AN EARLY ISLAMIC INSTALLATION AT RAMLA

OREN SHMUELI

INTRODUCTION

In 1999, a salvage excavation was conducted at the Ramlod Interchange, located along the southeastern fringes of the city of Ramla. The excavation was situated at the foot of a *ḥamra* hillock, adjacent to the city's Muslim cemetery, c. 200 m southeast of Birkat el-Jamus (map ref. 188865/647558; Fig. 1). At the top of this hill, a plastered vault stands (Fig. 2), c. 50 m north of the excavation area. A survey conducted on the hill during the excavation revealed Early Islamic sherds near the vault and a Muslim graveyard along its northeastern slope.

THE EXCAVATION

The excavation focused on a circular installation, the top of which was damaged during the course of the leveling of Road 44. The eastern part of the installation was not excavated,

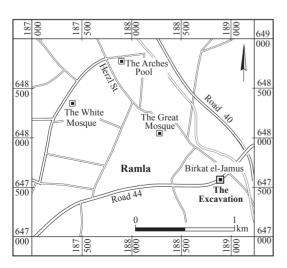


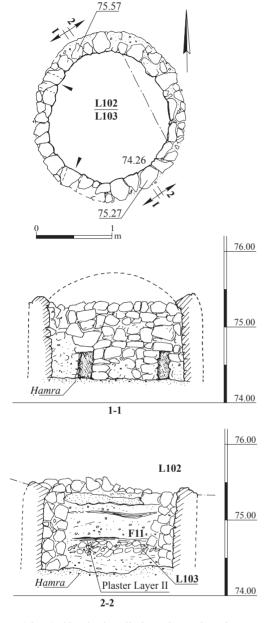
Fig. 1. Location map.

serving as a reference section for the excavation (Plan 1). The installation (diam. 2.15 m) was built into virgin soil of various-sized fieldstones ($15 \times 15 \times 25$ cm), bonded with gray/white mortar mixed with small pieces of charcoal (Fig. 3). It was preserved to a height of 1.35 m, with one course of its vaulted roof still extant (Fig. 3). There are two rectangular openings (18×36 , 26×40 cm; Fig. 4) at the base of the structure. The walls of the southwestern openings were covered with white plaster. A small amount of plaster was also exposed on the northern wall. The installation had no discernible floor.

Above the northwestern opening, an ashlar stone, with delicately chiseled combing, was found in secondary use (Plan 1: Section 1–1).



Fig. 2. Plastered vault at the top of the hill, looking north.



Plan 1. Circular installation, plan and sections.

There may have been a third opening along the unexcavated eastern side of the installation.

The fill in the upper part of the installation (L102) consisted of plaster fragments (Plaster Layer I) and fieldstones mixed with *hamra*, animal bones, pottery sherds and fragments of glass vessels. It seems that the plaster and stones originated from the collapse



Fig. 3. Circular installation (L103), looking north.



Fig. 4. Southeastern opening at the bottom of the installation.

of the upper part of the vault that did not survive. Beneath Plaster Layer II, the lower portion of the installation (L103) contained a concentration of complete pottery and glass vessels, roof tiles and ceramic tiles mixed with charcoal and animal bones (pending analysis).

THE CERAMIC ASSEMBLAGE

The pottery recovered from within the installation (L103) was sealed beneath Plaster Layer II and the fill above it (L102). The assemblage is primarily composed of plain, undecorated vessels, with no glazed vessels found.

Bowls and Mugs (Fig. 5)

The bowl in Fig. 5:1 has an everted, carinated, folded rim with a triangular section. This type dates to the seventh—tenth centuries CE (Magness 1993:199).

Three mugs were found in the excavation. All are of the same form, but two are of an orange fabric (Fig. 5:3, 4), while the third (Fig. 5:5) is of a buff ware. The vessels are well-fired and have a thin rim, with bands of dark burnish on both the interior and exterior of the

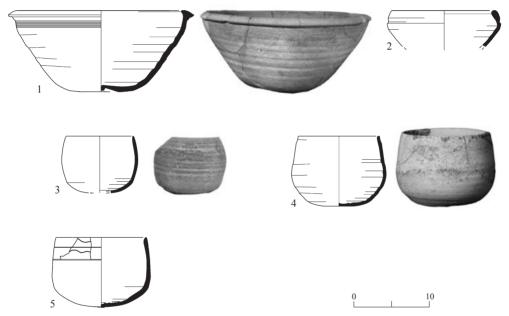


Fig. 5. Bowls and mugs.

No.	Vessel	Basket	Description	Parallels	
1	Bowl	1007/13	Orange/brown fabric	Avissar 1996: Fig. XIII.68.1 Walmsley 1988: Fig. III. 14	
2	Bowl	1011/11	Orange/brown fabric	Magness 1993: Fine Byzantine Ware Form 2 Variant B:2 Cytryn-Silverman 2010: Pl. 9.3:6	
3	Mug	Mug 1015/6 Orange fabric, bands of dark burnish on int. and ext., well-fired		Magness 1993: Fine Byzantine Ware Form 1 Variant D:3 Arnon 2008: Types 322, 322a, 322b Cytryn-Silverman 2010: Pl. 9.3:8	
4	Mug	1013/4	Buff fabric	As No. 3	
5	Mug	Mug 1011/14 Orange/gray fabric, well-fired		As No. 3	

vessel. This type of mug dates to the seventh—tenth centuries CE (Magness 1993:194), with parallels also found in Caesarea Stratum VIIIa, dating to the late seventh—mid-eighth centuries CE (Arnon 2008:36).

Cooking Pots (Fig. 6:1–3)

Two main forms of cooking pots were found in the excavation. The first (Fig. 6:1, 2) is a well-fired vessel, with a relatively short neck that flares out at the top. These vessels have large loop handles drawn from the rim to just beneath the shoulders and an omphalos base. The type dates from the fifth—eighth centuries CE (Magness 1993:219), with parallels found in the Umayyad citadel of Amman. The second type (Fig. 6:3) has a short neck, grooved rim, an omphalos base and handles attached to the rim.

Cooking Krater (Fig. 6:4)

Vessel No. 4 is a cooking krater with a cut rim, folded slightly inward, and a horizontal handle. Another fragment of this type of krater, with raised handles (not illustrated), was uncovered. This type of krater is very common at Yoqne'am (Strata II–IV) in the Early Islamic period (Avissar 1996:139). Magness suggested that this type of krater (Form 3) was used between the seventh and tenth centuries CE (Magness 1993:214).

Lid (Fig. 6:5)

One well-fired, concave lid with an everted rim is presented (Fig. 6:5). Such lids were in use between the third and the tenth centuries CE (Magness 1993:215; Avissar 1996:146–147).

Jars (Fig. 7)

The jar displayed in Fig. 7:1 is decorated with splashes of white paint. The vessel has a bagshaped body, a long straight neck and a plain rim. The vessel has large loop handles drawn from the rim to below the shoulders. Eight more jar handles indicate additional instances of this type in the assemblage. A vessel of this type was exposed in the Umayyad pottery assemblage at Pella and at Yogne'am, where

it was widely used from the beginning of the period onward (Avissar 1996:149). This type of vessel was also found in Caesarea Stratum VIII, dated to the mid-eight—end of ninth centuries CE (Arnon 2008:38).

Three jars (Fig. 7:2–4) have a plain rim and a bag-shaped body. Two of the vessels (Fig. 7:2, 4) are decorated with white slip. Similar vessels were uncovered at Caesarea in a building that was no longer in use by the year 660 CE (Adan-Bayewitz 1986:91–97) and on the *hamra* layer of Ramla that is dated to the second half of the eighth century (Cytryn-Silverman 2010:98–99). It was also found in Caesarea Stratum VII, of the second half of the eighth–ninth centuries CE (Arnon 2008:39).

Another jar (Fig. 7:5) has a plain rim with a long neck that tapers toward the top. The handles are affixed to the shoulder of the vessel and the body is globular with an omphalos base. No exact parallels were found.

Two jars (Fig. 7:6, 7) have a thickened rim, a torpedo-shaped body and a flat base covered with wheel marks. One example is distorted, while the other (Fig. 7:7) has a curved body and is covered with a buff slip. The sole parallel for this type of jar was found in the monastery at Mevo Modi'im, in the late phase dating to the Early Islamic period (Eisenberg and Ovadiah 1998:10*).

Jugs and Small Jars (Fig. 8:1–4)

A number of jugs were found, two of which were almost complete. One slightly everted, ridged jug rim (Fig. 8:1) is covered with white plaster mixed with pieces of charcoal. Another jug (Fig. 8:2) has a long, wide neck with a handle drawn from the shoulder to the rim. This type of jug, covered with white plaster mixed with pieces of charcoal, was found in Yoqne'am Strata II–IV, dating to the Early Islamic period (Avissar 1996:161).

A third vessel (Fig. 8:3) has a slightly everted neck and rim. Two handles extend from the shoulder to the rim of the vessel. Small jars of this type were uncovered in a pit that was found in Area XXIX at Pella, dating to the end of the

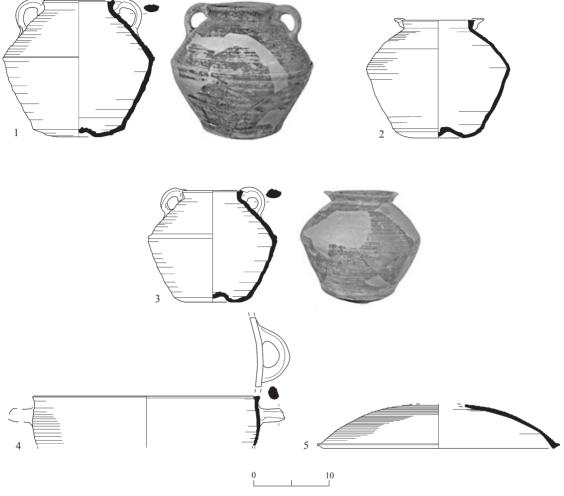


Fig. 6. Cooking pots, a cooking krater and a lid.

No.	Vessel	Locus/ Basket	Description	Parallels
1	Cooking pot	1016/5	Orange fabric, well-fired	Smith and Day 1989: PI: 53.3 Northedge 1992: Fig. 133.2 Magness 1993: Cooking Pots Form 4A Variant 1.4.A Cytryn-Silverman 2010: PI. 9.6:1
2	Cooking pot	1019/2	Orange fabric, well-fired	As No. 1
3	Cooking pot	1012/4	Orange fabric, well-fired	
4	Cooking krater	1011/3	Orange/gray fabric, well-fired	Smith and Day 1989: PI: 61.12 Magness 1993:214 Avissar 1996: Fig. XIII. 99.6; 2006: Fig.5:10 Arnon 2008: Type 721d Cytryn-Silverman 2010: PI. 9.6:8–10.
5	Lid	1008	Orange fabric, well-fired	de Vaux and Stéve 1950: Pl. B. 15 Smith and Day 1989: Pl: 61.11 Northedge 1992: Fig. 133.3 Cytryn-Silverman 2010: Pls. 9.6:5–7; 9.15.9

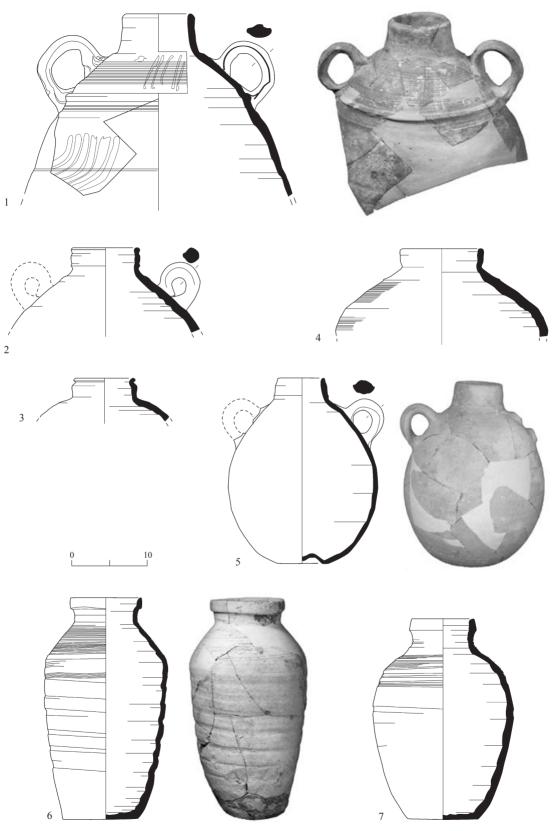


Fig. 7. Jars.

← Fig. 7

No.	Locus/ Basket	Description	Parallels	
1	1011/10	Gray fabric, splashes of white paint	McNicoll, Smith and Hennessy 1982:146.3 Avissar 1996: Fig. XIII.14.4 Arnon 2008: Type 821h	
2	1006	Orange fabric, white slip	Adan-Bayewitz 1986: Fig. 1.7 Northedge 1992: Fig. 133.5 Watson 1992: Fig. 10.82 Arnon 2008: Type 921a Cytryn-Silverman 2010: Pl. 9.35:1	
3	1007/4	Orange fabric	Adan-Bayewitz 1986: Fig. 1.6 Arnon 2008: Type 921a	
4	1013/1	Orange/brown fabric, white slip	Adan-Bayewitz 1986: Fig. 1.4 Watson 1992: Fig. 10.82 Arnon 2008: Type 921a	
5	1011/19	Orange/brown fabric, white slip		
6	1014/14	Buff fabric	Eisenberg and Ovadiah 1998: Fig. 16.4	
7	1017/5	Brown fabric, buff slip		

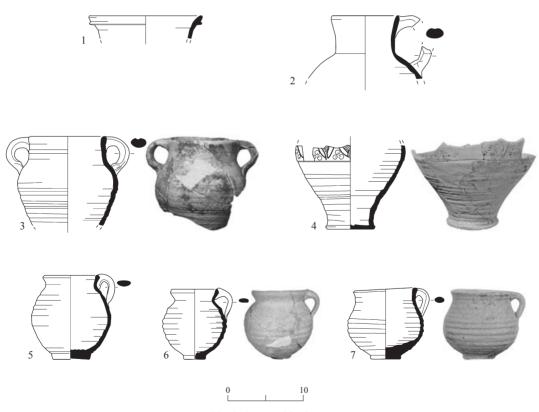


Fig. 8. Jugs and juglets.

No.	Vessel	Locus/ Basket	Description	Parallels
1	Jug	1002/1	Orange/brown fabric, white plaster mixed with charcoal	
2	Jug	1013/8	Brown fabric, covered with a layer of white plaster mixed with charcoal	Avissar 1996: Fig: XIII. 139.4
3	Jug	1007/8	Buff fabric	Walmsley 1988: Fig. III. 9: 15 Whitcomb 1988: Fig. 1.c Sion 2004: Fig. 12.64
4	Jug	1030/1	Buff fabric, incised decoration	Avissar 1996: Fig: XIII.133.1
5	Juglet	1015/2	Orange fabric, white slip	
6	Juglet	1009/2	Brown fabric, buff slip	

← Fig. 8

Umayyad period-beginning of the Abbasid period (Walmsley 1988:156–157) and at Ramla, in an assemblage dated from the mid-eighth to the tenth centuries CE (Sion 2004:71*).

1010/1

Buff fabric

Juglet

A jug with a narrow base (Fig. 8:4) is decorated with incisions and stamped decoration consisting of circles and dots on the shoulder. The upper part of the vessel is missing, so that only a portion of the decorated panel was preserved. A similarly decorated vessel was uncovered at Yogne'am. This kind of decorated vessel begins to appear at the end of the Umayyad period and continues into the Abbasid period (Avissar 1996:159). It is important to note that the buff fabric of the jug is a characteristic feature of Abbasid Ramla (Rosen-Ayalon and Eitan 1969).

Juglets (Fig. 8:5-7)

Three complete juglets were found. These vessels have a slightly everted rim, no neck, a globular body and a disc base. The handles extend from the shoulder of the vessel to the rim. One juglet (Fig. 8:5) is white slipped, another (Fig. 8:6) has a buff slip; a third juglet (Fig. 8:7) is not slipped. No exact parallels were found.

Flask (Fig. 9:1)

One complete flask was found, with two ridges below the rim, a globular body and two handles on the shoulder. Three holes were perforated at the base of the vessel after it was fired. This type of flask was also found in Caesarea Stratum VII, dating to the second half of the eighth—ninth centuries CE (Arnon 2008:38).

Decorated Sherds (Fig. 9:2, 3)

Two decorated sherds are illustrated. Figure 9:2, probably belonging to a jar, is adorned with a barbotine ornamentation depicting a floral pattern. Figure 9:3 is decorated with incised geometric patterns. According to Whitcomb's typology, this decorated style was common at Khirbat al-Mafjar (Period 3) in the tenth century CE (Whitcomb 1988:53, 64).

Roof Tiles

Five fragments of roof tiles (1 cm thick) were discovered. A circle (diam. 1 cm) is stamped on one of the fragments (not illustrated).

Ceramic Tiles

Twenty-one fragments of flat ceramic tiles (3–4 cm thick) were found (not illustrated).

The pottery vessels uncovered in the installation begin to appear in the sixth century CE, and continue into the eighth and ninth centuries CE. Some of the vessels have parallels from the first half of the eighth century CE, such as the mugs with a thin rim (Fig. 5:3–5), the juglets



Fig. 9. Flask and decorated body sherds.

No.	Vessel	Locus/ Basket	Description	Parallels
1	Flask	1011/17	Buff fabric, two ridges on rim	Arnon 2008: Type 528a Smith and Day 1989: Pl. 58, Fig. 6
2	Body sherd	1012/1	Buff fabric, plastic decoration	Whitcomb 1988: Fig: 1.3, B, E, K Baramki 1944: Fig. 5.15
3	Body sherd	1019/9	Incised diagonal stripes, buff fabric	

(Fig. 8:5–7), the buff jug (Fig. 8:3) and the bag-shaped jar (Fig. 7:1). All of these vessels continue to be used in the second half of the eighth century and in the ninth century. Most of the vessels have parallels in settlement levels dating between the second half of the eighth century and the ninth century CE. The three cooking pots (Fig. 6:1–3) were common during the eighth century CE.

A vast number of buff ware vessels were found in the excavation (Figs. 5:4; 8:3, 4, 7; 9:1, 3), one of which was decorated with an applied barbotine decoration (Fig. 9:2). Cytryn-Silverman (2010:104–108) has concluded, after reviewing the different opinions regarding the dating of buff ware, that it does not appear before 749 CE. Other vessels (e.g., Figs. 7:6, 7; 9:3; 10:1) were common in the second half of the eighth century and throughout the Abbasid period.

From the above-mentioned dating of the different ceramics, it seems that the assemblage was discarded into the pit between the second half of the eighth century and the first half of the ninth century CE. That said, the date of the glass vessels is slightly earlier—i.e., the end of the Umayyad period (end of the seventh century to the mid-eighth centuries CE), with no finds postdating the Umayyad period (see Gorin-Rosen, this volume). The discrepancy in dating between the glass and ceramic assemblages may possibly be linked to different stages in the deposition of the vessels. Such differences in dating reflect the need to fine-tune the chronology of both types of assemblages, perhaps at sites that provide a stratified sequence.

DISCUSSION AND CONCLUSIONS

Ramla was first founded at the beginning of the eighth century CE, with the rise of Islam in the region, in order to serve as the capital of the Filastin district (Luz 1997:53–54; Avni 2008:2–4). Recent excavations have revealed many remains of the Early Islamic urban site, including agricultural and water

installations, such as the one described here. The subterranean, round plastered installation described here consisted of a constructed vault with openings near its base and no floor. The installation was apparently one of many cesspits discovered in the Ramla area and its vicinity. The openings at the bottom of the pit were probably meant to increase the flow outward from the cesspit, so as to allow more efficient absorption in the earth.

Similar installations were discovered in other excavations in the area. For example, in an excavation south of Ramla (Paz 2000:296), nine circular subterranean (or sunken) installations $(1 \times 2 \text{ m})$ dated to the eighth–ninth centuries CE were uncovered. The excavator suggested that they were part of a drainage system for a farm near Ramla. In addition, two oval installations $(1.5 \times 1.8 \text{ m})$ of the early Islamic period were excavated south of Ramla by Korenfeld (2007: Fig. 1), who suggested that they were used as cesspits for a farm outside of Ramla.

Gorzalczany (2009a: Figs. 9–11; 2009b: Fig. 8) discovered several square and rectangular cesspits dated to the eighth–ninth centuries CE, roughly 800 m south of Ramla. These pits, several of which were covered with a stone vault, were constructed of small stones, and yielded many artifacts, including complete ceramic vessels, glass bottles and coins.

On the western side of Ramla, Sion (2010a: Figs. 8, 9) discovered a bell-shaped cesspit (diam. 1.7-2.4 m, 0.5 m high) of the eighthtenth centuries CE. The pit was dug into the ground and lined with stones; the walls were not plastered and no floor was found. In another excavation northeast of Ramla, Sion (2009: Fig. 3-5) discovered two cesspits with plastered walls-perhaps toilets-of the eighth-tenth centuries CE. The plaster was decorated with an incised herringbone pattern. No floors were discovered in these pits, which were situated beneath the center of a room. Nearby, two other rectangular cesspits (1.2 × 2.5 m) were exposed (Sion 2010b: Fig. 6). These pits, lined with limestone stones, are dated to the Early Islamic period. In an excavation in the

north of Ramla, Torge (2007: Fig. 2) discovered an oblong-shaped (2.5 × 2.0 m) Early Islamic installation covered with a vault and with no floor. She suggested the installation served as a cesspit. Toueg (2011: Figs. 1, 3) discovered two round (diam. 1 m) cesspits built into a layer of hamra on the eastern side of Ramla, constructed of fieldstones using dry construction and dating to the ninth-beginning of the tenth centuries CE. A drainage channel, built of gray lime-based mortar led to one of these pits. In the center of Ramla, Segal (2011: Figs. 5, 6) discovered a round cesspit of the ninth-tenth centuries CE. Eshed (2011: Fig. 1, 2) also discovered a round (diam. 0.9 m) cesspit of the Early Islamic period in the center of the city.

Most of the cesspits discovered in Ramla are small compared to the one discovered in the present excavation. It may be that the pit described above served a large building, which was not unearthed.

At some point in time, pottery and glass vessels, as well as ceramic and roof tiles, were discarded into the pit. The finds date to the end of the pit's use, or later, and therefore provide a *terminus ante quem* for the installation. While several complete ceramic vessels were found, no intact vessels were recovered from the excavation, other than the flask. It is possible that some of the vessels may have been thrown into the pit while they were still whole.

The position of the installation—on a *hamra* hill c. 200 m southeast of Birkat el-Jamus (see Peterson 1995:99, Table 1), where the aforementioned vault, as well as a number of other walls were discerned-differs from the city of Ramla. The accumulation of brown/ gray earth that characterizes the center of the settlement of Early Islamic Ramla cannot be discerned on the surface of the hill's southeastern slope, suggesting that this hill was outside the center of the city. Therefore, it appears that the installation served a structure, perhaps a farmhouse, built on the hill at the outskirts of the city. Similar farmhouses are located south of Ramla, forming a suburb of the Early Islamic-period city (Shmueli and Kanias 2007; Tal and Taxel 2008:210; Shmueli 2012:150*).

Although the historic evidence indicates that Ramla was built at the beginning of the eighth century CE, excavations have revealed architectural remains primarily of the ninth and tenth centuries (e.g., Rosen-Ayalon and Eitan 1969; Kletter 2005; Gutfeld 2010), with no architectural finds dating to the eighth century CE. The importance of the current excavation lies in the archaeological evidence it provides of a farmhouse that was built outside an established habitation—perhaps a farmhouse on the outskirts of the city during the eight century CE.

Note

¹ The salvage excavation (Permit No. A-3050) was conducted by the author in May 1999, on behalf of the Israel Antiquities Authority, and financed by the Department of Public Works, with the assistance of Yael Gorin-Rosen (glass), Tsila Sagiv (photography), Vadim Essman, Viatcheslav Pirsky and Natalia Zak (surveying and drafting), Hanita

Zion (GPS), Michal Ben-Gal (pottery restoration) and Marina Shuiskaya (drawing). I would like to thank Katia Cytryn-Silverman, of the Hebrew University, and Miriam Avissar and Raz Kletter, of the Israel Antiquities Authority, for their assistance, guidance and valuable comments during the course of preparing this article.

REFERENCES

- Adan-Bayewitz D. 1986. The Pottery from the Late Byzantine Building (Stratum 4) and Its Implications. In L.I. Levine and E. Netzer. *Excavations at Caesarea Maritima 1975, 1976, 1979—Final Report* (Qedem 21). Jerusalem. Pp. 90–129.
- Arnon Y.D. 2008. Caesarea Maritima: The Late Periods (700–1291 CE) (BAR Int. S. 1171). Oxford.
- Avissar M. 1996. The Medieval Pottery. In A. Ben-Tor, M. Avissar and Y. Portugali. *Yoqne'am* I: *The Late Periods* (Qedem Reports 3). Jerusalem. Pp. 75–172.
- Avissar M. 2006. The Ceramic Assemblage. In H. Barbé. Building Fragments of the Early Islamic Period on Ha-Gedud Ha-'Ivri Street, Ramla. 'Atiqot 51:41*–46* (Hebrew; English summary, pp. 237–238).
- Avni G. 2008. 'The Most Beautiful of Cities', Ramla during the Early Islamic Period: An Archeological Survey. *Qadmoniot* 135:2–11 (Hebrew).
- Baramki D.C 1944. The Pottery from Kh. El-Mefgar. *ODAP* 10:65–103.
- Cytryn-Silverman K. 2010. The Ceramic Evidence. In O. Gutfeld. *Ramla: Final Report on the Excavations North of the White Mosque* (Qedem 51). Jerusalem. Pp. 97–211.
- Eisenberg E. and Ovadiah R. 1998. A Byzantine Monastery at Mevo Modi'im. '*Atiqot* 36:1*–19* (Hebrew; English summary, pp. 123–124).
- Eshed V. 2011. Ramla, Yehoshua Ben-Nun Street. *HA–ESI* 123 (November 29). http://www.hadashot-esi.org.il/report_detail_eng.asp?id=1871&mag_id=118 (accessed March 7, 2012).
- Gorin-Rosen Y. This volume. An Ummayad Glass Assemblage from Ramla.
- Gorzalczany A. 2009a. Ramla (South). *HA–ESI* 121 (September 1). http://www.hadashot-esi.org. il/report_detail_eng.asp?id=1195&mag_id=115 (accessed March 7, 2012).
- Gorzalczany A. 2009b. Ramla (South). *HA–ESI* 121 (November 16). http://www.hadashot-esi.org.il/report_detail_eng.asp?id=1254&mag_id=115 (accessed March 7, 2012).
- Gutfeld O. 2010. Architecture and Stratigraphy. In O. Gutfeld. *Ramla: Final Report on the Excavations North of the White Mosque* (Qedem 51). Jerusalem. Pp. 9–96.
- Kletter R. 2005 Early Islamic Remains at 'Opher Park, Ramla. '*Atigot* 49:57–99.
- Korenfeld I. 2007. Ramla, Birkat el-Jamus. *HA–ESI* 119 (April 16). http://www.hadashot-esi.org.

- il/report_detail_eng.asp?id=505&mag_id=112 (accessed March 7, 2012).
- Luz N. 1997. The Construction of an Islamic City in Palestine: The Case of Umayyad al-Ramla. *Journal of the Royal Asiatic Society* 7:27–54.
- Magness J. 1993. *Jerusalem Ceramic Chronology:* Circa 200–800 CE (JSOT/ASOR Monograph Series 9). Sheffield.
- McNicoll A., Smith R.H. and Hennessy B. 1982. Pella in Jordan 1: An Interim Report on the Joint University of Sydney and the College of Wooster Excavations at Pella 1979–1981 (2 vols.). Canberra.
- Northedge A. 1992. Studies on Roman and Islamic 'Ammān: The Excavations of Mrs. C.-M. Bennett and Other Investigations I; History, Site and Architecture (British Academy Monographs in Archaeology 3). Oxford.
- Paz Y. 2000. Ramla—Highway 40 (G-153). *Tel Aviv* 27:295–296.
- Peterson A.D. 1995. Preliminary Report on an Architectural Survey of Historic Buildings in Ramla. *Levant* 27:75–101.
- Rosen-Ayalon M. and Eitan A. 1969. *Ramla Excavations: Finds from the VIII Century C.E.* (Israel Museum Catalogue 66). Jerusalem.
- Segal O. 2011. Ramla, Weizmann Street. *HA–ESI* 123 (December 11). http://www.hadashot-esi.org. il/report_detail_eng.asp?id=1868&mag_id=118 (accessed March 7, 2012).
- Shmueli O. 2012. An Umayyad-Period Aqueduct for the Irrigation of Farmland South of Ramla. 'Atiqot 70:145–152 (Hebrew; English summary, pp. 92*–93*).
- Shmueli O. and Kanias T. 2007. Ramla, Survey in the Region. *HA–ESI* 119 (February 5). http://www.hadashot-esi.org.il/report_detail_eng.aspx?id=474&mag_id=112 (accessed March 7, 2012).
- Sion O. 2004. An Early Islamic Period Settlement in Ramla. 'Atiqot 46:67–92 (Hebrew; English summary, p. 133*).
- Sion O. 2009. Ramla (East). *HA–ESI* 121 (July 8). http://www.hadashot-esi.org.il/report_detail_eng. aspx?id=1150&mag_id=115 (accessed March 7, 2012).
- Sion O. 2010a. Ramla. *HA–ESI* 122 (December 13). http://www.hadashot-esi.org.il/report_detail_eng. asp?id=1580&mag_id=117 (accessed March 7, 2012).
- Sion O. 2010b. Ramla (East). *HA–ESI* 122 (September 5). http://www.hadashot-esi.org.il/report_detail_eng.asp?id=1483&mag_id=117 (accessed March 7, 2012).

- Smith R.H. and Day L.P. 1989. Pella of the Decapolis
 2: Final Report on the College of Wooster Excavations in Area IX, the Civic Complex, 1979– 1985. Wooster.
- Tal O. and Taxel I. 2008. Ramla (South): An Early Islamic Industrial Site and Remains of Previous Periods (Salvage Excavation Reports 5). Tel Aviv
- Torge H. 2007. Ramla, Jerusalem Boulevard. *HA–ESI* 119 (February 8). http://www.hadashot-esi.org.il/report_detail_eng.asp?id=481&mag_id=112 (accessed March 7, 2012).
- Toueg R. 2011. Ramla. *HA–ESI* 123 (April 13). http://www.hadashot-esi.org.il/report_detail_eng. asp?id=1672&mag_id=118 (accessed March 7, 2012).

- Vaux R. de and Stève A.-M. 1950. Fouilles à Qaryet el-'Enab Abū Ġôsh, Palestine. Paris.
- Walmsley A.G. 1988. Pella/Fihl after the Islamic Conquest (AD 635–c. 900): A Convergence of Literary and Archaeological Evidence. *Mediterranean Archaeology* 1:142–159.
- Watson P. 1992. Changes in Foreign and Regional Economic Links with Pella in the Seventh Century A.D: The Ceramic Evidence. In P. Canivet and J.-P. Rey-Coquais eds. La Syrie de Byzance à l'Islam. VII^e–VII^e siècles (Actes du Colloque international Lyon–Maison de l'Orient méditerranén, Paris–Institut du Monde arabe, 11–15 septembre 1990). Damascus. Pp. 233–284.
- Whitcomb D. 1988. Khirbat al-Mafjar Reconsidered: The Ceramic Evidence. *BASOR* 271:51–67.