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The Anglo-Israel Archaeological Society

Editorial

For the opening paper of this volume, Dennis Mizzi has written a clear and concise summing up of the Dead Sea Scrolls, seventy years after their discovery in a cave in the desert. This single discovery has had a monumental impact on our understanding of ancient Judaism, and fundamentally enlarged the body of primary resources from Roman times available for modern study. Yet, the chronology of the site remains a major issue, and particularly questions concerning the origins of the site, whether a Roman villa or religious centre. For many scholars, consensus is far away.

Following this study, there are three on Roman lamps, the first by Renate Rosenthal-Heginbottom on 'factory-made' lamps found in modern Israel. Using both petrographic analysis and a detailed study of the iconography, a clear distinction can be made in the discussion of 'Romanisation', between the indigineous Jewish inhabitants and the new population of non-Jews who came to Palaestine after the destruction of the Temple in 70 CE. The second study, by James R. Strange and Mordechai Aviam examines mass production of oil lamps using moulds made either on the site of Shiḥin or nearby. Their excavation at the site uncovered not just stone moulds for Roman lamps, but also a production centre with a small kiln. This work sheds new light on where lamps were made and their trade in the ancient world. The following research by Anastasia Shapiro starts with an analysis of the petrography of the lamps from Shiḥin to identify the sources from which the clay used in these lamps came. The lamp clay came from two local sites.

Ido Wachtel, Roi Sabar and Uri Davidovich have written a carful study examining a single site, Bronze and Iron Age Tell Gush Halav (Roman Gischala), with an integrated approach, using both field survey and salvage excavations. Their study shows that the size of site has been often misunderstood. Instead of a large and cental site in Galilee, it was rather of medium size, part of a chain of sites along the Meron range.

Moving back in time to the 4th millennium BCE, Samuel Atkins studied the interactions between northeast Africa and the southwest Levant. The earliest commercial exchanges, and routes of transport are evidence of local identities

that indicate both a growth and later withdrawal from foreign ventures. The 1st Dynasty in Egypt consolidated power while at the same time brought more control over trade.

Michel Freikman and Alla Nagorskaya examine the megalithic architecture of the Shephelah region in Israel, and show how this type of architecture, thought to be totally absent from this region, is far more prevalent than ever considered. Often, what was found was mis-identified or poorly dated. The newest data shows that they belong in the EBI period, although many have been destroyed, or their stones used for later construction.

Orit Peleg-Barkat presents her second preliminary report on her excavations at Horvat Midras, a Hellenistic and Early Roman site that was considerably more well off than other nearby sites. The most important find of the excavation so far is the large funerary monument and a monumental podium.

To those who helped in producing this volume, I owe a debt of thanks, and in particular to the reviewers and those who helped proof the texts. This year, Kimberly Czajkowski jumped in the deep end and produced a formidable collection of reviews. Rachael Sparks has been an enormous help again in getting this issue ready for print. Eitan Klein, the Deputy Director of the Unit for the Prevention of Antiquities Looting for the Israel Antiquities Authority, has kindly taken over the responsibility for writing our *Reports from Israel*, which can be found both in this journal and on our website. To all, I owe my gratitude.

Concerning subscriptions, annual membership of the AIAS will include a mailed copy of the journal as well as access to the Society's other activities. Further details, contact information and a membership form are to be found on the AIAS website: http://www.aias.org and see our Facebook page: http://www.facebook.com/IsraelArchaeologyLondon for more up-to-date information and news.

David Milson
Editor

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Book Reviews

Shiḥin Excavation Project: Oil Lamp Production at Ancient Shiḥin

James Riley Strange and Mordechai Aviam
Stamford University and Kinneret Academic College

Ceramic lamps were produced at the Hellenistic and Roman-period village of Shiḥin. After an overview of archaeological evidence for lamp manufacturing in the village and elsewhere, we show that Shiḥin produced the well-known wheel-made Herodian lamp and at least two types of mould-made lamps for local distribution, including the Darom or 'Southern' lamp. Furthermore, many of the moulds for these lamps were carved into waste from a nearby chalk vessel industry. Darom style lamps were made in both northern and southern Palestine at the same time. Anastasia Shapiro's study follows with a petrographic analysis of a corpus of lamp fragments from Galilean (including Gamla) and Judean sites.

Introduction

In 1988, a survey team from the University of South Florida identified the ruins of Shiḥin (J. F. Strange *et al*. 1994). This ancient village was perched on a low hilltop 38 m above level terrain and 188 m above sea level at the western end of the Beit Netofa Valley, less than 2 km northwest of the Ẓippori (Sepphoris) acropolis in Lower Galilee (Fig. 1). Today the site lies within the Ẓippori National Park and the Ha-Solelim Nature Preserve.[1]

From 2012 until 2017, the Shikhin Excavation Project has conducted six seasons of excavations, concentrating most work in Field I, on the crown of the northernmost peak of the Shiḥin hill (Fig. 2).[2]

Grätz first identified the town (*polis*) that Josephus called Asōchis (*War* 1.86; *Ant.* 13.337; *Life* 384; cf. *Life* 207; 233) as the settlement named Shiḥin in Rabbinic written sources (Grätz 1853: 123, n. 2). Furthermore, some rabbinic passages refer to pottery production at Shiḥin, such as in the 3rd century CE Tosefta, where it is clear that Sages were aware of the lamp industry:

> *L. But if he said to him, 'Bring them [lamps and wicks] to me from Joseph['s shop],' and he brought [them to] him from Simeon['s shop],*
> *M. '[Bring me] from Shiḥin,' and he brought him from Sepphoris,*
> *N. it is the agent who has committed an act of sacrilege (t. Meilah 2:9; Neusner 2002).*

Several passages in Josephus' work suggest that Shiḥin was settled by Jewish residents as early as the first reign of Ptolemy IX ('Soter'/'Lathyrus'; 116–107

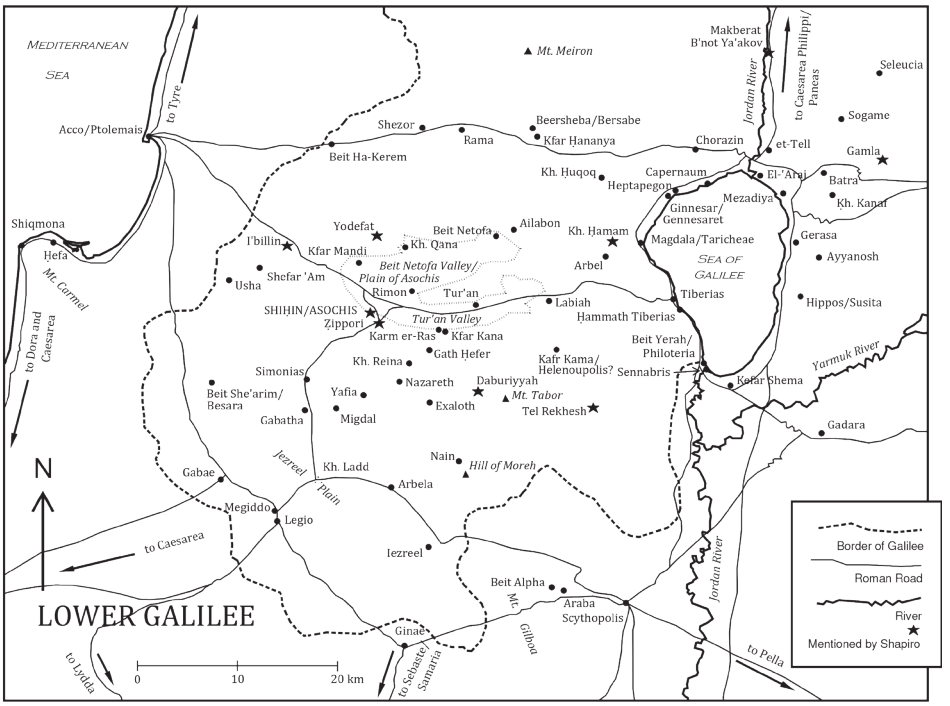


Fig. 1. Lower Galilee in the Roman Period. Map by J. R. Strange.

BCE) (J. F. Strange, *et al.* 1995; J. R. Strange 2015). A significant number of Hasmonean coins, stone vessel fragments, a probable *miqveh*, and remains of a public building that the excavators interpret as an early synagogue are indicative that the population was largely Jewish (J. R. Strange 2015).

Adan-Bayewitz and his team (1993), as part of their examination of pottery from Galilean sites, concluded that Shiḥin became a production centre in the Roman period for a particular type of storage jar 'characterized by an inset neck and everted rim' that was distributed in the Galilee and Golan[3] (J. F. Strange, *et al.* 1995: 182). Excavations revealed wasters of many of the common Galilean forms, including jars, jugs, cooking pots, bowls, and kraters. Furthermore, two pieces of potter's wheels, one in a fill and another *in situ*, pieces of kilns, and a small kiln *in situ* have been uncovered (see below).

In addition, excavations have discovered further evidence that residents of Shiḥin produced ceramic oil lamps. From the written record, when lamps and wicks were purchased in a town we may assume that they were probably made there (cf. Adan-Bayewitz 1995; 1997). The Tosephta passage implies that both Shiḥin's and Ẓippori's workshops produced lamps and wicks.

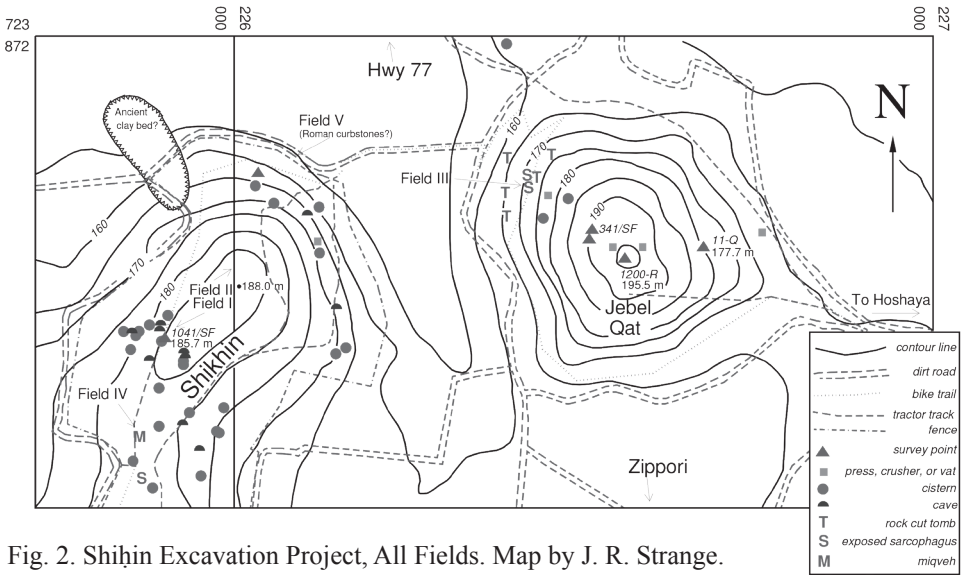


Fig. 2. Shiḥin Excavation Project, All Fields. Map by J. R. Strange.

In 1997, before the excavation of Shiḥin had begun, Adan-Bayewitz published a mould from Ẓippori (Adan-Bayewitz 1995; 1997). Nearly twenty years later, Sussman speculated that a workshop near Nazareth produced various kinds of lamps (Sussman 2012: 75, 84, 92–94, 96).

Ceramic Evidence from the Site

The earliest ceramic evidence dates to the Iron II period (1000–586 BCE), although no structures have been identified. These concentrations were found in the northwest corner of our Field I. The collected pottery indicates that an Iron II settlement continued, but became smaller in the Persian period, and continued in the Early Hellenistic period. Following a pattern familiar from other Galilean sites, the settlement saw a significant increase in population in the Late Hellenistic period (152–37 BCE). Pottery counts from the Early Roman period (37 BCE–135 CE) surge dramatically.

Near the end of the Late Roman period (second half of the 4th century CE), much of the synagogue was abandoned. The few early Byzantine sherds indicate a nearly complete abandonment of the site in the mid-4th century. Furthermore, we have found very few Islamic sherds, but three whole Islamic lamps, one intact, have been uncovered.

In the Late Islamic period (after 950 CE), agricultural terrace walls were built using both unworked building stones and architectural fragments, and crops were grown where the village had once stood. Their plowshares scarred shallow

Fig. 3. Shiḥin Field I: Synagogue remains in the southwest and lamp making industry in the northeast. (Map by J. R. Strange and S. Pevear).

bedrock and the tops of the highest surviving courses of walls. At some point, people also began to cultivate olives on the hill. One and a half millennia later, aerial photos from 1945 show olive groves extending into the wadis around Shiḥin. After 1948, residents of Moshav Ẓippori and Kibbutz Ha-Solelim bulldozed these wadis to create agricultural fields. Moshavniks began tending the trees on the hill and planted more groves as recently as 2012.

Ceramic Production

Surveys and excavations revealed that the village of Shiḥin was situated on the northernmost of three peaks. Across the *wadi* to the east lies the hill Jebel Qat, where there are rock cut tombs, sarcophagi on the surface, and voids carved into bedrock, probably for wine and olive production and for grain crushing.

From 2012, The Shiḥin Excavation Project has concentrated its efforts among the village ruins. Six seasons of excavations have revealed a series of connected rooms constructed on bedrock in the northern and eastern squares where industrial work sites for the production of ceramic oil lamps were uncovered (Fig. 3). The industrial site lies northeast of the contemporary late first through

second-century synagogue. Foundation levels for walls lie just centimetres below the modern surface. Consequently, there was much erosion and disruption by seasonal ploughing, olive tree roots and robbing. Surface pottery sherds ranged in date from Iron II through the Late Roman periods. Soundings beneath the floors of one building and two small pits carved into the bedrock beneath the synagogue floor have aided in dating.

Large quantities of pottery production waste, together with lamp forms dated to the late first and early 2nd century suggest that at Shiḥin the settlement existed at least until 135 CE.[4] Pottery from a deep fill in the southern part of room D contained no pottery later than the Early Roman period (Fig. 3). These finds, however, include fragments of Darom ('Southern') lamps, whose manufacture in Judea is typically dated to c. 70–135 CE (Lapp 2016, 5, Table 1; Sussman 1982, 16; 2012, 113–41; Rosenthal and Sivan 1978, 82).

Coin finds date from the second to fourth centuries. Among the 177 coins cleaned and identified, fourteen date to the 2nd century, while only one—a surface find of a coin minted under Caracalla or Elagabalus—dates to the 3rd century CE, and eight date to the 4th century.[5] In 2017, a hoard of 11 coins, the latest dating from the reign of Antoninus Pius, was recovered in a small pot.

Shiḥin's Oil Lamp Industry

By the end of the 2017 season, almost 1400 lamp fragments and 36 fragments of lamp moulds were recovered. Rooms B and F yielded the highest volume of complete lamps, lamp fragments, and mould fragments.[6] All lamp moulds were fragmentary, and either came from fill layers or were surface finds disturbed by ploughing. In 2017, excavations uncovered remains of a small kiln for firing lamps and other small vessels in Room G (Fig. 4). The kiln was roughly circular in shape, measuring just 80 cm in diameter. The uppermost stones lay about 22 cm below surface, showing that much of the kiln was damaged. A circular wall of fieldstones of varying thickness held the coarse interior bricks that were 2 cm thick. Their interior surface was covered with a 1 cm thick layer of clay. We estimate that the kiln stood around 150 cm high. In the centre of the installation stood a pillar made of three ceramic discs 18 cm in diameter and c. 10 cm thick stacked one on top of the other, around 30 cm in total. These appear to be specially made. Damaged remains of a thin mud floor near the southern side of the pillar survived. The higher floor of the firing chamber rested on the uppermost brick. The remains of a flue for controlling the temperature of the kiln (22.5 cm wide × 14 cm long) protruded from the kiln's wall.

Two complete Northern 'Darom' lamps of the same general size and pattern (perhaps even from the same mould), a large fragment of a square Darom-style

Fig. 4. The remains of the kiln in detail are visible with the central pillar (I.24 looking north). Photo by Steven Meigs.

lamp including the nozzle, and a small thin-walled bowl or cup were found inside this installation. Although disturbed, the pottery in the kiln's interior dates from the Late Hellenistic to the Late Roman period (152 BCE–352 or 363 CE). Beneath the kiln's central pillar, a shallow sounding yielded only Roman body sherds.

One large fragment of a wheel-made Herodian lamp with knife-pared nozzle came from a deep fill in room D of Area I.5 that contained pottery production waste in the form of thousands of pottery sherds and wasters, along with many lamp fragments. The Herodian lamp shows no signs of use as there was no soot on the nozzle. The location of the lamp among pottery wasters suggests that it too was discarded because it was ruined during the firing process. The probability is strengthened by Shapiro's petrographic analysis, which shows that Shiḥin's workshop produced and exported Herodian lamps (cf. Adan-Bayewitz *et al*. 2008: 74; Lapp 2015: 184–85).

In 2012, Sussman speculated that a Roman lamp workshop near Nazareth produced Herodian lamps and two types of mould-made lamps from 70 to at least 135 CE (2012, 92). These two new mould-made types developed from the well-known Herodian wheel-made lamp type with a spatulated, knife-pared nozzle.

The body of the first type retained the circular shape of the wheel-made lamps, made possible by the use of a compass to incise the mould. The lamps continue to

be mostly plain, with concentric rings at the edge of the shoulder and around the fill hole to decorate the body. On some lamps, simple curved parallel lines or lines and two dots decorate the nozzle, similar to some Herodian lamps (Sussman 2012, No. 907), yet without a handle. In many cases, even though the nozzle was formed in the mould with the rest of the lamp, it was then pared with a knife similar to the nozzle of a Herodian lamp. This type is Sussman's RH4, a 'Northern Undecorated Mold-made' lamp, and Eric Lapp's 'Sepphorean spatulate' type (Fig. 6:A).

The second lamp type bears decorations on the shoulders and nozzle that are carved into the moulds. On the finished product, these protrude in low relief. The base of the bow- or ax-shaped nozzle forms two 'wings' on either side of the nozzle—sometimes ending in volutes—where the nozzle attaches to the body. Some of these nozzles also show signs of paring.

On the underside of the lamp, the two wings form an inverted V where they meet in the center. A simple lug, a pierced lug, or a pierced ring handle sits opposite the nozzle. These are Sussman's type RH6, a northern variety of RH11, the 'Darom' (i.e. 'Southern') lamp, hence 'Northern Darom' (Figs 6:B–F). With the exception of a single mould that may be for making a type of discus lamp, all mould fragments recovered at Shiḥin come from varieties of these two forms (cf. Sussman 1982: 42, No. 26).

Lamp Mould Fragments

The moulds were carved from soft chalk. Several moulds were carved into cores from chalk cups created by turning a stone blank on a lathe (Fig. 5). Some cores are cylindrical and others are truncated cones. Both bear the marks of the lathe chisel (Gal 1991: Fig. 3, 4.1–3; Meyers and Meyers 2009: Photo 54 and Chalkstone Plate Nos 8–11; Sussman 2012; see also Magen 2002: 33–38, Figs 2.24–2.27; Amit 2010: Fig. 9). The cores were cut in half along their long axes, leaving one rectangular (or rhomboidal) flat face on one side and a hemi-cylinder opposite. Horizontal scratches visible on the carved faces of most moulds from Shiḥin probably result from sanding or smoothing the sawn face. Several moulds have one, two, or three vertical lines inscribed into their exterior, certainly to match upper sections with the corresponding lower sections.

These cores probably came from a nearby stone vessel workshop, perhaps the one at Einot Amitai or one of those discovered at some 7 km southwest of Shiḥin and around 3 km north of Nazareth, near Er-Reina. A salvage excavation there turned up stone vessel cores, some of which had been modified into loom weights (Jaffe 2012; cf. Gal 1991). Another salvage excavation is currently underway there (Borschel-Dan). Consequently, we have strong evidence that at least two industries—weaving and lamp mould carving—used waste from the manufacture of stone vessels.

A. R140317

B. R130375

C. R150240

D. R130318

E. R150300

Fig. 5. Lamp Moulds. (Photos by Gabi Laron).

To make mould-made lamps, artisans pressed clay into both bottom and top mould sections, allowing the clay to extend beyond the carved indentations of the moulds for both parts. While the clay was still wet, both mould parts were probably pressed together to produce a seal around the edge of the lamp for holding oil. This excess squeeze-out of clay could then be trimmed away and the edge was then smoothed. The seam on the interior received no cosmetic treatment.

The majority of designs show varieties of geometric patterns and vegetation: wreaths, leaves, flowers, and fruits. Depicted objects are limited to amphorae or vases and one example of a seven-branched menorah with flanking palm branches or *lulavs*.

Whole Lamps from a Single Context

Fifteen whole and complete or nearly complete mould-made lamps were discovered in room E (Areas I.10 and I.22) in 2015 and 2016 (Fig. 6). The lamps exhibit similar characteristics: all have circular bodies; among those with surviving wick holes, none shows soot from use; those with handles have a low, simple lug; among those with 'wings,' the wings are hardly more than concave depressions on each side of the nozzle; the poorly levigated clay is gritty with large, white inclusions (some of them very large); the vessel walls are thick; the upper and lower parts were not joined well; the seam between upper and lower parts was not well trimmed or well smoothed; in some cases, bottom and top parts are not of the same size; the clay was not pressed well into the moulds or it was pressed into poorly carved moulds, with the result that the decorations are in low relief and some are difficult to make out; nevertheless, all were fired. The poor and fragile quality of locally made gypsum lamp moulds excavated in the hippodrome of Jerash suggested to Kehrberg that the craftsmen valued fast production over quality (Kehrberg 2001, 232). At Shiḥin, we have not yet found poor quality moulds for producing the decorated lamps discussed in this section, but in the case of these lamps, quality must not have been the aim.

Sites of Lamp Manufacture in Roman Palestinee

Evidence for lamp manufacture have been found in a number of sites, including Zippori, Caesarea and Beth She'an.

Ẓippori

Adan-Bayewitz published a single mould, reportedly recovered at Ẓippori by a visitor to the site in 1983 or 1984 (Adan-Bayewitz 1995, 1997), and Eric Lapp mentions two moulds found in excavations on the western summit of Ẓippori (Lapp 2016: 183) during the 1986 season of the Joint Sepphoris Project (Meyers, Netzer,

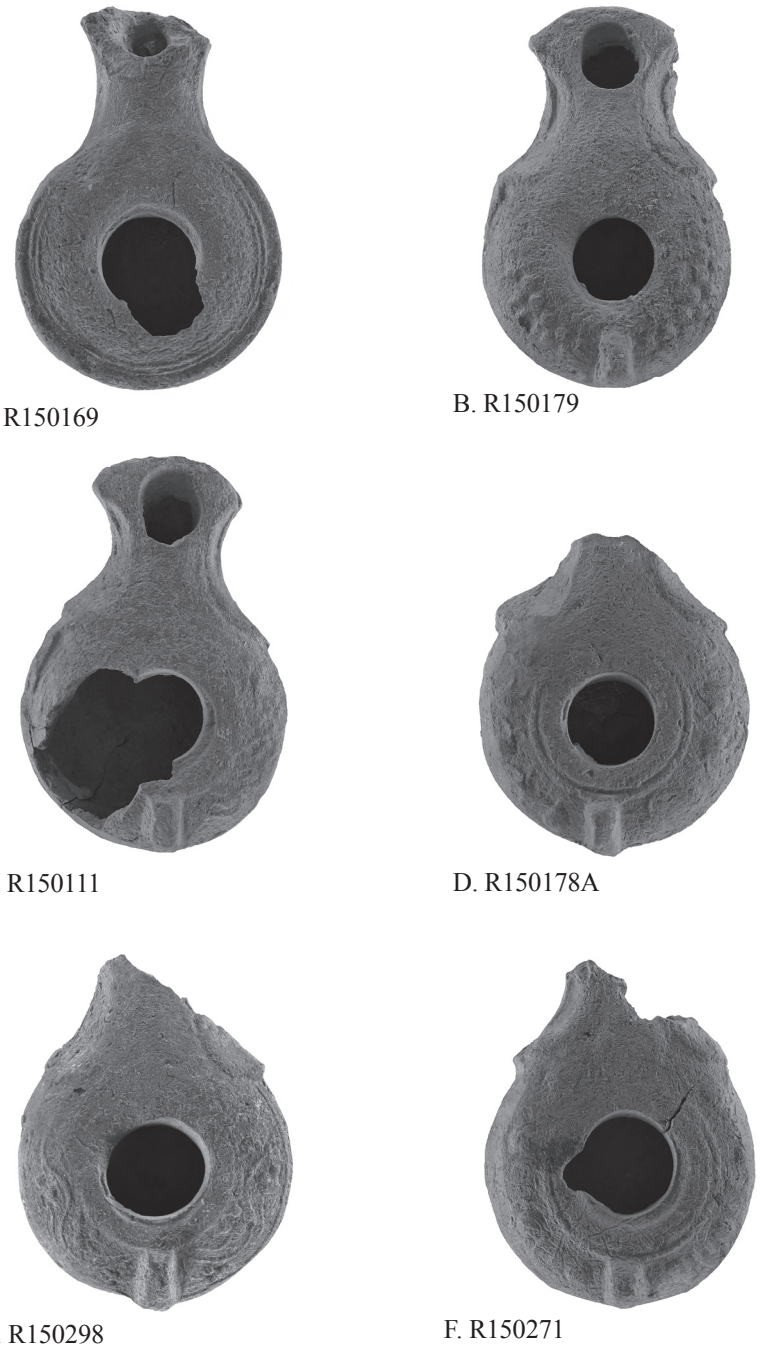


Fig. 6. Lamps. (Photos by Gabi Laron).

and Meyers 1987: 277). Adan-Bayewitz also mentions that Zeev Weiss told him about a ceramic lamp mould recovered at Ẓippori (Adan-Bayewitz 1995: 180).

Adan-Bayewitz published a mould that is 'rounded roughly on the bottom,' a feature similar to many moulds found at Shiḥin. The carving for the lamp itself is a round shape formed by a compass (the small hole for the compass is visible in the center of the cutout for the fill hole), the shoulder is decorated with a pattern of alternating triangles and ovals, and the short nozzle is spatulated, with no markings for a wick hole cutout. With no archaeological context from Ẓippori, Adan-Bayewitz dates the lamp between the 4th and 6th centuries CE based on similar lamps from Beit She'arim, Jalome, and Capernaum (Adan-Bayewitz 1995: 180). Eric Lapp identifies the mould as one for making lamps of 'the Sepphorean round-bodied type,' which does not appear in his catalogue of forms, but based on its similarity to the Sepphorean spatulate type, we can surmise a date between the 1st first and early 2nd centuries CE, significantly earlier than Adan-Bayewitz's date. Lapp identifies the two excavated moulds as: an upper half for making either a Sepphorean round-bodied or Sepphorean spatulate type [Sussman's RH4; see below]…with only the vestige of a cavity used to make a spatulate nozzle with lines following the contours of the nozzle…and an upper half for making a Galilean type lamp…showing a wide round body with a large discus, a spatulate nozzle, and a pinched pointed handle. (Lapp 2016: 183)

Meyers *et al.* published a photo of the second mould (Meyers, Netzer, and Meyers 1987: 277, Pl. 35:B). Lapp dates the Sepphorean spatulate type to the 'mid-first to early second centuries C.E.' (Lapp 2016: 5). The dates of this type and the Sepphorean round bodied type match the dates for the production of mould-made lamps at Shiḥin.

No other evidence of lamp manufacturing from Ẓippori—in the form of a large number of unused lamps or wasters—has been published. Lapp also suggests that Ẓippori's artisans produced moulds used in lamp workshops located elsewhere, including Shiḥin (Lapp 2016: 183–84).

Caesarea

Several lamp moulds dating to the 4th and 5th centuries were recovered near the Byzantine praetorium. Twenty moulds have been published (Patrich and Pinkas 2008; Sussman 1980), while many from the area south of the Crusader fortifications remain unpublished (Holum *et al.* 1988: 191–92). All moulds were carved from soft limestone. The lamp's circular body was etched in the limestone by a compass. The moulds indicate that the discus was closed, and both the discus and the shoulders of most are decorated. A small fill hole was pierced into the discus when the clay was leather hard. The short, squared, and spatulated nozzles do not have a cutout for a wick hole. This

hole was certainly cut after the clay was removed from the mould and before the lamps were fired. Many moulds have a convex base (see below). These published moulds were found in a fill near a staircase beneath an apsidal archival building, or tabularium (Zimmerman and Risser 2016: 1). Sussman suggests that lamps from these moulds were intended for Christians along the coast and in the north. Indeed, unpublished lamps of this type do bear symbols that reflect Christian identity such as crosses, peacocks, fisherman, and church façades (Sussman 1980: 78). Zimmerman and Risser suggest that these finds indicate a storage area or shop that sold to workshops located in other towns (Zimmerman and Risser 2016: 10).

Beit She'an/Scythopolis

Hadad has published seven complete and fragments of moulds from various Umayyad period contexts in the lower city of Beit She'an (Hadad 2002: 127–130). The clearest evidence for lamp production at the city comes from a kiln in a room near the Roman basilica and Umayyad kilns found within the arena at the eastern end of the amphitheatre. With the exception of one limestone example, all these moulds were made from clay. Of the two moulds found near the basilica, [1] one is for making the upper part of a type of Jerash lamp (Kehrberg 1989, below) and [2] the other is for the lower part of the most common type of Umayyad period lamp found at Beit She'an, in which a raised ring around the fill hole is integrated into raised ridges that extend to the wick hole, creating a channel between the holes. The handle is conical (Hadad's type 36). The area of the kilns in the amphitheater yielded [3] the lower part of a mould for another Jerash-type lamp with shallow incised wavy lines, branches, and what Hadad interprets as a letter phi. Cleaning the area of the amphitheater seats revealed [4] the one limestone mould fragment: it is for the upper part of a lamp with a lily or other flower near the wick hole. Hadad says that no lamps with flowers near the wick hole were found at Beit She'an, but the lamp type itself appears similar to Hadad's type 37 (see Hadad 2002: no. 438). The rest of the moulds were found in scattered parts of the city. Near the central monument where the 'Street of the Monuments' and 'Valley Street' intersect at the foot of the ancient tell was found [5] a mould for the upper part of a lamp decorated with elongated leaves on the shoulders. The type is similar to the most common type found at Beit She'an but has a tongue handle (Hadad's type 37). Hadad notes that lamps with this decoration are common at Beit She'an and all examples were made in the same mould, probably the one recovered (Hadad 2002: 129). [6] A mould for the upper part of a lamp of type 36 was found in the eastern bathhouse beneath rubble caused by the destruction of the 749 earthquake. [7] A mould for the upper

part of a pentagonal lamp type known from Caesarea came out of the Abbasid quarter that was built near 'Valley Street' after the 749 earthquake. With the exception of mould number 5, Hadad notes that at Beit She'an, none of the lamps discovered came from the moulds (Hadad 2002: 129).

Houston-Smith published a photograph of a plaster mould from Beit She'an (with no location or stratigraphic information) for the upper part of an 'Augustan style' lamp, with a round body and a depressed discus decorated with the image of a seated woman opening a wicker basket There is no cutout for a fill hole. The shoulder bears a repeating ovule pattern, interrupted by the indentation for a handle. The nozzle is spade-shaped with volutes on either side that end in another pair of volutes at the lamp body. Below where the wick hole would be cut out are two dots within circles oriented with the length of the nozzle rather than horizontally. Smith describes 'at the four corners of the mold indentations which held the corresponding bottom half of the lamp,' but surely he means the bottom half of the lamp mould. Smith dates the mould to the 'middle third of the 3rd century' CE (Smith 1966: 21–22).

Smith credits the photo to the University of Pennsylvania Museum, whose website lists a 'lamp mold' (object number 29-107-967) that may be the same lamp. There is no image. Like the mould Smith published, the Museum gives the provenience as Beit She'an and describes the mould carving in a way similar to Smith's, including image of a seated woman opening a box. In contrast to Smith's description, however, this mould is made out of limestone and is dated between 300 and 700 CE. The finding of the mould is credited to the University's Expedition to Beit She'an under Clarence Fisher, 1921–1928. No more precise information is listed. Gerald M. Fitzgerald published what must be the same mould 'from the Terrace, House III, Room 2' (Fitzgerald 1931: 40). The description is, 'a plaster mould for the upper part of a Roman volute-spouted lamp, with the figure a seated woman in the act of opening a casket' (Fitzherald 1931: 8; Pl. XXIX, 1, b). Based on a similar lamp found on the summit of Beit She'an, Fitzgerald dates the mould to 'the early years of the Roman imperial period' (Fitzgerald 1931: 40). The stratigraphic context, however is late Byzantine. Both Smith and Fitzgerald publish the photo upside down, and in both publications the image is difficult to make out. No discussion of the circular installations in the eastern rooms (5 and 9) of House III visible on the full site plan appears in the text.

Hadad published seven lamps and fragments of lamps from Beit She'an ('Type 6') that she identifies as similar to 'the 'Southern lamp'' and defines 'as a northern variant of the Judean lamps.' She noted that lamps of the same type were found at Sepphoris (Hadad 2002: 16). Most of the 59 lamps and fragments of this type were found in excavations near the nymphaeum in a context with Early Roman pottery

(she supplies no date range for this designation) and lamps of the discus type in two variants that Hadad dates from after 70 CE until the 3rd century (Hadad 2002: 16, 20). For our purposes, it is important to note that one of Hadad's published lamps of Type 6 (lamp number 12; Hadad 2002: 17) is an example of Sussman's type RH4 or 'Northern Undecorated' lamp, and since has been distinguished as a separate type from the 'northern Darom' lamp.

Beit Nattif

In 1934, Baramki cleared two cisterns at the village of Beit Nattif, located around 20 km southwest of Jerusalem (Baramki 1936; no photo). The lowest stratum of Cistern 1 contained Hellenistic toy vases, ribbed pottery sherds, many fragments of Roman cooking pots, some terra sigillata fragments, and nozzles of 1st century lamps showing signs of use. In the 3rd century C.E., apparently workers in a ceramics workshop began throwing waste from their industry into these cisterns, including eight moulds and fragments of moulds for making the top parts of oil lamps, one found in Cistern 1 (Baramki 1936: 6; no picture) and seven in Cistern 2 (Baramki 1936: Pl. XII). The waste also included two types of lamps: large, buff-coloured lamps and a much greater number of small 'red-painted' lamps (Baramki 1963: 5, 7). The lamps showed no signs of use, and in some cases, top and bottom parts appeared never to have been joined. The large lamps have decorated shoulders and discuses with small fill holes centered in the discus. The discus decorations include gladiators, birds, swastikas, and geometric and floral patterns. The small, red-painted lamps were made in poor moulds and most have large fill holes and decorated shoulders. One lamp depicts on the nozzle a large, seven-branched menorah standing on a tripod base, flanked on the left by a shofar and on the right by an incense shovel. Most of these lamps bear decorations of what are now the well-known, intricate geometric designs of the 'Beit Nattif lamp.' The lamp moulds from Cistern 2 showed 'more or less the same [geometric] designs as on the red-painted lamps' (Baramki 1963: 7). None, however, shows a menorah or similar symbols. Besides coins, the strata containing the lamp moulds also yielded moulded ceramic figurines of riders on horses and nude women.

Recently, rescue excavations 1 km north of Bet Nattif, at Kh. Shumeila, uncovered several stone lamp moulds and many lamp fragments within a large villa with a mosaic floor (Storchan 2017).

Jerash/Gerasa

In 1933, excavators in Gerasa found five lamps from the same mould (Iliffe 1945: 2), along with plaster (gypsum?) lamp moulds, of which Iliffe published descriptions of two. The moulds are described as 'for making the upper half of a squat fiddle-shape lamp with curved nozzle flanked by rudimentary volutes,'

and 'for making the upper half of a circular lamp with ovolo pattern around the shoulder, heart-shaped nozzle and central filling-hole' (Iliffe 1944: 25 Nos 160 and 161). Based on the descriptions, the first mould is for making what has come to be known as the 'Jerash' or 'Gerasa' lamp, and the second is of a lamp type found at Jerash (Iliffe 1944: no. 158). Iliffe dates the collection of objects to the beginning of the 2nd century (Iliffe 1944: 4; cf. Kehrberg).

Excavations in various parts of the hippodrome at Jerash, which included foundation levels of some chambers, recovered five lamps and one lamp fragment. Four lamps found in the same chamber (W24 on the western side of the hippodrome; Ortrasz 1989: Fig. 1) had lower parts cast from the same mould, whereas the upper parts of two of the four were cast in the same mould. Hence, all four lamps are from the same workshop. None of the four shows signs of use. All six of the published lamps and fragments are of the 'Jerash' type. Based on the pottery found in context with the lamps, and in comparison with material that dates the construction of the south decumanus and the sanctuary complex of the temple to Artemis, Kehrberg dates the making of Jerash lamps from 'about the middle until the last decades of the second century' (Kehrberg 1989: 86).

A later deposit beneath tumble excavated from the hippodrome's cavea (southwest of and across the hippodrome's arena from chamber W24) yielded a ceramic mould for a lamp that, based on the context, dates from the late 6th to early 7th centuries, whereas the type of lamp itself continued to be made into the first half of the 8th century (Kehrberg 1989: 88–89). The lamp body is an elongated oval in which nozzle and body are fully integrated. The decorations were incised into the mould when it was leather hard. A pattern of radiating lines decorates the shoulder, which extends around the cutout for the wick hole. A series of ten small circles forms a ring around the cut-out for the fill hole. A stylized human figure extends from the fill hole to the handle. Two birds facing inward are depicted flanking a jagged line. Two moulds of this type were found at Beit She'an.

Kehrberg discussed gypsum lamp moulds made on-site and found in the context of a kiln and waste products with photos of eight moulds from Chamber E8 of the Jerash hippodrome (Kehrberg 2001: 237–38; Figs 3: a–b, 4: a–d; Ostrasz 1993: 499). Ostrasz reported that excavations recovered 36 moulds 'and scores of fragments of moulds' (Ostrasz 1993, 500). Some moulds were for 3rd century CE lamps but were found in a context dating to the late 4th to the early 5th century. Kehrberg argued that the moulds were made from gypsum casts of 3rd century lamps, and concluded that, at least at Jerash, 'the lamp in itself has become too weak as a precise chronological indicator,' and must be taken into account along with the larger cultural assemblage

(Kehrberg 2001: 233). Found in the same context, three Early Byzantine lamps demonstrated that the practice of casting new moulds from successive generations of lamps resulted in lamps with decorations of increasingly dim relief, with the final example nearly blank. At Shiḥin, a group of 15 lamps with dim decorations might indicate a similar practice, the poor quality of the clay or the inexperience of the maker.

Khirbat el-Ni'ana

Sussman published 10 out of 17 fragments of ceramic lamp moulds recovered south of Tomb 1 at Khirbat el-Ni'ana, all for making the well-known candlestick lamp of the 5th to 7th centuries CE. No wasters for lamps were found, nor lamps or fragments of lamps that matched the moulds (Sussman 2007: 64–69).

Capernaum

The Franciscan excavations at Capernaum found 'a few hundred' lamp fragments (approximately 30 unused and poorly-fired lamps) primarily in the southern part of ambiente 119 of Insula V, a few meters north of the northeastern corner of the synagogue's portico. In this small room, which Loffreda interpreted as a shop, evidence of a single occupational layer of yellowish soil devoid of ashes was found (1974, 131). The clay of the fragments was thick and 'flesh colored', with traces of red slip. The lamps were clearly made in moulds because the 'lines, lunettes, scrolls, pegs and studs' decorations were in relief. In shape and decoration these resemble the well-known Beit Natif lamps with spatulated nozzles, but with generally less complex decoration (Loffreda 1974, 93, Fotos 26.1–7; 132; Figs 46.18–27). Loffreda dates the lamps and fragments, all but three of which he classifies as his type L6, as being 'typically Byzantine' despite originating in the late Roman period (Loffreda 187). He identifies two other fragments from this room as examples of his type L5: an ovoid or egg-shaped lamp with incised (or impressed?) designs (1974, 131).

Nazareth

Bagatti mentions a stone fragment of what might be a stamp for making a chevron pattern similar to some lamp fragments that he recovered (Bagatti 1969: 299, referring to Fig. 235: 21–26, lamps of the bilanceolate type). Eric Lapp speculates that the fragment could be part of a mould. Bagatti does not provide a drawing or photo of the object. Because he describes the stone as 'hard,' it is not likely to be a mould of the same type found at Shiḥin. There is little stratigraphic information on the piece, and following da Costa, Lapp questions the identification (Lapp 2015: 183).

Conclusions

Based on information gained during the six seasons of stratigraphic excavations at Shiḥin, it is clear that at least one Galilean village production center manufactured three types of lamps for distribution from the first century through the second century CE: the wheel-made Herodian type; the mould-made, Northern Undecorated type (Sussman's RH4, Lapp's 'Sepphorean Spatulate'; cf. Feig and Hadad 2015: 104, Fig. 11) and the mould-made Northern Darom lamp (Sussman's RH6). The discovery of a single possible mould fragment for making a discus-style lamp is inconclusive, for Sussman has published one Darom lamp with a closed, depressed discuss (Sussman 1982: 42, No. 26).

Shiḥin's lamp production began in the Late Hellenistic period (between 104 and 37 BCE). Before 70 CE. The discovered workshop produced Herodian lamps for use in the village and distributed them locally, as the presence of a Shiḥin-made Herodian lamp at Yodefat indicates. Production continued for 200 years, at least until 135 CE. We have no evidence yet for lamp production after the mid-2nd century CE

Since no examples of the Northern undecorated and Northern Darom lamps have been found at either Yodefat in the Galilee or Gamla in the Golan, (both towns were destroyed in 67 CE), these types may have developed after the fall of Jerusalem in 70. Northern Darom lamps appear in layers dated just prior to or at the year 135 CE in Kh. Wadi Ḥamam, we have strong evidence that this lamp type appeared in the Galilee before the end of the Bar Kokhba revolt.

In Judea, the Darom lamp type ceased shortly after the devastation of 135 CE. Yet, there are indications that production of the Northern Darom type continued after 135 CE, for example, both decorated and undecorated types have been found in Galilean tombs together with lamps of later types (for one example, see Aviam: 2002).

Regarding the development of Northern Darom lamps from earlier styles, several examples of knife-pared bow- or ax-shaped nozzles from mould-made lamps have been found at Shiḥin. So far as we know, this practice is unknown in Galilee before 67 CE.

Some lamp types that were common at Ẓippori, including Bilanceolate and Beit Nattif lamps (Lapp: 2016), have not yet appeared at Shiḥin. Despite the possibility that excavations at Shiḥin have found one mould for making lamps of the of the Palestinian discus type, quite common at Ẓippori, only a few examples of the lamp itself have appeared at Shiḥin as of the writing of this article.

In light of the volume of evidence from Shiḥin, it is not clear that the three lamp moulds found at Ẓippori—one from stratigraphic excavations of the western acropolis and one found by a visitor—indicate that lamp manufacturing happened

No.	Reg. No.	Area	Room	Description	Comparison
1	R130107	I.8	Room B	A mould fragment for a lower section carved into a badly damaged stone vessel core. Visible are the left corner of the nozzle and the inverted V at the meeting of the wings. Arcs of two incised circles formed by a compass meet the corner of the nozzle.	
2	R150329	I.10	Room E	A mould fragment for a lower section, showing the ax-shaped nozzle, the inverted V at the meeting of the wings, and the attachment to the body. Three vertical lines are incised on one side.	
3	R140317 (|Fig. 5:A)	I.18		A mould fragment for an upper section carved into stone vessel core, showing an ax-shaped nozzle and part of one wing on the left. Two incised parallel curved lines cross the nozzle below the place where the wick hole would be. On the nozzle, two incised parallel curved lines descend to the lamp body. There is no cutout for a wick hole. Shoulder decoration: a pattern of radiating lines with two incised concentric rings at the rim.	
4	R130375 (|Fig. 5:B)		Surface find	A mould fragment for an upper section, showing a ring of dots between two concentric incised rings at the rim. Compare: Sussman 2012: no. 921 (Nazareth, Kh. Moriah), 922 (I'billin); Kaufman, 376, 378, 379; Hadad 2002: Nos 17 and 18.	
5	R150300 (|Fig. 5:E)	I.14	Room A	A mould fragment for an upper section, showing an incised ring around the fill hole, a laurel wreath on the shoulder, and an incised ring at the outer rim. The mould for the handle is visible in the broken edge (lower section of photo).	Kaufman, 533–546; Lapp 2009: Lamp Plate C: 4.

No.	Reg. No.	Area	Room	Description	Comparison
6	R140001	I.13	possibly synagogue's courtyard	A badly damaged fragment of mould for an upper section carved into a stone vessel core, showing the fill hole cutout with a hole formed by a compass in the center and surrounded by two incised concentric rings. Shoulder decoration: a tendril with pomegranates facing in alternate directions, surrounded by one incised ring.	Sussman 2012: 932 (Geve/Mishmar Ha-'emeq); Sussman 1996: 15.4; Sussman 1982: 139; Hadad 2002: no. 13.
7	R150240 (|Fig. 5:C)	I.10	Room E	A mould fragment for an upper section carved into a stone vessel core, showing the rim of the fill hole cutout surrounded by two concentric incised rings. Shoulder decoration: a vine and branches with pomegranates surrounded by one incised ring. From the same mould as R160205 below.	Sussman 1996: 7; Sussman 1982: 192.
8	R160205	I.22	Room E	A second fragment from the same mould as R150240 above. Visible are a hole for the compass in the center of the fill hole cutout, a thin leaf with a central vein in the center of the nozzle, three incised parallel curved lines on what is probably the right wing, a spiral decoration below this wing, and the handle.	
9	R140075	I.6		A mould fragment for an upper section of a large lamp, showing a ring of dots at the shoulder rim flanked on both sides by two incised concentric rings. Also visible are the left outer rim of a rounded nozzle and part of the wick hole cutout, with a dot inside a small ring at the nozzle's rim. A dot inside three small incised concentric rings sits where the nozzle meets the outer rim. One vertical line is incised on one side. Possibly for a dilychnos lamp that may have been re-cut for a secondary use: perhaps another lamp mould carved into what was the bottom of the original mould.	Sussman 2012: Fig. 81:2 (p. 117) = Sussman 1982: 190.

No.	Reg. No.	Area	Room	Description	Comparison
10	R120034	I.4	surface find	A mould fragment for an upper section showing rounded nozzle with a circular wick hole cutout made with a compass, and rim.	Nozzle: Sussman 2012: 1080 (Nazareth, Kh. Tiriya).
11	R130318 (|Fig. 5:D)	I.6		A mould fragment for an upper section carved into a stone vessel core, showing the complete form from fill hole cutout to the rim, with a hole made by a compass in the center of the fill hole cutout. An undecorated shoulder with three incised concentric rings at the rim.	Lapp 2016: 44–47, 49, 50 (Ẓippori).
12	R140318	I.17		A mould fragment for an upper section showing the complete form from the fill hole cutout to the rim and a hole made by a compass in the center of the fill hole cutout. An undecorated shoulder with three incised concentric rings at the rim.	Lapp 2016: 44–47, 49, 50 (Ẓippori).
13	R140002	I.3	surface find	A small mould fragment for an upper section, showing an undecorated shoulder with three concentric incised rings at the rim. Possibly re-cut for another use.	
14	R140316	I.18	surface find	A small mould fragment showing the complete form for a lower section minus the nozzle, with two concentric incised rings at the outer edge of the base.	
15	R120321	I.6		A mould fragment showing the complete form for a lower section minus the nozzle carved into a stone vessel core, with a dot in the center formed by a compass and three incised concentric rings at the outer edge of the base.	
16	R120091	I.5		A mould fragment showing the complete form for a lower section minus the nozzle, with two incised concentric rings at the outer edge of the base. Three vertical lines are incised on one side and two on another.	

No.	Reg. No.	Area	Room	Description	Comparison
17	R130305	I.10		A mould fragment showing the complete form for a lower section minus the nozzle carved into a stone vessel core, with a dot in the center formed by a compass and three incised concentric rings at the edge of the base.	
18	R140098	I.6		A mould fragment showing the complete form for a lower section minus the nozzle, with a dot in the center formed by a compass and two incised concentric rings at the edge of the base. One vertical line is incised on one side.	
19	R140194	I.8	Room B	A mould fragment for a lower section of a lamp or perhaps an incense shovel. The mould has a series of six deeply incised concentric circles (there may have been more; the inner circle is lightly inscribed) within a rhomboid body or base. The walls of the rhomboid interrupt the three largest rings. On the left side of the face, three inscribed lines intersect at a point: a horizontal line extending left from the intersection, a vertical line at right angles extending upward from the intersection, and an arc inscribed by a compass curving upward and outward to the left from the intersection. The vertical line becomes the top of the carved rhomboid.	Hirschfeld, Pl. 55.
20	R160119	I.9	Room C	A mould fragment for an upper section carved into a stone vessel core, showing the wall, two incised concentric rings about 0.6 cm apart at the edge, and the handle.	
21	R160167	I.9	Room C	A mould fragment, 2/3 complete, for a lower section carved into a stone vessel core, showing a dot for a compass in the center, four incised rings at the edge of the base, and part of the wall.	

No.	Reg. No.	Area	Room	Description	Comparison
22	R160160	I.22	Room E	A mould fragment for a lower section, showing a dot for a compass in the center, and two incised concentric circles at the edge of a ring base.	
23	R160020	I.22	Room E	A mould fragment for an upper section, showing one incised ring around the cutout for the fill hole and another at the edge of the undecorated shoulder.	
24	R160176		Room F	From the same moulds as R150243? Complete: only the left tip of the ax-shaped nozzle is missing. upper section: a wide nozzle with two parallel curved lines crossing just below the wick hole and two wings with a pattern of three teardrop shapes (figs?) curving upward from both sides of the lug handle. On either side of the fill hole: a bunch of grapes or a cluster of dates. Two concentric raised rings sit at the rim of the shoulder. The fill hole is not centered in the flange that surrounds it. lower section: a raised dot in the center and three raised concentric rings at the edge of the base.	
25	R160177		Room F	Complete. upper section: a wide nozzle with two parallel curved lines crossing just below the wick hole and two wings. On either side of the fill hole: clusters of three fruits with three intertwined tendrils. The fill hole is not centered in the flange that surrounds it. Lug handle. lower section: one or two raised concentric rings as the edge of the base.	
26	R150179 (Fig. 6:B)	I.10	Room F	Only the right tip of the ax-shaped nozzle is missing. upper section: a wide nozzle with two wings. Shoulder decoration: pattern of large dots, perhaps pomegranates. Low lug handle. lower section: three concentric rings at the edge of the base.	

No.	Reg. No.	Area	Room	Description	Comparison
27	R150111 (Fig. 6:C)	I.10	Room F	Only a piece of the shoulder is missing. upper section: the nozzle has an ovoid wick hole with two wings flanking. The fill hole is not centered in the flange that surrounds it. Shoulder decoration: indecipherable. Low lug handle. lower section: three concentric circles at the edge of the base.	
28	R150330	I.10	Room F	Preserves the complete form. upper section: a wide, ax-shaped nozzle with a circular wick hole and flanked by two wings. A raised disc surrounds the fill hole (note the large, white inclusion visible inside the fill hole). Shoulder decoration: a ring of dots between two concentric raised rings at the rim. The fill hole is not centered in the flange. Lug handle. lower section: three raised concentric rings at the edge of the base.	No. 4, this article; Sussman 2012: no. 921 (Nazareth, Kh. Moriah), 922 (I'billin); Kaufman, 376, 378, 379; Hadad 2002: Nos 17 and 18.
29	R150243	I.10	Room F	From the same mould as R160176? Complete body and part of nozzle. upper section: two wings where they connect to the shoulder with a pattern of three teardrop shapes (figs?) curving upward from both sides of the lug handle. On either side of the fill hole: a bunch of grapes or a cluster of dates. Two concentric raised rings sit at the rim of the shoulder. The fill hole is not centered in the flange that surrounds it. lower section: three raised concentric rings at the edge of the base.	Abu-Uksah 2002: 7.3 (Kafr Kana); Lapp 2016: 55 (Ẓippori).
30	R150178A (Fig. 6:D)	I.10	Room F	Complete body and about one half of the nozzle, including the lower arc of the wick hole. upper section: two wings, a raised disc around the fill hole surrounded by one raised ring. Shoulder decoration: tendrils and pomegranates. Low lug handle. lower section: one raised ring at the edge of the base.	

No.	Reg. No.	Area	Room	Description	Comparison
31	R150178B	I.10	Room F	Complete body and start of the nozzle. upper section: an undecorated shoulder with three raised concentric rings at the rim. No handle. The fill hole was not completely cut out. lower section: flat disc base.	Aviam 2002, 2.3 (Daburiyah); Lapp 2016, 44–47, 49, 50 (Ẓippori).
32	R150271 (Fig. 6:F)	I.10	Room F	Complete body and about one third of nozzle, including the lower left arc of the wick hole. upper section: two wings and a raised disc around the fill hole surrounded by one raised ring. Shoulder decoration: tendrils and pomegranates. Lug handle. lower section: three raised concentric rings at the edge of the base.	
33	R150298 (Fig. 6:E)	I.10	Room F	Complete body with about half of the nozzle, including the lower left arc of the wick hole. upper section: two wings and a raised disc surrounding the fill hole. Shoulder decoration: tendrils and berries. Lug handle. lower section: three concentric rings at the edge of the base.	
34	R150325	I.10	Room F	About one half of the body. upper section: the beginning of a wing on the left with a raised disc surrounding the fill hole. The shoulder decoration is in low relief and dim: possibly a wreath. Low pyramidal lug handle.	
35	R150202	I.10	Room F	About one half of the body. upper section: the wing on the left and three raised concentric rings around the fill whole. The shoulder decoration is indecipherable. lower section: three raised concentric rings at the edge of the base.	

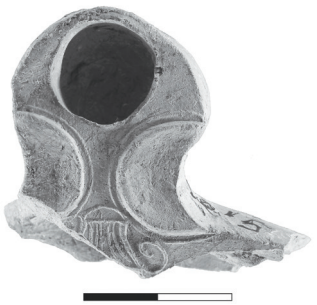
No.	Reg. No.	Area	Room	Description	Comparison
36	R150169 (Fig. 6:A)	I.10	Room F	Complete body with nearly the entire nozzle. upper section: an undecorated and unpaired nozzle with a circular wick hole. The shoulder is undecorated, with two raised concentric rings at the rim. No handle. The fill hole was not completely cut out. lower section: flat disc base.	
37	R150304	I.10	Room F	Complete body and start of nozzle. upper section: an undecorated shoulder with three raised concentric rings at the rim. No handle. lower section: flat disc base.	
38	R150177	I.10	Room F	Complete body and lower section of the nozzle. upper section: an undecorated shoulder with two raised concentric rings at the rim. No handle. The fill hole was not completely cut out. lower section: flat disc base.	Sussman 2012: 912, 917 (I'billin).
39	R150238	I.5	Room D	Area I.5. Wheel-made 'Herodian' lamp with knife-pared nozzle (8 strokes of the knife are visible). About one-third of the large (11 cm in diameter), tire-shaped body with the complete nozzle survives. The fill hole is surrounded by a flange and a raised ring. The clay is dark gray with large white inclusions. No soot appears at the wick hole.	Sussman 2012, 61:1, 854.

No.	Reg. No.	Area	Room	Description	Comparison
40	R150220 (Fig. 7:A)	I.5	Room D	Short, rounded nozzle with circular wick hole and a short arc of the body. upper section: two crescents in mirror position to one another outlined by two parallel crescent lines lie below the nozzle. Between the lower sections of the crescents, at the joining of the nozzle and the body, a fluted amphora or vase with volute handles. No soot at the wick hole. lower section: the bottom of the nozzle extends below the body like the prow of a boat, forming a keel with two ribs on each side descending from the rim of the nozzle to the keel. Below the keel, a pattern of slim, parallel, pointed leaves with center veins pointing toward the nozzle and to the left. The decoration was smudged before the clay dried. 5 YR 5/3.	Amphora: Sussman 1982, 49, 50, 51.
41	R120104 (|Fig. 7:B)	I.5	Room D	Mold-made, ax-shaped, nozzle with an ovoid wick hole. Two encircled dots flank the fill hole at the nozzle's tips. Two raised parallel lines transverse the nozzle below the fill hole. No soot at the wick hole. 7.5 YR 7/6.	
42	R140124	I.8	Room B	Mold-made, ax-shaped nozzle with pronounced tips and a circular wick hole. Faint strokes from knife paring are visible on the sides and bottom. The top of an inverted V is visible on the underside of the nozzle. Black slip over brownish gray clay with white inclusions.	Lapp 2016, 71a, 72–73.
43	R140008 (Fig. 7:G)	I.8	Room B	Part of the shoulder, wall, upper right arc of the fill hole, right wing, nozzle, and the right arc of an ovoid wick hole. The wick hole is roughly cut out. The fill hole is surrounded by a wide raised ring. Shoulder decoration: a tendril and berries. Nozzle decoration: a stylized inverted palm tree (?) with two parallel raised curved lines below the wick hole. The edge of the wing becomes a curved raised line on the right side of the nozzle. No soot at the wick hole. 7.5 YR 7/6.	

No.	Reg. No.	Area	Room	Description	Comparison
44	R120134			Part of the shoulder, wall, base, and left wing of a square lamp. upper section shoulder decoration: a box outlined by parallel lines with a large raised dot at the upper left corner. From this dot, a line extends upward and to the left to the juncture of the left wing and the left wall. A line of dots between two parallel raised lines divides the box into upper and lower registers. Two circular designs are visible in the upper register. In the lower register, dentillation descends from the dividing line, with a small circle below. lower section: the outline of the left wing (now on the right) is visible, with a line descending left from the juncture of the wing and wall to the line at the edge of the base. The vessel walls are over 1 cm thick at the joining of the upper and lower sections. Red slip.	
45	R130357 (Fig. 7:D)	I.5	Room D	Small fragment of a lamp shoulder with a raised ring around the fill hole. Shoulder decoration: a seven-branched menorah flanked by palms growing from the menorah's stem. The menorah branches extend upward from a circular knob. The menorah base is a bifurcated triangular foot. Fronds of another palm or other plant are visible at the left broken edge.	Palms growing from menorah stem on a lamp base: Meyers, Kraabel, and Strange, 248–49, pl. 8.10:10, photo 8.3 (Kh. Shema'); base and branches on the lintel to the north entrance of synagogue II: Ibid. (Kh. Shema').
46	R140165 (Fig. 7:F)	I.5	Room D	Part of the shoulder and arc of the fill hole. The fill hole is encircled by two raised concentric rings. Shoulder decoration: trefoil of narrow leaves with central veins. Red slip. 2.5 YR 6/6.	Trefoil: Sussman 1982, 90.

No.	Reg. No.	Area	Room	Description	Comparison
47	R130338 (Fig. 7:C)	I.10		Part of the nozzle, right arc of the wick hole, and the right wing. The wick hole is surrounded by a narrow flange and two concentric raised rings. Nozzle decoration: two descending narrow leaves with central veins (part of a trefoil?) and a berry. Possibly for a square lamp. Red slip. 2.5 YR 5/8.	
48	R140021 (Fig. 7:E)			Surface find. Part of the shoulder, upper left arc of the fill hole, nozzle, right wing, and lower arc of the wick hole. The fill hole is surrounded by a narrow discus and two raised concentric rings. Shoulder decoration: a zigzag pattern around the fill hole creating a radiating star; a raised ring encircles the rim. Nozzle decoration: one curved horizontal line crosses the nozzle below the wick hole. Between this line and the ring at the rim, an inverted palm branch, with perhaps another horizontal line beginning at the lower right arc of the wick hole. No soot at the wick hole.	Inverted palm: Sussman 2012, no. 992; shoulder and nozzle decoration: Sussuman 1982, p. 19 = Kaufman, 652; shoulder pattern: Sussman 2012: 69:2, no. 954 (Samaria), 956 (Kh. El-Farwa), 960 (Caesarea); Kaufman, 373, 374; shoulder pattern: Hadad 2002, no. 16 (Beit She'an).
49	R130233	I.12		Nearly half of the body preserving part of the shoulder, wall, and lower arc of the fill hole, with a pyramidal lug handle. Fill hole surrounded by a narrow discus and a double raised ring. Shoulder decoration: a laurel wreath and a single raised ring at the rim. 7.5 YR 7/4.	Sussman 1982, 213; Sussman 2012, 1076; Aviam 2002, 2.13 (Daburiyah); Lapp 2009, Lamp Plate C: 4.

No.	Reg. No.	Area	Room	Description	Comparison
50	R170250 (Fig. 7:H)	I.20	Room H	Part of shoulder, wall, and bottom of a lamp with a broken handle. Shoulder decoration: tendril with *ethrogs*.	
51	R130167	I.8	Room B	Fill hole cutout for moulded lamp. The lamp had a circular body or rings around the fill hole or on the shoulder, as indicated by the low knob on one side marking the hole made by the point of the compass. The opposite side preserves some evidence of the fingerprint left as the potter pressed the wet clay into the mould. The cutout was probably removed when the clay was leather hard, and it was accidentally fired. The plate shows the cutout with lamp mould R130318 and a lamp fragment that matches the mould.	
52	R120342 (Fig. 7:I)	I.24	Room G	Complete lamp found in the disturbed soil within the kiln. Wide fill hole surrounded by narrow flange and thick raised ring. Shoulder decoration: alternating hearts and points surround the fill hole. Pierced loop handle. Axe-shaped nozzle with wings on both sides where it attaches to the body, and with a dot inside a small circle on either side of a large wick hole; two parallel horizontal lines cross the nozzle beneath the wick hole. Bottom (not shown): a circular base surrounded by two raised rings. An identical lamp (R170286), probably from the same mould but with much more calcification, was found in the same context, along with complete vessel R170478.	



A. R15022

B. R120104

C. R130338

D. R130357

E. R140021

F. R140165

G. R140008

H. R170250

I. R170223

Fig. 7. Selected lamp fragments. (Photos by Gabi Laron).

in this city. Perhaps even the evidence at Caesarea indicates the production of moulds for use elsewhere. We can, however, now say that in the Galilee, both lamp and pottery production occurred in villages.

We cannot yet determine whether lamp manufacturing was an integrated industry in which the same artisans threw pots, made lamps, and carved their own moulds, or whether each industry required its own craftspersons. The raw materials for Shiḥin's lamp moulds were either purchased or scavenged from local stone vessel workshops such as the ones at Einot Amitai and Er-Reina. Accordingly, the lamp industry at Shiḥin required some level of cooperation between three industries: the carving of chalk stone cups, lamp mould carving, and the forming and firing of clay lamps.

The decorations on the decorated lamps and moulds suggest the movement of peoples from Judea to Galilee between 70 CE and the mid 2nd century, as does the very existence of a northern Darom lamp type. The discovery of a single Hasmonean pinched lamp at Shiḥin, perhaps the second recovered in the Galilee via stratigraphic excavations, suggests that a similar movement happened around 200 years earlier, perhaps as early as 112 BCE (Aviam: 2015, 18–19).

Notes

1. 32°46'5.21''N / 35°16'25.16''E; ITM map reference 200204-656377.
2. The Shikhin Excavation Project is licensed by the Israel Antiquities Authority and the Israel Nature and Parks Authority, and is affiliated with the American Schools of Oriental Research. The primary sponsoring institutions are Samford University and the Institute of Galilean Archaeology of Kinneret Academic College on the Sea of Galilee. The dig is funded by Samford University, Kinneret Academic College, the Fund for Biblical Archaeology, private donations, and donations of equipment from Robins & Morton and Leica Geosystems. Senior staff members are James Riley Strange (Director) and Mordechai Aviam (Associate Director); David Fiensy served as Associate Director during the 2011 survey and the 2012 excavation season.
3. Lower Galilee, *e.g.* Ẓippori, Ḥammat Tiberias, Tabgha, Capernaum, Horvat Hazon, and Rama; in the Upper Galilee: Meiron, Nabratein, and Sa'sa'; and the Golan: Susita, Gamla, Ein Nashut, and Dabiya.
4. Following closely the chronology in use by the USF Excavations at Sepphoris, the team dates the early Roman period from 37 BCE to 70 CE.
5. The authors wish to thank Danny Syon, Head of the Scientific Assessment Branch of the Israel Antiquities Authority, for his identifications of the coins from Shiḥin, and Mr. Yeshua Dray, Site Conservator, for coin cleaning.
6. Inside room B, 156 lamp fragments and 6 mould fragments were recovered from soil deposition measuring approximately 50 cm blow surface at its deepest.
7. Holum *et al.* date 'the production of ceramic goods in area C.21' to 'the late sixth and early seventh century.' (Holum *et al.* 1988: 192). The three moulds, two lamps, and one lamp nozzle they show in Fig. 140 however, closely resemble the lamps published by

Zimmerman and Risser, and argue that they 'must instead date between the late 4th century and the end of the 5th century.' (Zimmerman and Risser, 2016: 4).

8. Patrich and Pinkas refer to some moulds having a 'pierced discuss' and one having a 'filling hole,' apparently referring to the hole in the center of the discus created by (or for) the use of the compass to etch the outlines of the circular bodies and rings on shoulders and bases (2008: 296).
9. A plaster lamp mould was reported from Beit She'an (Smith 1966, 21).
10. XPL: cross-polarized light; PPL: plane polarized light.

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