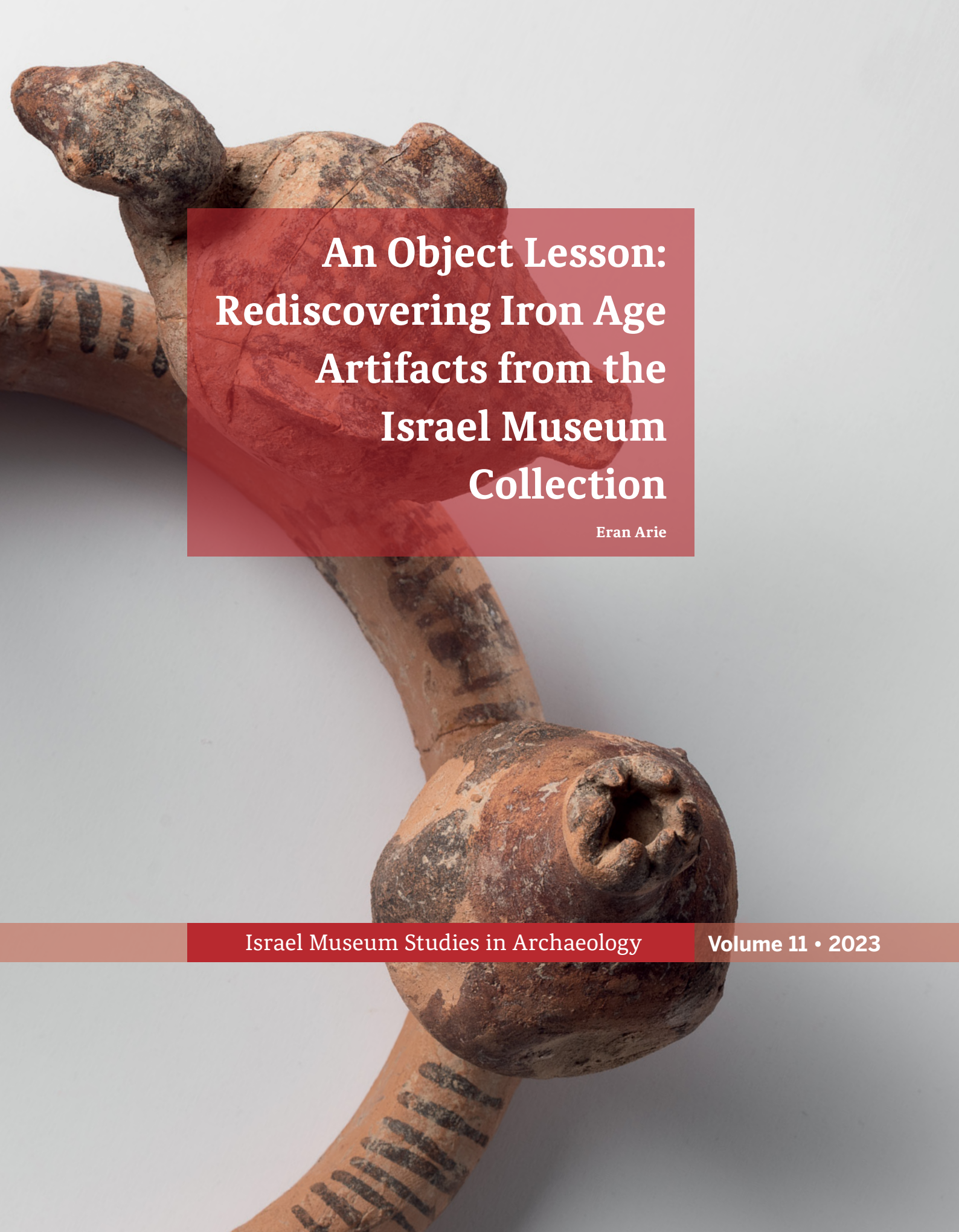
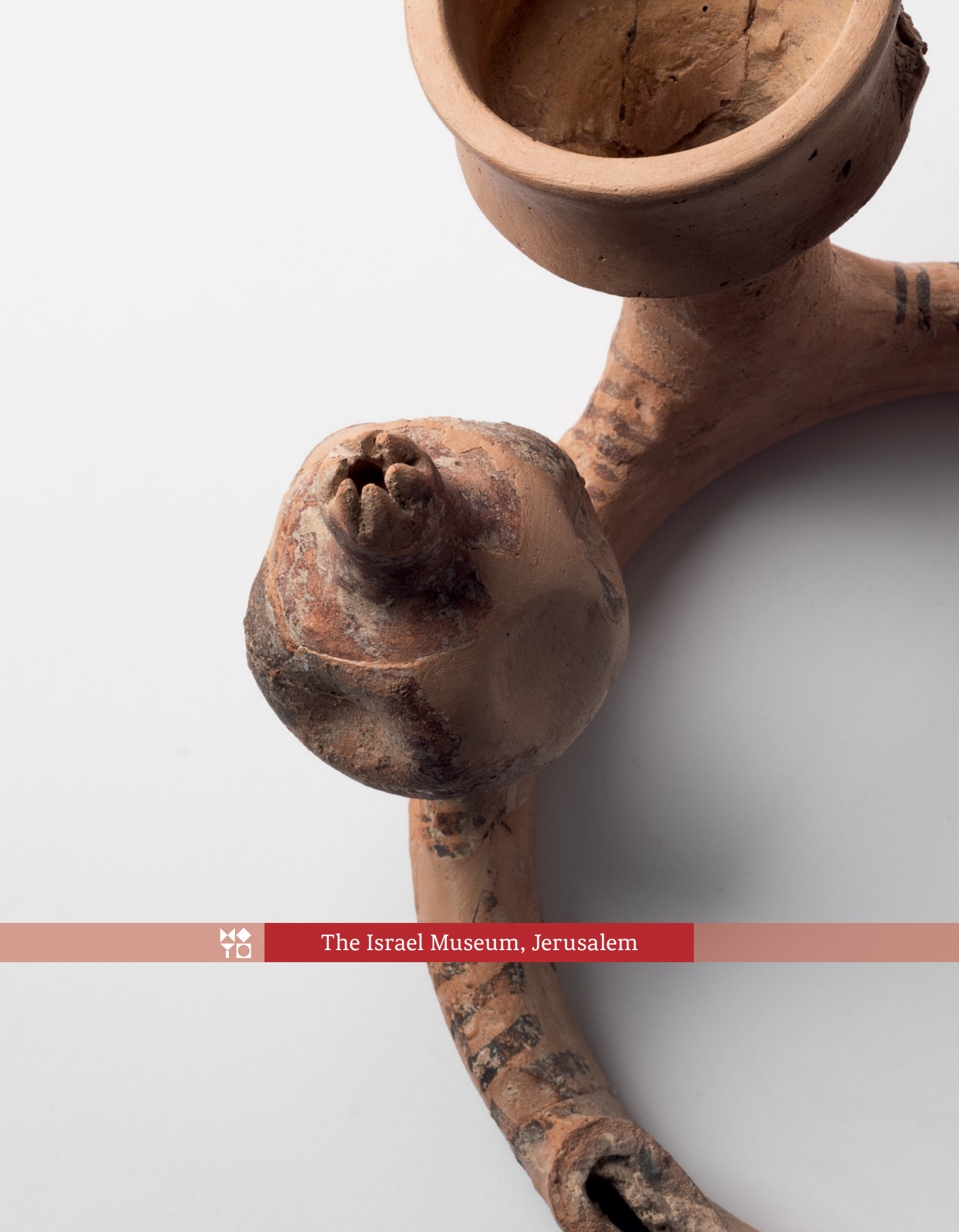


An Object Lesson: Rediscovering Iron Age Artifacts from the Israel Museum Collection

Eran Arie

Israel Museum Studies in Archaeology Volume 11 • 2023



The Israel Museum, Jerusalem

An Object Lesson: Rediscovering Iron Age Artifacts from the Israel Museum Collection

Eran Arie

This volume is dedicated to the Israel Museum's former curators of the Iron Age and Persian Period Department Ruth Hestrin and Michal Dayagi-Mendels.

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Cover: Detail of the kernos from Tel Sasa
IAA collection, Photo: © The Israel Museum, Jerusalem, by Laura Lachman

Contents

Introduction

This volume of *Israel Museum Studies in Archaeology* (IMSA) is special in its structure, content, and authorship. In contrast to this journal's usual mélange of topics and authors, this issue comprises five subjects of research on themes related to Iron Age objects from the Israel Museum Collection, all initiated and led by a single author (one co-authored with Prof. Yuval Goren). Some of these items have long been on display in the permanent exhibition of the Bronfman Archaeology Wing, while others have languished in obscurity owing to having been re-buried in the darkness of the storerooms of the Department of Iron Age and Persian Period Archaeology. I had the privilege to study these objects during the period of 2013 to 2020, when I had the honor to serve as the department's curator. The lengthy process of preparing this publication culminated after I was appointed as a Senior Lecturer in the Department of Cultural Heritage and a member of the Leon Recanati Institute for Maritime Studies, both in the University of Haifa.

These articles reflect my enthusiasm and love for archaeological artifacts, some of elite or symbolic function, but others of everyday use, lacking the requisite museum splendor and, thus, reducing their chances of ever being on display. I had the rare opportunity to have unfettered access to examine these objects closely in the department's storeroom, exploring their otherwise inaccessible parts, obtaining a tactile impression of their surface texture, searching for evidence their ancient treatment, divining their hidden secrets, and, ultimately, drawing out their innate, mute memories to reveal their long object biographies. In other words, in these studies, I sought to do what we curators do best—tell the story of objects!

Yet, some of the objects dealt with in these papers presented special challenges. Some were illicitly excavated from archaeological sites and, subsequently, via unknown intermediaries, sold or donated to the Museum. Naturally, this is a contentious issue, but I believe that since these artifacts are today in public hands, they indeed deserve publication and discussion by the archaeological community, both regarding the ethical implications and their archaeological contribution. The articles herein do not shy away from these questions in any way. In fact, the precise provenance of some of these items is presented here for the first time.

Finally, it is my honor to dedicate this special IMSA volume to the two women who curated the Iron Age and Persian Period Department before me, Ruth Hestrin and Michal Dayagi-Mendels, and are more than deserving of public recognition for their contributions. Ruth, whom I unfortunately did not get to know, founded the department at the Museum's inauguration in 1965, and immediately understood the crucial importance of having a permanent display of the Biblical Periods, both to the Israeli audience and to world heritage culture (For more on her career, see the *Israel Exploration Journal,* Vol. 43, 1993, pp. 199–200). In the case of Michal, with whom I worked closely, she raised the profile of the department in many exhibitions and strengthened the department's connection with the general public by publishing catalogues and addressing broad and diverse topics. Michal also served as chief curator of the Archaeology Wing from 2004 to 2013 and successfully lead it through a challenging renovation process that culminated in 2010.

Moreover, in recent years, the Archaeology Wing of the Israel Museum has undergone massive changes in personnel, and, thus, I believe that there is great importance in mentioning these salient persons and their work to the younger generation. I believe that only if they are cognizant of the long journey taken by the Museum, will they be able to carry it forward along its future path. Curators mostly stand in the shadows, and museum visitors usually do not encounter them. Often the public does not realize how central is a curator's role in how they experience a display. Thus, the twenty-first century is not too late, but rather high time to acknowledge two dedicated individuals who labored at the museum for decades, and molded the public's experience we call 'The Israel Museum'.

Dr. Eran Arie, 14.3.2023

The Kernos from Tel Sasa

and a Catalogue of Iron Age Kernoi from the Israel Museum Collection

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Abstract

Nearly fifty years have passed since the discovery of an elaborate kernos from Tel Sasa in the Upper Galilee of Israel. Yet, it is only with the present article that this extraordinary vessel is formally published in a full and proper manner. The ceramic vessel, which is decorated in paint, was found in an evidently cultic context in a small shrine at the summit of the tell and comprises a hollow ring to which were attached six figurative and miniature forms, of which only two pomegranates, a single dove, and a chalice were preserved. Although incomplete, the present examination of the kernos has led to the reconstruction of the two missing attachments as a bull and a jar. Moreover, this study also revealed that the three extant attachments—the two pomegranates and the dove—do not have any opening at their top; hence, the kernos not only functioned as a libation vessel, but also as a kind of a trick vase. The circulation of the liquid in the closed attachments may have conveyed special meaning to the liquid. The iconography of the kernos attests to the fact that fertility, abundance and the cycles in which they appear in life were the most important aspects it symbolized. In order to further explore this object, a petrographic analysis revealed that it was manufactured at Tel Sasa itself, or in its immediate vicinity. This local production is another indication of the isolated nature of the Upper Galilee settlements during the Iron Age I. Finally, during this research, a catalogue of fifteen kernos fragments from The Israel Museum collection was compiled, as well, and is published here for the very first time.

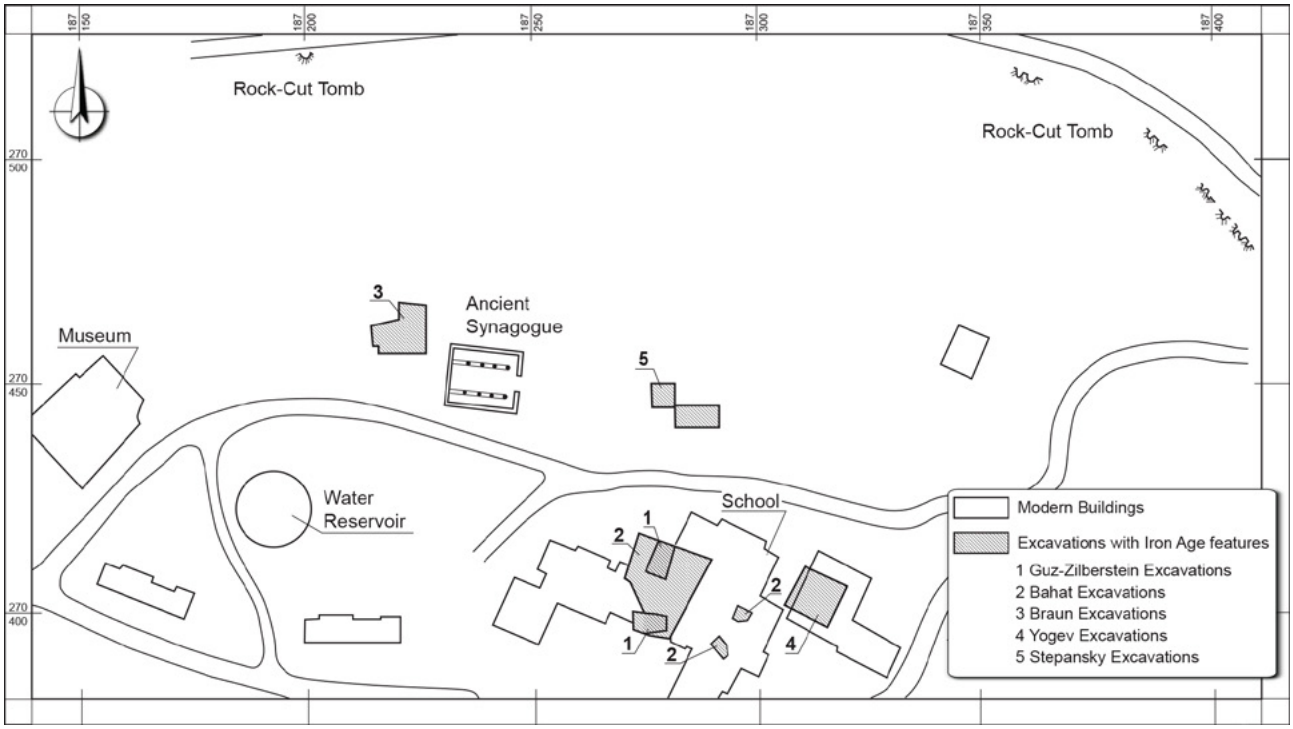

Fig. 1. Location of salvage excavations with Iron Age architecture at Tel Sasa (adapted from Golani and Yogev 1996: Plan 1).

Introduction

The elaborate kernos from Tel Sasa was unearthed in June 1975 during a small salvage excavation led by the Israel Department of Antiquities and Museums under the directorship of Bracha Guz-Zilberstein. Almost immediately after its discovery the vessel was displayed at the Rockefeller Museum and later in the permanent exhibition of the Israel Museum, Jerusalem. Today, it is one of the highlights of the "Israel and the Bible" gallery at the Museum, but although nearly fifty years have passed since its discovery and initial display, the kernos was never formally published. This article aims to rectify this deficiency.

Tel Sasa during the Iron Age I

Tel Sasa is located in the Upper Galilee to the north of Mount Meiron, on a strategic summit, today within the area of modern Kibbutz Sasa. Several salvage excavations have been conducted at the site since 1968 (e.g., Foerster 1969; Guz 1975; Bahat 1986; Golani and Yogev 1996; Stepansky, Segal and Carmi 1996; for a summary of the archaeological excavations, see Bahat 1992; Gal 1993a; Wachtel 2018: 148–153). Apparently, the tell was settled during the Middle Bronze Age IIB, the Iron Age I, and the Roman, Islamic and Ottoman Periods. The most prominent of these occupations was the multi-phased settlement of the Iron Age I represented by architectural features that were revealed during four of the salvage excavations (Fig. 1; in other excavations many pottery sherds from this period were uncovered, but no architecture was found). Three successive Iron Age I strata included remains of domestic architecture unearthed in the southeastern part of the summit (Guz 1975; Bahat 1986); remains of two of these strata were also recognized in the northeastern part of the summit (Stepansky, Segal and Carmi 1996: 64–71). Some twenty meters to the east of Guz and Bahat's excavations a refuse pit, rich with finds, was dug above and within a natural depression of the bedrock (Golani and Yogev 1996: 48–54). The only feature uncovered

on the western side of the summit was a single isolated oven (Braun 1977: 12).

Although the scope of the excavated areas was rather limited, a large number of finds was uncovered. The published pottery assemblage is composed of mostly pithoi (Galilean, Wavy-Band and Collared-rim), cooking-pots, and few bowls, jars and jugs. In contrast to Stepansky et al. (1996: 71) and Bahat (1986: 91), who dated the Iron Age I occupation to the 12th century BCE and the first half of the 11th century, respectively, we believe that the pottery assemblage indicates that the site was occupied during the Late Iron Age I (especially due to the presence of Phoenician Bichrome Ware; Bahat 1986: 103: 3-4; 104: 6), and, thus, dated to the second half of the 11th to early 10th century BCE. The size of the Iron Age I settlement was estimated by Wachtel (2018: 152), who assembled the data from the various excavations, at 15–20 dunams (1.5–2.0 ha.).

The Kernos from Sasa

Archaeological Context

The kernos was uncovered in the southeastern part of the summit of Tel Sasa during a small-scale trial excavation (Guz 1975) that was later expanded (Bahat 1986). Unfortunately, the exact archaeological context of the kernos was unclear during its excavation, due to the very small scale of the excavated area. However, Bahat was able to assign the floor on which it was found to his Stratum III. Fortunately, this stratum (the lowest of three Iron Age I strata) was well preserved, hence it could be coherently understood (Bahat 1986: 86–89).

The main structure of Stratum III, which possibly had an earlier phase, included a row of three rooms (40, 31 and 41), separated by indirect entrances (Figs. 2, 3). Additional walls attached to both the west and the east side attest to the originally large size of the structure, which was therefore considered by Bahat to have been a large public building (1992: 327).

The entrance to the building was from southwest through Room 40. The two inner rooms (31 and 41) were well preserved;

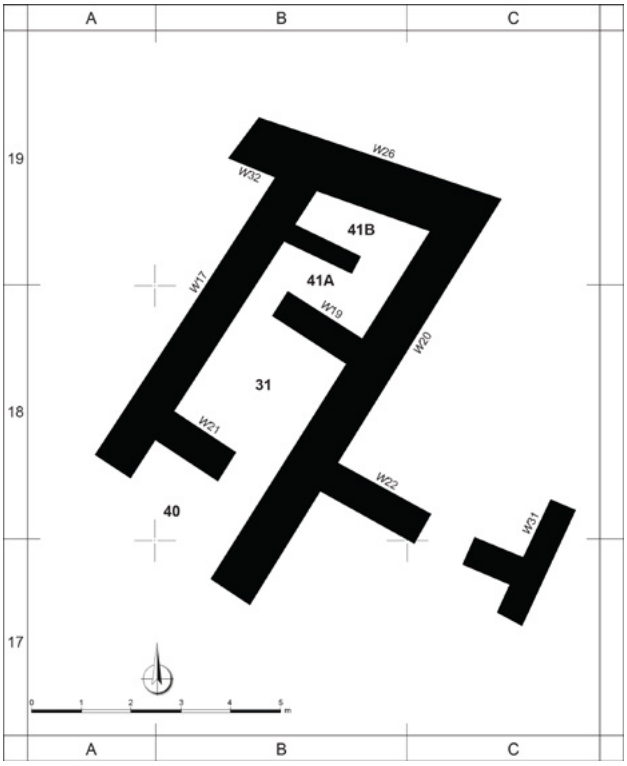

Fig. 2. Schematic plan of the Kernos Building (adapted from Bahat 1986: 99).

Fig. 3. The Kernos Building (Rooms 31 and 41), looking northeast (Photo by D. Bahat; courtesy of the Israel Antiquities Authority).

Fig. 4. Room 41B, looking west. Note the plaster on the floor and walls (Photo by D. Bahat; courtesy of the Israel Antiquities Authority).

all four walls of each room were still standing, some preserved up to a height of 1 m. The maximum dimensions of both rooms were 2.5 × 2.5 meters. The floor of Room 31 was made of white plaster, and its walls were also coated with the same material. The innermost Room 41 was divided into two spaces (41A and 41B) by a narrow partition wall. On the western and northern walls of Room 41, white plaster with red patches was still in situ (Fig. 4; unfortunately, only black and white photos of the excavations exist). The only complete vessel retrieved from the building was the kernos, found on the floor of the innermost space: Room 41B (Bahat 1986: 97: Photo 8). Bahat suggested that this room served as a kind of shrine (1992: 327).

Notably, this building presents the only context in Sasa that yielded clear coastal pottery: Phoenician Bichrome Ware (Bahat 1986: 103: Ills. 3, 4; 104: Ill. 6) and a rim of a commercial jar (Bahat 1986: 103: Ill. 9). Moreover, an Egyptian bi-faced rectangular plaque was unearthed in Room 40 (Bahat 1986: 89, 97: Photos 6, 7); it is well-dated to the 12th–11th century BCE (Daphna Ben-Tor, personal communication). These unusual finds provide additional proof of the special function of the kernos building.

Previous Research

Ironically, it was not the short note of Guz (1975), the archaeologist who uncovered the kernos from Sasa, which brought this magnificent vessel to the attention of archaeologists (even though an illustration of it adorned the cover of the volume of *Hadashot Arkheologiyot* in which it was first reported). Rather, its notoriety was the result of a somewhat scandalous

affair that followed the refusal of the Israel Department of Antiquities to allow a photo of the new find, which had appeared in *The Jerusalem Post*, to be reprinted in the *Biblical Archaeology Review*, following a formal request by its editor, Hershel Shanks (Shanks 1975). A year later, Shanks did indeed publish the photo, adding only some minor details (Shanks 1976). Oddly, to date, these two notes are still regarded as the definitive publications of this special find.

In the early 1980's, the Sasa kernos began to attract scholarly attention. Mazar proposed that kernoi should be treated as vessels of Canaanite origin, and that the Sasa example was likely imported to the Upper Galilee (1980: 111). Elsewhere he hypothesized that it was manufactured at Megiddo on the basis of its stylistic resemblance to other kernoi from that site (Mazar 1982: 32; see Fig. 11). Dothan, who did not specifically mention the Sasa kernos, expressed her view that kernoi were introduced to the Southern Levant by the Philistines via Cyprus (Dothan 1982: 222–224), a view that is still widely cited (e.g., Gal 1993b: 123; Dever 2001: 125–126; Novacek 2011: 68; Kletter 2015a: 26; Szanton 2016: 75; Schroer 2018: 294).

It was only in 1986, following Bahat's publication of the Sasa excavations,[1] that the kernos was finally discussed in its archaeological context. However, Bahat's brief description of the kernos and his reconstruction of the complete vessel were inaccurate, if not patently incorrect (Bahat 1986: 89).[2] Bahat assumed that the vessel was symmetrical and hence reconstructed the two missing attachments as a bird and a chalice. This arrangement is of course untenable, as such a kernos would have no known parallels and no functionality (see below). Moreover, Bahat reported that the vessel was decorated with brown paint, while it was in fact decorated in two colors (red/brown and black).

The most recent study on the kernos from Sasa was conducted by Bignasca (2000). In this exhaustively researched publication of the largest corpus of kernoi ever to be assembled,[3] the kernos from Sasa was systematically described for the first time (Bignasca 2000: 25). Importantly, Bignasca rejected the Philistine origin of the vessel in favor of a Canaanite one.

Fig. 5. The Sasa kernos before final restoration. Note the hollow pomegranate, bird, and its stand (courtesy of the Israel Antiquities Authority).

Description

The kernos from Sasa (IAA 1975-470) was restored from numerous fragments and was partly reconstructed using Plaster of Paris (Figs. 5–10). The ware is reddish-brown with few inclusions. A black and dark reddish-brown decoration (henceforth: "black and red decoration") was painted directly on the clay. The kernos still exhibits four of its original six attachments: two pomegranates (one intact, while the other suffered damage to its body), a chalice with a tall cylindrical foot and a bird facing the chalice, probably intended to be portrayed as drinking from it (see below). All attachments are hollow, with their interiors connected to the hollow ring (Figs. 7, 9). The two lost attachments are attested by the remains of the clay used for their affixing them to the ring which have an open elongated slit into the ring.
General dimensions: max. width: 26.7 cm (from one pomegranate to the other); height of intact pomegranate: 15.5 cm; height of second pomegranate: 15.6 cm; height of bird: 14.7 cm; height of chalice: 16.5 cm.

The Ring: The ring has an oval-triangular section; its upper part is rounded, and an outer gutter appears on its lower part facing the center of the ring. The ring's base is either

Fig. 6. The Sasa kernos, top and side view (IAA collection, Photo © The Israel Museum, Jerusalem, by Laura Lachman).

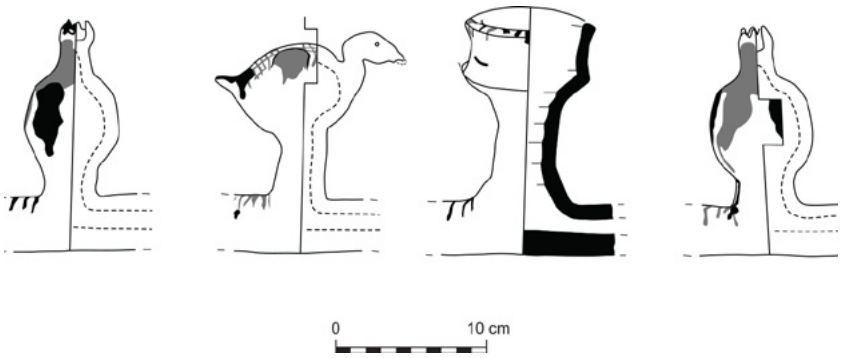

Fig. 7. The individual attachments of the Sasa kernos (Drawing © The Israel Museum, Jerusalem, by Ester Stark).

flattened or slightly rounded in other places. Cutting and scrubbing marks appear throughout the perimeter of the base, probably indicating that this part of the kernos was unseen during its use.

While drawing the kernos a prior glued section was undone, allowing the examination of the ring's section (Fig. 9). The ring's interior takes the form of a triangular tube. Its inner height is 1.1 cm and its maximum width is 0.08 cm. The tube was an independent part on to which a sheet of clay was folded, together forming the ring's wall; this is clearly revealed by a narrow space visible between the two parts. However, the precise technique of forming the ring is still not entirely clear.

The upper part of the ring is decorated with painted lines arranged mostly perpendicular to the ring in an ostensibly radial pattern. Nine to thirteen monochrome lines adorn each segment between the various attachments in alternating red and black schemes. Generally, these were carefully painted, but sometimes seem hastily done. Various spots on the upper part of the ring are in fact drizzles from painting the attachments. For instance, a red patch under the bird head appears in a section which is painted in black. Similarly, a black drizzle between red lines is visible under the bird's tail.

The remains of the two missing attachments are preserved as ovoid punctures. The one opposite the chalice is longer (2.8 cm) than the other (2.1 cm). The lower part of the latter has more of the attachment preserved, allowing its interpretation as a wide vessel whose broadening started at the attachment to the ring itself (even lower than the pomegranates; see also below), especially towards the inner part of the ring.
Dimensions: exterior diameter: 22.8 cm; inner diameter: 17.9 cm. H: 3.4–3.6 cm; W: 2.3–2.5 cm.

The intact pomegranate: The intact pomegranate has five concave depressions on the central part of the body, giving the fruit a realistic appearance. The calyx comprised six closed petals, painted in black; their maximum height is 1.2 cm. The top of the pomegranate fruit itself is closed.

The shoulders and neck of the pomegranate are painted in red and the ridges between the depressions bear alternating patches of red and black paint. Due to the odd number of depressions, two black patches are adjacent. All patches are irregular in form, and one of them (in black) drizzles down and almost reached the ring.
Dimensions: H 10.2 cm; W 7.2 cm.

The Second Pomegranate: This pomegranate is poorly preserved; its fragments were glued, and its body was restored with Plaster of Paris. It is nearly identical to the intact pomegranate, but its calyx is not painted, and drizzles from two of its hastily painted black patches, reach the ring.
Dimensions: H 10.4 cm; W 7.1 cm.

Fig. 8. The Sasa kernos, details of the attachments (IAA collection, Photo © The Israel Museum, Jerusalem, by Laura Lachman).

The Bird: The bird figure has a horizontal tail, two outstretched diagonal wings, a bent neck and a pointed head; all are attached to the hollow body. The neck and head are solid (with no openings) and the beak is missing. The head is crudely fashioned, and the eyes were rather deeply punctured (0.4 and 0.6 cm) with a very thin tool. The depression between the neck and body was probably formed while these parts were attached to each other, when the clay of the figure was leather-hard. The bird is attached to a 4 cm high cylindrical stand.

It seems that the entire head was first painted in red, and only then was black paint applied to the rear part without completely obscuring the red paint below it. The eyes and beak are undecorated. The right outer wing is painted in red, while the left inner wing is black. The upper part of the body (the bird's back) is decorated with a red net pattern (13 × 7 lines), which reaches the black tail. In the front outer (right) part of the body, an additional net was painted (6 × 3 lines). The color scheme is less clear and seems to be a combination of black and red. It might have been painted after the bird's head, while the brush still had a mixture of both colors. *Dimensions:* H 5.9 cm; W 6.1 cm; L 12.4 cm.

The Chalice: The chalice, which is tilted outwards beyond the outer edge of the ring, was formed from a carinated bowl on a high foot. Over half the bowl (near the inner part of the ring) was not preserved and is reconstructed in Plaster of Paris.

Vestiges of an attachment to a missing feature are visible above the carination of the bowl, near the bird's head (Fig. 10). It seems that a similar vestige can be observed on the opposite side, next to the reconstructed pomegranate, but there, the bowl is broken, and almost nothing was preserved. These vestiges

probably attest to the bowl having handles. An additional hint is a fragmented horizontal black line on the body of the bowl, which probably continued on the handle (Fig. 10). Thus, the handles may be speculated to have been horizontal.

The bowl's rim is decorated with irregular vertical lines alternating in black and red paint. The painting seems careless: the gap between the lines is unequal, drizzles of paint appear on the inner part of the bowl and the orientation of the lines is uneven. Unsmoothed wheel marks remain on the inner part of the bowl and especially on the inner part of the foot. *Dimensions:* bowl H: 5.3 cm, W: 8.5 cm; Foot H: 6.4 cm, W: 3.9 cm.

Parallels and Reconstruction

To date, not a single intact Iron Age I kernos[4] (a complete ring with all of its attachments) has been found in the Southern Levant.[5] However, an almost complete Iron I kernos was unearthed at Megiddo Stratum VI (Fig. 11; May 1935: Pl. XVI: P2282).[6] From the Iron IIA, two complete kernoi are known from Tell el-Ḥammah (Fig. 12; Tarler, Lipovitz and Cahill 1989–1990: 135) and from Ḥorvat Rosh Zayit (Fig. 13; Gal 1993b: 121–122; Gal and Alexandre 2000: 81–82). These three examples include two pomegranates each, making them the closest known parallels to the kernos from Sasa. All of them were filled through an open vessel-shaped attachment that was in line with a front spouted horned animal attachment. However, none are identical to the vessel from Sasa neither in number of the attachments nor in their arrangement: the kernos from Megiddo originally had eight attachments, the examples from Rosh Zayit (with four attachments) and Tell el-Ḥammah (with five attachments) lack birds, and the kernoi from Megiddo and Tell el-Ḥammah also include miniature jars.

Nevertheless, these examples, together with other parallels, can aid in deducing the shape of the missing attachments on the Sasa kernos. Thus, the missing attachment opposite the chalice was likely a spouted bull protome, as in most Levantine examples.[7] However, the second missing attachment of the kernos is more difficult to reconstruct. Theoretically, if the kernos was symmetrical, like the Megiddo example, the attachment could

Fig. 9. The Sasa kernos, detail of ring section, below the intact pomegranate (IAA collection, Photo © The Israel Museum, Jerusalem, by Laura Lachman).

Fig. 10. The Sasa kernos, detail of chalice with an attachment stump on bowl (handle?) (IAA collection, Photo © The Israel Museum, Jerusalem, by Laura Lachman).

have been a bird. However, birds on kernoi usually appear drinking from an open vessel, and since our missing attachment is between a pomegranate and a bull it would not fit this scheme. Alternatively, bearing in mind that identical attachments do not appear one next to the other in any of the three cited parallels, and that the existing attachments already include a pomegranate and a (reconstructed) bull, these should be excluded as hypothetical reconstructions. That leaves a miniature jar, like on the Megiddo and Tell el-Ḥammah examples as the only likely suggestion. This reconstruction (Fig. 14) is supported by the still

Fig. 11. The nearly complete Iron Age I kernos from Megiddo (May 1935: Pl. XVI) (Courtesy of the Oriental Institute of the University of Chicago).

visible shape of the base of the missing attachment which, as noted, flairs outward from the kernos ring.

Archaeological Context of Iron I Kernoi from the Southern Levant

Surprisingly, only a few Iron Age I kernoi from the Southern Levant can be firmly dated and/or associated with secure archaeological contexts. They include from north to south:[8]

Megiddo: Fragments of at least seven kernoi were found in Megiddo by Schumacher (1908: 136, Fig. 204; Watzinger 1929: 84, Fig. 77; Bignasca 2000: 200, O58, O59) and the Chicago Expedition (May 1935: Pl. XVI; Loud 1948: Pl. 145:16; Dothan 1982: 223, Pl. 5; Bignasca 2000: 200, O60–O63, O65; one of them can be seen in Fig. 11). Although their precise contexts remain unclear, their style evidently relates them to Stratum VI of the Iron Age I. The fragments were found scattered throughout the tell but none were unearthed in the area of Temple 2048, therefore their context should probably be considered as domestic.

Beth-Shean: Only three of the examples published by Bignasca as Iron Age I kernoi can be truly dated to this period (Bignasca 2000: 201: O67, O68, O73), while the rest should be dated to the Late Bronze Age II or to the Iron Age IIA.[9] These three kernoi originated from domestic contexts in the buildings that surrounded the Level VI temples. Unfortunately, their affiliation to Upper Level VI or to Lower Level VI is difficult to determine and, hence, they should be dated to the Late Bronze Age III–Iron Age I.

Tel Qasile: Six ring fragments of kernoi were found by Mazar in the temple area (1980: 108–109, Fig. 40; Bignasca 2000: 201–202, O77, O79–O81, O84, O85) from Strata XII–X, two from each stratum.

Gezer: Fragments of four different kernoi were uncovered in a favissa containing various cultic objects (Macalister 1912a: 236–237, #2-#3, #6; Fig. 390: 1–4; Bignasca 2000: 199, O51–O53). The description of one of them (Macalister 1912a: 237, #6) may attest that there are actually fragments from two kernoi, hence the number of kernoi in this favissa might actually be greater. Another ring fragment from Dever's excavations was unearthed in the domestic area of Granary 2400 (Dever 1986: Pl. 57:18).

Tel Miqne/Ekron: Two kernoi fragments were found in Stratum VC, which is well dated to the Iron Age I: one with a complete pomegranate decorated in black paint was found in a fill (Ben-Shlomo 2010: 156, Fig. 3.89:4); and a ring fragment

Fig. 12. The Tell el-Ḥammah kernos, Iron Age IIA (IAA collection, Photo © The Israel Museum, Jerusalem, by Laura Lachman).

Fig. 13. The Ḥorvat Rosh-Zayit kernos, Iron Age IIA (IAA collection, Photo © MUZA, Tel Aviv, by Maya Delano).

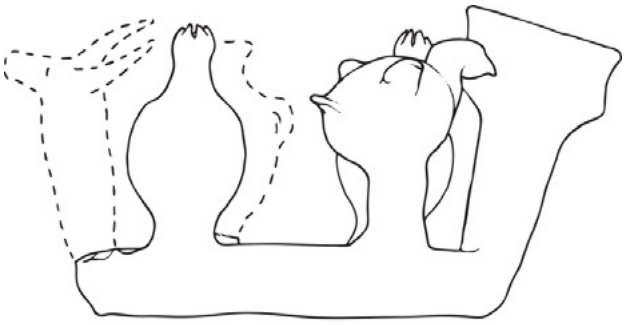

Fig. 14. Reconstruction of the complete kernos from Sasa (Drawing © The Israel Museum, Jerusalem, by Ester Stark).

with two caprid attachments (Ben-Shlomo 2010: 145–146, Fig. 3.82; Bignasca 2000: 202, O86a) was found in Building 350, a public structure defined by the excavators as a temple (Dothan 2003: 194–195).

Ashdod: Two Iron Age I kernoi fragments were uncovered in a very large refuse pit with many other varied objects (Dothan and Freedman 1967: 111, Fig. 35:9, 10; Bignasca 2000: 202, O89, O90). An additional fragment of a ring with a broken attachment (Dothan and Ben-Shlomo 2005: 118–120, Fig. 3.34:13) was unearthed on the floor of a large building (5337) that was interpreted as the dwelling of a prosperous family (Dothan and Ben-Shlomo 2005: 26–30).

To conclude, it appears that Iron Age I kernoi from the Southern Levant were only found in cultic, domestic and refuse contexts. Direct evidence for their cultic use is provided by their inclusion in temples and favissae at Sasa, Tel Qasile, Gezer (Macalister) and Tel Miqne/Ekron. In Beth-Shean, Megiddo, Gezer (Dever) and Ashdod kernoi appear in domestic contexts and might reflect cultic practices performed in the private domain. Two fragments from a refuse pit in Ashdod and a fragment from a fill in Tel Miqne/Ekron demonstrate that kernoi were not always discarded in cultic favissae, such as the one from Gezer, but were sometimes carelessly disposed of with other quotidian objects.

Notably, no Iron Age I kernoi from the Southern Levant were found in funerary contexts, a point which has some bearing on the question of the Levantine versus Cypriote origin of this object type. While some scholars assumed that kernoi originated in Cyprus and arrived in the Levant through Philistine mediators (e.g., Dothan 1982: 222–224), others, like Mazar (1980: 111) Bartoloni (1992: 139) and Bignasca (2000: 250), showed that kernoi were in fact Levantine creations. Two additional observations, unmentioned by Mazar and Bignasca, support their conclusions. First, kernoi in the Late Bronze and Iron Age Levant, are almost never found in burial contexts, while many of the examples from Cyprus are from tombs. Second, Levantine kernoi lack the horizontal handle that is common in many of the Cypriote examples. These differences justify treating the Cypriote kernoi as a separate phenomenon and, therefore, are not discussed in the present article.

Function and Use

All scholars agree that, based on their morphology and typology, kernoi were used for holding liquids. The representation of bird figures caught in the act of drinking from open vessels (as reconstructed on the Sasa kernos) seems to support this assumption (Bignasca 2000: 98). In addition, their cultic find-spots, coupled with the rich symbolism reflected in the shapes of their attachments, suggest that kernoi were cultic objects, although their exact use remains a mystery due to the total lack of any relevant iconographic representations.

More than one hundred years have passed since Macalister's suggestion to consider kernoi as ornamental lamps which were used by pouring oil into the ring and placing the wicks through the attachments (1912a: 236). Alternatively, kernoi, as was suggested for kernos-bowls (Maass 1992), may have been used for drinking while sucking the liquid through the central spout.

However, most scholars nowadays agree that kernoi were specifically designed for pouring liquid offerings (libations) such as water, wine, oil, milk and honey (Bignasca 2000: 253). The ring-shaped vessel was filled from a main filling attachment, mostly an open vessel (bowl, krater, chalice or

cup), and emptied through one of the other attachments. The complete examples from the Iron Age Levant show that one main pouring attachment was positioned opposite the main filling one. This central pouring attachment was mostly modeled as a bull protome. The other attachments, which we consider to be minor ones, were mostly shaped as pomegranates, birds and jars. Liquid decanting from each attachment must have had a distinctive implication.

While studying the Sasa kernos, it became apparent that three of the four extant attachments lack a spout, i.e., the bird and the two pomegranates. This fact called for a re-examination of all known kernoi in order to verify the nature of the openings of their attachments. Unfortunately, only a small number of complete examples were published in sufficient detail for such an assessment. Indeed, it was found that all the main filling and pouring attachments (open vessels and bull protomes) were spouted, while the minor attachments were mostly closed. Spouted attachments included pomegranates from Tell el- Ḥammah (Fig. 12; Tarler, Lipovitz and Cahill 1989–1990: Fig. 121), Tel Miqne/Ekron (Dothan and Ben-Shlomo 2007: Fig. 9:1, 2) and from the Israel Museum Collection (see below Appendix, Cat. No. 1); miniature storage jars from Megiddo (Dothan 1982: 223, Pl. 5) and Tell el- Ḥammah (Fig. 12; Tarler, Lipovitz and Cahill 1989–1990: Fig. 121); and birds from the Israel Museum Collection (see below Cat. Nos. 5 and 6). Closed attachments included the pomegranates from Sasa (Fig. 8) and Ḥorvat Rosh-Zayit (Fig. 13; although they seem open in the photo, they were originally closed and broken in antiquity; Gal 1993b: 121–122; Gal and Alexandre 2000: 81–82); caprids from Tel Miqne/Ekron (Ben-Shlomo 2010: Fig. 3.82); the bird from Sasa (Fig. 8), Megiddo (Fig. 11; May 1935: Pl. XVI:P2282; Loud 1948: Pl. 145:16), Gezer (Dothan 1982: 220–221, Fig. 1:6, Pl. 1:2), Ashdod (Dothan 1971: Fig. 71:2) and Tell es-Safi/Gat (Szanton 2016: Pl. 13:1).

The fact that many of the minor attachments were closed at their top negates the assumption that different attachments of the kernos were used for diverse liquids, that would then be mixed in the ring and poured together (PAM 1940: 25, Object no. 178; Bignasca 2000: 253). Even those minor attachments that were left open at the top cannot be considered as filling attachments since their mouths were too small (e.g., Gal 1993b: Fig. 2). Nevertheless, in some kernoi, multiple attachments of open vessels may have been used for filling (e.g., Bignasca 2000: Pls. 5: O44a; 8: O67, O69, O74). These examples however, do not reflect on the use of the Sasa object.

Kernoi such as the one from Sasa, were likely filled through the main filling attachment causing the liquid to circulate through the minor attachments before being decanted through the bull spout. This practice may have added special meaning to the liquid (see below). The kernos would thus be used as some sort of a trick vase, "locking" the liquid in the minor attachments, requiring a rather large amount of liquid to fill the entire vessel before pouring it through the spouted attachment, probably by tilting the vessel after it was filled.

Symbolism

The distinct form and rich decoration of Southern Levantine Iron Age I kernoi must have had a deep symbolic meaning. However, while scholars dealt with the many aspects related to kernoi, only few tried to decipher their emblematic value. Interestingly, scholars generally agree that the ring shape as well as the design of the attachments are related to fertility, hence kernoi are believed to have been used in fertility rites (e.g., May 1935: 18; Rowe 1940: 56; Colley 1983: 52; Bignasca 2000: 251–252; Novacek 2011: 68; Bignasca 2007: 53).

May (1935: 18) suggested that, in addition to the symbolic meaning of fertility represented by the animals in the nearly complete kernos from Megiddo, the miniature jars represented vessels that contained wine. He believed that the kernos was used for libation and that the circulation of the liquid symbolized the fertility of the earth and the fructifying of its produce. The entire scene on the vessel represented, according to him, a miniature garden. Likewise, Rowe (1940: 56) suggested that kernoi were generally used in ceremonies related to the agricultural realm.

Bignasca suggested that the shapes of the attachments were linked to fertility and water. These characteristics, combined

with the round ring of the vessel, led him to the conclusion that kernoi might constitute a representation of the cosmos (Bignasca 2000: 109). This far-reaching conclusion seems to us unfounded, perhaps prompted by Bignasca's attempt to provide one overall, general interpretation that would include all kernoi from a broad chronological and geographical range (see note 3 above). In any event, in order to understand the symbolic meaning of the Sasa kernos, one should examine each attachment separately, and only later attempt a general conclusion.

Representations of pomegranates in various materials were very common, and their remains as well as their symbolic meaning in both the Bible and Ancient Near Eastern art have been dealt with in depth (Dothan and Ben-Shlomo 2007: 13–14; and see, recently, with extensive references, Arie 2018–2019: 22). The pomegranate likely symbolized a vital force, fertility, regeneration, and rebirth. It was linked to femininity and regarded as an attribute of female deities.

Given that the bird on the kernos from Sasa, as well as other birds on kernoi (e.g., from Megiddo, Bignasca 2000: Pl. 7: O60, O61) is represented drinking, it should probably be identified as a dove (see also Schroer 2018: 294). Drinking doves are a common motif in ancient art, perhaps due to their ability to keep their beak in the water until they finish drinking unlike other birds, which have to raise their head after each gulp (Ziffer 1998: 11*). In the Ancient Near East, the dove was the symbol of the female deity of love and fecundity and was thus also invested with erotic connotations (Ziffer 1998: 37*–51*; Fossum 1999). As an attribute of fertility goddesses, the dove became the symbol of love between the deity and its worshipers.

One of the missing attachments of the Sasa kernos was reconstructed above as a bull protome. The bull, which was a powerful symbol in Near Eastern art, has been thoroughly discussed by various scholars (Mazar 1982: 30–32; Lambert 1985: 436; Beck 1995: 141; Fleming 1999; Ornan 2001). Already in the second millennium BCE, the bull represented thunder and rain and mainly appears as the emblem of the storm god Baal/Hadad, though it also had some lunar features. Its mighty power and vast masculinity gave it the necessary features to represent these central gods. However, Ziffer (2010: 69–73) demonstrated that bulls, and especially bull heads, could also be related to representations of goddesses. In any event, bulls on kernoi were powerful divine emblems related to fertility.

The last two attachments of the kernos from Sasa are a chalice and, presumably, a jar (see above). Both represent frequently used pottery vessels abundant in many archaeological sites across the Iron Age Southern Levant. These two types were used for various purposes in all aspects of life, hence, their iconographic value is unclear. We would like to suggest that they represent the act of libation itself. In addition, these vessels recall flowing vases held by minor deities that appear in both monumental and miniature Near Eastern art. Two of the most famous examples come from Zimri-Lim's Palace at Mari. Two such figures are represented on the well-known mural painting and an almost life-sized statue was found nearby (Al-Khalesi 1978: 41–45, Fig. 8; Keel 1978: 186–188, Figs. 191, 256; Margueron 1992: 108–109, Pl. 43). The representation of similar figures on the wall painting demonstrates that the statue was used as an actual fountain, the water flowing from the vase that the figure was holding. Many additional similar depictions are dated from the third to the first millennium BCE (Margueron 1992: Fig. 185; Ornan 2005: 39, Figs. 1, 10, 11, 82). Ornan (2005: 18) identified these representations as the *ḫegallu*, Akkadian for "abundance". One should add that the water circulation illustrated coming out of these flowing vases is also reminiscent of the round form of kernoi.

To conclude, Green (2017) assumed that the zoomorphic attachments might have been associated with deities to whom offerings were provided; however, the pomegranates and pottery vessels probably attest that *all* the attachments were in fact emblems. The round form of the ring, the alternate and cyclic nature of the red and black decoration, the meaning of the pomegranate, dove and bull, and the abundance reflected by the chalice and jar, all might attest that fertility, wealth and their periodic appearance were the most important aspects symbolized by the Sasa kernos.

Petrographic Analysis

Background

Sparked by the lively discourse during the early 1990s over the nature of Iron I pithoi (Biran 1989; Esse 1992; Artzy 1994), petrographic analysis of the Tel Sasa storage containers was performed by Cohen-Weinberger and Goren (1996). For this reason, almost no other pottery types from the site were tested. Fourteen pithoi were analyzed: eight of the Galilean type, four wavy-band pithoi, two collard-rim pithoi and a single storage jar. These were assigned to three distinct petrographic groups: Group A and C are most likely local to the Upper Galilee but represent two distinct production centers; and Group B, on the other hand, is comprised of a fabric that originated in the coastal plain of northern Israel or Lebanon. However, this division does not correlate with the ceramic typology. In other words, the two local production centers manufactured all types of sampled pithoi. The third source, in the Phoenician coast, produced only one type, the wavy-band pithoi. Technologically driven decisions are evident in some of the pottery, such as the addition of terra rossa soil in the form of aggregates to the clay. This led the researchers to conclude that, ostensibly, the Iron I pithoi in the Upper Galilee were produced by professional potters, not by itinerant or household producers.

The lithology of the Upper Galilee is characterized mainly by carbonate rocks of Early Cretaceous to Eocene age, and by Neogene to Pleistocene basaltic flows. The volcanic element is composed of Neogene to Pleistocene basalt, most significantly in the area of the Dalton plateau and the eastern reaches of the Galilee. The sedimentary lithology includes predominantly dolomite, marl, limestone and chalk. Chert, quartz geodes, and quartzolite constitute a minor component, appearing within some of these formations. The following formations are exposed within a radius of 5 km from Sasa (Grader 1958; Eliezri 1965; Levitte and Sneh 2016):

1. The Yagur Formation (Albian—lower Cenomanian), comprising dolomite, quartzolite and chert.

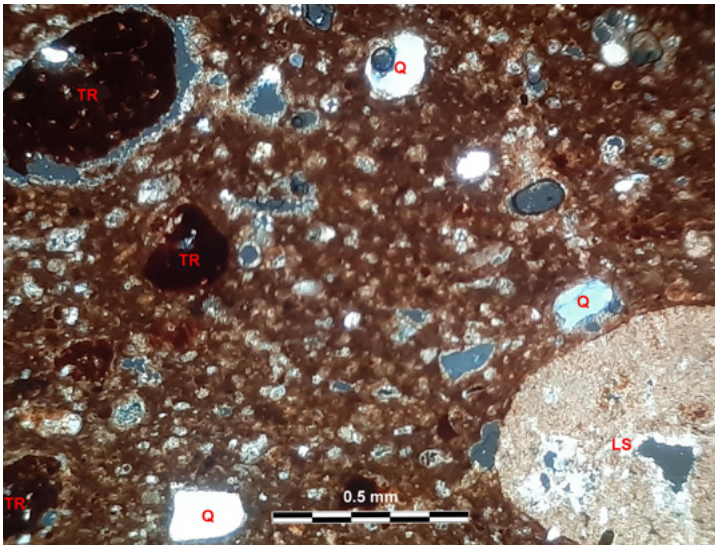

Fig. 15. A microscopic of thin-section view of the Sasa kernos. Ls = limestone; Q = quartz; TR = terra rossa (Micrograph by Yuval Goren).

2. The Deir Hana Formation (lower—upper Cenomanian), characterized by dolomite and limestone, chert nodules, and quartz geodes.

3. The Sakhnin Formation (upper Cenomanian), composed of lightly colored dolomite with a karstic surface.

4. The Ghareb and Taqiya formations (Campan—Palaeocene), which consist of marl and chalk, exposed near Bar'am and Gush Halav to the east, and at Tel Rosh to the west.

5. The flows of the Dalton Basalt, exposed east of Sasa.

Results

The matrix of the Sasa kernos consists of foraminiferous marl mixed with terra rossa soil, appearing in the form of mud balls (Fig. 15). These are oval to round components, ranging from 0.1 to 2 mm in diameter, composed of silty (2–3%) ferruginous clay. The non-plastic components consist mostly of sand-grain sized, poorly sorted rounded limestone and silicified limestone fragments, angular chert grains, quartz geodes, and minor

quantities of quartzolite, dolomite rhombs (mostly altered to chert), and chalcedony. The vessels made in this fabric are ascribed a low firing temperature in view of the absence of decomposed carbonate particles and the lack of isotropism in the clay matrix, both of which characterize calcareous clay fired to high temperatures.

Most components of this sample are commonly found in the Cenomanian formations of the Sasa region, particularly in the Deir Hana Formation. There are no interbedded clay and marl layers within the calcareous sequence near the Sasa region. The Ghareb and Taqiya marl formations exposed west of Sasa at Tel Rosh, and east of Sasa in a strip extending from Bar'am to Gush Halav and further to the northeast towards Tel Qadesh (Levitte and Sneh 2016), are possible sources for the marl. Thus, it may be concluded that it is local to the environs of the site.

The Kernos from Sasa in a Broader Perspective

The settlement of the Upper Galilee during the Iron Age I has been intensively studied ever since Aharoni's famous survey of the region identified some twenty small sites (Aharoni 1957; Finkelstein 1988: 97–110; Frankel 1994; Frankel et al. 2001: 104–106; Ben-Ami 2003: 156–160; Nakhai 2003; Braun 2015; Wachtel 2018). Aharoni and subsequent scholars assumed that these rather meager sites were part of the Israelite settlement of the Galilee (e.g., Finkelstein 1988: 109; Frankel 1994: 32–33).

It is within this context that one should understand the attempts to interpret the Sasa kernos as an import to the Upper Galilee (see above). The kernos, with its rich iconography, did not fit the perception of the Israelite aniconism. Mazar (1982: 32) discussed the kernos from Sasa together with the bronze bull figurine from the "bull site" as two anomalies of Canaanite cult objects, while others linked the kernos from Sasa to Philistia (Shanks 1975; 1976) or even to Cyprus (Gal 1993b: 123).

In contrast to the attribution of the Iron Age I Upper Galilee to an Israelite territory, Kochavi (1984: 67) suggested that these sites were in fact hinterland settlements of the city of Tyre. This suggestion, however, was never pursued. Raban (1991: 24) who apparently agreed with Kochavi, believed that these settlements were outposts of the Phoenician hinterland, but were garrisoned by Sea People mercenaries. Neither Kochavi nor Raban specifically referred to the Sasa kernos, but presumably its nature was taken into consideration while reaching these conclusions.

At present, following Wachtel's research, a new understanding of the Upper Galilee during the Iron Age I has been reached (Wachtel 2018: 240–245). Based on data from this new survey, Wachtel identified about forty fairly large sites, distributed throughout all geographic units of the Upper Galilee in a hierarchical and stratified array (large and small cities, villages and fortresses). Wachtel even claims that the process of settlement in this area cannot be separated from the process of renewed Canaanite urbanization in other areas. Almost simultaneously, Braun (2015: 58), in the publication of his excavations in Horvat 'Avot, contested the automatic affiliation of this population to the Israelites, claiming that the ethnic identity or identities of the Iron I occupants of the Upper Galilee remain obscure for the present (see also Nakhai 2003: 138).

We believe that this perception of Iron Age I settlement of the Upper Galilee fits well with the petrographic results of the Sasa kernos. The local origin of the kernos joins previous petrographic analysis showing that almost all of the sampled pottery from Sasa, thus far, including pithoi of various types and a jar, were produced in the vicinity of the site (Cohen-Weinberger and Goren 1996: 79–80, Families A and C). This indicates the closed nature of the Upper Galilee settlement during the Iron Age I, reflecting a mostly self-sufficient society. The petrographic results of the kernos demonstrate that the cultic needs of this society were also locally met.

Only minor evidence for trade was observed in Sasa—some of the wavy-band pithoi originated from the coast (ibid.: 79, Family B), as were probably also a Phoenician jar and Phoenician Bichrome ware (not sampled; Bahat 1986: 103:3, 4, 9, 10; 104:6).

Similarly, the Egyptian plaque definitely arrived through an intermediary, probably also from the coast. These observations are an additional cornerstone for comprehending the society of Iron Age I Upper Galilee, which will only be possible with much further research.

Conclusions

The present research has aimed to portray one of the most elaborate kernoi ever unearthed in the Southern Levant. The study of the Sasa kernos may be concluded as follows:

There is no doubt that the context in which the Sasa kernos was found is cultic. Moreover, it seems that the structure, on whose floor the kernos was uncovered, should be defined as a small shrine. This findspot is consistent with other Iron I kernoi that were found in similar contexts in Tel Qasile, Gezer and Tel Miqne/Ekron.

A thorough examination of the Sasa kernos revealed the following details for the very first time: (1) three of the attachments– the two pomegranates and the dove, are closed from the top; (2) the chalice's bowl probably had handles; and (3) the two missing attachments can probably be reconstructed as a bull and a jar.

The observation that the two pomegranates and the dove of the Sasa kernos were never used for pouring (or filling) raises once again the question of kernoi use in general and their symbolic meaning. The present example seems to have been used for libation, but kernoi with closed minor attachments, such as the one from Sasa, were also used as a kind of trick vase. It possibly gave the circulated liquid a special meaning.

Fertility, abundance, and the cycles in which they appear in life were the most important aspects symbolized in the Sasa kernos. It was probably used in fertility rites as previously assumed by research in relation to other kernoi.

The petrographic analysis reveals that this kernos was made in Sasa itself or in its immediate vicinity. The local origin of the kernos joins previous petrographic analysis showing that almost all pottery sampled from Sasa were produced in its vicinity. This is an indication of the closed nature of the Upper Galilee settlements during the Iron Age I, which reflect a society that provided most of its own needs. Moreover, the nature of the Sasa kernos and the fact that it was a local product, once again indicates the complex identity of the population of the Upper Galilee. It seems that they should not be identified as Israelites in any simplistic manner, as they have been defined in the past.

We conclude with an important note for those who will find and publish kernoi in the future. Only few kernoi have survived the ravages of time and even fewer have reached us intact. Kernoi require special attention at the time of publication: each attachment must be examined independently, both their upper and lower sides should be studied in order to determine whether the attachment continues the hollow section of the ring and, on the other hand, whether it was intended for pouring. Kernoi must be examined prior to reconstruction. Every step of the reconstruction process should be documented in order to record any data that will not be visible once that restoration is finalized. Only proper and full publication of kernoi will help to eventually crack their complex code.

Appendix: Catalogue of Iron Age kernoi from the Israel Museum collection (all measurements in cm)

This appendix includes all Iron Age kernoi housed in the collection of the Israel Museum, Jerusalem, almost all of which are in fragmentary condition.[10] Two kernos-bowls from the Israel Museum collection which are related to this group were previously published elsewhere (Ornan 1986: 96–97; Dever 2001: 123–125, Fig. 6.1: d). Fifteen objects are presented below (Cat. Nos. 1–15). Eleven items were part of the Moshe Dayan Collection, bought for the Museum in 1982 through the donation of Lawrence and Wilma Tisch of New York after Dayan's passing (Arie 2021). The other four fragments were part of a very large collection of Prof. Dan Barag, bequeathed to the Israel Museum after his passing in 2009.

The modern history of the fragments from the Dayan collection deserves special attention. One of them (Cat. No. 7) reached the Museum attached to a zoomorphic vessel (IMJ 82.2.23/1).

Fig. 16. The "fabricated" kernos from the Dayan Collection (Reg. No. 82.2.2). After it arrived at the Israel Museum it was detached into seven individual fragments of different genuine kernoi: Cat. Nos. 2, 5, 6, 9, 12 (Photo © The Israel Museum, Jerusalem).

Cat. No. 1, top and front views, Fragments 1/1, 1/2, 1/3 (Photo © The Israel Museum, Jerusalem, by Vladimir Naikhin).

Cat. No. 2, front, side and top view (Photo © The Israel Museum, Jerusalem, by Vladimir Naikhin).

The mismatch was immediately recognized by the Museum conservationists and was subsequently detached. Similarly, seven other fragments (Cat. Nos. 2, 5, 6, 9–12) were received as one "complete" kernos (see Fig. 16), and were separated to seven fragments of different kernoi. An additional "nearly complete" kernos from the Dayan Collection (Cat. No. 13) comprises five different fragments of five different kernoi. It is unknown whether it was Dayan himself who glued the objects together or they were bought this way, but the plaster used for this work, which resembles other "restoration" works made by Dayan himself hints at the former. Additionally, a nearly complete kernos and a fragment of another seem to be modern fakes (Cat. Nos. 14, 15).

Notably, a rather large number of fragments can be associated with Late Philistine Decorated Ware (LPDW) dated to the Iron Age IIA (Ben-Shlomo, Shai and Maeir 2004). Apparently, most of these should be assigned to the site of Ashdod, either because of their annotations (Cat. Nos. 3, 4, 8 [the latter does not belong to the LPDW]), their general appearance (Cat. Nos. 2, 5, 6), or their on-site parallels (Cat. Nos. 7, 9–12, 13/1). Dayan himself recorded his illicit digging at the site of Ashdod (Dayan 1978: 132–133), which, to date, has yielded the largest known assemblage of kernoi, comprising of over 100 published examples[11] (Bignasca 2000: O87–O90, O111–O183; Hachlili 1971: 132; Dothan 1971: Figs. 66–71; Dothan and Ben-Shlomo 2005: Figs. 3.34:13; 3.86; 3.96:1–3; 3.116:1), to which the following catalogue contributes some additions.

1. Fragments of a kernos with pomegranate-shaped attachments

Date: Iron Age I–II

Site: Unknown

Dimensions: outer ring diameter: 20.2; ring H: 2.9; ring W: 2.7; Fragment 1/1 H: 7.8, W: 4.4; Fragment 1/2 H: 7.4, W: 3.8; Fragment 1/3 H: 7.3, W: 3.5

Provenance and accession no.: Bequest of Dan Barag, Jerusalem, 2010.65.2498

Description and notes: Three fragments of a tubular ring; on each of them a pomegranate-shaped vessel was attached; all continue the hollow section of the ring. The pomegranates

Cat. No. 3, front, side and top view (Photo © The Israel Museum, Jerusalem, by Vladimir Naikhin).

Cat. No. 4, front, side and top view (Photo © The Israel Museum, Jerusalem, by Vladimir Naikhin).

are hollow and open at their upper parts. The body of the pomegranates is rounded, and their calyx is schematically depicted; the petals are not represented; the rim is flattened. The vessel is made of light brown crumbly ware, and the surface is covered entirely with a red wash. On the edge of the largest fragment slight remains of an additional attachment are discernible to the touch; it thus seems that the attachments were rather densely located on the ring.

Parallels: No exact parallels were found, but three kernoi from Beth-She'an seem to be close in form (Bignasca 2000: 201; Pl. 8:O67, O69, O74).

2. A bull head attachment of a kernos

Date: Iron Age IIA

Site: Unknown

Dimensions: H: 6; W: 6.2; Depth: 5.3

Provenance and accession no.: Moshe Dayan collection, 82.2.2/2

Description and notes: Reddish-brown ware, red-slipped and burnished. Black painted triangle filled with white paint on forehead; remains of black and white paint on right horn (Late Philistine Decorated Ware). Left ear missing. The eyes are formed from applied impressed pellets.

Parallels: Dothan and Freedman 1967: Fig. 44:4; Dothan 1971: Figs. 68:6; 69:1–6; 70:1–5; Dothan and Ben-Shlomo 2005: Figs. 3.86:7–10; 3.96:1; 3.116:1; Ben-Shlomo 2010: Fig. 3.56:2–5; Gilmour 2014: Pl. 17:6; Kletter 2016: Fig. 15.9A:1, 2.

3. A bull head attachment of a kernos

Date: Iron Age IIA

Site: Ashdod

Dimensions: H: 4.4; W: 4.3; Depth: 4.5

Provenance and accession no.: Bequest of Dan Barag, Jerusalem, 2010.65.2491

Description and notes: Reddish ware, red-slipped and burnished. Black and white painted lines around the neck, and in a triangle on forehead (Late Philistine Decorated Ware). Vestiges of clay stumps probably attest that ears and horns originally were attached to the bull's head (none survived). The eyes are applied impressed pellets.

Parallels: see above Cat. No. 2.

Cat. No. 5, front, side, rear and top view (Photo © The Israel Museum, Jerusalem, by Vladimir Naikhin).

Cat. No. 6, front, side, rear and top view (Photo © The Israel Museum, Jerusalem, by Vladimir Naikhin).

4. A bull head attachment of a kernos

Date: Iron Age IIA

Site: Ashdod

Dimensions: H: 5.8; W: 3.5; Depth: 5.4

Provenance and accession no.: Bequest of Dan Barag, Jerusalem, 2010.65.2492

Description and notes: light brown ware, red-slipped and burnished. Black and white painted motifs on forehead (triangle) and neck (squares) associate this example with Late Philistine Decorated Ware. Vestiges of clay stumps probably attest that ears and horns originally were attached to the bull's head (none survived). The eyes are applied impressed pellets and lined with black paint. Out of all zoomorphic heads published here, this example is the only suspected to be of a zoomorphic vessel rather than a kernos, owing to its size and the nature of the back part of the neck.

Parallels: see above Cat. No. 2.

5. A bird-shaped attachment of a kernos

Date: Iron Age IIA

Site: Unknown

Dimensions: H: 7.9; W: 6.8; Depth: 8.4; Inner rim diameter: 1.9

Provenance and accession no.: Moshe Dayan Collection, 82.2.2/1

Description and notes: Complete bird figure, the openings of which are from its back and legs. The neck is solid; one eye was not preserved. The ware is dark brown; the entire bird is red-slipped and well-burnished. The left eye, neck, wings, tail, and the rim of the vessel are painted in black lines over patches of white paint. This is one of the finest examples of animal figures related to the Late Philistine Decorated Ware (Ben-Shlomo, Shai and Maeir 2004).

Parallels: Dothan 1971: Fig. 71: 1 (and see also no. 2 in the same figure, which is closed on the top, as opposed to the present specimen).

6. A bird-shaped attachment of a kernos

Date: Iron Age IIA

Site: Unknown

Dimensions: H: 4.2; W: 5.4; Depth: 5.7; Inner rim diameter: 1.5

Provenance and accession no.: Moshe Dayan Collection, 82.2.1085/1

Cat. No. 7, front, side and top view (Photo © The Israel Museum, Jerusalem, by Vladimir Naikhin).

Cat. No. 8, front, side and top view (Photo © The Israel Museum, Jerusalem, by Vladimir Naikhin).

Description and notes: Dark brown ware, red slipped and burnished. The left wing is painted with black lines over a white patch and, hence, related to the Late Philistine Decorated Ware. The head, (solid) neck, right wing and tail are missing. The openings are from the back and legs. Incorrect reconstructions of the missing parts (Fig. 16) were detached by Museum's staff upon accession.

Parallels: see above Cat. No. 5.

7. Animal head attachment of a kernos lacking ears and horns

Date: Iron Age I–IIA

Site: Unknown

Dimensions: H: 3.1; W: 2.6; Depth: 3.9

Provenance and accession no.: Moshe Dayan collection, 82.2.23/2

Description and notes: Cream slip on dark brown ware. The eyes are applied impressed pellets. Remains of black paint on the forehead, neck and in the eyes.

Upon arrival at the Israel Museum, it was found attached erroneously to a zoomorphic vessel in the shape of a bird (82.2.23/1), which were separated in the Museum's laboratories.

Parallels: Dothan and Freedman 1967: Fig. 45: 2–4; Dothan 1971: Figs. 66: 9–13; 67: 1–3; Dothan and Ben-Shlomo 2005: Figs. 3.79:2; 3.86:11; 3.96:3; Ben-Shlomo 2010: Fig. 3.8:1–3.

8. An animal head attachment of a kernos lacking ears and horns

Date: Iron Age I–IIA

Site: Ashdod

Dimensions: H: 3.4; W: 3.2; Depth: 4.5

Provenance and accession no.: Bequest of Dan Barag, Jerusalem, 2010.65.2493

Description and notes: Remains of cream slip on light brown ware. The eyes are applied impressed pellets. Black painted triangle with two horizontal lines on forehead.

Parallels: see above Cat. No. 7.

9. A miniature cup (or funnel) attachment of a kernos

Date: Iron Age IIA

Site: Unknown

Dimensions: H: 5.7; Diameter: 3.7; Inner rim diameter: 1.7

Provenance and accession no.: Moshe Dayan Collection, 82.2.1085/2

Cat. No. 9, top and front view (Photo © The Israel Museum, Jerusalem, by Vladimir Naikhin).

Cat. No. 10, front and top view (Photo © The Israel Museum, Jerusalem, by Vladimir Naikhin).

Description and notes: Reddish-brown ware; red-slipped and well-burnished. A wide ridge is applied beneath the rim.
Parallels: Dothan and Freedman 1967: Fig. 45:6; Dothan 1971: Fig. 71:9, 11, 13; Dothan and Ben-Shlomo 2005: Fig. 3.86:2–4.

10. Fragment of a tubular ring with the remains of two attachments, one open and one closed

Date: Iron Age IIA
Site: Unknown
Dimensions: outer ring diameter: 13.8; ring H: 2.7
Provenance and accession no.: Moshe Dayan Collection, 82.2.1085/3
Description and notes: Dark reddish-brown ware; red slip and well-burnished. A quarter of a complete kernos with remains of two attachments on the ring, one of which does not continue from the void of the ring therefore it cannot be filled from the ring. The complete kernos probably had four attachments.
Parallels: Dothan and Freedman 1967: Fig. 45:5, Pl. XXVIII:5; Dothan 1971: Fig. 71:5, Pl. LXII:5.

11. Fragment of a tubular ring with an opening for a missing attachment

Date: Iron Age IIA
Site: Unknown
Dimensions: outer ring diameter: 13.4; ring: 2.2
Provenance and accession no.: Moshe Dayan Collection, 82.2.1085/4
Description and notes: Dark reddish-brown ware; red slip and well-burnished.
Parallels: Dothan and Freedman 1967: Fig. 45:7; Dothan 1971: Fig. 71:3, 4; Dothan and Ben-Shlomo 2005: Fig. 3.86:6.

12. Fragment of a tubular ring with the remains of an attachment

Date: Iron Age IIA

Cat. No. 11, front and top view (Photo © The Israel Museum, Jerusalem, by Vladimir Naikhin).

Cat. No. 12, front and top view (Photo © The Israel Museum, Jerusalem, by Vladimir Naikhin).

Site: Unknown
Dimensions: Outer ring diameter: 14; ring: 2.3
Provenance and accession no.: Moshe Dayan Collection, 82.2.1085/5
Description and notes: Light brown ware; red slip and well-burnished. The remains of the attachment indicate that it does not continue from the void of the ring therefore it cannot be filled from the ring.
Parallels: see above Cat. No. 10.

13. Fragments of various kernoi assembled into one pseudo-kernos

Date: Iron I–IIA
Site: Unknown
Dimensions: outer ring diameter: 14.9; Fragment 13/1 H: 5.3, W: 3.6, Depth: 5.5; Fragment 13/2 ring H: 2.8; Fragment 13/3 ring H: 3.6, with attachment H: 8.7; Fragment 13/4 H: 2.7, with attachment H: 4.5; Fragment 13/5 H: 3.8, with attachment H: 3.7
Provenance and accession no.: Moshe Dayan Collection, 82.2.766
Description and notes: This "kernos" was made from five fragments of different kernoi that were attached to each other with modern plaster reconstructions. The ancient fragments appear to be similar, but close examination revealed that each one of them has a different width, and none were attached to each other. Moreover, the positions of the attachments and openings on the ring seem disproportionate. The five fragments include (counter-clockwise from the spout): Fragment 13/1 is a spouted animal head lacking ears and horns. Light brown ware and cream slip. The eyes are applied pellets and the forehead has a projection. The head is decorated in black paint with a triangle on the forehead, circles around the eyes, a dot as the pupil and three horizontal lines on the neck; Fragment 13/2 is a tubular ring fragment which was located below the spout. Light brown ware and cream slip; Fragment 13/3 is part of a tubular ring with a high broken attachment that shows the remains of its lower part. Its height might hint that it was a spouted animal (bull?). Light brown ware with remains of cream slip; Fragment 13/4 is part of a tubular ring with the remains of a broken attachment. Light brown ware with white slip; Fragment 13/5 is part of a tubular ring with the remains of a broken attachment. Light brown ware with white slip. The "kernos" remains complete since its current configuration is now part of the biography of the vessel, and museological story.
Parallels: Fragment 13/1, see above Cat. No. 7; Fragments 13/2–13/5, Mazar 1980: Fig. 40: a-b; Dothan and Porath 1982: Fig. 28:2; Dever 1986: Pl. 57:18; Dothan and Ben-Shlomo 2005: Figs. 3.34:13; 3.86:5; Gilmour 2014: Pls. 13:5; 18:5.

14. Modern fake(?) kernos

Date: Modern(?)
Site: Unknown
Dimensions: Cup 1 H: 5.9, D: 6; Cup 2 H: 5.6, D: 5.6; outer ring diameter: 16.1; ring H: 2.3; ring W: 1.9
Provenance and accession no.: Moshe Dayan Collection, 82.2.767/1
Description and notes: Several clues hint at this object's modern origin: (1) The very sandy buff ware gives it a "modern

Cat. No. 13, top, front and side view (Photo © The Israel Museum, Jerusalem, by Vladimir Naikhin).

Cat. No. 14, top and front view (Photo © The Israel Museum, Jerusalem, by Vladimir Naikhin).

feeling" to the object; (2) Both cups do not continue into the void of the ring and therefore cannot be filled through the ring; (3) The ring is tubular, but the inner dimeter of its inner part is only 0.4 cm; (4) Both cups were attached to the ring in a careless way: the attachment between these parts was not smoothened and can be easily seen; (5) the two cups look similar, but at close examination reveal their different size and morphology; (6) the entire vessel was carelessly made, not in accordance with other kernoi from controlled excavations; (7) the ring is not round, but more ellipsoid. Individually, each of these

features might be considered characteristic of a genuine kernos; however, their combination points to a modern production for this vessel.

A thermoluminescence analysis was recently conducted on the vessel (Oxford authentication labs, Sample No. N120h22, 21 December 2020), demonstrating that the kernos was last fired between 300 to 500 years ago. We were not able to locate any reasonable parallels from this timeframe and to date, these results require further research. In any event, it is clear that this kernos (and Cat. No. 15 which is similar) is not from the Iron Age as previously thought.

Parallels: Macalister 1912b: Pl. 172: 15.

15. Modern fake(?) kernos fragment (cup and a ring fragment)

Date: Modern(?)

Site: Unknown

Dimensions: H: 6.1; ring H: 2.3; cup D: 5

Provenance and accession no.: Moshe Dayan Collection, 82.2.767/2

Description and notes: Sandy reddish-brown ware with many small black and white inclusions. The ring is solid, so naturally there is no connection between the cup and the ring. The cup is almost identical to the small cup of Cat. No. 14, although in Cat. No. 15 the outer connection between the cup and the ring is smoothed. For similar reasons as in Cat. No. 14, this fragment is considered a modern fake. The shape of the breaks in Cat. Nos. 14 and 15, as well as the known practice of attaching together unrelated fragments in the kernoi from the Dayan Collection (see above), suggest that Cat. Nos. 14 and 15 were glued together in the past or were prepared to be attached to one another. No relevant Museum records exist. Despite their similarities in shape, the many differences in their production technique attest to their relation to two different vessels.

Parallels: see Cat. No. 14.

Cat. No. 15, top and front view (Photo © The Israel Museum, Jerusalem, by Vladimir Naikhin).

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Postscript

While this article was being finalized for publication, I was informed by David Ilan regarding his recent article proposing that kernoi-rings might also have been utilized for the consumption of mind-altering liquids and smoke during religious rituals (Ilan 2022). This intriguing idea deserves thorough consideration but, regrettably, exceeds the scope of my own present contribution. Nevertheless, reference to this study is offered, as it may be of interest to the reader and contribute to further research.

Notes

1 Apparently, since Bahat (1986; 1992) published his report and summary only in Hebrew, these important sources were left largely unknown to scholars who don't read Hebrew.

2 Even the scale of the drawing and the details of the decorations are wrong (Bahat 1986: 105); hence, new drawings of the vessel are published here (Figs. 7 and 14).

3 Although the corpus of Southern Levantine kernoi published by Bignasca (2000) is comprised of some 160 vessels from the Late Bronze to the Iron Age, we believe one should re-explore this subject for the following reasons: (1) Bignasca did not include all the specimens that were known at the time of his publication, such as those from Kinneret (Fritz 1990: Pl. 103:7), Tel Qiri (Hunt 1987: Fig. 45:4), Hurvat Tzror (Raban 1991: Fig. 3:5), Tel Shamat (Zori 1962: Fig. 1A), Tel Dothan (Colley and Pratico 1995: 162) and Gezer (Dever 1986: Pls. 50:2; 57:18); (2) Since his publication, additional kernoi were uncovered at Gezer (Gilmour 2014: Pls. 13:5; 18:5); The City of David (De Groot and Bernick-Greenberg 2012: Figs. 4.47: 17; 9.4:1–5), Tel Batash (Mazar and Panitz-Cohen 2001: Pl. 101: 10), Yavneh (Kletter 2015a), Tell es-Safi/Gath (Szanton 2016: 74–75, Pl. 13:1), Tel Malḥata (Kletter 2015b: 570–571, Fig. 94: 4), Tell Zerāʿa (Vieweger and Häser 2010: 13, Pl. 7B) and see also the catalogue below; (3) Bignasca's research covers a very wide geographical and chronological range. While this allows for a broad perspective, it affects the reliability of the conclusions. We believe that kernoi in different regions and periods did not share the same function and meaning.

4 This article does not deal with the related kernos-bowls, which are even rarer than kernoi, but known from various Early Iron Age sites in the southern Levant such as Turʿan (Gal 1993b: Fig. 3); Tel Qashish (Ben-Tor and Bonfil 2003: Fig. 146:3, Photo 150); Dor (Gilboa et al. 2018: Pl. 20.55:20); Tell ʿEitun (Tzaferis et al 1968: 7); Tell el-Hesi (Bignasca 2007), and vessels from unknown provenance (Ornan 1986: 96–97; Bignasca 2007: 52); see discussions and many additional examples in Mazar (1980: 106–108) and Dever (2001: 121–125). This type still awaits thorough research.

5 A nearly complete example was found in Tell Zerāʿa (Vieweger and Häser 2010: 13, Pl. 7B), but as its publication is limited to a single-photo, its exact state cannot be established.

6 Additional fragments of kernoi, quite similar to the one from Sasa should also be mentioned: several items from Megiddo (Schumacher 1908: 136, Fig. 204; Watzinger 1929: 84; Loud 1948: Pl. 145:16; Dothan 1982: 223, Pls. 4, 5) and one from Gezer (Macalister 1912a: Fig. 390:1). Almost all Iron Age I specimens, including the nearly complete example from Megiddo, were lavishly decorated in red and black, like the Sasa kernos.

7 It could have also been a caprid or a ram, as suggested by three parallels from Tell el-Ḥammah, Tel Qasile and Ashdod (Bignasca 2000: Pls. 9: O82; 10: O100; 13: O170), two of which can be dated to the Iron Age IIA.

8 Additional fragments that Mazar (1980) and Bignasca (2000) dated to the Iron Age I are either not necessarily from this period (Shechem and Jericho) or cannot be definitively identified as kernoi (e.g., zoomorphic spouts that might have originated from zoomorphic vessels).

9 Another Late Bronze Age II kernos fragment from Beth-She'an was recently published (Yahalom-Mack and Mazar 2006: 159, Fig. 6.1:3).

10 All photos of catalogue © The Israel Museum, Jerusalem, by Vladimir Naikhin.

11 Theoretically, some of the zoomorphic spouts could have been related to vessels other than kernoi, but given the small number of zoomorphic vessel fragments at Ashdod, in contrast to the large amount of kernoi, it would not seem to change the general picture.

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