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SOCIO-POLITICAL AND ECONOMIC ASPECTS OF REFUSE DISPOSAL IN LATE BYZANTINE AND EARLY ISLAMIC PALESTINE¹

OREN TAL, ITAMAR TAXEL²

ABSTRACT

This paper presents three different, yet related, test cases of how disposed material in archaeological sites supplements our historical knowledge and provides information on the political, social and religious history of late antique Palestine. The three test cases presented below deal with transitional periods of occupation that not only provide data on shifting in the political sovereignty of the region but also on the religious or social affinity of the ethnic groups involved.

GENERAL ASPECTS OF REFUSE DISPOSAL IN LATE ANTIQUE PALESTINE

Before presenting the three case studies on which this article is based, it is essential to mention some basic aspects of refuse disposal in late antique Palestine as reflected in the archaeological record.³ The most thorough study of refuse-discard practices in the Roman and late antique world has been recently published by J.T. Peña, who focuses on pottery disposal (Peña 2007: 272-351).⁴ Peña, however, only rarely deals with the Eastern Mediterranean, and at any rate does not discuss assemblages that postdate the 7th century. Thus, critical research may indeed be in order, although it is beyond the scope and aims of the present study to deal at length with this fascinating aspect of human behaviour.⁵ In what follows we will deal with refuse disposal in its domestic context, based on three sites of different chronological frameworks that present three

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2 Tel Aviv University

3 'Late antique' is used here as a reference to the period of Byzantine and Early Islamic rule in Palestine, namely the 4th-11th centuries AD – a period used to describe the transition from Classical Antiquity to the (proper) Middle Ages in local regional milieu.

4 It should be noted, though, that Peña's research is partially based on M.B. Schiffer's pioneer study of refuse discarding practices as evidencing 'behavioural archaeology' (see Schiffer 1996).

5 Worth noting in this respect are Dauphin (1996-97) and Ayalon (1997a), who have dealt with refuse disposal in Byzantine Palestine from the ecological and hygienic perspectives.

different case studies. Deposits of domestic refuse usually contain some or all of the following components: human and animal excrement, kitchen ash, food waste, and items of material culture in a variety of both organic (cloth, leather, basketry, wood, bone), and inorganic (pottery, glass, iron, bronze, lead, stone) materials (Peña 2007: 306-307). However, it should be emphasized that such deposits can sometimes contain refuse originating in other contexts as well, such as industrial, commercial or construction debris.

Peña identifies four general types of behavioural loci that generated significant amounts of discarded pottery: 1) pottery workshops; 2) wholesale/storage and retail facilities for pottery; 3) wholesale/storage and bulk retail facilities for wine, oil and/or fish products; 4) residences and other loci where food was regularly stored in small or moderate quantities, prepared and consumed, such as workshops and other work sites, sanctuaries, meeting facilities and *necropoleis* (Peña 2007: 272). The latter category represents the main locus in which typical domestic refuse (composed not only of pottery) has been generated.

According to Peña, the management of (mostly domestic) refuse within 'Roman' settlements (urban and rural alike) is reflected by a variety of contexts in the archaeological record. Large quantities of refuse were disposed of beyond the built-up area of settlements, sometimes even dumped from the top of the wall (in the case of fortified settlements). In this manner, extensive refuse middens often developed at the edge of settlements; in other words, dumps can define the inhabited areas of a given settlement. In addition, substantial amounts of refuse were discarded within the built-up area of settlements, either by throwing it into an adjacent public thoroughfare, undeveloped lots, abandoned rooms or structures, cesspits, substructures of buildings, cisterns, wells, pits, natural declivities and cul-de-sacs. Peña has suggested that since abandoned negative features (e.g., pits, wells and cisterns) would have represented significant hazards, especially for children and small domesticated animals, their infilling with refuse (during a single or several episodes) would have served a beneficial purpose. Much of the domestic refuse, especially in rural settlements, was collected and spread over the surface of agricultural fields and gardens as fertilizer. Finally, small to moderate amounts of refuse, including small and fragmentary artifactual materials, kitchen ash and food waste, may have been left on the earthen floors of residences and eventually trodden into them (Peña 2007: 278-91, 306-16).

All or most of these practices of domestic refuse management can be identified in the archaeological contexts of late antique Palestine. Extramural or off-site refuse dumps of various sizes and shapes are a common feature in virtually every settlement of the Byzantine and Early Islamic periods in Palestine.⁶ These dumps could have been

6 Possible epigraphic evidence of the practice of refuse dumping outside city walls through a certain gate, exists in the Aramaic (halakhic) mosaic inscription from the synagogue of Tel Rehov, located south of Scythopolis (Beth Shean). The inscription describes, *inter alia*, the six gates of Scythopolis, including the Dung Gate (*pulé de-zablava*, פילי דזבללייה, in the east part of the city walls (Tsafirir and Foerster 1997: 102-103).

developed either as heaps over horizontal or slanted surfaces, or as fills within natural or artificial negative features, such as streams, dug pits and even abandoned burial caves. Examples have been found at Shiqmona (Hirschfeld 2006: 141-42), Apollonia-Arsuf (below), Kafr 'Ana (Gophna *et al.*, 2007: 11-12), Tell Qasile (Ayalon and Harpazi-Ofer 2007) and Ḥorvat Karkur 'Illit (Figueras 2004: 5). Relatively shallow, horizontal refuse deposits located at some distance from settlements can be identified with the fertilizing of agricultural lands; for example at Shiqmona (Hirschfeld 2006: 132-33, 141-42), Caesarea (Porath 1975), Tel Yavneh (Fischer and Taxel 2007: 232) and rural sites in the vicinity of Ashkelon (Allen 2008: 25). No less common is the evidence of various forms of refuse disposal within settlements, especially inside abandoned or unused subterranean features such as cisterns, wells, Jewish ritual baths (*miqva'ot*) and natural or dug pits, usually in the immediate vicinity of inhabited buildings; for example Sumaqa (Dar 1999: 39-40), Ramat Hanadiv (Hirschfeld 2000: 73-74), Yavneh-Yam (below), Ramla (below) and Khirbet es-Suyyagh (Taxel 2009: 79-81). In a few cases possible evidence was found of the dumping of refuse through a window in buildings built either on the outskirts of settlements or as isolated complexes; for example the monastery at Shelomi (Dauphin 1996-97: 67) and the farmhouse at Ḥorvat Petora (Feder 2009). Another practice identified in a few settlements is the mixing of domestic refuse with garden soil and the creation of cultivated garden plots within or on the fringes of settlements. Examples include Caesarea (Patrich 2011: 40-49; Porath, 2006: 123), Ramat Hanadiv (Hirschfeld 2000: 68-70), and Yavneh-Yam (M. Fischer and I. Taxel *in preparation*).⁷ Sometimes, a combination of the two practices of refuse disposal can be identified in one and the same context, such as the leveling and filling of abandoned structures in Caesarea with soil mixed with domestic refuse in order to create terraced garden plots (Patrich 2011: 43).

The various practices of refuse disposal within or in the immediate vicinity of inhabited areas, are only one aspect of both the low standards of individual and public hygiene and the absence/weakness of legal restrictions (or enforcement) governing refuse discard, which characterized daily life in Byzantine and Early Islamic Palestine, especially in the countryside (Dauphin 1996-97; see also Peña 2007: 277-78, 291).

APOLLONIA-ARSUF: TOWN DUMPS

The site of Apollonia-Arsuf, located on the Mediterranean coast of Israel some 17 km north of Joppa (Jaffa) and 34 km south of Caesarea, has been excavated continuously during the last 30 years. Once a modest coastal settlement, Apollonia-Arsuf became the urban center of the southern Sharon plain as early as the Persian-Achaemenid

7 This practice should not be confused with that of off-site refuse scatters (above), which are usually identified with larger agricultural plots located some distance from a given settlement. Cultivated gardens were relatively small plots located adjacent to private urban or rural dwellings, including isolated farmhouses and monasteries.

period (late 6th century BC) until the Crusader period (until the mid-13th century AD). Apollonia is then mentioned in some written sources from the Byzantine period, such as the *Cosmography of Ravenna* and Stephanus Byzantius. However, Apollonia does not appear in early ecclesiastical lists, apparently because its name had been changed to Sozousa – a common change for cities named after Apollo Sōter in Byzantine times. Later texts and critical editions of texts, which recount the Persian-Sasanian capture of Jerusalem, record the death of the patriarch Modestus in a city named Sozos: Sozousa in Georgian texts and Arsuf in Arabic texts. Bishops of Sozousa appear in the records of three 5th- and 6th-century ecclesiastical meetings. These bishops probably served in the church with an inscribed mosaic floor that was uncovered in the site in 1962 in Area K and was re-excavated in 1996. Arsuf is also mentioned in connection with the Sasanian military campaign in the Holy Land (AD 614). The *Acta Anastasii Persae* relate that the escort conveying the relics of the Christian martyr Anastasius the Persian from Caesarea to Jerusalem in AD 631 – soon after the Persians evacuated Palestine – marched via Sozousa. This indicates that the name Sozousa continued to be used for Apollonia-Arsuf until the Islamic conquest (Roll 1999: 8-10; Tal 2009: 320-21).

Historical sources suggest that Apollonia-Arsuf's Byzantine-period occupation (then named Sozousa) came to an end either when the city was taken by the Persians-Sasanians in AD 614 or shortly after. Around AD 640 the city was taken by Muslims, who called it Arsuf. Archaeological investigations have shown that for several decades, until late in the 7th century AD, life in the city continued as before those political upheavals. No destruction layer was found in any of the several excavated areas. The different phases of occupation between the Byzantine and Early Islamic periods simply followed each other consecutively, but in the latter phase the city was fortified and reduced in size to less than one third of its Byzantine occupation (some 8 hectares), most probably due to the constant threat of the Byzantine navy and its attempted raids.

The reduction in the size of the site is amply demonstrated in all areas of excavations carried out outside the Early Islamic fortifications, that is, in Areas K (in the east), N (in the southeast), M (in the south) and O (in the north), as well as in several mechanically dug trial trenches (25 m long and 1 m wide on average), located some 200 m to the east of the Crusader town wall (Roll 1999: 43, 46, Fig. 1.2, see Trenches 7 and 8). Excavations in these areas, which are located in the far southeastern, southern, northern and eastern limits of the Byzantine-period town (respectively), uncovered large Late Byzantine-period refuse pits (or more accurately, centralized town dumps, especially in Areas N, M and O), providing tangible evidence regarding the limits of the Late Byzantine town whose area can be estimated at 28 hectares. Pottery, glass and coins found in these dumps suggest that although no evidence of visible destruction by Persian-Sasanian conquerors in AD 614 is attested in the town, it seems that its inhabitants suffered either forced evacuation or brutal slaughter. This can be deduced from the fact that very few of the coins discovered in the dumps of Areas N, M and

O postdate this event, and none of the pottery and glass finds, can contradict a date of abandonment in the early 7th century AD.⁸ The majority of the pottery from these dumps includes Fine Byzantine Ware (FBW), Palestinian (coastal) bag-shaped storage jars, late Gaza amphorae, various types of cooking wares, ‘Samaritan’ lamps and imports from North Africa (ARS), Cyprus (CRS) and Asia Minor (PRS) (see Magness 1993: 193-201, 236-41; Kingsley 1994-95; Majcherek 1995; Sussman 1983; Hayes 1972, 1980). Although we cannot rule out the total abandonment of Areas K, N, M and O under Islamic rule (i.e. post-AD 640), it seems to us that the Persian-Sasanian conquest and subsequent occupation caused a shift in the settlement activities and the behaviour of its occupants. In the case of Apollonia or, more accurately, Late Byzantine Sozousa, disposed material – that is pottery, glass and coins – presents evidence of a faith that is not visible in the inhabited area of the site.

YAVNEH-YAM: WELL DEPOSIT

The site of Yavneh-Yam, or Iamnia-on-the-Sea, is also located on the Mediterranean coast of Israel, roughly midway (some 20 km) between Ashdod (Azotos) in the south and Joppa (Jaffa) in the north. The site is mentioned in various sources dated to the Late Bronze Age through the Late Islamic period, which reiterate the settlement’s function as a harbour town of inland Yavneh/Iamnia (located 8 km to the southeast). Among them are the *Life of Peter the Iberian* (5th century AD), where it is called Maḥouza d’Yamnīn, Johannes Rufus (6th century AD), who called it Maoza d’Yamnias, al-Muqaddasi (late 10th century AD), who call it Māḥūz Yubnā, and Idrisi (12th century AD), who called it Māḥūz ath-Thānī (Fischer 2008: 2073).

Archaeological excavations have been carried out here since the 1960s; the most extensive ones are those conducted by Tel Aviv University since 1992. Their results show that the site was continuously inhabited between the Middle Bronze Age II and the early Crusader period (12th century AD). The excavations clearly indicate that during the Byzantine period the settlement reached its peak in terms of size and intensity. The remains attributed to the Byzantine period include domestic and commercial-industrial complexes, agricultural installations and tombs. No clear

8 A total of 42 coins came from Area M, one coin came from Area N and 17 coins came from Area O; Area K yielded no coins but revealed a mosaic inscription assigned by its publishers to the 5th-6th centuries AD based on its decorative patterns (Birnbaum and Ovadia 1990). Out of 36 identifiable coins found in Area M, only one postdates AD 614 – a coin that was minted in Alexandria and is assigned to the later regnal years of Heraclius (AD 632-41). Out of 15 identifiable coins found in Area O, three postdate AD 614 based on stylistic considerations hence attribution is tentative – two minted in Constantinople and may be assigned to AD 624/25 and AD 630-41 respectively, and another coin lacks the mint name and is too assigned to the later regnal years of Heraclius (AD 630-41). The coin from Area N belongs to Justinian I. It should also be mentioned that among the c. 850 coins documented at the site only three are assigned to AD 614-41; all came from Area E (adjacent to the southern town wall). Moreover, the latest coins found as strays outside the Early Islamic (and Crusader) town walls are usually dated to the 6th century AD.

remains of public buildings (such as a church) have yet been found, but architectural elements that must have belonged to public edifices were discovered out of context in various locations. These finds, as well as the contemporaneous literary sources, indicate that between the 5th and 7th centuries AD Yavneh-Yam was a flourishing harbour town inhabited by Christians, Samaritans and Jews (Fischer 2005, 2008; Fischer and Taxel *in preparation*).

It seems that the settlement continued to exist more or less in its Late Byzantine form for some time after the Muslim conquest, though not later than the early 8th century AD. At that time the town was almost entirely deserted by its original inhabitants, its buildings were looted for their stones and colored mosaics were intentionally destroyed. In relation to these remains, rich assemblages were found that were dated by coins and pottery to the late 7th and early 8th centuries AD.

We attribute this break to the establishment of the *ribāṭāt* system in Umayyad Palestine. The *ribāṭāt* (sing. *ribāṭ*) were maritime strongholds manned by garrisons, which were established in existing coastal towns in order to form a maritime frontier between the Muslims and the Byzantines. According to the Arab geographer al-Muqaddasi, Yavneh-Yam, or Māḥūz Yubnā, was one of these *ribāṭāt* (El'ad 1982; Khalilieh 1999; Masarwa 2006). In this context, a fortress was built on the promontory of the site that marked the southwestern end of the harbour; to this day, substantial parts of this fortress are visible, especially its northern peripheral delimiting wall. A massive tower, probably part of the fortress' eastern gate, was unearthed during excavations (Fischer 2008: 2075), and more recently (in summer 2011), additional parts of the fortress' interior were excavated. Although the exact date of the foundation of this *ribāṭ* is still unclear, it can be tentatively assigned, based on the archaeological evidence, to the mid-7th through early 8th centuries AD. It is clear that by the late 8th or early 9th century AD the site's occupied area included only the fortress and its immediate vicinity, that is to say only about 10% of the Byzantine-period settlement.

One of the places that best represents the settlement's transformation in the Early Islamic period is located outside of the fortress to its east (Area A). The intensive Early Islamic building activity carried out in this area left only scant remains of the Byzantine period. One of these is a well, some 7 m deep and 1.5 m in diameter, which was dug into earlier archaeological layers and hewn through the fossilized sand-dune (*kurkar*) rock down to the coastal aquifer.

The well was found completely packed with two distinct layers of fills. The lower fill was composed of earth mixed with many medium-sized building stones, plaster, pottery and glass fragments, metal objects and animal bones. The upper layer of fill contained no building debris, but earth mixed with a much larger amount of pottery and other finds, including two coins. Most of the pottery found inside the well includes Palestinian (coastal) bag-shaped storage jars and various types of cooking wares. Other vessel-forms are open and closed table wares, local and imported storage jars and amphorae and lamps. The deposit's *terminus post quem* is provided by a fragment of a Cypriote Red Slip (CRS) Ware bowl of a type dated to the late 6th/early 7th to

late 7th centuries AD (Hayes 1972: 379-82, Form 9B; 1980: lxii), which was found close to the bottom of the well. Other chronologically important ceramic types, found elsewhere in the fill, are an Egyptian Red Slip (ERS) Ware 'A' bowl, a local Fine Byzantine Ware (FBW) bowl, an Egyptian bag-shaped jar, an early buff-ware jug and late 'Samaritan' lamps (See Hayes 1972: 387-91, Form J or M; 1980: lxv; Magness 1993: 198-201, Form 2C; Taxel and Fantalkin 2011; Walmsley 2001: 307-308, Form ICW-A1; Tal and Taxel 2008: 154, Type 1). In addition, two Umayyad post-reform coins (c. AD 696/7-750) were found in the uppermost layer of fill. It should be noted that 2% of the numerous animal bones belong to pigs. This relatively low figure, when compared with other contemporaneous sites, corresponds to the general low ratio of pig bones in Byzantine-Umayyad assemblages throughout the country. In the present case, it may indicate that at least part of the original Christian population still lived here in the beginning of the Early Islamic period or that part of the Muslim population consumed some pork.

The ceramic and numismatic evidence suggest a late 7th- or more probably an early 8th-century date for the entire deposit found in the well. The reason for the conversion of the well into a dump is yet unknown, and can be hydrologic, socio-political, or both. According to Carmi *et al.* (2008: 130), abandonment of wells along the Palestinian coast may have resulted from one or more of the following causes: 1) salinization due to seawater penetration into the groundwater system; 2) collapse of the sea cliff due to a receding of the *kurkar* ridge; 3) the discovery of better water sources in the vicinity; 4) destructive military operations; 5) political or demographic changes that resulted in the complete or partial abandonment of the site, and a consequent end to the maintenance of wells. In our case, the second scenario can be excluded, since the Yavneh-Yam well is located on top of the sea cliff and not at its foot. However, it is possible that sometime around the late 7th/early 8th century the well water became salty and undrinkable, due to either a rise in the sea level or a lowering of the groundwater table by 'over-pumping'. Such a situation would have resulted in the search for a better water source, most probably a new well dug farther away from the coastline. A destructive military operation should also be dismissed, since the well was found intact and not covered by destruction debris.

The abandonment and filling of the well can be attributed to the settlement's decline and transformation at the beginning of the Early Islamic period. The material found in the well most probably originated in nearby domestic complexes inhabited by the original, apparently non-Muslim population of Yavneh-Yam. A socioeconomic decline of the settlement toward the late 7th century might have resulted, *inter alia*, in the deterioration and abandonment of some of its wells, which in turn became an appropriate location for refuse disposal. Such an act could have been done either by the local population who still lived here at the turn of the 8th century, or by the newly arrived Muslim military authorities, after the former had evacuated its residences and completely or partially abandoned the settlement.

RAMLA: DEPOSITS OF DOMESTIC REFUSE IN INDUSTRIAL INSTALLATIONS

The Early Islamic city of Ramla is located inland, some 15 km from the Mediterranean coast and Yavneh-Yam, and some 30 km from Apollonia-Arsuf. Ramla was founded in the days of the Umayyad Caliph al-Walīd Ibn ‘Abd al-Malik (AD 705-15) as the provincial capital of the military district of *jund Filasṭīn*. Ramla’s economic prosperity in the Early Islamic period, which derived from its status as the major commercial centre in Palestine, is reflected both in the contemporary historical sources and in the archaeological record. Ramla is described in the sources as a planned city with various public buildings, some of which were built as early as the early 8th century AD. Archaeological investigations in areas located in the old and modern towns, both of which cover parts of the Early Islamic settlement, have been carried out at Ramla over the past seven decades. The extensive distribution of these excavations provided important information about the nature, stratigraphy and chronology of different parts of the city. The most common remains discovered are domestic and industrial in nature, and identified as belonging to private dwellings, industrial installations and water installations (Tal and Taxel 2008: 8-9).

Some of these remains represent industrial areas established on the fringes of the Early Islamic town of Ramla. The largest industrial area was probably located to the south of the town (hereafter Ramla [South]), and a large portion of it was excavated by the authors from 2005 until 2007 (Tal and Taxel 2008).⁹ The excavations revealed that the site was first inhabited during the Middle Bronze Age II and confined to quite a limited area. Later occupations in the Persian, Late Hellenistic and Roman periods were sparse and likewise limited. The first substantial occupation of the site, in the form of a large rural settlement, is dated to the Late Byzantine and Umayyad periods. This settlement was abandoned sometime around the mid-8th century AD, after which an extensive industrial area was established on top of its ruins. The industrial installations attributed to this later phase included pools of various sizes, cisterns, water pipes and channels, working surfaces and subterranean vaulted chambers used to collect residue. There is no doubt that this industrial complex formed a suburb of the town of Ramla that was developed during its rapid urban development.

Based on the nature of these industrial installations, we suggest that the site’s main activity was the processing of flax into textile fibers. Historical sources related to Early Islamic Ramla mention the ‘Market of the Linen Combers’,¹⁰ and we believe that our excavations have unearthed an industrial quarter that served this market. According

9 Other areas of the industrial site of Ramla (South) were excavated by the Israel Antiquities Authority between 2004 and 2009 (for a recent overview, see Gorzalczyński *et al.*, 2010).

10 The first is the geographer al-Ḥimyarī (late 13th/early 14th centuries AD) who mentioned the Šuk al-Mašaṭīn (‘the Market of the Scutchers [combers]’) in his description of the city of Ramla (al-Ḥimyarī: 268). The second source is the chronicler al-Ḥanbalī (late 15th century AD) who, while describing the city of Ramla, mentioned the Šuk al-Mašaṭīn lele-Ktan (‘the Market of the Linen Scutchers [combers]’) (al-Ḥanbalī: 68). Both sources are based on an earlier source referring to Ramla’s heyday, apparently during the Abbasid period, while the linen industry still flourished.

to the ceramics, glass and coins found in the site, it seems that the main phase of industrial activity here took place between the mid-8th to the mid-/late 10th centuries AD, that is, during the period of Abbasid rule. The end of this phase is marked by the conversion of the subterranean vaulted chambers into refuse pits, as is evident from the huge amount of domestic garbage, including fragmentary and complete pottery and glass vessels, stone and metal artifacts, coins and animal bones dumped into these chambers. Since these artifacts sank in the sewage sludge of the subterranean vaulted chambers, the color and/or texture of many of them changed (the coins, for example, became highly corroded and unidentifiable). These finds probably originated in a large nearby complex of a commercial/domestic nature, perhaps a *khan* (excavated by the Israel Antiquities Authority) (Gorzalczany 2008: 32).

The lack of certain pottery types that mostly characterize the late 10th and 11th centuries (e.g., coarse *sgraffito* ware bowls, glazed cooking ware and beehive lamps) from the refuse deposits discussed above provides a mid-/late 10th century *terminus post quem* for these assemblages, and therefore also for the end or decline of industrial activity at the site we excavated. It seems that the monopoly on flax processing and linen production was re-established in Egypt by the Fatimid caliphs in the late 10th century AD, as according to the accounts of the geographer Ibn Zāfir, the Fatimid Caliph al-‘Azīz (AD 975-96) established weaving workshops for linen in Egypt (Ibn Zāfir: 35, Gil 1992: 246, note 23). It is likely that this process led to a gradual decline of this industry in Ramla and elsewhere in Palestine. Therefore, this case reveals a clear-cut politically oriented decline and transformation of an industrial zone of the major town of Early Islamic Palestine. The Fatimids, the country’s new rulers, not only shifted the capital from Baghdad to Cairo, but also moved to Egypt much of the economic activity that once flourished in Syria-Palestine.¹¹

SUMMARY

The case of the disposed material of Apollonia/Sozousa/Arsuf indicates that the strong Christian administration lost its power once Persian-Sasanian rulers became the country’s overlords; moreover, a Christian regime probably never regained proper administrative control over the site even during the decade or so of Christian rule before the country was conquered by Muslims. In the case of Yavneh-Yam/Māhūz Yubnā, refoundation of the site as an Islamic coastal stronghold (*ribāṭ*), where holy warriors resided, led to a reduction in its size and ethnic variability. Although diminishing size is a well-attested phenomenon in other Byzantine sites in Palestine reoccupied during the Early Islamic period (as in Arsuf), one is left to hypothesize whether the

11 This situation recalls the common phenomenon of Byzantine wine presses, which ceased to function during the late Umayyad and early Abbasid periods (8th to 9th centuries AD), and were converted into refuse dumps. This change is related to the Muslim prohibition on wine consumption, which led to a gradual decline of viticulture and abandonment of wine presses (Ayalon 1997b).

intentionally debris-filled well was an act of Islamic religious faith, attesting to a some kind of a zealot act. It is politics that played a role in the case of Fatimid Ramla where, based on the archaeological finds (in Ramla and elsewhere in Palestine), it seems that the political status of *jund Filasṭīn* declined as an economic center once previously owned Palestinian economic branches were shifted to Egypt.

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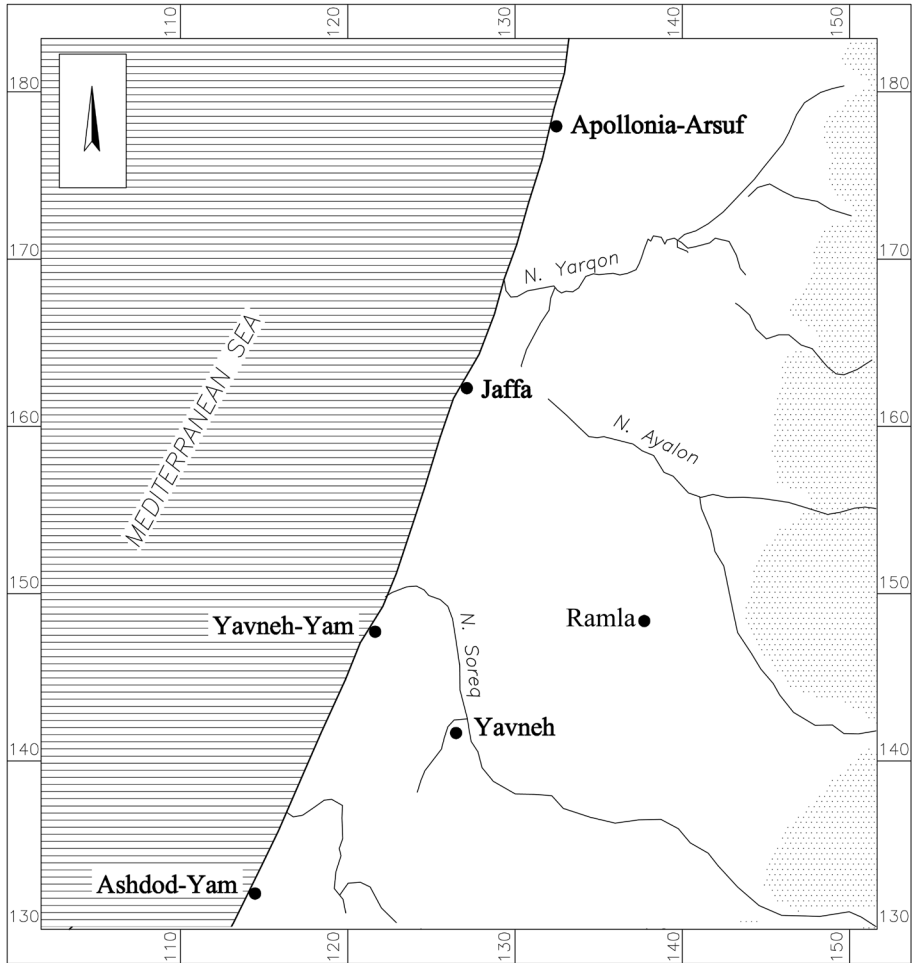


Fig. 1: Location map.

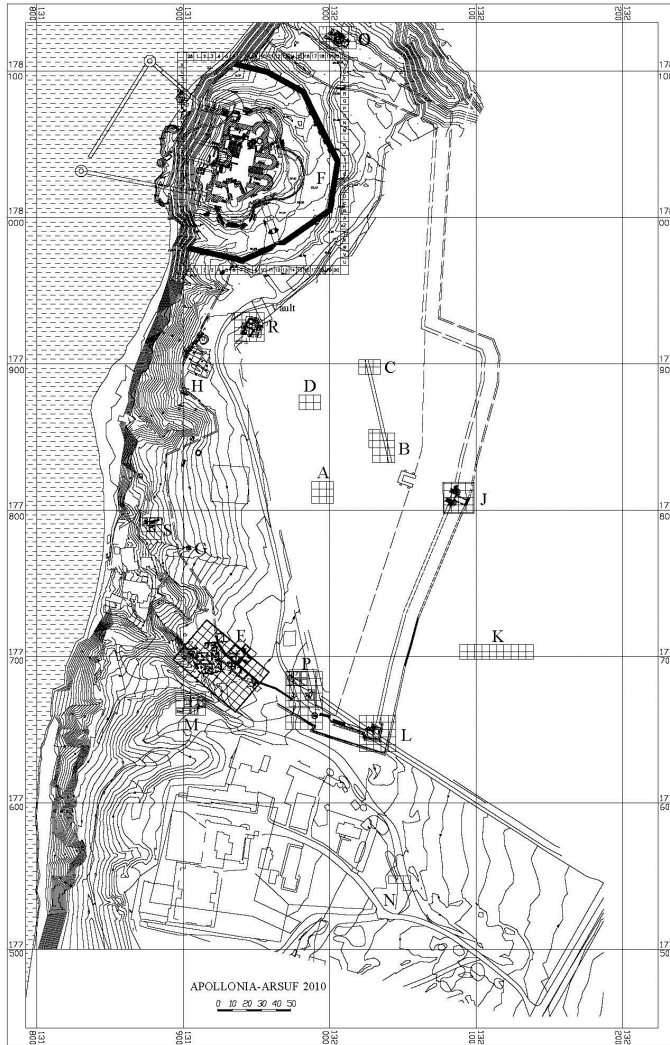


Fig. 2: Apollonia-Arsuf, site plan (2010).

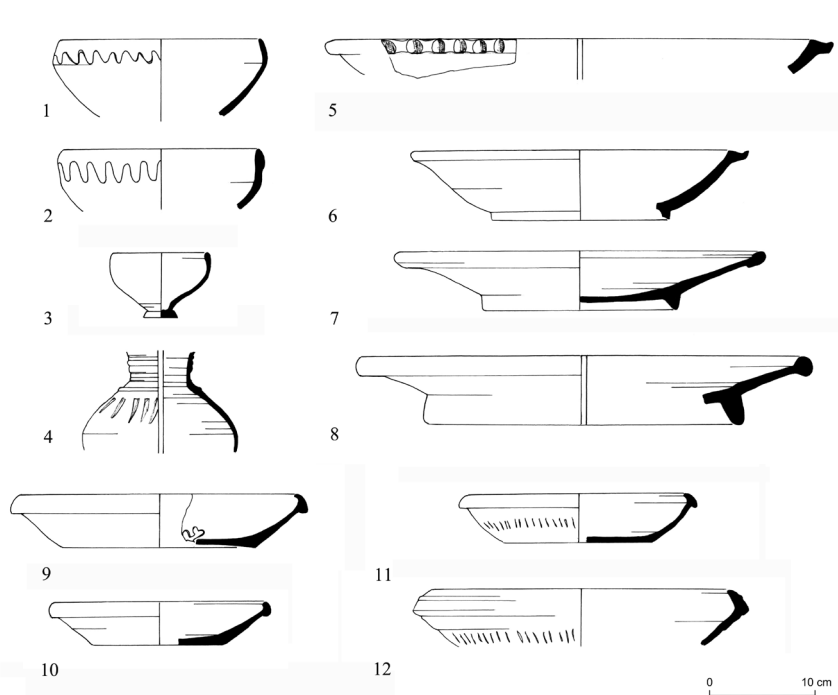


Fig. 3: Apollonia-Arsuf, selection of Late Byzantine pottery from the dumps.

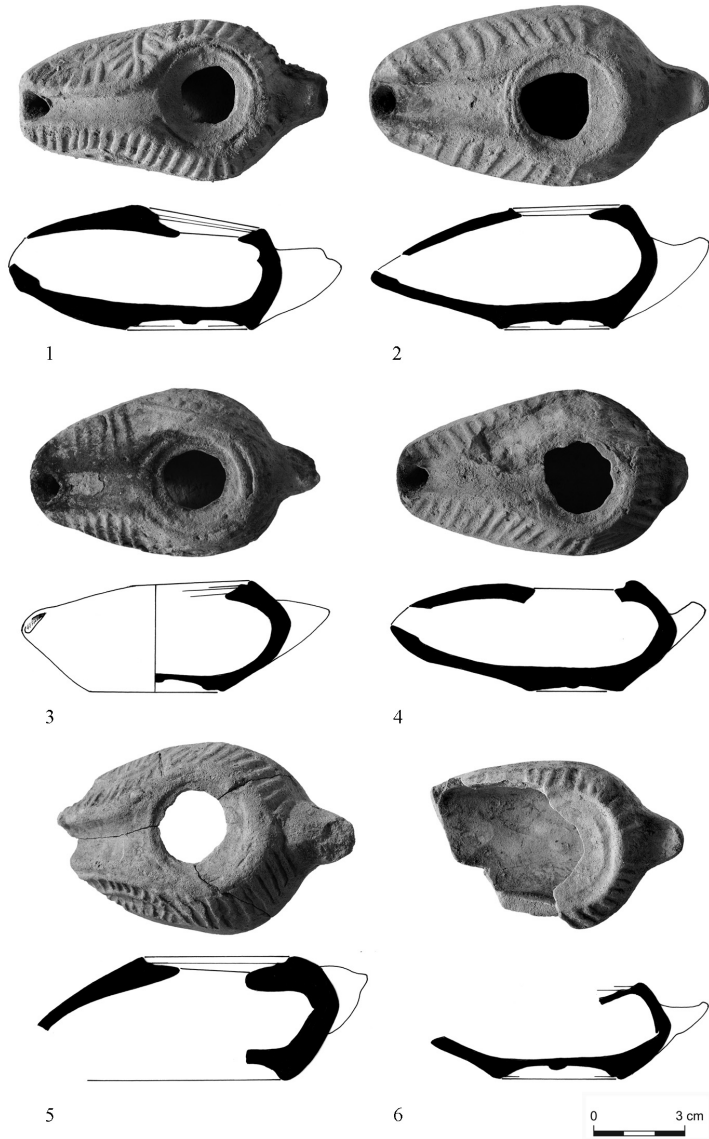


Fig. 4: Apollonia-Arsuf, selection of Late Byzantine 'Samaritan' lamps from the dumps.

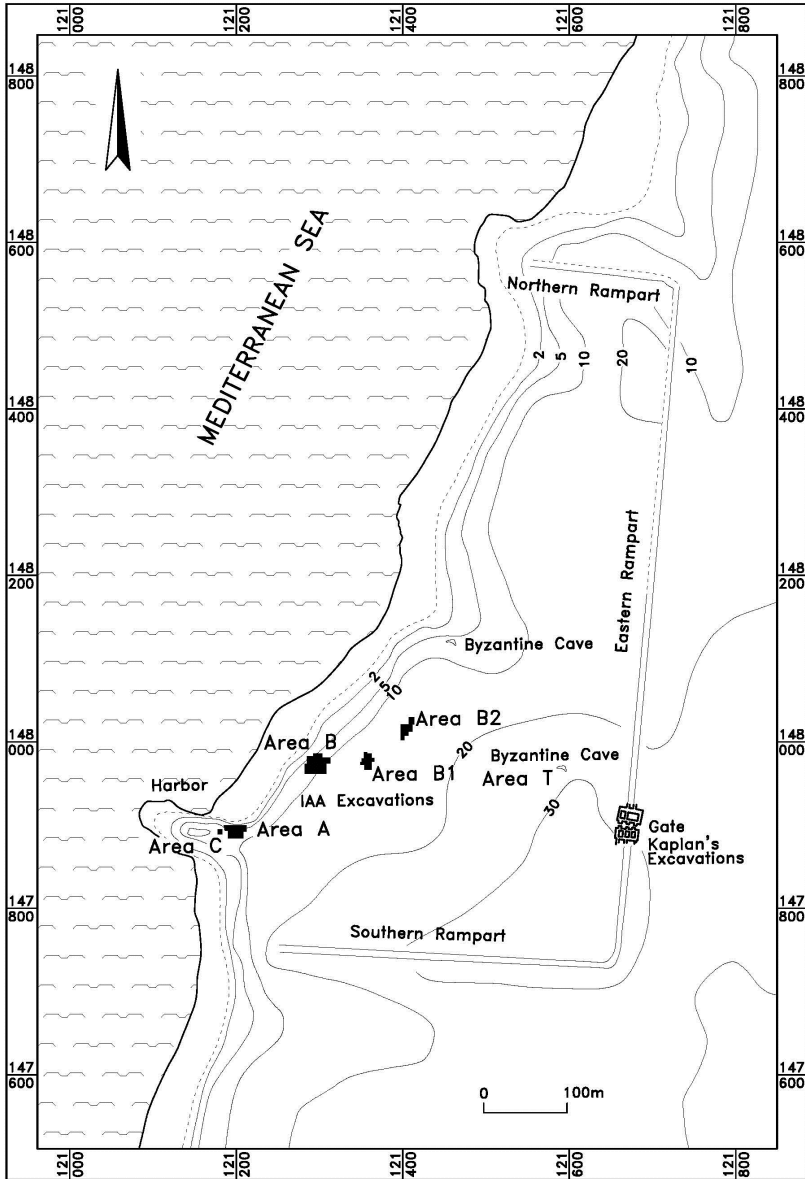


Fig. 5: Yavneh-Yam, site plan (2008).

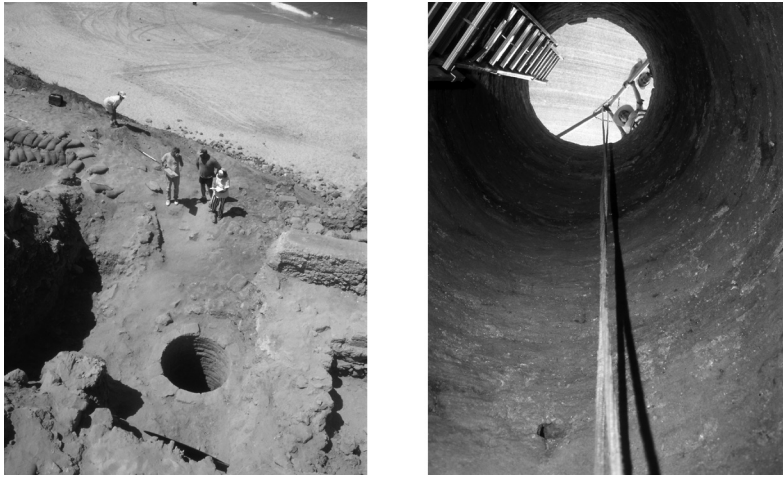


Fig. 6: Yavneh-Yam, the well.

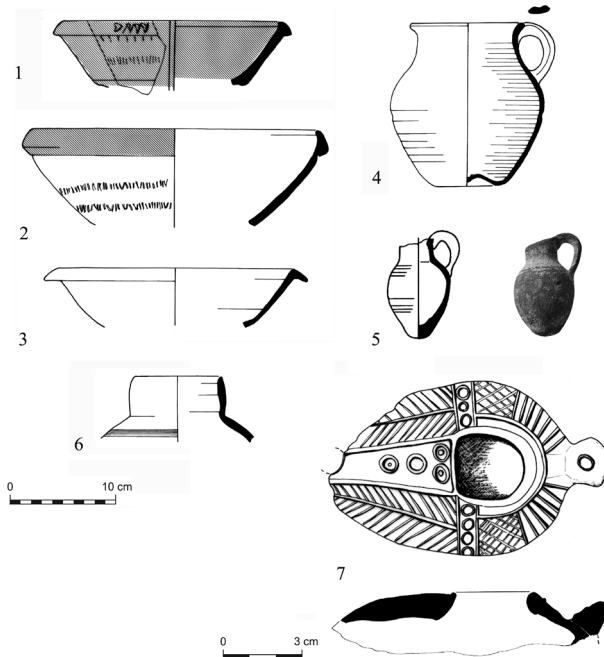


Fig. 7: Yavneh-Yam, selection of Late Byzantine-Umayyad pottery from the well.

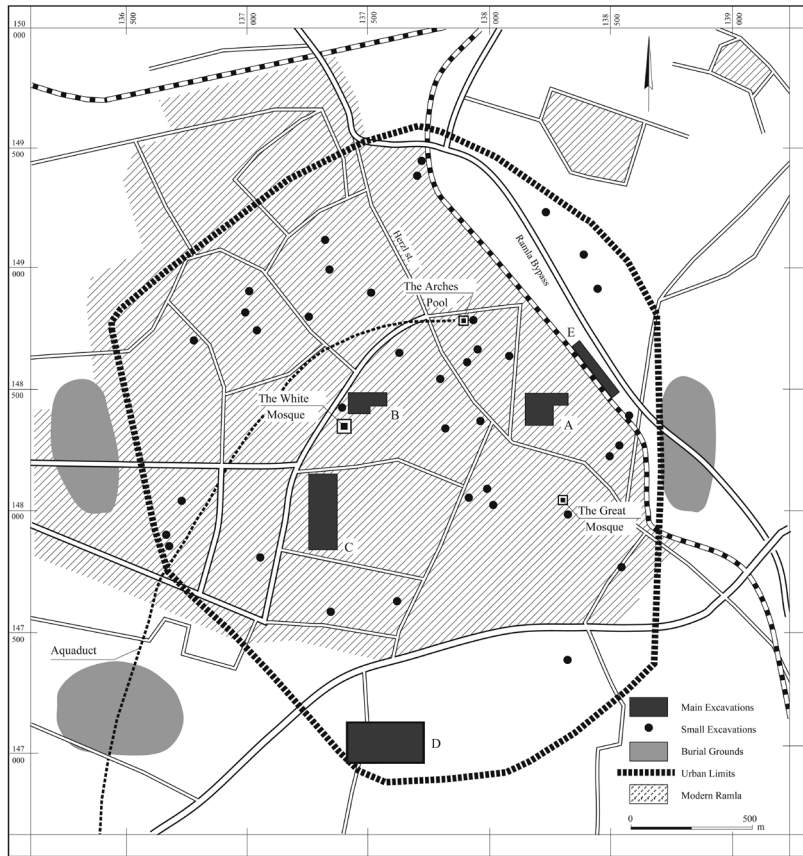


Fig. 8: Ramla, city limits and excavations (2008).

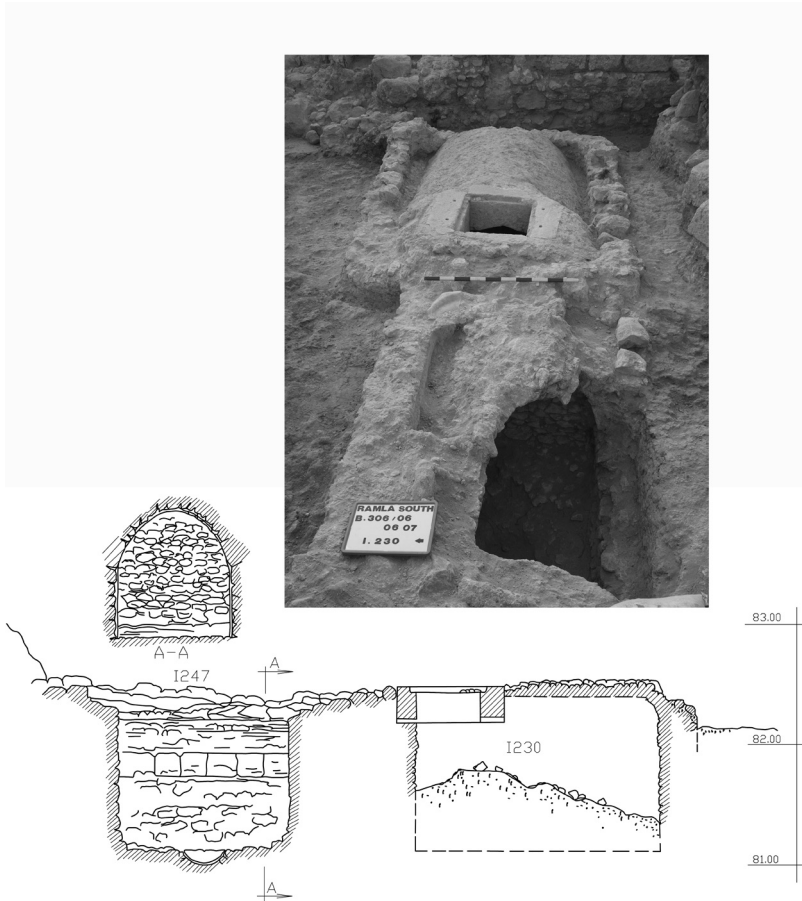


Fig. 9: Ramla (South), subterranean vaulted chamber (photo and section).

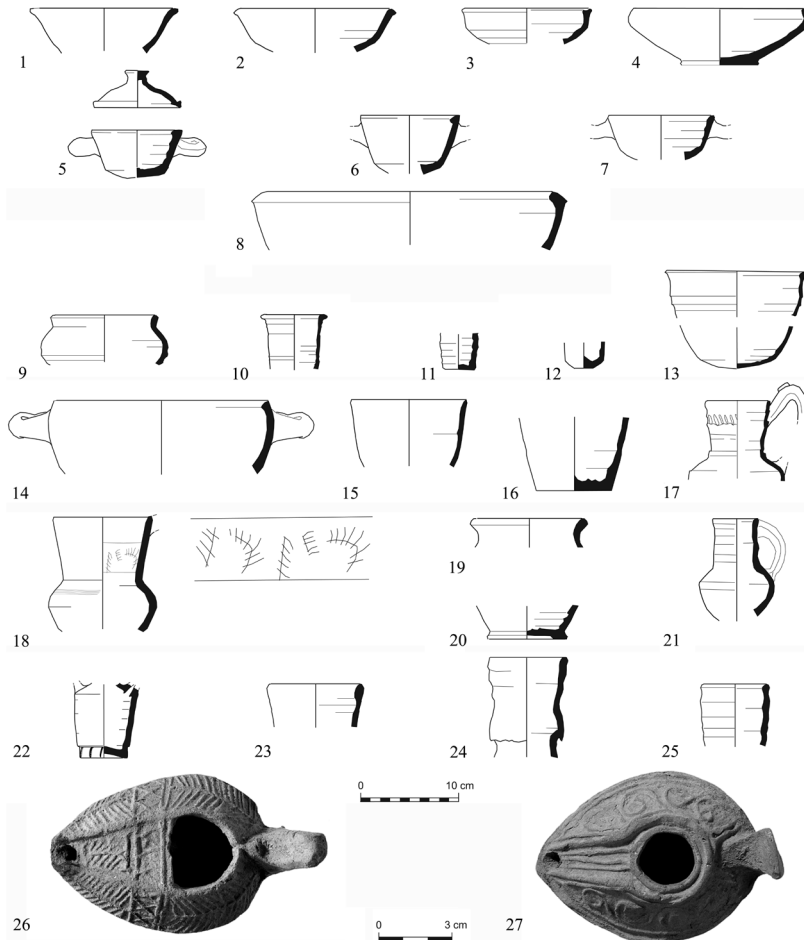


Fig. 10: Ramla (South), selection of Abbasid pottery from a subterranean vaulted chamber.