Khirbet Qeiyafa Vol. 2

Excavation Report 2009-2013: Stratigraphy and Architecture (Areas B, C, D, E)

Yosef Garfinkel, Saar Ganor, and Michael G. Hasel

Edited by: Martin G. Klingbeil

Institute of Archaeology
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With Contributions by:
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Institute of Archaeology
Southern Adventist University

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Institute of Archaeology
The Hebrew University of Jerusalem

Jerusalem 2014
To Benjamin (Bini) Eisen
To Burton and Dorothy Keppler

For their vision and encouragement which made this publication possible
Foreword

The Khirbet Qeiyafa Archaeological Project was conducted over a period of seven years, from 2007 to 2013. It was initiated with a two–week pilot season in the summer of 2007. Each subsequent summer, from 2008–2011, a six–week field season has been conducted each summer. One of the major problems with archaeological projects, in Israel as well as around the world, is the long delay in the publication of the excavated data and interpretations. As a result, other specialists in the field often wait and are unable to incorporate the new information from neighboring sites in the assessment of their own excavation results. This leads to isolationism and an inability to conduct comparative studies. We have decided on a different course of action. After the first two excavation seasons a final report was published, without waiting until the end of the project (Khirbet Qeiyafa Vol. I [2009]). As we worked on a relatively small scale one volume was sufficient to include the entire relevant data.

At the end of the field work we began to organize the final excavation report for the other five excavation seasons, 2009–2013. So much data accumulated in these five seasons that we decided to organize the publication in several separate volumes. This present volume – Khirbet Qeiyafa Vol. 2 – deals with Areas B, C, D, and E, and reports on (1) an overview of the methodology, (2) descriptions of the database and survey work conducted at the site, (3) the field observations, (4) a detailed account of the stratigraphy, and (5) the architecture of the relevant areas. In addition, relevant aspects of dating are included, presenting the radiometric determinations, coins, a local group of pottery known as “Black Juglets” and Cypriot pottery.

Some argue that the fortified city of the early tenth century BCE should be affiliated with Iron IB. For this reason we included the “Black Juglets” and Cypriot pottery which are clear markers of Iron II.

The third volume (Khirbet Qeiyafa Vol. 3), which is in an advanced stage of preparation, will present the field data on the other excavated parts of the site, Areas A, F and W. This volume will include a final discussion of the relevant phases of occupation at Khirbet Qeiyafa: Late Chalcolithic, Middle Bronze Age, Iron Age IIA, Late Persian–Early Hellenistic, Late Second Temple, and Late Roman–Byzantine periods. Two of these periods have significant importance and are emphasized in the report: the Iron Age IIA and the Late Persian–Early Hellenistic period.

The fourth planned volume (Khirbet Qeiyafa Vol. 4), deals with aspects of art, cult, and epigraphy; reporting specifically on the discovery of three sanctuaries or cult rooms in Areas C and D. The fifth report volume (Khirbet Qeiyafa Vol. 5), will present the assemblage of ca. 600 coins uncovered at the site. The sixth report volume (Khirbet Qeiyafa Vol. 6), will present an analysis of the Iron Age IIA ceramic assemblage of the site. The last reports for the 2009–2013 excavation seasons (Khirbet Qeiyafa Vol. 7–8), will present the various find categories: metal objects, stone tools, animal bones and the like from all the areas. The meticulous study of these very rich assemblages will require much more time than the aspects presented in the earlier volumes. We see no reason to delay the presentation and final analysis of our findings, simply because other aspects are still under study. Thus we have organized the publication according to a simple principle: the first data which has been analyzed is published first. In this way, the number of the volumes will not affect the order of the publication.

The fieldwork, analysis of the data uncovered, and the publications all required extensive financial support, which was obtained by various foundations, organizations, and individuals, as specified in the acknowledgements. The editors would particularly like to express their deep appreciation to the supporting institutions that made this excavation possible: The Hebrew University of Jerusalem, Southern Adventist University, and the Israel Exploration Society. The Israel Antiquities Authority granted licenses for the project and assisted in the processing and storage of finds under the directorship of the late Shuka Dorfman. We appreciate the opportunity to further the understanding of the periods of history represented at Khirbet Qeiyafa. Finally, our gratitude is extended to the foundations, organizations, and individual supporters who understood the significance of this small but important site for the early history of Judah and the Kingdom of David. It was your generosity that enabled us to carry out the project from the beginning to the end.

Yosef Garfinkel, Saar Ganor, and Michael G. Hasel
2010 Excavation season: Southern Adventist University team.

2012 Excavation season: The Hebrew University of Jerusalem team.
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10.1. Introduction

During the 2011 expansion of Area D, an impressive olive press installation was excavated from the Late Persian–Early Hellenistic period to the south of Building D200 in Squares W30–32 and X30–32. With this discovery an entirely new element was added to the use and function of Khirbet Qeiyafa during this period (the oil press installation architecture and stratigraphy were discussed in Chapter 8). The purpose of this chapter is to: (1) describe the oil press in more detail; (2) compare the oil press at Khirbet Qeiyafa with similar presses in the Shephelah; and (3) develop a typology that might locate this press within the development of oil production from the Late Iron Age to the Hellenistic period.

10.2. Description

The olive press building was 5.3 m wide and 7.5 m long, or ca. 39.74 m², and was bordered by Walls D2275, D2405, D2360 to the north, Wall D2212 to the east, Wall D2252, D2364 to the south and the Iron IIA inner casemate Wall D2506 to the west (Figure 10.1–10.2). The olive press room was accessed from a doorway leading into Room A4 from Building D200 to the north. Another entrance may have been located in Wall D2352, as a press weight was found reused in the wall. This suggests an original opening in an earlier phase. The most likely location for the entrance was over a threshold between Wall D2212 and D2275, as only one course of flat stones was preserved here and may have served as a threshold leading to the east, just north of circular Installation D2222. The eastern entrance would explain why several larger and minor circular Installations D2229, D2238, D2240 were located directly outside.

Several observations suggest that the olive press room was, at least originally, a partially roofed structure. The enormous Pillar D2539, which stands at a height of 1.42 m in the center of the building slightly to the east, would have supported a roof (Figure 10.3). It is located 2.43 m from Wall D2275 and 2.44 m from Wall D2352, D2364. This precise central position was not a coincidence and indicates that the pillar served an architectural function. That it belongs to the Late Persian–Early Hellenistic period is borne out by three observations: (1) the pillar’s perfect symmetry and stance in the center of the olive press building, which definitely dates to this period; (2) the pillar’s size, which is nearly identical in shape and size to Pillar D2547 in Room A4 in Building D200, which served a similar function in the same period; and (3) the clean Late Persian–Early Hellenistic material all around the pillar.

Along the eastern Wall D2212 of the olive press room and abutting it, a Storage Installation D2222 was built in a triangular shape (Figure 10.4). The installation was built directly on bedrock and contained few material remains. Pottery from the interior Surface D2223 inside the installation was comprised predominantly of Late Persian–Early Hellenistic pottery.

The western half of the olive press room was composed by the smooth Bedrock D2544, D2381, D2430, D2402, and enlarged by plastering floor Surfaces D2480, D2420 and extending the plaster up Wall D2364 to the south, Wall D2360 to the north, and the Iron IIA inner casemate Wall D2506 to the west (Figure 10.5). This was undoubtedly to ensure the complete capture of all the precious olive oil during production.

The olive press room contained two improved lever presses. The one on the south was best preserved and built with a central, plastered collecting Basin D2473. The one on the north was not as well...
preserved with a collecting area naturally occurring in the bedrock. In the center between the two presses was a large Vat D2418 (Figure 10.6). Each of the presses will be described separately.

**South Press**
The south lever press faced west-east and the beam’s anchor (fulcrum) was in the former doorway (D2511) of the Iron Age casemate Wall D2527. This had been filled in with stones and by the position of the stones in right angles formed a niche for placement of the beam. One of the border stones of the niche used to cradle the beam was a small stone press weight (Obj. #4719) in secondary use. The south lever press originally contained a pair of plain piers to the south and north of the central collecting Vat D2473, which cut into the bedrock and was plastered, measuring 0.40 m in diameter and 0.50 m in depth (Figure 10.7). These piers served to support the frails and were plastered on their bases as well. Only the south Pier D2382 was preserved. It was carved of solid limestone and stood at a height of 1.17 m. Evidence for the northern pier was found at the base where the plaster from central collecting Vat D2473 ran up around some smaller stones used to shore up and support the pier and presumably continued up the north pier, as was the case for the south pier (Figure 10.8).

To the east, running in a clear line along where the south press beam once stood, was a set of four large press weights (Figure 10.9). The weights (Objs. #4722, 4723, 4725, 4726) were cut with one horizontal bore. The last, easternmost weight (Obj. #4722) was twice the size of the other weights and more rounded, suggesting the possibility that it might originally have been used as a crushing stone for the olives. As no crushing stone was found in the olive press room and adjacent rooms, this is a reasonable
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Figure 10.2: Area D – 3-D Plan of the olive press installation.

Figure 10.3: Area D – Pillar D2539 situated in the center of the olive press building.
explanation. But this interpretation is also problematic based on the irregular shape of the stone.

To the north of the central collecting Vat D2473, and immediately adjacent to where the north pier stood, was a large lateral Vat D2418. It measured 1.34 m in length, 1.2 m in width, and 1.1 m in depth. It was carved into the bedrock symmetrically positioned between the South and North presses and plastered. This deeper and larger basin might have been used in the final stage of oil production where the oil is separated from the watery lees (Kloner, personal communication).

**North Press**

Observation of the symmetry of the south press installation and certain features suggested that there might have been a second press to the north. This was based on several observations: (1) a large Stone D2540 was excavated in the north of the building sitting directly on bedrock and propped on the south side with small stones. It was square in shape and flat in contrast to the south pier of the south press, which was elongated and tall, but positioned in the same location opposite of it, suggesting that it served as the north pier of the north press (Figure 10.9); (2) like the plaster for the north pier of the south press, the presence of plaster running from the large lateral Vat D2418 ran up as a support around smaller stones that seemed to once support a south pier opposite of stone Pier D2540.

Based on these observations exploratory excavations revealed a cut in bedrock in the same location, but opposite to central collecting Vat D2473. While it was not nicely carved into a circular installation and plastered, several dozen olive pits were found inside the cut into the bedrock, which was designated as Installation D2521. Deeper excavation was not possible. The suggestion is that a second press was situated with the beam facing the same direction. No weights were found, suggesting...
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Figure 10.6: Area D – Large Vat D2418, which is centrally located between the north and south lever presses.

Figure 10.7: Area D – South lever press with central collecting Vat D2473 and preserved south Pier D2382.
it went out of use prior to the function of the south press. The secondary Wall D2360 contained a small reused weight that might have been employed in the earlier working of this press. In the northwestern corner of this room, in Debris D2368 (2388), more than 1600 olive pits were discovered (Figure 10.11), apparently dumped here before the abandonment of the later phase of the olive press installations.

Outside the olive press room, a large pit was found with the discarded remains of dozens of storage jars dating to the Late Persian–Early Hellenistic period. The pit was located between Squares X31 and Y31. A small retaining Wall D2396 was running east-west in Square X31 and was composed of a single row of stones about five to seven courses high (Figure 10.12). This was later changed to Installation D2535 in X31 and D2409 in Y31. The pit was excavated under four debris loci in X31 (D2322, D2332, D2337, D2377). In Y31 the pit was excavated as Debris D2408 and with the southern retaining installation Wall D2409. The pit dimensions were 3.1 m wide, 4.5 m long and 1.2 m deep. The Late Persian–Early Hellenistic pit contained about 3,400 sherds of storage jars in Y31 alone (Figure 10.13).

10.3. Historical Context and Chronology

The olive press installation was used during two phases in the Late Persian–Early Hellenistic period (Phase 1, Stratum IIIa; and Phase 2, Stratum IIIb).
This was demonstrated by the addition of architecture to divide the installation into a north and south press and the secondary use of press weights (see Chapter 8). The pottery found on surfaces relating to the olive press installation was exclusively dated to the Late Persian–Early Hellenistic period. Several coins were also found, which provide a more specific date for the installation.

10.4. Comparative Studies: Iron Age Olive Presses

The olive press installations at Khirbet Qeiyafa reveal an important step of development in olive press technology from the Iron Age into the Hellenistic period. The comparison of olive press technologies in these periods will help establish where the Khirbet Qeiyafa installation fits within this broader development. Comparisons in the Iron Age II will focus on presses at Tel Miqne-Ekron and Tel Batash-Timnah located within the general region.

Tel Miqne-Ekron

During excavations at Tel Miqne-Ekron from 1984 to 1996, 184 installations were found of which 164 were employed to produce olive oil on a massive scale during the 7th century BCE (Strata IB-C). The growth of the olive oil industry at the site corresponds to the enforced stability provided by Assyria in the region while Ekron became a vassal...
It is estimated that the minimum annual yield of olive oil at peak production was 230 tons from an estimated 3,500 dunams of olive groves extending over a 1.5–2 km radius around the site (Eitam 1996:183). Of these presses, 115 were oil-press complexes, each with one central basin and two presses (Figure 10.14). The presses on either side of the crushing basin were made of a stone block measuring ca. 0.7 x 0.6 x 0.7 m. The horizontal pressing surface was flanked on all sides by raised edges. The center of the press was chiseled into a collecting vat. These presses were independent containers chiseled from local Nari stone blocks placed on the floor on either side of the central collecting vat (Eitam 1996:169; cf. Frankel 1984:26–30; Eitam 1987). Most of the presses (105) were square-shaped with radial draining groves chiseled into the press surface (Eitam 1996:170).

The central basin was rectangular in shape, ca. 0.7 x 1.1 x 1.5 m, with an average volume of 300
liters (Eitam 1996:171–172). One hypothesis is that a function of the central basin was for crushing olives (Eitam 1996:172). Three rollers were found, one in situ in front of one of the central basins. The measurements of one roller were 0.6 x 0.22 m. The reconstructed dimensions of the second roller were 0.45 m in length and 0.15 m in diameter. The rollers had round impressions engraved on each end measuring about 3 cm in diameter and 2 cm in depth. The volume of the central basin equaled approximately twice the number of olives required for one press. In this way, both presses on either side of the crushing basin could have been used after initial crushing was completed. It is suggested that the crushing rollers were maneuvered by one person using a fork-shaped shaft that fit into the depressions on the ends of the roller (Eitam 1996:172).

This system of operation was preserved continuously at Tel Miqne-Ekron (Eitam 1996:175).

Based on the positioning of weights, it is believed that the beam was set into the wall and used as a lever by attaching weights. A specific rectangular stone niche averaging 0.45 x 0.45 x 0.75 m was used to anchor the beam in the wall. Several of these stone niches were found in situ. Nine weights were found in situ while many others were located in secondary use in walls around the site. The stone weights were pyramid in shape with a truncated top. The weights found in situ were in a line. The average measurements were 0.4 x 0.55 (base) x 0.3 m with weights between 70 and 120 kg. A hole was drilled into the upper part (Eitam 1996:172). The presses at Tell Miqne-Ekron provide significant data to the development of presses in the Iron Age.

Figure 10.14: Ekron (Tel Miqne) reconstruction of olive press installation (Courtesy of Seymour Gitin, Albright Institute of Archaeological Research, drawing by E. Cohen).
Figure 10.15: Timnah (Tel Batash) Area H isometric view and reconstructed sections of olive press installation (Courtesy of Amihai Mazar, The Hebrew University of Jerusalem, drawing by Leen Ritmeyer).
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Tel Batash-Timnah

Ten seasons of excavation (1977–1989) produced an excavated area of 3,000 m² of Stratum II dating to the late seventh century BCE (Kelm and Mazar 1995:151). In this period two oil presses were found in Area E and Area H while other scattered remains of oil presses were documented on the site (Kelm and Mazar 1996:244). It is believed that the site had a thriving oil industry in this period, based on the evidence here and related evidence at nearby Tel Miqne-Ekron (Kelm and Mazar 1996:244).

The Area H and Area E presses were very similar in design to the Tel Miqne-Ekron presses with two pressing vats on either side of a central crushing basin. In contrast to the Tel Miqne-Ekron presses, the crushing basins were not at a raised elevation, easy to reach by the workers. The Tel Batash-Timnah presses were characterized by a built-up stone surface that was even—that is, at the same level as the openings of the crushing basins. This design would have required the workers to kneel or crouch in order the extract oil from the basins by dipping (Kelm and Mazar 1995:157).

The Area E press was situated in Building 950, immediately adjacent to House 743 in Area D. It consisted of a central crushing basin and was flanked by two square crushing vats on either side. Three stone rollers used to crush the olives, evidently in the stone basin, were found in the room. Two stone weights, with suspension holes, were located near the presumed furthest length of the eastern beam. The largest one weighed 58 kg (Kelm and Mazar 1995:150–151).

The Area H press was situated in a large complex (Mazar 1997:155–161; see 159, Figure 38; Figure 10.15). The raised stone platform measured 3.2 x 3.9 m, surrounded by walls on all three sides. The central crushing basin measured 0.8 x 1.3 m and 0.42 m in depth. The central crushing basin was flanked on either side by two stone pressing vats, one square shaped (0.74 x 0.84 m) and the other rounded (diameter 0.80 m). Both of the pressing vats are shaped with a rim around the outer edge apparently to make a frame for containing the crushing baskets. Just 2 m behind the presses, two niches were found in the southern wall for the beam. In front of and directly between the two presses was a flat stone. “A large broken monolithic pillar found fallen near this flat stone must have stood on it. This pillar probably supported the roof of the structure, but could also have served as a divider between the two beams” (Kelm and Mazar 1995:158).

Several similarities and dissimilarities can be noted when comparing the Tel Miqne-Ekron and Tel Batash-Timnah presses with the press at Khirbet Qeiyafa. First, in both cases a central basin was flanked on either side by crushing basins. While at Ekron and Timnah the central basin was most probably used for crushing, there is no evidence that the Qeiyafa central basin was used for this purpose. The Qeiyafa central basin appears to have been used as a vat to separate different types of oil. Second, the beam in both cases was anchored into the wall behind each crushing basin. In the case of the Ekron olive presses, the crushing basins were raised above ground allowing workers to stand while extracting the oil. However, in both the Timnah and Qeiyafa presses, the crushing basin and collecting vats were at the same level as the standing area. In the case of the Qeiyafa presses, the collecting vats were carved into the bedrock and plastered, whereas the Timnah presses had a raised stone construction that brought the surface to the same height as the crushing basin and collecting vats. Finally, both the Area H press at Timnah and the Qeiyafa press have a central monolithic pillar that supports a roof structure and might also have served as a divider between the two beams. These similarities point to some degree of continuity in the olive oil industry from the late Iron Age into the Early Persian period.

10.5. Comparative Studies: Late Persian–Early Hellenistic Olive Presses

In the Persian and Hellenistic periods, olive presses have been documented at several sites in the Shephelah region (Avni and Gudovitz 1996; Kloner 2003; Eton et al. 2009). Two sites deserve special attention due to their proximity and strong parallels to the Khirbet Qeiyafa olive press. The first press was discovered at ‘Aderet in the Elah Valley east of the site (Seligman 2009). Maresha’s numerous Hellenistic presses also provide an important site for comparison (Kloner and Sagiv 1991; 1993; Kloner 2003).

‘Aderet

The site was excavated in 1981 by Ora Yogev as part of a salvage excavation under the auspices of the Department of Antiquities and Museums (Yogev 1982). ‘Aderet is located on a hill south of the Elah Valley, about 4 km southeast of Khirbet Qeiyafa and 11 km northeast of Maresha. It consists of a rectangular farmhouse measuring 28 x 11 m, separated into two units of rooms surrounded by a central courtyard. The olive press is located on the western edge of the courtyard (Seligman 2009:361; Figure 10.15). The complex includes an improved
lever press in one room with a central collecting basin connected by a gutter to a lateral vat. In an adjacent room is a round crushing basin. The press bed was plastered and rectangular (1.55 x 1.10 m) with a round shallow vat in the center (diameter 0.55 m, depth only 0.3 m). Stone piers flanked the vat on both sides. One pier had fallen over the vat. The piers were plastered on the bases. The plaster extended around the press bed and over to the collecting vat, which was also carved into the bedrock. A small gutter ran from north-south to the press-vat to the collecting vat. The collecting vat was round (diameter 1.5 m and 0.8 m deep; volume 1.4 m^3). Plaster covered the collecting vat and extended around the press bed and over to the collecting vat. The central collecting vat had a narrow opening 0.1 m high and placed over the central collecting vat. The function of the Hellenistic presses found at ‘Aderet, Maresha, and Khirbet Qeiyafa were somewhat similar. All could be classified as lever-and-weights presses, more specifically modified with piers on either side of the central collecting vat to support the baskets or frails (Sagiv and Kloner 1996:281; Frankel 1999; 2009:5). Another common practice was to plaster the collecting vats and the surrounding area to maximize the collection of oil. Several additional close parallels can be pointed out between ‘Aderet and Khirbet Qeiyafa:

1. At both ‘Aderet and Khirbet Qeiyafa the plaster extended up the piers that flanked the central collecting vats and also extended over the stone walls of the room where the pressing occurred.

2. The Khirbet Qeiyafa olive press installation also had the vats carved into the bedrock, which was the method used at ‘Aderet and Maresha, but which was notably different from the Iron Age exemplars from Ekron and Timnah.

3. A larger lateral vat carved into bedrock was found adjacent to the central collecting vat at both Qeiyafa and ‘Aderet. This feature was absent at the Iron Age presses where the central stone basin between the presses was explained as crushing basins. At Maresha this feature was absent altogether.

4. Both the Qeiyafa and ‘Aderet presses were connected to large buildings with central courtyards. The buildings are of similar size. The function of the ‘Aderet building is described as a farmhouse (Seligman 2009:361). In contrast, the building at Qeiyafa appears to have had a more administrative function based on the artifacts found.

5. The Qeiyafa stone weights had simple horizontally bored holes, unlike Maresha where the reversed T was used.

6. Finally, the stone weights at Qeiyafa were found directly on the surface of the bedrock. No special troughs were carved for them to provide further leverage. This seems to have been a later innovation in the region as exemplified at Maresha. For the reasons given above, the closest parallel to the Khirbet Qeiyafa olive press installation seems to be 4 km southeast at ‘Aderet.

**10.6. Conclusions**

Oil presses with firm dating to the Late Persian–Early Hellenistic period are not common (Seligman...
2009:361). The Khirbet Qeiyafa olive press installation can be more firmly dated, based on the numismatic evidence, to this period. It was built together with Building D200 in the Late Persian period. A later phase exemplified by the reused stone weights and a secondary wall built between the north and south presses indicates possible continued use into the Early Hellenistic period. The new press found at Khirbet Qeiyafa provides an important typological link in the region between the Iron Age presses of the late seventh century BCE and those found in the later Hellenistic period at Maresha. Throughout these periods olive oil production was a significant part of the economic, social, and religious aspects of ancient society which continued to impact daily life in the region.

References


