh. el-Maqatir, 1995–2000 and 2009–2014. *In the Highland's Depth* 6, pp. 17*–49*.

Wood 2018
Wood, B., 2018. The March to Jerusalem: Roman Brutality at Khirbet el-Maqatir. *Bible and Spade* 31, 2, pp. 29–34.

Yavor 2010
Yavor, Z., 2010. The Architecture and Stratigraphy of the Eastern and Western Quarters. In: D. Syon & Z. Yavor (editors), *Gamla II: The Shmarya Gutmann Excavations, 1976–1988, The Architecture*, vol. 2. Jerusalem, pp. 13–112.

Historical Sources

Jewish War
Josephus, 2017. *The Jewish War*. M. Hammond (translation), Oxford.

Appendix A: Chronological Distribution of Coins from the Tower

Date	Ruler or Period	Count
204–197 BCE	Antiochus III	5
175–150 BCE	Antiochus IV or Demetrius I	3
129–80 BCE	Hasmonean	2
129–80 BCE	John Hyrcanus I or Alexander Jannaeus	11
104–80 BCE or later	Alexander Jannaeus or successors	92
100–1 BCE or 301–500 CE	Hasmonean, Herodian, or Late Roman	1
63 BCE	Dora	1
40–37 BCE	Mattathias Antigonus	1
37–4 BCE	Herod I	4
4 BCE–6 CE	Herod Archelaus	1
5–11 CE	Roman governor under Augustus	2
17–19 or 25 CE	Roman governor under Tiberius	6
42 CE	Agrippa I	1
59 CE	Roman governor under Nero	3
67–69 CE	First Jewish Revolt	11
450–550 CE	Late Roman	1
	Total:	**145**

Appendix B: Selected Inventory of Militaria from Khirbet el-Maqatir

Artifact no.	Size (cm)	Weight (g)	Square
Hobnails			
1356	1.2×0.6	?	O22
1444	1.3×1.1	1.73	O21
2561	1.4×1.0	1.01	W22
2577	2.2×1.4	2.35	A24
2683	1.1×1.2	0.94	Q25
2722	0.9×0.8	0.73	AB23
2835	1.6×1.2	1.68	P22
2870	1.6×0.7	2.97	F25

Ballista Balls			
443	Ø11	1960	Q8
698	Ø8	920	ZH05
Sling Pellets			
553	3.9×2.1×1.7	72.60	P18
Arrowheads			
1018	4.7×0.75	?	R19
2425	4.8×0.6×0.6	2.13	X23
2429	4.4×0.7×0.7	2.24	X22
3037	2.0×0.5×0.3	1.06	Q25
Javelin Heads			
2342	7.0×1.3×0.6	11.54	X23
Blades			
776	4.4×1.1×0.4	3.60	P21
916	6.5×3.1×0.1	16.40	R19
1046	10.0×3.0	?	S19
1047	4.4×3.2	?	S19
1048	10.0×2.0	?	S19
1049	10.1×3.0	?	S19
1128	2.7×1.0×0.3	1.61	M28
1219	6.0×2.1×0.6	5.28	CAV1
1703	5.4×1.5×0.3	8.16	O23
1828[13]	16.8×3.2×0.9	118.72	CAV1
2157	3.0×3.8×0.9	10.85	O24
2158	7.5×2.7×1.0	29.58	O24
2559	6.0×1.7×0.7	4.48	P24
2705	6.0×2.2×0.3	6.29	Q22
2841	7.1×2.1×0.5	10.16	W22
2926	3.5×1.5×0.5	13.36	P22
2945	1.1×0.6	0.28	R24
3097	4.0×1.9×0.2	6.53	Q25
Equestrian Fittings			
1548	1.8×0.8	12.06	O22
1550	1.8×0.8	12.61	O22

13 This object may be too thick to be a blade.