



## A Late Hellenistic Storage Complex in Tel Aviv, Israel: Pottery Finds and a Broader Perspective

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### Abstract

Salvage excavations at a site in central Tel Aviv, Israel, uncovered a storage complex from the Hellenistic period. The complex probably belonged to an adjacent farm, similar to several that were discovered in excavations in Jaffa's vicinity. Abundant pottery found on the floors of some of the rooms included mostly storage jars generally dated to the 2nd century BCE – the Seleucid phase of the Hellenistic period – as well as some irregular types. The storage complex is the largest Hellenistic structure exposed in and around Jaffa, and attests to turbulent times in Jaffa's region, as well as to the thriving trade of the period along the Mediterranean coasts.



### Introduction

An unusual Hellenistic structure was exposed in salvage excavations conducted in 2020 and 2021 at the junction of the streets Arlozorov and Ibn Gvirol in central Tel Aviv (**figs. 1–2**). It is the largest Hellenistic structure exposed so far in Jaffa's region. No Hellenistic sites or structures are known in its vicinity, other than a hexagonal building exposed further east at Arlozorov Street, which the excavator identified as a bastion in a fortification line built by Hasmonean king Alexander Jannaeus (103–76 BCE)<sup>1</sup>.

The site (henceforth ARIG) is located on the edge of the second of three ›kurkar‹ ridges at a north-south course across metropolitan Tel Aviv. The location is a topographic vantage point that prior to modern construction offered a broad westward view toward the coastline. The Hellenistic remains lay under structures and graves of the village of Summayl (al-Mas'udiyya), which stood at the site from Ottoman times until 1948, and later apartments.

1 KAPLAN 1972, 90. Based on *Ios., ant. Iud.* 13, 390; contra FANTALKIN – TAL 2003.

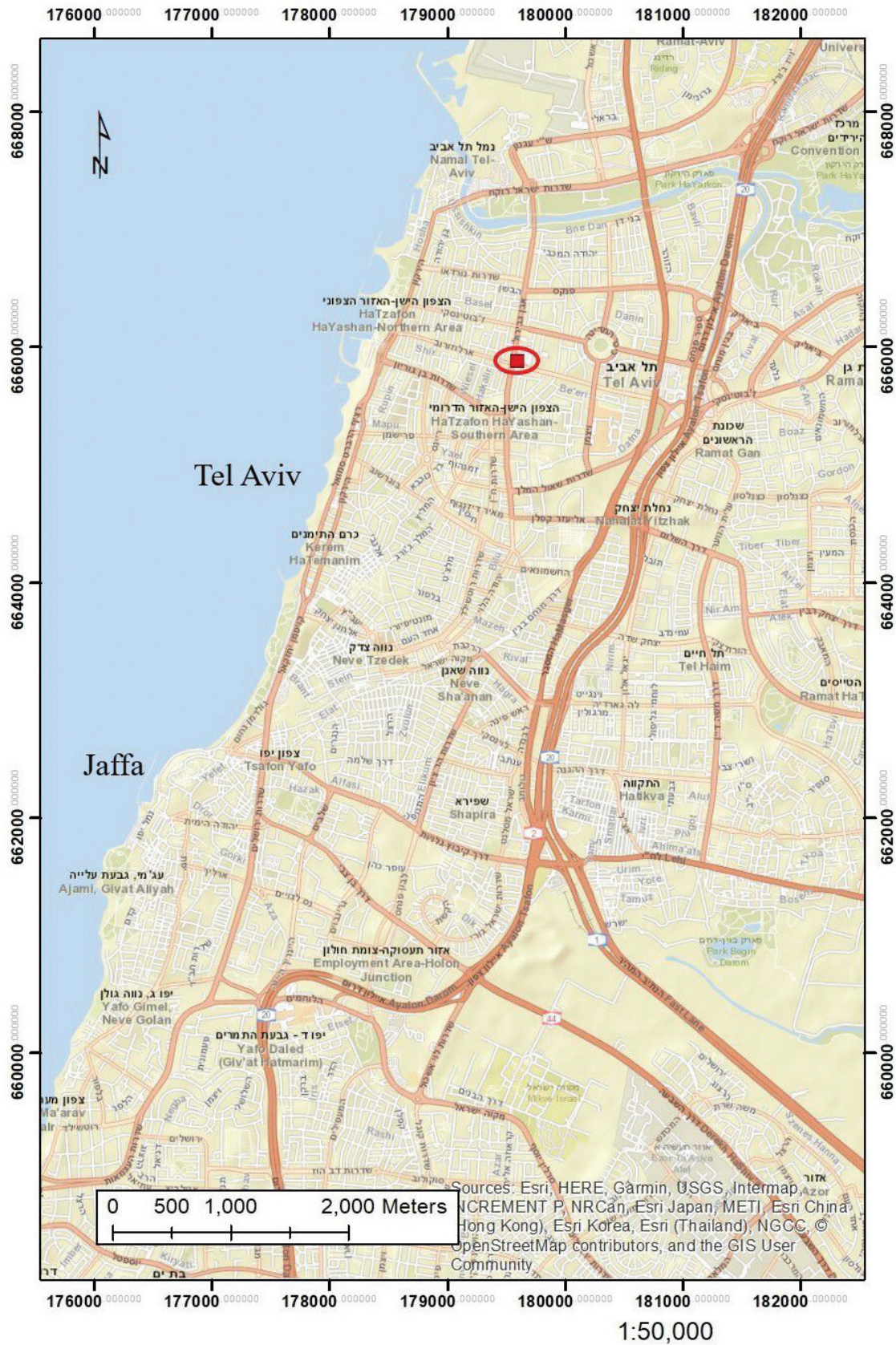


Fig. 1 : Location of the site (map by A. Dagot, Israel Antiquities Authority)



Fig. 2 : The site in its present urban environment  
(photograph by A. Peretz, Israel Antiquities Authority).

### Historical background

At the conclusion of the Diadochi conflicts, Jaffa and its region became part of the Egypt-based Ptolemaic kingdom. Over 190 settlements, farms, graveyards and fragmentary architectural remains in the southern coastal plain reflect considerable demographic and economic growth under the Ptolemaic agrarian and trade system<sup>2</sup>. Jaffa's role in this system was significant, due to its fertile soil and its position as a key harbour and a crossroads on the ›Via Maris‹. Material evidence for Jaffa's consequent prosperity and Hellenistic cultural traits was discovered both on the mound<sup>3</sup> and at sites immediately to its east, where late Iron Age and Persian habitations evolved into a Lower Town<sup>4</sup>. The Ptolemaic court boosted Jaffa's political and economic potential by granting it the status of an independent city with the right to mint coins<sup>5</sup>.

The economic organization of Jaffa's region conformed to the central-place system – a central town enjoying the products of a surrounding agricultural-industrial belt and reciprocating with marketing services and a measure of security<sup>6</sup>. Other than profits from trade, harbour services and local industry, Jaffa enjoyed the produce of its surrounding farms and villages, where grapes for wine and cereals were cultivated<sup>7</sup>. Numerous winepresses

2 'Ad 2016, 94–95.

3 KAPLAN 1972, 88; TSUF 2018a; BURKE ET AL. 2014, and references there.

4 ARBEL 2017, 68–70, and references there; GENDELMAN 2020b, 178–182.

5 TAL 2006, 302–303. 310–11.

6 RENFREW 1984, 48–49; 'Ad 2021, 101–102.

7 KEIMER 2017, 383–387.

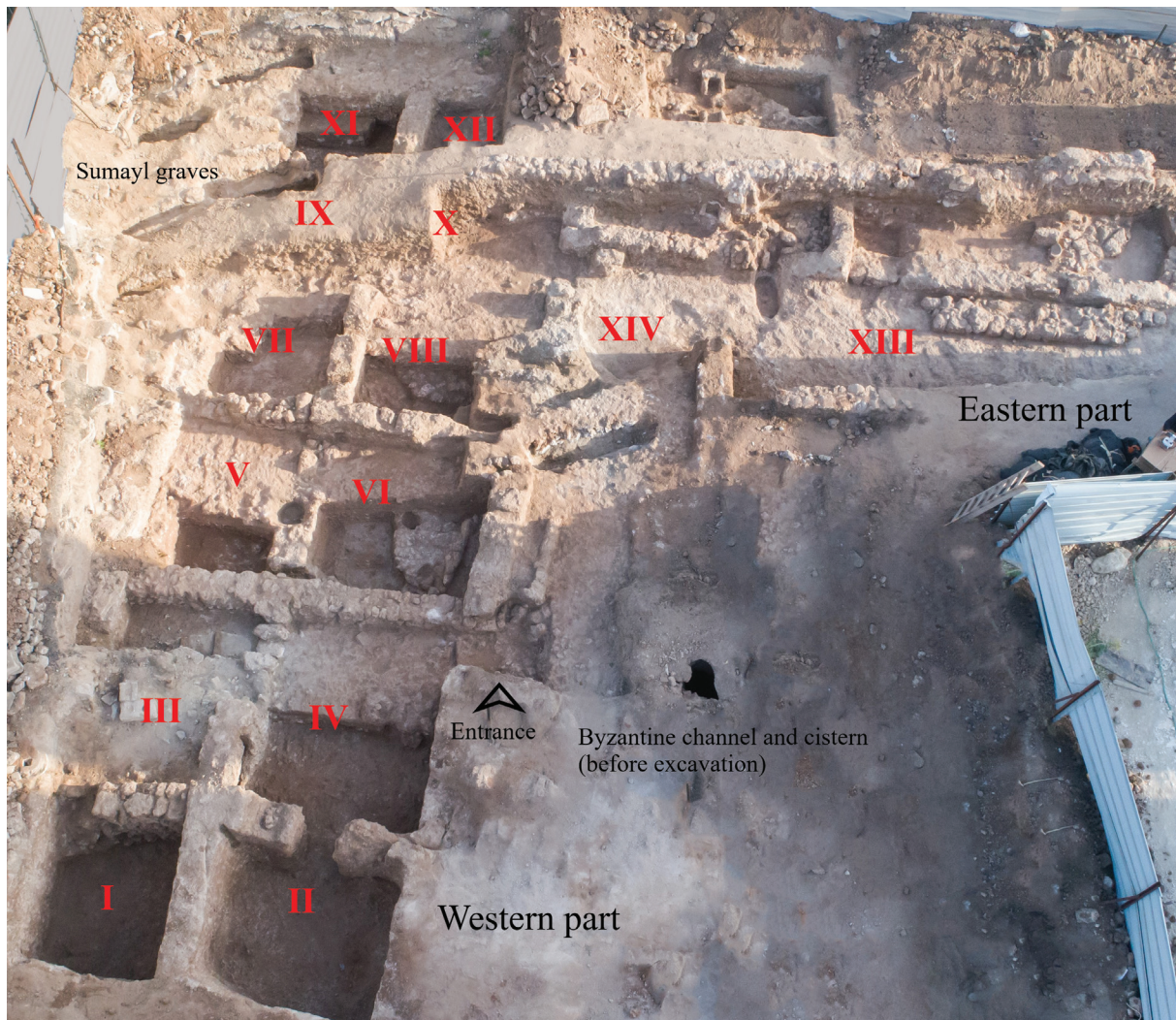


Fig. 3 : General image of the Hellenistic complex, looking north  
(photograph by A. Peretz, Israel Antiquities Authority).

found in the southern coastal plain attest to extensive wine production, part of an international commercial exchange reflected in the profusion of imported wares in local ceramic assemblages<sup>8</sup>. Stamped handles of amphorae represent importation from the Greek Islands, Cyprus, Sicily and Italy. Greek merchants and others benefitting from this thriving trade settled in Jaffa and its region<sup>9</sup>.

The mutually beneficial economic system between Jaffa and its environs remained in effect under the Seleucids, yet an analysis of excavations conducted in the city and its environs reveals significant alterations. While the town experienced gradual regression during the 2nd century BCE, the farms and villages in its environs were clearly less affected. Some, such as the settlement at Gan Soreq, ca. 11 km to the southeast of Jaffa, even enjoyed a peak in expansion during the early Seleucid phase<sup>10</sup>. The advantage of the environs compared with the city in this period has additional evidence at ARIG.

8 'Ad 2021, 100; GENDELMAN 2020b; GENDELMAN 2020c; GENDELMAN 2021.

9 FINKIELSZTEJN 2020; FINKIELSZTEJN 2021; STERN 1995, 437.

10 'Ad 2021, 96.

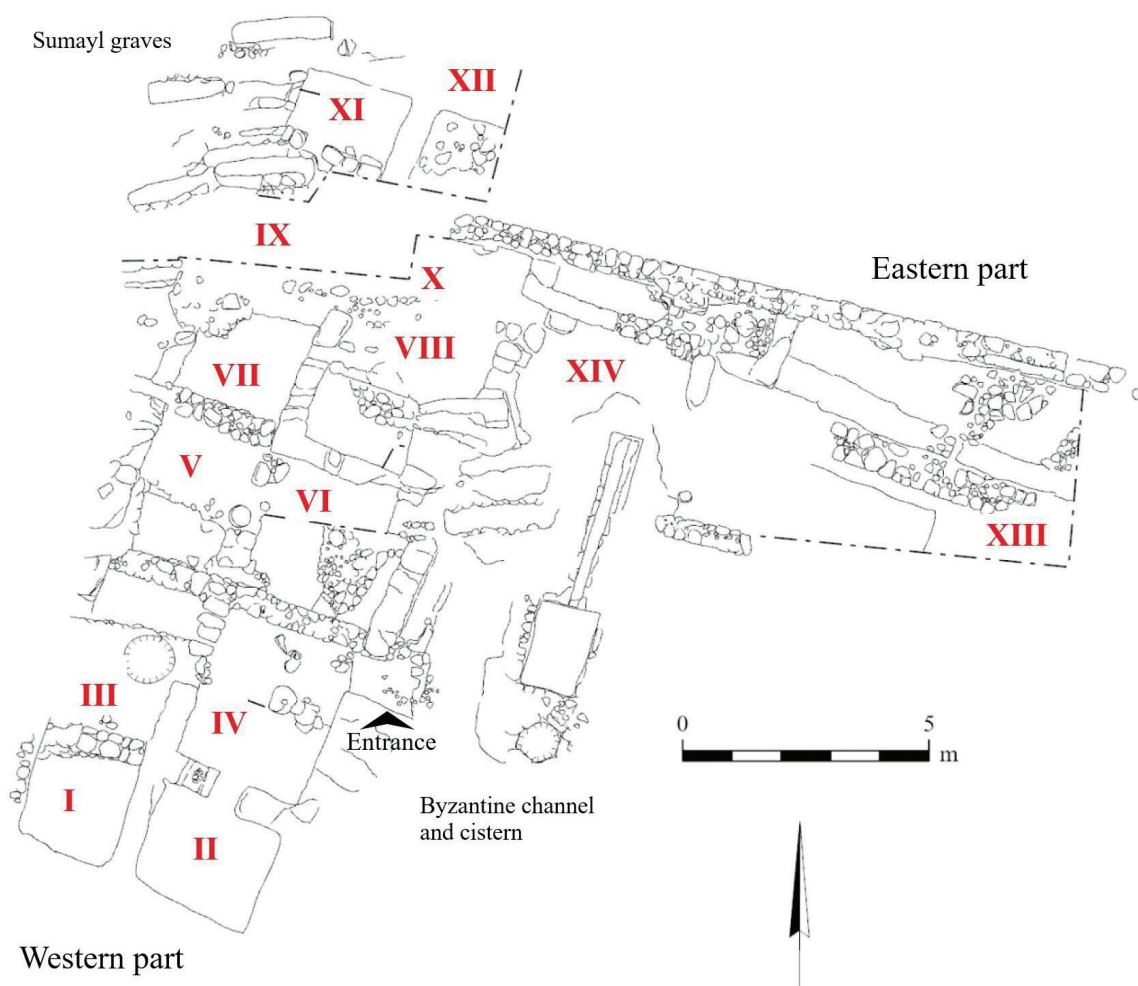


Fig. 4 : Plan of the Hellenistic complex (plan by M. Kahan, Israel Antiquities Authority).

### The Hellenistic Complex

The main segment of the Hellenistic complex at ARIG consisted of a double row of up to twelve rooms (ca.  $3 \times 3.5$  m) with a common central wall along a north-south course (figs. 3, I–XII; 4). The outer walls of the complex and some of the inner walls were hewn into the sandstone (᾽kurkar᾽) bedrock. Other inner walls were stone-built (fig. 5). Doorways linked between the rooms (figs. 5–6), and shelves or closets were installed in some of the walls (fig. 7). The single known entrance was located at the eastern perimeter wall, with three stone steps descending to room IV from the surface. This entrance served only the southern rooms, as a solid stone wall separated them from the northern rooms. The latter may have been reached through an undetected second entrance, or by means of ladders placed in openings in the floors of superimposing rooms. An eastern wing comprising at least four larger and irregularly sized spaces adjoined the complex at a perpendicular angle. These spaces may have been open courtyards, in which various chores were performed. A basalt-made tripod mortar and a rock-cut sump discovered there were used for grinding, an activity usually carried out in courtyards.

The size of the complex, the symmetrical room arrangement, the lack of baking ovens (᾽tabuns᾽) and other domestic installations, as well as the marked statistical advantage of amphorae in the ceramic assemblage (see below) strongly suggest a semi-subterranean

Fig. 5  
Rock-hewn and stone-built  
partitions, looking north  
(photograph by A. Peretz, Israel  
Antiquities Authority)



Fig. 6  
Entrance between Rooms II-IV,  
looking north (photograph by  
A. Peretz, Israel Antiquities  
Authority)



Fig. 7  
Rock-cut niches in the wall  
between rooms III-IV, looking  
west (photograph by A. Peretz,  
Israel Antiquities Authority)



storage complex. It likely belonged to a farmstead or estate, as at sites in mainland Greece<sup>11</sup>. Local examples of storage structures within farmsteads were discovered near El'ad, where the storages occupied the ground floor<sup>12</sup>, and at Rosh Ha'Ain<sup>13</sup>. The limited volume of debris at ARIG falls below what could be expected had residential rooms stood over the storage space, although this option cannot be dismissed, as stones could have been removed for later construction. If the associated residence stood near the storage complex its remains are yet to be discovered or may have been uprooted by modern activity.

Other stone-built warehouses from this period were exposed in Jaffa<sup>14</sup>, Ashkelon<sup>15</sup>, and in contemporary rural sites such as Gan Soreq<sup>16</sup>, and Shikmona, near modern Haifa<sup>17</sup>. Large warehouses were reported as parts of the administrative complex at Tel Kadesh<sup>18</sup> and in Nahal Tut, where the remains were interpreted as a military fortified storage depot<sup>19</sup>.

### The Ceramic Finds from the Hellenistic Complex

A soil layer up to 40 cm thick over the floors of several Hellenistic rooms contained the sherds of dozens of vessels, most of which local amphorae. The vessels may have fallen from shelves, or tumbled down as the roof of the building or the upper story collapsed. Far fewer table-ware items were found, most of them in the four northern rooms, hinting to function variation between the two parts. The assemblage includes local and imported forms.

#### Table Wares

##### *Unidentified Eastern Mediterranean Centres' Production (Levant?)*

A group of vessels made of well-levigated light-coloured clay and covered with mottled slip varying from red to dark gray colour. This ware was produced in unidentified eastern Mediterranean workshops<sup>20</sup>, and is commonly reported from Jaffa and its satellite sites. These well-known and widely distributed shapes correspond to common pan-Hellenic forms, dating from the late 4th till the late 2nd centuries BCE<sup>21</sup>. The high frequency of these vessels in the region and particularly in Jaffa<sup>22</sup> might suggest production centres located somewhere in the southern Levant. The assemblage includes hemispherical (>echinus<) (**fig. 8, 1**)<sup>23</sup>, outturned rim

11 MARGARITIS 2015.

12 NAGORSKY 2019, 48.

13 SHADMAN 2019.

14 HERZOG 2008, 1792.

15 STAGER ET AL. 2008, 317 fig. 15.97.

16 'AD 2016, 92.

17 ELGAVISH 1974.

18 HERBERT – BERLIN 2003, 27–30.

19 ALEXANDRE 2006.

20 For possible identification see ROSENTHAL-HEGINBOTTOM 2015, and discussion therein.

21 e.g., GUZ-ZILBERSTEIN 1995, 290–291 figs. 6.1, 1–29; 6.2, 14–19; ROSENTHAL-HEGINBOTTOM 1995, 215–216 fig. 5.5, 13–15.

22 GENDELMAN 2020c, 408.

23 These bowls were produced from the late 4th till the late 2nd centuries BCE and were very common and widely distributed in the region, especially along the Mediterranean coast and particularly at Jaffa. See GENDELMAN 2020a, 56 fig. 1, 97–98; GENDELMAN 2020c, 409–410 fig. 3, 1–8; GENDELMAN 2021, 59 fig. 4.3; JAKOEL – GENDELMAN 2017, 61\* fig. 19, 1; TSUF 2018b, fig. 9.2, 29–56, and sites in its territory: Tel Aviv – GORZALCZANY 2003, 7 fig. 2, 1–2; Apollonia-Arsuf – TAL 1999, 153–154 fig. 4.35, 2–4; FISCHER – TAL 1999b, 230 fig. 5.7, 7–8 and Tel Michal – FISCHER 1989, 183 fig. 13.3, 1–3.

(fig. 8, 2)<sup>24</sup> and moldmade bowls (fig. 8, 3)<sup>25</sup>, and small fishplate circle saucers with grooved lips (fig. 8, 4)<sup>26</sup>.

### *Ptolemaic Fine Table Ware of Egypt*

The second group of imported fine table wares from ARIG includes vessels made of hard, micaceous fabrics and red and grey clay. The red ones may originate in Lower Egypt workshops<sup>27</sup>, while the dark gray/black fabrics are known from various Egyptian regions<sup>28</sup>. Rather small, but stable numbers of Egyptian vessels reached the markets of Jaffa<sup>29</sup> and other sites of the region<sup>30</sup>. The illustrated sherds include a red carinated cup (fig. 8, 5) and a gray fabric bowl decorated with stamped palmettes (fig. 8, 6). Parallels for the former type were reported from Upper Egypt<sup>31</sup>, and for the latter from Lower Egypt sites<sup>32</sup>, Jaffa<sup>33</sup>, Ramat Aviv (in northern Tel Aviv, across the Yarkon River)<sup>34</sup> and Maresha<sup>35</sup>.

### *Locally Produced Colour-Coated Fine Table Wares*

In addition to the imported vessels there is a distinct group of locally produced table wares with poor-quality black or red coating. The type is inspired by and imitates imported vessels of Pan-Hellenic shapes widespread throughout the Mediterranean and beyond. This group includes a small fishplate (fig. 8, 7) and echinus bowls (fig. 8, 8–9). Parallels date from the late 4th or early 3rd till the early 1st century BCE, and are known from Jaffa<sup>36</sup>, and surrounding sites<sup>37</sup>.

- 24 Carinated bowls were produced in various eastern Mediterranean workshops from the late 4th till the 2nd century BCE. Carinated bowls with out-curved rims thought to imitate Attic bowls date ca. 275 to the 2nd century BCE, and see ROTROFF 1997, 159–160. Such vessels are rarely reported from Jaffa (TSUF 2018b, 110–112 fig. 9.2, 57–60; GENDELMAN 2020a, 55–56 fig. 1, 5 and other coastal sites of the region (e.g., ELGAVISH 1974, 51–52, pl. XXX, 282; OLESON ET AL. 1994, 146 fig. 55, BG 6. 7; GUZ-ZILBERSTEIN 1995, 290–291 photo 6.6. 346–347 fig. 6.2, 14–19).
- 25 During the Hellenistic period such bowls were produced in numerous eastern Mediterranean workshops. Such vessels, generally dated to the 2nd – early 1st century BCE, are well represented in the Hellenistic sites of the region (ROSENTHAL-HEGINBOTTOM 1995, 215). The decoration on the poorly preserved ARIG fragment is of an ovolo on rim-zone. This decoration scheme is well known from other sites of the region (e.g., ELGAVISH 1974, 58–59, pls. XXXV, 319–320. 324. 326; XXXVI, 327–330; ROSENTHAL-HEGINBOTTOM 1995, 216 fig. 5.5, 13–15; ROSENTHAL-HEGINBOTTOM 2016, nos. 42–43. 57–61. 101).
- 26 Rather rare shape (cf. TSUF 2018b, 112–113 fig. 9.3, 87–92; MŁYNARCZYK 2002, 120–121 fig. 4, 53) marked as Type BL4c and dated to the 3rd–2nd century BCE in the Tel Dor excavations (GUZ-ZILBERSTEIN 1995, 292. 348–349 fig. 6.3, 20).
- 27 HARLAUT 2002; BALLETT 2002, 90–91.
- 28 GILL 2012, 19.
- 29 GENDELMAN 2021, 59.
- 30 cf. ROSENTHAL-HEGINBOTTOM 2019.
- 31 Closely shaped painted or slipped bowls, dated to the 3rd and 2nd centuries BCE, were reported from Karnak and Elephantine, Upper Egypt (PIERRAT-BONNEFOIS 2002, fig. 12; MASSON 2011, 280 figs. 68–69; CONSONNI 2016, 197. 203 fig. 8, 19; LICITRA – DAVID 2016, fig. 21, 114).
- 32 e.g., BERLIN 2001, fig. 2.14, 6–12; HARLAUT 2002, 271 fig. 10, b.
- 33 GENDELMAN 2021, fig. 4, 4.
- 34 GORZALCZANY 2003, 7 fig. 2, 3–4.
- 35 ROSENTHAL-HEGINBOTTOM 2019, 61 fig. 3f, no. 3.
- 36 TSUF 2018b, 98–99 fig. 9.1, 12–14; GENDELMAN 2020a, 56 fig. 1, 9; JAKOEL – HADDAD 2015, fig. 5, 1–3.
- 37 KLETTER 2015, 121 fig. 37, 2. 4–5; GORZALCZANY 1999, 28 fig. 4, 1–4. 6; GORZALCZANY 2003, 7 fig. 2, 1–4; FISCHER – TAL 1999b, 238 fig. 5.12, 11–14; SINGER-AVITZ 1989, 133 fig. 9.13, 4–5.

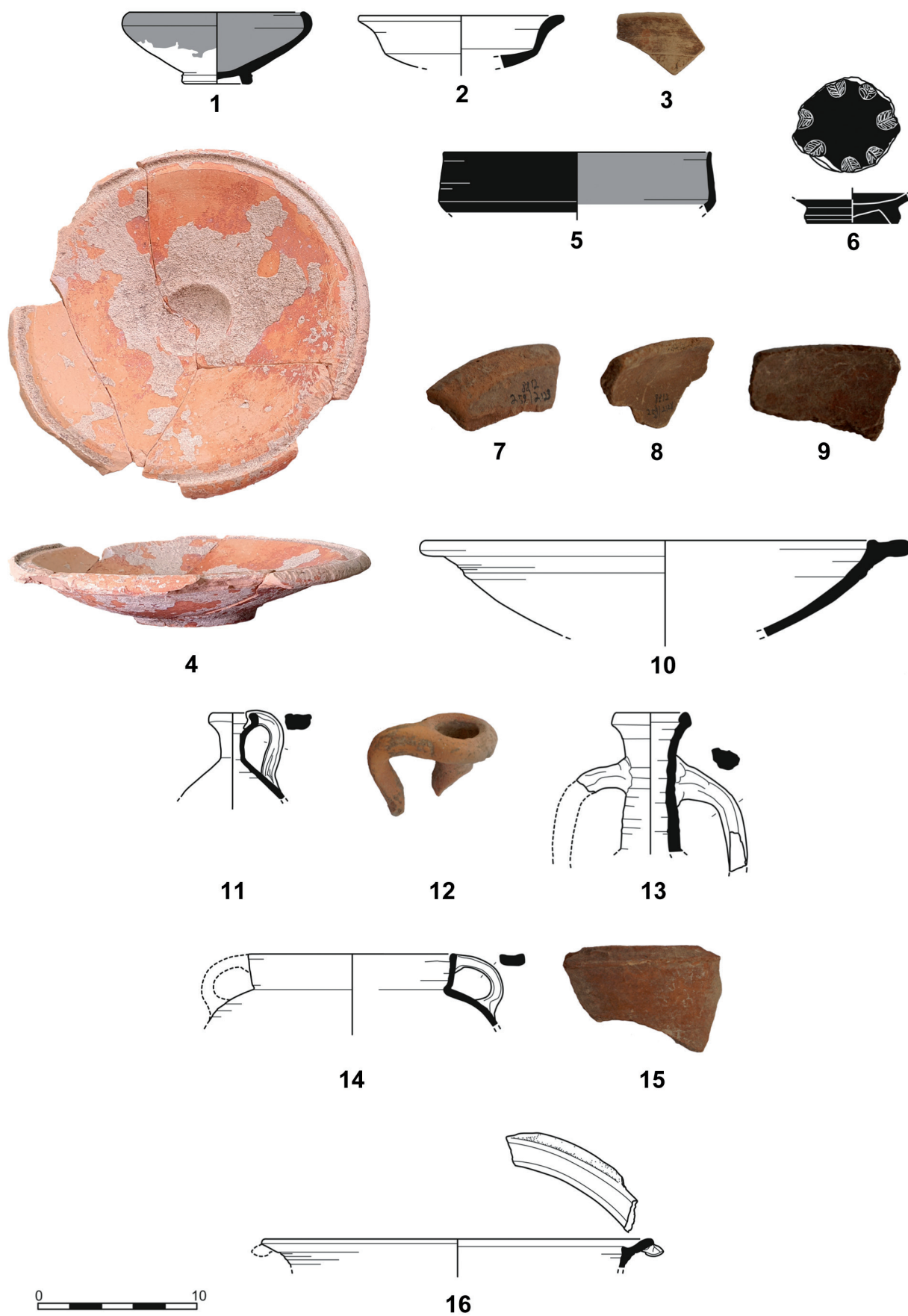


Fig. 8: The pottery: table, household and kitchen wares.

### *Household and Kitchen Wares*

The slim household assemblage includes an imported mortarium (**fig. 8, 10**), two variants of local perfume juglets (**fig. 8, 11–12**) and a pilgrim flask (**fig. 8, 13**).

#### *Mortarium*

Fragment of an imported mortarium bowl with wide shelf-like rim (**fig. 8, 10**). These eastern Mediterranean vessels were reported from Kition, in layers from the end of the 4th and beginning of the 3rd centuries BCE<sup>38</sup>. Similarly shaped vessels are commonly reported from Jaffa<sup>39</sup> and other sites in the region<sup>40</sup>.

#### *Perfume Juglets*

Two slightly different variants of small juglets were identified at the site. The first is represented by the fragment of a globular juglet with short narrow neck, up-raised concave rim, and ovoid handle connected to the rim (**fig. 8, 11**). Similarly shaped perfume juglets are reported as early as the late Persian-early Hellenistic period (mid/late 4th – early 3rd centuries BCE)<sup>41</sup> and seem to be continuously produced during 2nd – early 1st centuries BCE<sup>42</sup>. Such juglets were recovered from nearby Tel Qasile<sup>43</sup>.

The second variant is characterized by an out-rolled rim (**fig. 8, 12**). Similar vessels, with or without red wash, dated to the 2nd and early 1st centuries BCE, were reported from diverse sites of the region<sup>44</sup>.

#### *Pilgrim Flask*

Fragment of a lentoid-shaped pilgrim flask with narrow neck and flaring rim (**fig. 8, 13**). This vessel is similar to Type PF from Tel Dor, where it was dated to the early Hellenistic period<sup>45</sup>. Such vessels, dated from the mid-6th till the late 4th or early 3rd century BCE are commonly reported from Jaffa<sup>46</sup> and nearby sites<sup>47</sup>.

#### *Cooking Pots*

The cooking pots assemblage comprises only two variants of locally produced vessels (**fig. 8, 14–15**). The first variant is characterized by a short concave neck with inner lid setting and rounded lip (**fig. 8, 14**). It is a common shape of Hellenistic cooking pot, generally dated

38 SALLES 1983, 73–74 fig. 28, 245; SALLES 1993, 189. 267–268 figs. 200, 239; 230, 521; 232, 521.

39 JAKOEL – GENDELMAN 2017, 61\* fig. 19, 12; TSUF 2018b, fig. 9.17, 336–339; GENDELMAN 2021, 414–416 fig. 4, 4–7.

40 E.g., KENYON 1957, 228 fig. 40, 4; BRIEND 1980, 108. 114 pls. 12, 7; 17, 14; ROCHMAN-HALPERIN 1999, 107 fig. 23, 11.

41 Cf. vessels from Apollonia-Arsuf, see TAL 1999, 157 fig. 4.38, 6 and Tel Michal, see SINGER-AVITZ 1989, 135 fig. 9.13, 10.

42 As reported from Maresha (LEVINE 2003, 108–109 fig. 6.13, 123–128) and Jerusalem (GEVA 2003, 129–130 fig. 5.2, JT 2, pls. 5.2, 41; 5.6, 28; 5.8, 23, 5.9, 16; 5.10, 19; photos 5.7, 5.8; BERLIN 2015, 638. 665 pl. 6.1.18, 12).

43 KLETTER 2015, 122 fig. 37, 13.

44 E.g. Tirat Yehuda (YEIVIN – EDELSTEIN 1970, fig. 7, 8–9), Or Aqiva (YANNAI 2009, 60 fig. 6, 11–12) and Maresha (LEVINE 2003, 109 fig. 6.13, 126; STERN – OSBAND 2015, fig. 2.9, 6).

45 GUZ-ZILBERSTEIN 1995, 310–311. 382–383 fig. 6.34, 1–3.

46 TSUF 2018b, fig. 9.8, 182–184; GENDELMAN 2020c, 417–419 fig. 5, 8–10.

47 Such as Tel Qasile (KLETTER 2015, 122 fig. 37, 15) Tel Mikhal from Stratum VI, dated to 350–300 BCE (SINGER-AVITZ 1989, 135 fig. 9.13, 16) and Apollonia-Arsuf (FISCHER – TAL 1999b, fig. 5.14, 4; TAL 1999, 157 fig. 4.38, 12).

from the 3rd to the late 2nd or early 1st centuries BCE and reported from numerous sites along the Israeli Mediterranean coast and inland<sup>48</sup>. It was also reported from Jaffa and nearby sites<sup>49</sup>.

The second variant is a globular cooking pot with high cylindrical neck and out-curved rim (**fig. 8, 15**). This shape appears as early as the end of the Persian and the beginning of the Hellenistic periods and is continuously represented till the late 2nd century BCE. It was reported from Jaffa<sup>50</sup> and from numerous sites of the region<sup>51</sup>.

### *Casserole*

The only shape of casseroles in the ARIG assemblage is a barrel-shaped vessel with a ledge-shaped rim, inner lid support and a pair of horizontal rod handles (**fig. 8, 16**). This shape is commonly reported from Jaffa and neighboring sites, dating from the late Persian through the Hellenistic periods<sup>52</sup> and was reported from numerous sites in Israel and beyond<sup>53</sup>.

## *Hellenistic Amphorae*

### *Local Amphorae*

As stressed above, local amphorae are by far the most common vessels found at both parts of the ARIG complex. Two distinct variants represent the local sack-shaped amphorae.

The first variant, represented by a few fragments, is characterized by a relatively high cylindrical neck and out-folded rim (**fig. 9, 1**). This is the most common shape of local containers from the Persian and early Hellenistic periods in Jaffa<sup>54</sup>. Closely shaped vessels, dating between the mid-5th and mid-4th centuries BCE, are reported from Tel Michal and Apollonia-Arsuf<sup>55</sup>.

Hundreds of fragments belonging to over 40 vessels correspond to the second variant. They were found mainly in the four southern rooms of the storage building and at the easternmost space of the eastern wing. The vessels are relatively small and slender. They have a thickened out-splayed rim with pointed lip set directly upon the rounded shoulder, and a pair of loop handles connected to the shoulders (**fig. 9, 2–5**). This common shape appears as early as the 3rd century BCE and became dominant during the 2nd and early 1st centuries BCE<sup>56</sup>. Such vessels are commonly reported from late Hellenistic deposits in Jaffa<sup>57</sup> and its surroundings<sup>58</sup>. One vessel from a burial cave at Bat-Yam bears a Phoenician inscription of Baal'salah, ascribed to the 3rd century BCE<sup>59</sup>.

48 e.g., BRIEND 1980, 107 pl. 11, 5a–b; GUZ-ZILBERSTEIN 1995, 299. 366 fig. 6.19, 13–14.

49 TSUF 2018b, 177–178 fig. 9.20, 374–376; FISCHER 1989, 184 fig. 13.3, 17; FISCHER – TAL 1999b, 238 fig. 5.13, 10–12.

50 TSUF 2018b, 174–175 fig. 9.19, 363–368; GENDELMAN 2020c, 420–421 fig. 6, 5.

51 e.g., BRIEND 1980, 107 pl. 11, 1. 2; ALEXANDRE 2006, 155 figs. 48, 7; 53, 5. 6; GUZ-ZILBERSTEIN 1995, 299. 365 fig. 6.18, 5–11.

52 FISCHER – TAL 1999b, 238 fig. 5.13, 3; KAPITAİKIN 2006, 29–30 fig. 5, 8; GENDELMAN 2020c, 422.

53 e.g., GUZ-ZILBERSTEIN 1995, 300 fig. 6.22, 1; BERLIN 2001, 34 fig. 2.23, 11.

54 See GENDELMAN – JAKOEL 2017, 301 fig. 16.1, 3; JAKOEL – GENDELMAN 2017, 61\* fig. 9, 14; TSUF 2018b, 220–221 fig. 9.34, 586–591; GENDELMAN 2020a, 59 fig. 2, 5. 6; 2020c, 422 fig. 7, 2.

55 SINGER-AVITZ 1989, 122–124 figs. 9.4, 1–3. 5–6. 9. 12; 9.5, 8; 9.6, 1–4. 7; 9.12, 6–10; TAL 1999, 102 fig. 4.13, 12. 13; KAPITAİKIN 2006, 30–31 fig. 6, 1. 8.

56 GUZ-ZILBERSTEIN 1995, 311. 386 fig. 6.37, 1–6.

57 e.g., TSUF 2018b, 221–222 fig. 9.43, 593–600; JAKOEL – GENDELMAN 2017, 61\* fig. 19, 15–16.

58 KAPLAN – KAPLAN 1989, 355–356 figs. 6–7; KLETTNER 2015, 122 figs. 38, 3–6; 39, 13; GORZALCZANY 1999, 30 fig. 4, 14–17. 19–20.

59 SHAPIRA 1966, pl. 4.



Fig. 9 : The pottery: Hellenistic amphorae

*Imported Amphorae*

Few fragments of imported amphorae were found at ARIG, and only two are identifiable.

One shard represents a vessel with a narrow neck, rounded rim and massive curved handles connected to the neck below the rim. The single preserved handle is bearing an illegible circular stamp (**fig. 9, 6**). The coarse pale fabric suggests Antioch or Cilicia origins<sup>60</sup>.

The second shard belongs to an amphora with a short neck and wide out-splaying ridged rim (**fig. 9, 7**). It follows a characteristic Punic production tradition with origins at Carthage and other coastal Tunisian sites<sup>61</sup>. Such vessels, known as Mañá C1/2 and Ramon T-7.4.2.262 are dated c. 200–150 BCE<sup>63</sup>. Similarly shaped amphorae were reported from 'Akko and Tel 'Ira<sup>64</sup>.

*Oil Lamps*

Two types of oil lamps were found. The common wheel-made lamp (**fig. 10, 1**), dated to the 4th–2nd centuries BCE, has many examples in Jaffa<sup>65</sup> and other sites<sup>66</sup>. Decorated mold-made oil lamps (**fig. 10, 2–3**), dated ca. 200–50 BCE<sup>67</sup>, were also reported from Jaffa<sup>68</sup> and its surroundings<sup>69</sup>.

*Ceramic Beehives (?)*

Two fragmentary, locally produced vessels with an elongated body, narrow shoulders and a simple, slightly out-turned rim were discovered (**fig. 10, 4–5**). Their closest parallel is a group of pipe-like vessels recovered from a Hellenistic deposit at Straton's Tower/Caesarea Maritima<sup>70</sup> and tentatively identified as amphorae. A similarly shaped fragmentary vessel from a Hellenistic deposit at Tel Qasile was marked as possibly a »pipe?«<sup>71</sup>. Yet a feasible possibility, first presented here, that all these vessels, including the newly discovered shards from ARIG are in fact terracotta horizontal beehives. Terracotta or unbaked clay biconical pipe-like beehives were used in Egypt in as early as the 3rd millennium BCE till at least the 6th century BCE<sup>72</sup>. In Canaan, two-ended-open clay beehives appeared in the Iron Age II and persisted until the 20th century<sup>73</sup>. Terracotta beehives resembling the ARIG finds, dated to the late 4th-early 3rd centuries BCE are also known from Greece<sup>74</sup>.

60 cf. stamped amphorae from Issos: GATES 2015, fig. 19.

61 NASEF 2015, 33 fig. 39.4–6.

62 RAMÓN TORRES 1995, 426–442.

63 GUERRERO 1986, 160–163 fig. 6, 1–3.

64 DOTHAN 1976, 36 fig. 30, 17; FISCHER – TAL 1999a, fig. 6.141, 8; WOLFF 2004, 453–454.

65 e.g., TSUF 2018b, 314–315 figs. 9.68, 1109–1114; 9.69, 1115–1117; GENDELMAN 2020a, 60 fig. 2, 10–11.

66 ROSENTHAL-HEGINBOTTOM 1995, 235 figs. 5.13, 9–10; 5.14, 1–8.

67 ROSENTHAL-HEGINBOTTOM 1995, 238 figs. 5.17, 11–13; 5.18, 1–3.

68 TSUF 2018b, 317–318 figs. 9.69, 1124; 9.70, 1127–1130.

69 KAPLAN – KAPLAN 1989, 356 fig. 16.

70 OLESON ET AL. 1994, 143–144. 147 figs. 52, A97–99; 53; pls. 27, A97; 28, A100–102.

71 KLETTER 2015, 122 fig. 38, 7.

72 CRANE 1999, 164. 166 fig. 20, 3a. 4a; KRITSKY 2015, 10. 47–53 figs. 2.3–2.5; 5.5–5.6.

73 MAZAR 2017, figs. 4–5, 9.

74 JONES ET AL. 1973, 394. 446–448 fig. 19 and pls. 76, 170–177; 77.

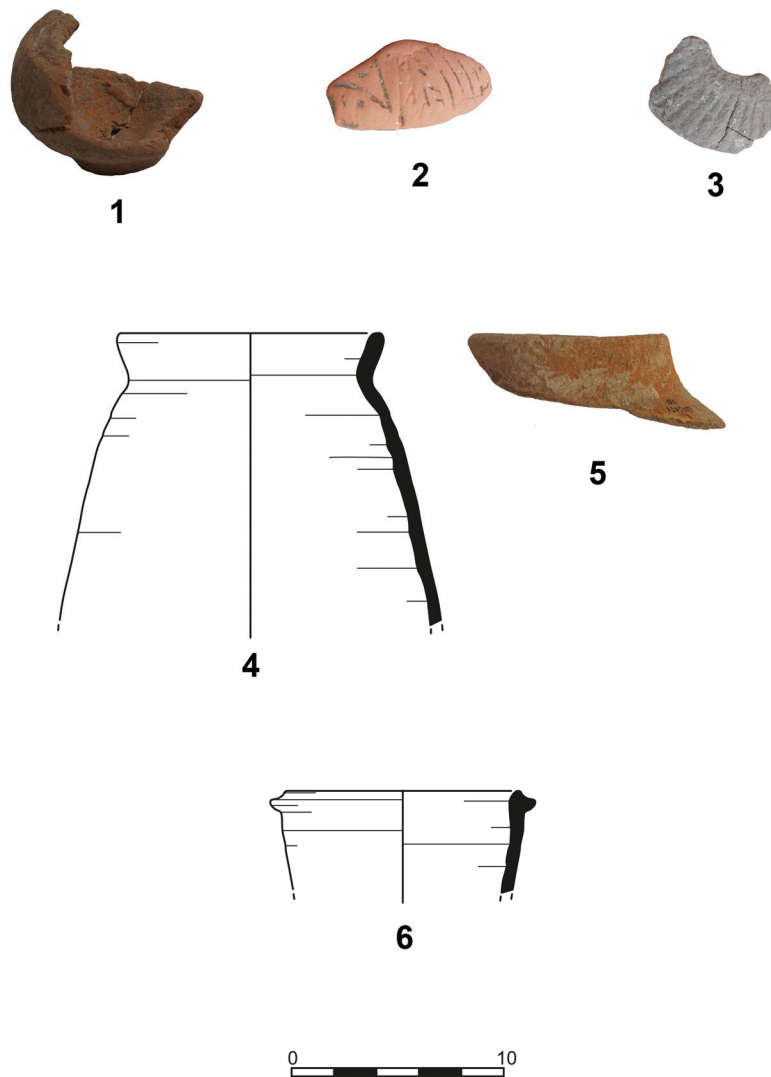


Fig. 10 : The pottery: Hellenistic lamps and beehives, Roman amphora.

### *Roman amphorae*

A few fragmentary local bag-shaped amphorae from the 1st–early 2nd century CE were also found at the site (**fig. 10, 6**). Such amphorae are common at Jaffa<sup>75</sup> and various other sites<sup>76</sup>.

### **Date and Significance**

The Hellenistic pottery assemblage from ARIG consists almost exclusively of types/variants dated to the 3rd and 2nd centuries BCE. While most types, especially the locally made vessels, had a wide span of production, a date in the 2nd century BCE is viable for the assemblage. The mid-late 2nd century BCE is the latest represented stage for the datable types, particularly the local amphorae, which comprise the bulk of pottery finds.

The fragments of a mortarium and of local amphora from the late 4th and early 3rd centuries BCE (**figs. 8, 10; 9, 1**) are the only indicators of an earlier presence at the site, but

<sup>75</sup> e.g., GENDELMAN – JAKOEL 2017, 303 fig. 16.2, 7–11.

<sup>76</sup> e.g., OLESON ET AL. 1994, 16. 117 fig. 40, 71.

their small quantity and negligible percentage in the total assemblage suggest chance deposits rather than an actual occupation. The scattered fragments of amphorae from the Early Roman period may have reached the site during post-dereliction stone extraction, quarrying and farming.

The owners of the ARIG estate evidently adopted Hellenistic fashions, as indicated by the presence in the pottery of Levantine and Egyptian drinking vessels as well as of vessels for wine and fish products imported from as far as the Punic west. These were probably acquired in Jaffa's markets. Still, the ceramic assemblage is relatively poor in fine table wares compared with contemporaneous pottery from Jaffa, and is sharply dominated by local amphorae undoubtedly utilized for an agriculture byproduct, possibly wine. If the interpretation of the vessels in **fig. 10, 11–12** as beehives is correct, this is rare evidence for beekeeping in the region during that time<sup>77</sup>.

### Discussion and conclusions

During the Hellenistic period, ARIG was one of over 40 farmsteads and five villages in an area spanning from across the Yarkon River at the north to Gan Soreq, with Jaffa in its centre. ARIG was at a relatively short distance from Jaffa, although not in the closest belt of affluent, agricultural-based farmsteads immediately east of the Lower City<sup>78</sup>. The structures at ARIG were relatively short-lived. Built after the Seleucid takeover of the coastal region in 198 BCE, they stood until no later than the mid-2nd century BCE. The ceramic assemblage contains no exclusively Ptolemaic or Hasmonaeen vessels. These periods are also missing in the small numismatic assemblage. ARIG and other rural sites affiliated with Jaffa evidently outlived the developments that had led the Hellenistic city into gradual decline. The economic system they were part of met its end only with the Hasmonean conquest of the region in 142 BCE. At its aftermath Jaffa withdrew back into its ancient mound, underwent a thorough demographic change, and its affiliated farms and villages were abandoned.

A broader perspective may shed light on the reasons behind the latter outcome. For the Hasmoneans, control over Jaffa meant profitable sea trade and a vital communication venue with the influential Jewish diaspora and with Rome, their political ally in the struggles with the Seleucids. As the Hellenized residents of Jaffa enjoyed under Seleucids a valued and profitable autonomy<sup>79</sup>, and could not be trusted to shift their loyalties to the new rulers, the Hasmoneans replaced them with Jews. Yet had the affiliated rural settlements and estates remained in place, the newly converted Jaffa would have stayed surrounded by an indignant population as sympathetic to the court of Antioch as the expelled urban residents. There is no evidence for attempts to resettle the farms with Jews as was done in Jaffa itself and maintain the profitable economic/agricultural system. The Hasmoneans may have felt incapable of defending isolated and unfortified spots from anticipated Seleucid campaigns, or did not consider such effort worthwhile. The promise of crops and subsequent taxes could wait for stabler and calmer times.

Time-frozen ash layers and fragmented or intact vessels left in their original positions are absent at ARIG, as are other straightforward testimonies of destruction. Neither was such evidence found at other Hellenistic sites near Jaffa, such as Gan Soreq<sup>80</sup> and Shai 'Agnon Street in Ramat Aviv<sup>81</sup>. Still, ARIG's amphorae assemblage represents dozens of crushed vessels. They may have been shattered by resentful residents forced to leave their homes, or

77 For literary and epigraphic evidence for beekeeping in the region from the Bronze Age until late Persian – early Hellenistic period see CRANE 1999, 174.

78 HADDAD 2010; JAKOEL – MARCUS 2017, 44–46. 67; ARBEL 2020.

79 GEIGER 1990.

80 'Ad 2021, 105.

81 GORZALCZANY 1999, 31; 2003, 10.

broken as the derelict house's roof or upper floor caved or were destroyed during or after the abandonment. ARIG's final desertion may have taken place under a Hasmonean decree, out of fear of repressive measures, because the residents may not have wished to live under the new rulers or under some other stress. Either way, it was not an isolated episode but rather part of a system collapse; it put an end to the solid, efficient and largely self-dependent system that flourished under Alexandria and Antioch and was maintained by sympathetic populations that shared the ideological and cultural traits of these courts. Its disappearance was to change Jaffa's region for centuries.

## Bibliography

- 'AD 2016 U. 'Ad, Settlement in the Southern Coastal Plain (Philistia) during the Persian and Early Hellenistic Periods (from the Last Third of the Sixth Century until the Mid-second Century B.C.E.) (Ph.D. Thesis –Tel Aviv University 2016).
- 'AD 2021 U. 'Ad, Settlement in the Southern Coastal Plain (Philistia) during the Early Hellenistic Periods (Third through Mid-second Centuries BCE), in: A. M. Berlin – P. J. Kosmin (eds.), *The Middle Maccabees. Archaeology, History, and the Rise of the Hasmonean Kingdom* (Atlanta, GA 2021) 91–106
- ALEXANDRE 2006 J. Alexandre, Nahal Tut (Site VIII): A Fortified Storage Depot from the Late Fourth Century BCE, *Atiqot* 52, 2006, 131–190
- ARBEL 2017 Y. Arbel, Salvage Excavations in Jaffa's Lower Town, 1994–2014, in: A. A. Burke – K. S. Burke – M. Peilstöcker (eds.), *The History and Archaeology of Jaffa 2* (Los Angeles, CA 2017) 63–88
- ARBEL 2020 Y. Arbel, Building Remains from the Hellenistic, Byzantine and Late Ottoman Periods on Ben Gamli'el Street, Yafo (Jaffa), *Atiqot* 100, 2020, 389–402
- BALLET 2002 P. Ballet, Les productions céramiques d'Égypte à la période hellénistique. Les indices de l'hellénisation', in: F. Blondé – P. Ballet – J.-F. Salles (eds.), *Céramiques hellénistiques et romaines. Productions et diffusion en Méditerranée orientale* (Chypre, Égypte et côte syro-palestinienne), *TMO* 35 (Lyon 2002) 85–96
- BERLIN 2001 A. Berlin, Naukratis/Kom Hadid: A Ceramic Typology for Hellenistic Lower Egypt, in: A. Leonard Jr., *Ancient Naukratis: Excavations at a Greek Emporium in Egypt 2. The Excavations at Kom Hadid*, *AASOR* 55 (Atlanta, GA 2001) 26–163
- BERLIN 2015 A. Berlin, Hellenistic Period, in: S. Gitin (ed.), *The Ancient Pottery of Israel and its Neighbors from the Iron Age through the Hellenistic Period 2* (Jerusalem 2015) 629–671



- BRIEND 1980 J. Briend, Vestiges hellénistiques, in: J. Briend – J.-B. Humbert (eds.), *Tell Keisan (1971–1976): Une cité phénicienne en Galilée*, OBO.SA 1 (Fribourg 1980) 101–116
- BURKE ET AL. 2014 A. A. Burke – M. Peilstöcker – G. Pierce, Hellenistic Architecture in Jaffa: The 2009 Excavations of the Jaffa Cultural Heritage Project in the Visitor's Centre, *PEQ* 146.1, 2014, 1–16
- CONSONNI 2016 A. Consonni, Ptolemaic Pottery from the Area of the Temple of Millions of Years of Amenhotep II: an Overview, in: R. David (ed.), *Céramiques ptolémaïques de la région thébaine*, CCE 10, 2016, 193–213
- CRANE 1999 E. Crane, *The World History of Beekeeping and Honey Hunting* (New York 1999)
- DOTHAN 1976 M. Dothan 1976, Akko: Interim Excavation Report First Season 1973/4, *BASOR* 224, 1976, 1–48
- ELGAVISH 1974 J. Elgavish, Archaeological Excavations at Shikmona Field Report 2. The Level of the Hellenistic Period – Stratum H, Seasons 1963–1970 (Haifa 1974) (Hebrew)
- FANTALKIN – TAL 2003 A. Fantalkin – O. Tal, The Yannai Line (BJ I, 99–100; AJ XIII, 390–91): Reality or Fiction?, *PEQ* 135.2, 2003, 108–123
- FINKIELSZTEJN 2020 G. Finkielsztejn, Unstamped and Stamped Hellenistic Amphora Fragments from Ben Gamli'el Street, Yafo (Jaffa), *Atiqot* 100, 2020, 437–456
- FINKIELSZTEJN 2021 G. Finkielsztejn, Amphora Stamps and Fragments, in: Y. Arbel (ed.), *Excavations at the Ottoman Military Compound (Qishle) in Jaffa, 2007, 2009* (Münster 2021) 67–72
- FISCHER 1989 M. Fischer, Hellenistic Pottery (Strata V–III), in: Z. Herzog – G. Rapp Jr. – O. Negbi (eds.), *Excavations at Tel Michal, Israel* (Minneapolis, MN – Tel Aviv 1989) 177–187
- FISCHER – TAL 1999a M. Fischer – O. Tal, Byzantine and Early Islamic Periods, in: I. Beit-Arieh (ed.), *Tel 'Ira. A Stronghold in the Biblical Negev*, Monograph Series of the Institute of Archaeology of Tel Aviv University 15 (Tel Aviv 1999) 300–345
- FISCHER – TAL 1999b M. Fischer – O. Tal, The Hellenistic Period, in: I. Roll – O. Tal, *Apollonia-Arsuf. Final Report of the Excavations I. The Persian and Hellenistic Periods* (Tel Aviv 1999) 223–261
- GATES 2015 C. Gates, Kinet Höyük (Classical Issos): A Harbor Town in Southeast Cilicia during the Persian and Hellenistic Periods, *Journal of Eastern Mediterranean Archaeology & Heritage Studies* 3.2, 2015, 81–104
- GEIGER 1990 J. Geiger, Local Patriotism in the Hellenistic Cities of Palestine, in: A. Kasher – U. Rappaport – G. Fuks, *Greece and Rome in Eretz Israel* (Jerusalem 1990) 141–150
- GENDELMAN 2020a P. Gendelman, Hellenistic and Early Roman-Period Pottery from Rabbi Yehuda Me-Raguza Street, Yafo (Jaffa), *Atiqot* 100 (2020) 53–64
- GENDELMAN 2020b P. Gendelman, Pottery Vessels and Stone Artifacts from the Persian, Roman and Byzantine Periods at the French Hospital Compound, Yafo (Jaffa), *Atiqot* 100, 2020, 157–188

- GENDELMAN 2020c P. Gendelman, Pottery Vessels and Oil Lamps from the Iron Age, Persian, Hellenistic, Roman and Byzantine Periods from Ben Gamli'el Street, Yafo, Atiqot 100, 2020, 403–435
- GENDELMAN 2021 P. Gendelman, Pottery of the Hellenistic, Roman and Byzantine Periods, in: Y. Arbel (ed.), Excavations at the Ottoman Military Compound (Qishle) in Jaffa, 2007, 2009 (Münster 2021) 59–66
- GENDELMAN – JAKOEL 2017 P. Gendelman – E. Jakoeel, Ceramics from the Postal Compound Excavations, 2009–2011, in: A. A. Burke – K. S. Burke – M. Peilstöcker (eds.), The History and Archaeology of Jaffa 2 (Los Angeles, CA 2017) 301–311
- GEVA 2003 H. Geva, Jewish Quarter Excavations in the Old City of Jerusalem Conducted by Nahman Avigad, 1969–1982, 2. The Finds from Areas A, W and X-2. Final Report (Jerusalem 2003) 113–175
- GILL 2012 J. C. R. Gill, Ptolemaic ›Black Ware‹ from Mut el-Kharab, in: C. Knoblauch – J. C. R. Gill (eds.), Egyptology in Australia and New Zealand 2009, Proceedings of the Conference Held in Melbourne, September 4th–6th, 2009, BARIntSer 2355 (Oxford 2012) 15–25
- GORZALCZANY 2003 A. Gorzalczany, A Hellenistic Site on Shay 'Agnon Street, Ramat Aviv', Atiqot 44, 2003, 5–11 (Hebrew with English Summary, 273–274)
- GORZALCZANY 1999 A. Gorzalczany, Hellenistic Period Remains at Ramat Aviv, Atiqot 38, 1999, 25–32 (Hebrew with English Summary, 222–223)
- GUERRERO 1986 A.V. Guerrero, Una aportación al estudio de las ánforas púnicas Maña C, *Archaeonautic* 6, 1986, 147–186
- GUZ-ZILBERSTEIN 1995 B. Guz-Zilberstein, The Typology of the Hellenistic Coarse Ware and Selected Loci of the Hellenistic and Roman Periods, in: E. Stern, Excavations at Dor, Final Report 1 B. Areas A and C: The Finds, Qedem Reports 2 (Jerusalem 1995) 289–433
- HADDAD 2010 E. Haddad, Yafo, Yehuda Ha-Yamit Street, *EscIsr* 122, 2010  
[http://www.hadashot-esi.org.il/report\\_detail\\_eng.asp?id=1427&mag\\_id=117](http://www.hadashot-esi.org.il/report_detail_eng.asp?id=1427&mag_id=117), accessed 20 July 2022
- HARLAUT 2002 C. Harlaut, Productions céramiques égyptiennes d'Alexandrie à l'époque ptolémaïque. Évolution des formes et des fabriques. Traditions locales et innovations, in: F. Blondé – P. Ballet – J.-F. Salles (eds.), Céramiques hellénistiques et romaines. Productions et diffusion en Méditerranée orientale (Chypre, Égypte et côte syro-palestinienne), TMO 35 (Lyon 2002) 263–287
- HERBERT – BERLIN 2003 S. C. Herbert – A. M. Berlin, A New Administrative Center for Persian and Hellenistic Galilee: Preliminary Report of the University of Michigan/University of Minnesota Excavations at Kedesh, *BASOR* 329, 2003, 13–59
- HERZOG 2008 Z. Herzog, Jaffa, *NEAEHL* 5 (Jerusalem 2008) 1791–1792
- JAKOEL – GENDELMAN 2017 E. Jakoeel – P. Gendelman, The Pottery Finds, Atiqot 88, 2017, 59\*–64\* (Hebrew with English Summary, 157–158)

- JAKOEL – HADDAD 2015 E. Jakoel – E. Haddad, Yafo, Sha'are Nicanor Street, Exclsr 127, 2015  
[https://www.hadashot-esi.org.il/report\\_detail\\_eng.aspx?id=23810&mag\\_id=122](https://www.hadashot-esi.org.il/report_detail_eng.aspx?id=23810&mag_id=122), accessed 29 October 2022
- JAKOEL – MARCUS 2017 E. Jakoel – J. Marcus, The Northeastern Fringes of Yafo (Jaffa) in Light of the Excavations on Jerusalem Boulevard and Its Vicinity, *Atiqot* 88, 2017, 43–70 (Hebrew with English Summary, 157–158)
- JONES ET AL. 1973 J. E. Jones – A. J. Graham – L. H. Sacket – M. I. Geroulanos, An Attic Country House below the Cave of Pan at Vari, *BSA* 68, 1973, 355–452
- KAPLAN 1972 J. Kaplan, The Archaeology and History of Tel Aviv–Jaffa, *BibAr* 35.3, 1972, 66–95
- KAPLAN – KAPLAN 1989 J. Kaplan – H. Kaplan, Remains of a Serapis Cult in Tel Aviv, *Eretz-Israel* 20, 1989, 352–359 (Hebrew with English Summary, 207–208)
- KAPITAIKIN 2006 L. A. Kapitaikin, The Pottery from the IAA Excavations at Tel Mikhal (Tel Michal), *Atiqot* 52, 2006, 21–56
- KEIMER 2017 K. H. Keimer, Excavations in Areas B, D, F, and G by Jacob Kaplan, 1959–1964, in: A. A. Burke – K. S. Burke – M. Peilstöcker (eds.), *The History and Archaeology of Jaffa 2* (Los Angeles, CA 2017) 369–399
- KENYON 1957 K. M. Kenyon, Hellenistic Pottery, in: J. W. Crowfoot – G. M. Crowfoot – K. M. Kenyon, *The Objects from Samaria. Samaria-Sebaste 3* (London 1957) 217–281
- KLETTER 2015 R. Kletter, A Middle Bronze Age II Site West of Tell Qasile, *Atiqot* 53, 2006, 65–128
- KRITSKY 2015 G. Kritsky, *The Tears of Re: Beekeeping in Ancient Egypt* (Oxford 2015)
- LEVINE 2003 T. Levine, Pottery and Small Finds from Subterranean Complexes 21 and 70, in: A. Kloner, *Maresha Excavations Final Report 1. Subterranean Complexes 21, 44, 70, IAA Reports 17* (Jerusalem 2003) 73–130
- LICITRA – DAVID 2016 N. Licitra – R. David, L'évolution des céramiques ptolémaïques à Karnak d'après la documentation du Trésor de Chabaka, in: R. David (ed.), *Céramiques ptolémaïques de la région thébaine*, *CCE* 10, 2016, 77–121
- MARGARITIS 2015 E. Margaritis, Agricultural Production and Domestic Activities in Rural Hellenistic Greece, in: E. M. Harris – D. M. Lewis – M. Woolmer (eds.), *The Ancient Greek Economy Markets, Households and City-States* (Oxford 2015) 187–204
- MASSON 2011 A. Masson, Persian and Ptolemaic Ceramics from Karnak: Change and Continuity, *CCE* 9, 2011, 269–310
- MAZAR 2017 A. Mazar, The Iron Age Apiary at Tel Rehov, Israel, in: F. Hatjina – G. Mavrofridis – R. Jones (eds.), *Beekeeping in the Mediterranean: From Antiquity to the Present* (Nea Moudania 2017) 40–49
- MŁYNARCZYK 2002 J. Młynarczyk, Hellenistic Fine Wares at Tell Keisan. A Pattern of Importations, in: F. Blondé – P. Ballet – J.-F. Salles (eds.), *Céramiques hellénistiques et romaines. Productions et diffusion en Méditerranée orientale* (Chypre, Égypte et côte syro-palestinienne), *TMO* 35 (Lyon 2002) 117–132

- NAGORSKY 2019 A. Nagorsky, A Hellenistic Farmhouse at the Entrance to the Town El'ad, JHP 4, 2019, 44–58
- NASEF 2015 J. Nasef, La production de la céramique antique dans la région de Salakta et Ksour Essef (Tunisie), Roman and Late Antique Mediterranean Pottery 8 (Oxford 2015)
- OLESON ET AL. 1994 P. J. Oleson – M. A. Fitzgerald – A. S. Sherwood – E. S. Sidebotham, The Finds and the Ship. The Harbours of Caesarea Maritima. Results of the Caesarea Ancient Harbour Excavation Project 1980–85, 2, BARIntSer 594 (Haifa 1994)
- PIERRAT-BONNEFOIS 2002 G. Pierrat-Bonnefois, L'hellénisation des productions céramiques en Haute-Égypte: le cas de Tôd, in: F. Blondé – P. Ballet – J.-F. Salles (eds.), Céramiques hellénistiques et romaines. Productions et diffusion en Méditerranée orientale (Chypre, Égypte et côte syro-palestinienne), TMO 35 (Lyon 2002) 175–188
- RAMÓN TORRES 1995 J. Ramón Torres, Las anforas fenicio-punicas del Mediterraneo central y occidental, Instrumenta 2 (Barcelona 1995)
- RENFREW 1984 C. Renfrew, Approaches to Social Archaeology (Cambridge, MA 1984)
- ROCHMAN-HALPERIN 1999 A. Rochman-Halperin, Excavations at Giv'at Yasaf (Teller-Ras) 1984–1985, Atiqot 37, 1999, 83–123 (Hebrew with English Summary, 172–173)
- ROSENTHAL-HEGINBOTTOM 1995 R. Rosenthal-Heginbottom, Imported Hellenistic and Roman Pottery, in: E. Stern, Excavations at Dor, Final Report 1 B. Areas A and C: The Finds, Qedem Reports 2 (Jerusalem 1995) 183–288
- ROSENTHAL-HEGINBOTTOM 2015 R. Rosenthal-Heginbottom, Hellenistic Period Imported Pottery, in: S. Gitin (ed.), The Ancient Pottery of Israel and its Neighbors from the Iron Age through the Hellenistic Period 2 (Jerusalem 2015) 673–708
- ROSENTHAL-HEGINBOTTOM 2016 R. Rosenthal-Heginbottom, Moldmade Bowls from Straton's Tower (Caesarea Maritima), JHP 1, 2016, 113–168
- ROSENTHAL-HEGINBOTTOM 2019 R. Rosenthal-Heginbottom, Cave 169 at Marisa: The Imported Ptolemaic Red Ware, JHP 4, 2019, 59–79
- ROTROFF 1997 S. I. Rotroff, Hellenistic Pottery. Athenian and Imported Wheelmade Table Ware and Related Material, Agora 29 (Princeton, NJ 1997)
- SALLES 1983 J.-F. Salles, Kition-Bamboula 2. Les égouts de la ville classique, Éditions Recherche sur les civilisations, mémoire 27 (Paris 1983)
- SALLES 1993 J.-F. Salles, Kition-Bamboula 4. Les niveaux hellénistiques, Éditions Recherche sur les civilisations (Paris 1993)
- SHADMAN 2019 A. Shadman, Rosh Ha-'Ayin (South and East), Exclsr 131, 2019  
[https://www.hadashot-esi.org.il/report\\_detail\\_eng.aspx?id=25525&mag\\_id=127](https://www.hadashot-esi.org.il/report_detail_eng.aspx?id=25525&mag_id=127), accessed 22 June 2023
- SHAPIRA 1966 Y. Shapira, An Ancient Cave at Bat-Yam, IEJ 16, 1966, 8–10



- SINGER-AVITZ 1989 L. Singer-Avitz, Local Pottery of the Persian Period (Strata XI–VI), in: Z. Herzog – G. R. Rapp Jr. – O. Negbi (eds.), Excavations at Tel Michal, Israel (Minneapolis, MN – Tel Aviv 1989) 115–144
- STAGER ET AL. 2008 L. E. Stager – J. D. Schloen – D. M. Master, Ashkelon 1. Introduction and Overview (1998–2006) (Winona Lake, IN 2008)
- STERN 1995 E. Stern, Between Persia and Greece: Trade, Administration and Warfare in the Persian and Hellenistic Periods (539–63 BCE), in: T. E. Levy (ed.), The Archaeology of Society in the Holy Land (New York 1995) 433–445
- STERN – OSBAND 2015 I. Stern – M. Osband, Pottery and Small Finds, in: I. Stern – N. Sagiv – B. Alpert, The Excavations of Maresha Subterranean Complex 90. Final Report, NGSBAArchJ 3, 2015, 175–203
- TAL 1999 O. Tal, The Persian Period, in: I. Roll – O. Tal, Apollonia-Arsuf. Final Report of the Excavations 1. The Persian and Hellenistic Periods (Tel Aviv 1999) 83–222
- TAL 2006 O. Tal, The Archaeology of Hellenistic Palestine: Between Tradition and Renewal (Jerusalem 2006) (Hebrew)
- TSUF 2018a O. Tsuf, Area A: The Historic Sacred Center (Tel Yaffo), in: O. Tsuf, Ancient Jaffa from the Persian to the Byzantine Period, Kaplan Excavations (1955–1981) (Münster 2018) 57–81
- TSUF 2018b O. Tsuf, The Pottery, in: O. Tsuf, Ancient Jaffa from the Persian to the Byzantine Period, Kaplan Excavations (1955–1981) (Münster 2018) 95–416
- WOLFF 2004 S. R. Wolff, Punic Amphoras in the Eastern Mediterranean, in: J. Eiring – J. Lund (eds.), Transport Amphorae and Trade in the Eastern Mediterranean. Acts of the International Colloquium at the Danish Institute at Athens, 2002 (Aarhus 2004) 451–457
- YANNAI 2009 E. Yannai, Excavations at Or ‘Aqiva (North), Atiqot 61, 2009, 51–73
- YEIZIN – EDELSTEIN 1970 Z. Yeivin – G. Edelstein, Excavations at Tirat Yehuda, Atiqot 6, 1970, 56–67 (Hebrew, English Summary, 6)