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ABBREVIATIONS

AASOR	Annual of the American Schools of Oriental Research
ADAJ	Annual of the Department of Antiquities of Jordan
AJA	American Journal of Archaeology
AfO	Archiv für Orientforschung
ANET	Ancient Near Eastern Texts Relating to the Old Testament[3], ed. J.B. Pritchard, Princeton, 1969
BA	The Biblical Archaeologist
BASOR	Bulletin of the American Schools of Oriental Research
BT	Babylonian Talmud
CAD	Chicago Assyrian Dictionary
CIS	Corpus Inscriptionum Semiticarum
DJD	Discoveries in the Judaean Desert
DSD	Dead Sea Discoveries
EI	Eretz-Israel: Archaeological, Historical and Geographical Studies
ESI	Excavations and Surveys in Israel
IAA Reports	Israel Antiquities Authority Reports
IEJ	Israel Exploration Journal
JAOS	Journal of the American Oriental Society
JBL	Journal of Biblical Literature
JCS	Journal of Cuneiform Studies
JEA	Journal of Egyptian Archaeology
JNES	Journal of Near Eastern Studies
KAI	W. Donner and W. Röllig: *Kanaanäische und aramäische Inschriften* 1–3, Wiesbaden, 1962–1964; 1[5], 2002
NEAEHL	The New Encyclopedia of Archaeological Excavations in the Holy Land (English Edition), Jerusalem, 1993
PEQ	Palestine Exploration Quarterly
PT	Palestinian Talmud
QDAP	Quarterly of the Department of Antiquities in Palestine
RA	Revue d'Assyriologie et d'Archéologie Orientale
RB	Revue Biblique
RE	Pauly-Wissowa's Realencyclopädie der classischen Altertumswissenschaft
RQ	Revue de Qumran
VT	Vetus Testamentum
ZA	Zeitschrift für Assyriologie
ZDPV	Zeitschrift des Deutschen Palästina-Vereins

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A Late Bronze IIB Silver Hoard from Tel Abel Beth Maacah*

Naama Yahalom-Mack
The Hebrew University of Jerusalem

Nava Panitz-Cohen
The Hebrew University of Jerusalem

Tzilla Eshel
University of Haifa

Robert Mullins
Azusa Pacific University

ABSTRACT: During the first season of excavations at Tell Abil el-Qameḥ, identified with biblical Abel Beth Maacah, a fused clump of silver items inside a small pottery jug was found in a Late Bronze IIB context. This article presents the context and proposed date of the hoard, a description of its contents, chemical and isotope analyses and suggested provenance of the silver, as well as the significance of the find in the broader regional, chronological and cultural context.

LOCATION, BACKGROUND AND EXCAVATION OF THE SITE

Tell Abil el-Qameh is located *c*. 3 km south of the border between Israel and Lebanon, 6 km west of Tel Dan and 35 km north of Tel Hazor (fig. 1). The tel, sitting astride the Iyyon River, is located at the junction of several important thoroughfares: north–south through the Hula Valley to the Lebanese Beqʿa, west towards Tyre and Sidon on the Lebanese/Phoenician coast (35 km away) and northeast towards Damascus (70 km as the crow flies).

The tel, covering an area of 100 dunams (10 hectares), comprises a lofty upper mound in the north and a larger lower mound in the south, joined by a moderately sloping saddle (fig. 2). Apart from the affinity between the names ‘Abil’ and ‘Abel’, the identification with biblical Abel Beth Maacah[1] is based on the order of

* We wish to thank Prof. Yigal Erel, head of the Geochemical Laboratory at the Institute of Earth Sciences, the Hebrew University of Jerusalem. This research was supported by the Israel Science Foundation (grant no. 859/17).

1 In second-millennium BCE sources the site is called Abel (Dever 1986: 212–214). The suffix ‘Beth Maacah’ was apparently added during the early Iron Age, possibly when the city became the centre of a tribal entity named Beth Maacah (Younger 2016: 215).

Fig. 1. Location map (by Ruhama Bonfil)

Fig. 2. View of the tel, looking east (photo by Robert Mullins)

its appearance in the biblical lists of conquered sites in the Upper Galilee and the Hula Valley, first by the Arameans (1 Kings 15:20) and then by the Neo-Assyrians (2 Kings 15:29).

Surveys and excavations at the site[2] have exposed continuous occupation layers with architecture from the Middle Bronze Age IIB until the Roman/Byzantine periods, with a possible lacuna during the Iron Age IIB. Pottery from the Early Bronze Age II–III and from the Early Islamic and medieval periods was recovered in the surveys and excavations. A small Arab village, Abil el-Qameḥ, occupied approximately one third of the area of the tel until 1948 (fig. 3).

Fig. 3. Aerial view of the tel, 1945, showing the Arab village of Abil el-Qameḥ and the excavation areas (Aerial Photographic Archive, Geography Department, the Hebrew University of Jerusalem, taken by the Royal Air Force, 1945)

2 A survey was conducted in 1972 by Prof. W.G. Dever of the University of Arizona (Dever 1986). The current project includes to date a survey (2012) and six seasons of excavation (2013–2018) under the joint auspices of Azusa Pacific University of Los Angeles and the Hebrew University of Jerusalem. Excavation licenses were granted by the Israel Antiquities Authority and the Israel Nature and Parks Authority. For preliminary reports and general articles, see Panitz-Cohen, Mullins and Bonfil 2013; 2015; Panitz-Cohen and Mullins 2016; Yahalom-Mack, Panitz-Cohen and Mullins 2018; Yahalom-Mack *et al*. 2018. Annual field reports are posted on www.abel-beth-maacah.org.

THE FIND CONTEXT AND DATE OF THE HOARD

The silver hoard was found in Area F, located at the southern end of the lower mound and commanding a view of the Hula Valley (Panitz-Cohen, Mullins and Bonfil 2013: 39–40; http://www.abel-beth-maacah.org/index.php/2013-excavation-report-area-f-2). Here, a fortification built of large, roughly hewn stones was uncovered, delineating a rampart to its south. The massive northern wall gave it the appearance of a tower when viewed from inside the city. The northern face of this 'tower' was abutted by three main occupation phases (and several sub-phases), consisting of walls, features and debris layers. The pottery associated with the earliest of these phases points to a date in the MB II/LB I transition, while the two additional main phases (and their sub-phases) date from the Late Bronze Age. Since neither the bottom of the fortification nor any floor clearly associated with its foundations has yet been reached, we cannot determine the exact date of its construction. The preserved top of the rampart was cut by numerous pits and silos containing Iron I finds. Thus, it seems that the fortification system was built sometime in the Middle Bronze Age II, was used throughout the Late Bronze Age, and went out of use in the Iron Age I (fig. 4).

The western part of the 'tower' wall was preserved at a lower level than the eastern end, the upper stones having been robbed or possibly damaged by a large pit, apparently dating from the Persian/early Hellenistic periods. Abutting the uppermost preserved course of this western part was an earthen floor (L1355), on which lay a small concentration of LB pottery, several worked stones and two large ring-shaped basalt stones (fig. 5). The jug with the silver hoard[3] was uncovered in the lower part of a 45 cm deep debris layer (L1342) that covered the floor. It rested above the floor, not hidden below it (bottom level of jug: 363.65 m; level of floor: 363.50 m), and was leaning against one of the stones of the fortification wall (fig. 4); a stone borders it on the east, creating a kind of shallow niche (fig. 6). Thus, the jug was visible and accessible to those who used this room. The floor was bounded on the north and east by stone walls; the eastern wall contained an entranceway. The corner between these two walls was cut by an Iron Age I pit (L1364) and a silo (L1374).

The stratigraphic context of the jug with the hoard points to the latest LB occupation in Area F, assigned to the LB IIB. Based on their typology (see below), we assume that the silver pieces and the jug all date from the time of deposition, although it is possible that at least some of the items are earlier. Due to the limited excavation here, as well as the damage caused by the later pit, the nature of the

3 The reg. no. of the jug is 13347 and of the hoard 13482.

Fig. 4. Aerial view of Area F, showing the MB II fortification; arrow indicates find spot of the hoard (photo by Robert Mullins)

Fig. 5. Pottery and stones on the floor level (after removal of the jug; find spot marked with yellow circle; photo by Robert Mullins)

a

b

Fig. 6. The hoard jug *in situ*; a) looking south; b) looking east (photos by Robert Mullins)

context remains unknown — apart from the fact that it is a room bordered on the south by the fortification façade wall and on the north and east by stone walls. It is notable that this final Late Bronze occupation did not end in a violent destruction, as there are no traces of conflagration or of havoc wreaked here or in other places where the LB–Iron I transition was excavated (e.g., Area A in the centre of the mound). Apparently, this occupation terminated in abandonment, with some items, including the jug with the hoard, left on the floor *in situ*.

THE JUG

The jug that contained the hoard is a local imitation of a Cypriot Base-Ring jug (a 'Bilbil') (fig. 7). It is made of a non-Cypriot, probably local, clay (based on visual examination), reddish-yellow with many white and some grey inclusions. Very faint traces of a design painted in black can be discerned on its exterior. Most of the handle and the entire neck of the jug were missing; it appears that the join of

Fig. 7. The jug and the hoard as extracted (before cleaning and conservation) (photo by Gabi Laron)

neck to shoulder was neatly and deliberately filed around the break, which was coated with a thin layer of solid whitish-grey material, which also covered the stump of the handle. It thus seems that the break was intentional and meant to facilitate the insertion and extraction of the packet of silver items (as well as other possible items that had been stored in the jug; see below, n. 5 on p. 142). This practice of deliberate breakage of the neck/rim in order to allow for easier access to the contents has been noted in other vessels used for storing silver hoards, such as at Akko and ʿEin Ḥofez in the Iron Age II (Eshel *et al*. 2018: 211).

DESCRIPTION OF THE HOARD

The small (*c*. 6 cm wide and high) packet of fused, corroded silver pieces rested in the bottom of the jug, surrounded by what initially looked like basketry fibres (fig. 7); radiocarbon analysis showed them to be modern — apparently roots that had infiltrated the jug.[4] Even though no traces of cloth were found, their fusion suggests that they might have comprised a bundle. The silver was extracted and cleaned by Miriam Lavi, head of the Conservation Laboratory of the Institute of Archaeology of the Hebrew University of Jerusalem.

The hoard consists of 12 pieces: six complete earrings (one a twisted wire),

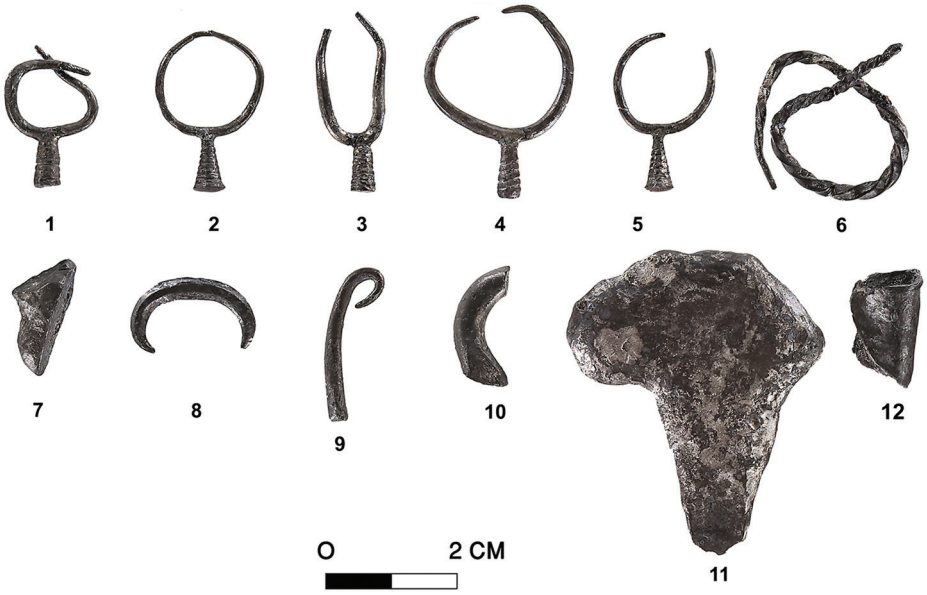

Fig. 8a. The contents of the hoard (photo by Gabi Laron)

4 The radiocarbon analysis was conducted at the D-REAMS laboratory at the Weizmann Institute of Science.

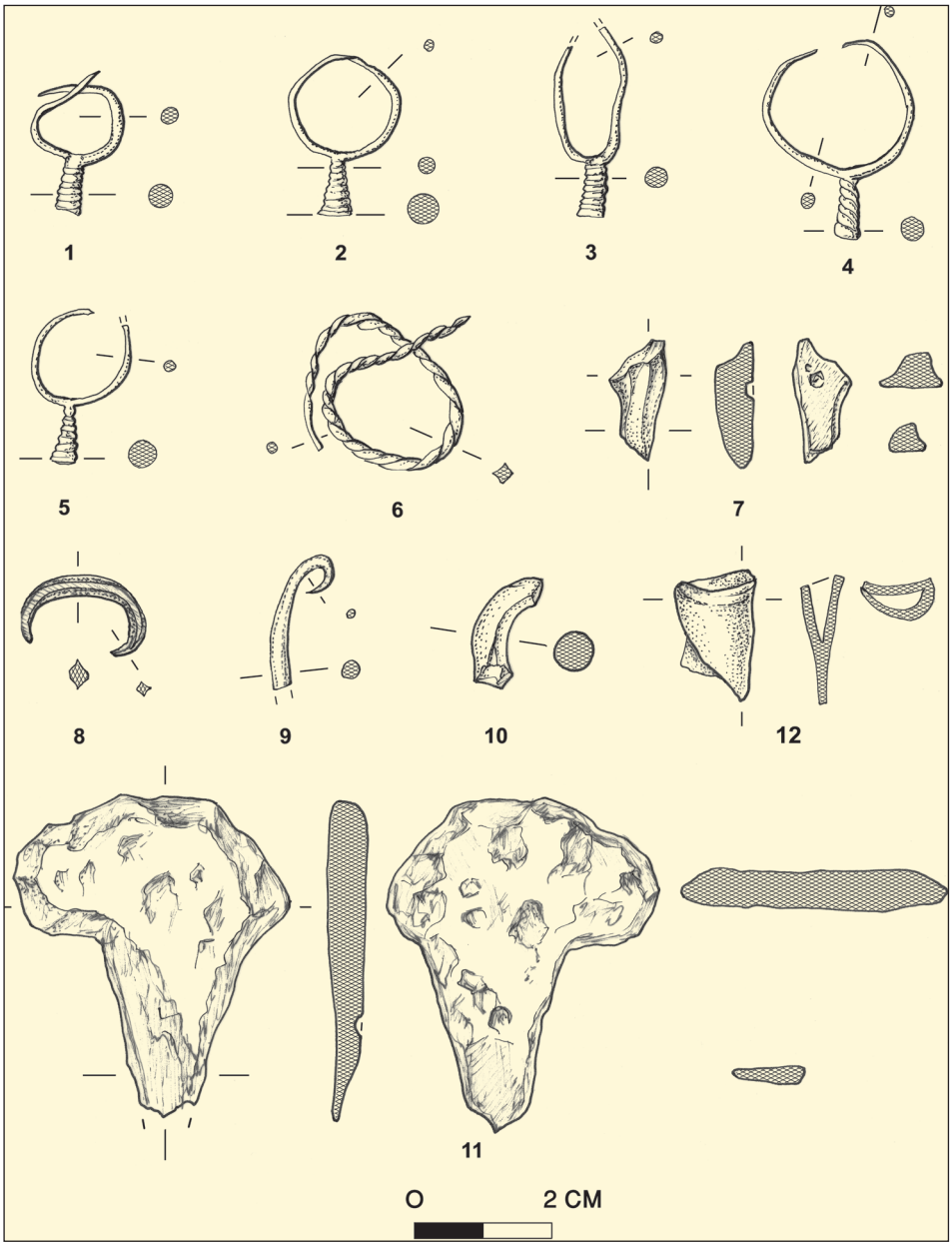

Fig. 8b. The contents of the hoard (drawing by Yulia Rudman)

an ingot (poured silver), a folded sheet fragment and four cut items (*hacksilber*[5]) — an ingot and three pieces of jewellery (fig. 8; the numbers in the illustrations follow the registration numbers listed below). The hoard weighed 59 gr.

5 Hence the Hebrew expression בצע כסף, paralleled in the German *Hacksilber*, describing silver in any form (including jewellery) which was hacked (Yeivin 1990; Eshel *et al*. 2018).

Hoop Earrings with Hanging Pendant
Five almost identical earrings (reg. nos. 13482/1–5), composed of an open ring or hoop that closes on top, with a round section, and a conical pendant hanging at the bottom; the pendants are incised with parallel horizontal lines. The shape of three earrings is well preserved, while the other two are bent and folded over at the edges. The earrings belong to Golani's Type II1b (Golani 2013: 104–106); he describes the pendant as a 'solid drop-shaped attachment'. Similar earrings made of gold originated in LB I contexts at Tell el-ʿAjjul (Petrie 1932: pl. 3:17–20; 1933: pl. 7, upper right; 1934: pl. 34:533); there, the pendants are decorated with an incised net pattern.

The closest parallel in material and time to the Abel earrings is found in a huge hoard of gold and silver from el-Amarna, apparently dated to the LB IIA; one earring of this type made of silver was found (Frankfort and Pendlebury 1933: 61, pl. XLII:4; Gestoso-Singer 2013: 259; see Bell 1986: ill. 2 for a schematic drawing of this earring). It is difficult to determine whether this earring type is Egyptian or Canaanite, as the main parallels come from the Tell el-ʿAjjul hoard and the Amarna hoard, while a stone mould that produced such earrings in one piece (although with a different design on the suspended part) was found at Hazor in Stratum XIV (Yadin *et al*. 1961: pl. CLVIII:31), although no such earrings were found at Hazor.

Twisted Wire (Earring?)
A square-sectioned twisted strip with tapering edges (reg. no. 13482/6) had been bent to overlap on both ends. Larger copper-based twisted wires dated to the Iron Age were classified by Golani (2013: type I.3, fig. 19) as rings. However, twisted wires were, in fact, used during the Late Bronze Age as earrings. Many examples made of gold were found at Tell el-ʿAjjul in LB I contexts (e.g., Petrie 1934: pl. 13, bottom row, pl. 14:38–41; Petrie, Mackey and Murray 1952: pl. 7). A twisted wire made of silver was found in the Amarna hoard (Gestoso-Singer 2013: 259).

Cut Ingot
A small piece with cut edges (reg. no. 13482/7). Such pieces were hacked or chiseled off larger ingots, such as reg. no. 13482/11 (see below), probably during economic transactions.

Crescent Pendant
This piece (13482/8) is a crescent-shaped pendant fragment (Golani type I.4b; after McGovern 1985: 68–70, type VI.B.1, fig. 66). These often have a tubular stringing attachment and are lozenge-shaped in cross-section. The fragment from Abel has this cross-section and shows traces that it had an attachment on top. McGovern lists 32 examples, 14 of which are in silver. According to him, these pendants have a long life span, beginning in the Middle Bronze Age and continuing into the

Iron I, as well as a wide geographical distribution. Among the examples he cites are pendants from Tell el-ʿAjjul, in various Late Bronze levels at Tel Beth-Shean and Megiddo, in an LB IIB hoard from Beth Shemesh and in an LB II burial at Lachish. Two similar items were uncovered in Stratum XIII at Hazor, one in silver and the other in gold (Spaer 2017: fig. 17.8:2–3). A complete silver pendant of this type was found in the Amarna hoard as well (Bell 1986: ill. 2).

Cut Jewellery
The hoard includes two hacked-off jewellery pieces (reg. nos. 13482/9–10). No. 9 is part of an earring, while no. 10 is thicker and cannot be further classified.

Ingot
This irregularly-shaped artefact (reg. no. 13482/11) can be defined as an ingot; it is the largest piece in the hoard. It was likely produced by pouring liquid silver on a flat surface. The ingot is 0.5 cm thick and weighs 44.3 gr. Eshel *et al*. 2018 suggested that objects such as no. 7 above, were chiseled off ingots such as this one during economic transactions.

Folded Sheet
This item (reg. no. 13482/12) is a small silver sheet that was folded over to meet at both ends.

CHEMICAL AND LEAD ISOTOPE ANALYSIS

Lead Isotope Analysis (LIA), which is used for the provenancing of diverse metals, is particularly effective for the provenancing of silver, as the latter is widely produced from lead ores in the cupellation process from as early as the fourth millennium BCE. In this method, lead ores are reduced to metallic lead and later oxidized for preferential separation of the lead oxide (litharge) and the precious metals (silver and gold). It has been shown that lead isotopic ratios do not significantly fractionate during the smelting, cupellation and re-melting processes. Unless mixed with other metals, the lead isotope ratios may serve as a ‘fingerprint’ of the mineral ore deposits, which can be compared with the end product (for discussion and bibliography, see Gale and Stos-Gale 1982; Hauptmann 2007: 31–38; Stos-Gale and Gale 2009; Pernicka 2014; Eshel *et al*. 2019).

Seven silver artefacts from the hoard were drilled (table 1). After the surface drillings were discarded, 10–20 mg of sample was collected. The drillings were dissolved using nitric acid. Lead concentration and additional elements were determined by Ofir Tirosh using a quadrupole Inductively Coupled Plasma — Mass Spectrometer (ICP-MS, Agilent 7500cx) at the Institute of Earth Sciences of the Hebrew University of Jerusalem. The ICP-MS was calibrated with a series

Table 1: Chemical composition of the silver objects in wt%

Sample*	Fe	Co	Ni	Cu	Zn	As	Sn	Sb	Au	Pb	Bi
ABM 1	0.012	0.0002	0.005	3.97	0.000	0.002	0.000	0.003	0.037	0.28	0.11
ABM 6	0.026	0.0001	0.010	0.63	0.001	0.003	0.000	0.002	0.041	0.06	0.03
ABM 7				2.24					0.041	0.38	
ABM 9				1.94					0.023	0.45	
ABM 10				2.00					0.000	0.38	
ABM 11				0.72					0.094	0.04	
ABM 12	0.025	0.0001	0.004	2.80	0.001	0.001	0.001	0.001	0.007	0.13	0.07

* Sample numbers correspond to the numbers in the catalogue and fig. 9.

of multi-element standard solutions (Merck ME VI), standards of major elements and a blank. A solution of internal standards (50µg/l Sc, 5µg/l Re and 5µg/l Rh) was injected alongside the samples during the analytical session for drift correction. USGS SRMs (T-201, T-207, T-209) were examined after calibration for accuracy assessment. Estimated precision of the major and trace elements are 3% and 5%, respectively. Major and trace elemental accuracy was ±5%. Following the separation of Pb in columns (Erel *et al*. 2006), lead isotopic ratios were measured using Neptune plus multi-collector ICP-MS in the Hebrew University laboratory mentioned above. Thallium was used for mass-bias correction. SRM-981 standard was run with the samples, yielding the following values (2σ, n=5): $^{206}Pb/^{204}Pb$ = 16.9302±0.0014, $^{207}Pb/^{204}Pb$ = 15.483±0.002, $^{208}Pb/^{204}Pb$ = 36.671±0.004.

Analytical Results

The results of the analysis show that the artefacts in the hoard contain silver with 0.6–4% Cu, 0.04–0.45% Pb and 0.01–0.09% Au and additional elements in trace concentrations (table 1). This quite homogeneous composition is indicative of unalloyed/unmixed silver, especially in comparison to silver from the Iron Age I, when it has been demonstrated that silver was alloyed with copper to a considerable degree (Thompson 2007; Eshel *et al*. 2018; Yahalom-Mack *et al*., forthcoming).

The lead isotopic ratios generally range between $^{206}Pb/^{204}Pb$ 18.77–18.88; $^{207}Pb/^{204}Pb$ 15.674–15.690; $^{208}Pb/^{204}Pb$ 38.823–38.968, while ABM12, the folded sheet, appears to have lower isotopic values for $^{206}Pb/^{204}Pb$ and for $^{208}Pb/^{204}Pb$, which could indicate a different silver source or mixing (table 2). The origin of the seven analyzed objects based on these LIA values cannot be determined with certainty, as the lead isotopic ratios do not form tight clusters and therefore could be derived from different sources or represent a mixture between two sources or more (fig. 9). However, it appears that ore sources in the western Mediterranean, which were exploited later, during the Iron Age, such as Sardinia and Iberia, can

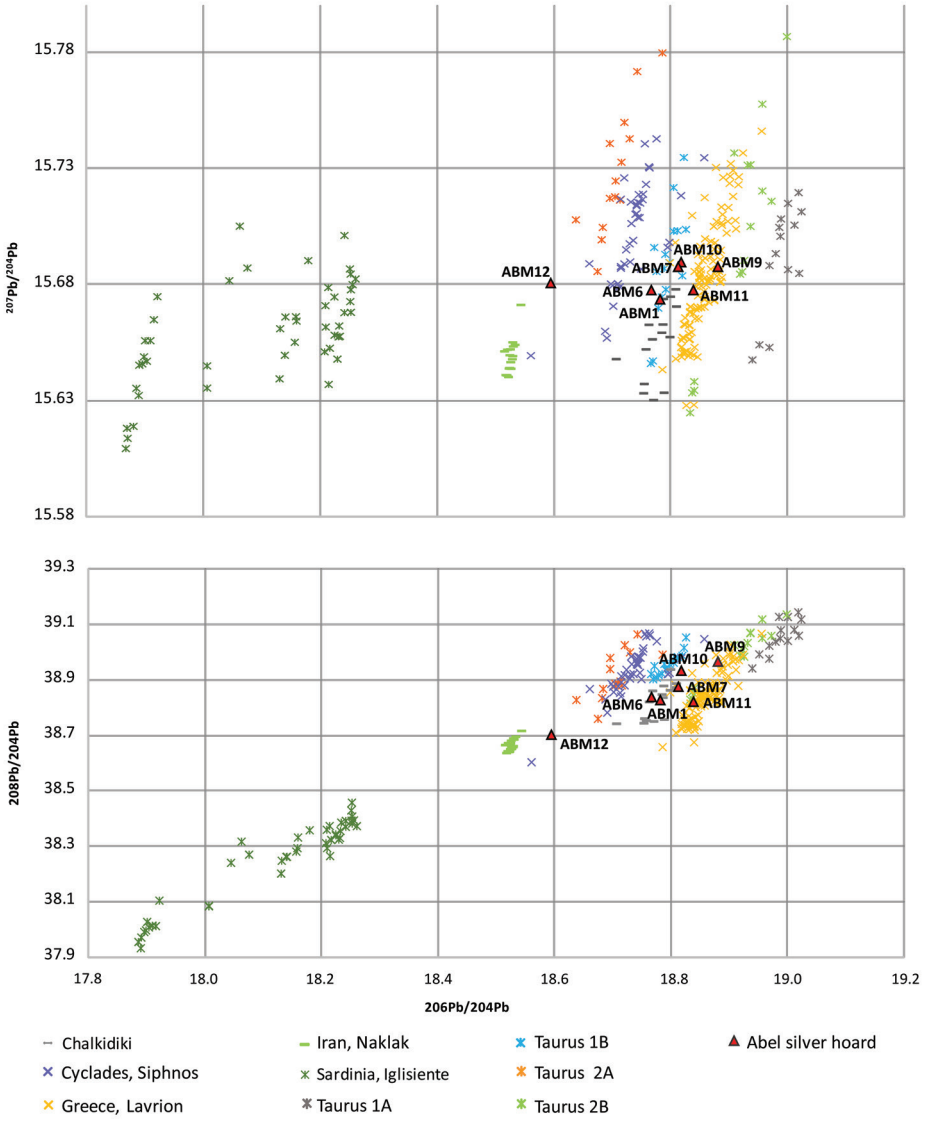

Fig. 9. Lead isotope ratios of silver objects from the Abel hoard plotted against isotopic ratios of selected lead ore sources from Anatolia, the Aegean, Iran and Sardinia (Boni and Koeppel 1985; Vavelidis *et al*. 1985; Wagner *et al*. 1986; Chalkias *et al*. 1988; Ludwig *et al*. 1989; Yener *et al.* 1991; Begemann *et al*. 2001; Valera and Rivoldini 2005; Pernicka *et al.* 2011; Vatandoust, Parzinger and Helwing 2011, http://oxalid.arch.ox.ac.uk)

Table 2: Lead isotope ratios of the silver objects

Sample*	206Pb/204Pb	207Pb/204Pb	208Pb/204Pb
ABM 1	18.781	15.674	38.829
ABM 6	18.766	15.678	38.840
ABM 7	18.812	15.688	38.877
ABM 9	18.880	15.688	38.968
ABM 10	18.817	15.690	38.935
ABM 11	18.838	15.678	38.823
ABM 12	18.594	15.681	38.704

* Sample numbers correspond to the numbers in the catalogue and fig. 9.

be excluded; the same can be said for Iranian lead sources. Based on the lead isotopic ratios, it can only be stated very generally that the silver likely originated in Anatolia or the Aegean. Significantly, one artefact, the ingot (ABM 11), has lead isotopic ratios fully consistent with Lavrion in Greece.

DISCUSSION

The Hoard: Contents, Size and Value

The hoard contains complete jewellery items and *hacksilber* (two cut jewellery items and one piece cut off an ingot), as well as one complete ingot. The occurrence of cut jewellery pieces together with complete earrings indicates that the latter were kept for their weight in silver, rather than for their finished form. The silver would have been used as currency in the metal weight-based economy that prevailed at this time (see below). The irregular shape of the ingot reflects the insignificance of its morphology, as such an ingot would be chiseled into small pieces during a transaction. This practice was meant to reach the required weight of silver that the merchant needed to receive, as well as to enable a glimpse of the metal and its quality (Eshel *et al*. 2018).

The weight of the pieces in the hoard amounts to a mere 59 gr, equivalent to a little over six Ugarit shekels, weighing 9.4 gr silver each (for the value of an Ugaritic shekel, see Monroe 2010 and bibliography therein).[6] If we round the weight to 60 gr, taking into consideration that corrosion and modern cleaning reduced the weight of the artefacts, then *c*. 1/8 of a 470 gr mina is represented by

6 The hoard occupied only a small portion of the jug, and it is quite possible that it had contained more silver (or other items) that had been removed, so that the hoard we found is only a remnant of the original amount. However, there is no way to know this for sure.

the silver in the Abel hoard. For comparison, the value of a sheep in Ugarit was 1–1.5 shekels, and the value of an ox was 10–17 shekels. A woman's monthly wages in grain (or other products) equaled 0.5 shekels, while a man's wages were more than double that. It thus appears that the silver in the Abel hoard was approximately equivalent to five sheep or five monthly salaries of a male worker. In comparison, the weight of the Amarna hoard (both gold and silver) reached over 4,000 gr; the silver alone was over 1000 gr (Gestoso-Singer 2013: 254 and references therein).

The Container

The vessel, described above, is a local imitation of a Cypriot Base Ring import. The earliest imitations of such jugs began to appear with the importation of Base Ring II, reaching their peak in the thirteenth century BCE and ending at the end of the thirteenth/beginning of the twelfth centuries BCE (Tufnell 1958: 210; Bergoffen 2006: 332). Base Ring jugs were the most common imitation of all the known Cypriot imported types, especially in the Late Bronze Age IIB, although there is a debate whether this went hand in hand with a concomitant decrease in imported Cypriot jugs, as claimed by Tufnell (1958: 209–211), or whether they both appear in similar numbers at that time (e.g., Prag 1985: 160–163; Bergoffen 2006: 333). Notably, although they could have been still produced locally, imitations ceased to be made at the same time that the original imports no longer arrived at the Levant, indicating that the imitations played a cultural role as much as an economic one.

It has been suggested that the imported Base Ring jugs were used as containers for oils or precious substances, although perhaps when placed in Canaanite non-elite tombs, they could have simply been a prestigious offering, regardless of their contents (Prag 1985: 163). Imported pottery (Mycenaean and Cypriot) is understood by some scholars to have been an auxiliary product brought by merchants dealing chiefly with the elite palace-based commodity trade who created a demand in the local market by saturating it with such low-value products. These vessels became a (relatively) high-status item for sub-elite populations who could not be players in the high-level exchange between the elites (Sherratt 1999: 177–181; 2000: 83; Bergoffen 2006: 333). Were the imitations on a similar footing as the imports, so that their function, status and perception in the eyes of the consumer were considered a legitimate derivative of the 'real thing'? (Bergoffen 2006: 332). Or were these vessels *a priori* relegated to a lower status and viewed as replacement objects for those who could not afford or access the former? The answer to this question bears significance in the case of the Abel silver hoard when attempting to understand what underlies the choice of such a jug as a receptacle for the small, yet valuable, collection of silver items. Does it suggest that this vessel had an equally valued standing as the imported original and thus the choice deliberately reflected the value of the contents? Or was this

choice no more than an arbitrary act or a contingency due to lack or scarcity of imported jugs at the site (and region) at that time?

Most imitation Base Ring jugs were found in tombs (Bergoffen 2006: 332); four such jugs (although none similar in shape to ours) were found in the Mycenaean tomb at nearby Tel Dan (Biran and Ben-Dov 2002: fig. 2.59:49–52). Notably, the examples in non-funerary contexts that date from the Late Bronze Age IIB, the time of our jug, are found only at southern sites, e.g., Tel Batash, Stratum VI (Panitz-Cohen 2006: pl. 57:8), Lachish Fosse Temple III (Tufnell, Inge and Harding 1940: pl. LI:284), Lachish Stratum VII (Yannai 2004: fig. 19.31:4), Tell Beit Mirsim, Stratum C (Albright 1932: pl. 47:10) and Aphek, Stratum X12 (Gadot and Yadin 2009: fig. 8.8:10–12). In this sense, the non-funerary find context of the Abel jug is quite exceptional.[7]

The Origin and Circulation of the Silver

The lack of silver ore sources in the Levant leads us to seek the origin of the silver in the Abel hoard elsewhere. It could not be securely determined in this study, as a larger number of artefacts would be required in order to substantiate a source or to indicate the contribution of different ore sources resulting in a mixed pattern (Eshel *et al*. 2018; Eshel *et al*. 2019). The samples in this study, when regarded as a group, are oriented horizontally on the 206Pb/204Pb vs 207Pb/204Pb plot, rather than diagonally curved, as would be expected if they originated from a single coherent ore source (for explanation of the two-stage model showing growth curves for the 235U and 238U decay to 207Pb and 206 Pb, respectively, and references, see Eshel *et al*. 2019, supplementary materials). Therefore, we can determine that the sampled artefacts were made of silver from at least two different ore sources, a geologically young lead ore source represented by lead isotopic ratios on the right-hand side of the plot, either in the Aegean or in Anatolia, and an older source located to the left of the samples. The latter could be within Anatolia, if ABM-12, which is an outlier, is excluded.

We are able to negate ore sources in the western Mediterranean that were exploited later during the Iron Age (such as Sardinia and Iberia) and to suggest two possible sources: Anatolia and the Aegean. The latter option is preferable in light of the intense economic interaction between the Levant and the Greek mainland during the Late Bronze Age II, well evidenced by the export of pottery and other commodities to the East. This contrasts with the relative lack of evidence

7 A similar-looking jug is published from a non-funerary context in Stratum VIII, LB I, at Tel Dan (Ben-Dov 2011: 87, fig. 65:11); it is thus earlier than the find context of the Abel Beth Maacah jug. However, this jug is not described as an imitation Cypriot Base Ring jug and is typed as 'jugs with a shoulder-handle', although it clearly does not have such a handle; no discussion of this jug is provided and it is not certain that it should be considered a local imitation Base Ring jug.

for ongoing and robust trade between the Southern Levant and Anatolia at this time, although silver that was mined in Anatolia could have reached the Southern Levant via Ugarit, which was under the auspices of the Hittite Empire at that time (Bryce 2014: 89–94).

There is evidence that the Lavrion mines (see fig. 1) were utilized well until the Late Helladic IIIC1 (Stos-Gale and Gale 1982: 480), and they were certainly active during the peak of exportation of Mycenaean pottery to the Levant during the fourteenth and first half of the thirteenth centuries BCE (Sherratt 1982: 179; Manning and Hulin 2005: 279). Thus, the possibility that silver was traded from Aegean (Lavrion?) to the Levant during the Late Bronze Age II within the framework of the international exchange system is more likely.

We might hypothesize an exchange of Lavrion silver between the palace at Hazor and the Mycenaeans, alongside the importation of Mycenaean pottery (for the latter, see Leonard 1994: 204–206; Van Wijngaarden 2002: 75–97; Zuckerman 2007a), and suggest that the silver items in the hoard could have found their way from Hazor to Abel in the course of the thirteenth century BCE. Notable in this context is the stone mould from Hazor, found in a LB IIA context, used to cast earrings of the hoop with pendant types, whether in silver or in gold. Also noteworthy is a crucible with evidence of silver melting found in the 'ceremonial palace' on the Acropolis of Hazor, indicating the working of silver in the building immediately prior to its destruction (Yahalom-Mack *et al*. 2014). Not enough data is presently on hand to estimate whether Hazor was particularly rich in silver and to determine the origin of this silver; several silver objects from Late Bronze Age Hazor were reported and await publication, although none were subjected to chemical or isotopic analysis.

Economic and Cultural Implications:
Silver in the Late Bronze and Early Iron Ages

There is no doubt that silver played an important role during 'the international age' of the fourteenth and thirteenth centuries BCE in the Mediterranean basin, the Levant and Egypt. First and foremost, silver was the main standard that was used to estimate the value of diplomatic gifts, trade, salaries, tribute, ransoms and fines during the Late Bronze Age (Liverani 1979; 1987; Zaccagnini 1987; Moorey 1994: 236–237; Kassianidou 2009; Peyronel 2014; Monroe 2015). Silver was used for high-level gift exchange of prestigious items (and, to a much lesser degree, as raw material) directly performed between rulers and was also used for commercial interactions by the palace dependents (Zaccagnini 1987: 57; Sherratt 2000: 84–88; Peyronel 2014: 359, 362). Textual evidence points to the widespread use of silver for actual payments as well (see Gestoso-Singer 2013 and bibliography therein).

Many of these texts show that silver was used to pay for commodities or services that pertain mostly to palace or royal-related instances. Liverani (1979)

has demonstrated that alongside these administrated commercial exchanges controlled by the elite or the state, merchants working on behalf of the kings were also active on the level of private entrepreneurship. It has been suggested that this type of informal, unofficial, or *ad hoc* trade increased during the latter part of the Late Bronze Age, and some suggest that these entrepreneurs ultimately contributed to the collapse of the LB palatial centres by these actions (Artzy 1985; Sherratt 2000). It can be assumed that in these latter transactions, as in the palatial-related ones, silver played a role, although there is no direct textual or archaeological evidence for this.

While silver is occasionally found in the archaeological record of the Late Bronze Age in the Southern Levant, we witness an increase in the physical presence of silver in the Iron Age I, particularly in its later part and mainly in the form of hoards (Kletter 2003; Thompson 2003; 2007; Eshel *et al*. 2018: fig. 2). According to Jurman, a similar increase occurred in Egypt starting with the Third Intermediate Period, as textual sources make explicit mention of actual pieces of silver in contexts of domestic exchange (Jurman 2015: 63).

In the Southern Levant, alongside the clear preference for silver over other metals, particularly gold, these early Iron Age hoards contained an increasingly larger proportion of ingots and *hacksilber*, as opposed to jewellery pieces, which were more common in the Late Bronze hoards. Moreover, the hoards were found in more varied contexts, including domestic ones (Eshel *et al*. 2018). There is also a shift in the composition of the silver itself in the early Iron Age, with silver now almost always mixed with copper (Thompson 2007; Eshel *et al*. 2018; Yahalom-Mack *et al*., forthcoming).

The Abel Beth Maacah Hoard in Context

When looking at the Abel hoard in chronological and regional context, we note that it is the only one in the Southern Levant containing exclusively silver that can be dated to the Late Bronze Age IIB. A hoard from Ugarit (partially shown in Schaeffer 1932: pl. XVI) apparently contained only silver items, but cannot be more precisely dated than broadly to the Late Bronze Age II. All the other LB hoards contained a mixture of silver and gold (with a preference for gold), as well as additional prestige items made of other materials, such as stone and ivory. Examples include several hoards found at Tell el-ʿAjjul, dating from the Late Bronze Age I (Negbi 1970), and two from Megiddo — Hoard 3100 from below a floor in the Stratum VIII palace (Loud 1948: 25, fig. 382) and one from Palace 2048 of Stratum VIIB (see Hall 2016 for discussion and bibliography). Another such hoard was found in Stratum IV at Beth Shemesh (Tadmor and Misch-Brandl 1980). For a recent compilation of data from the Southern Levant, see Eshel *et al*. 2018: table 1.

From beyond the Levant, there is the very large hoard with gold and silver items from Tell el-Amarna in the LB IIA (possibly late within this period) (Pendlebury

1931: 236; Frankfort and Pendlebury 1933: 61; Gestoso-Singer 2013). Notably, three items of the types found in the Abel hoard (the hoop earring with pendant, the twisted wire and the crescent pendant) also appear in the latter hoard, all made of silver as well. Thus, we see an interesting affinity between the two, despite the differences in region, size and date within the Late Bronze Age.

The small hoard from Abel Beth Maacah includes more jewellery than ingots/*hacksilber*, and it is made of pure silver, which relate it to the Late Bronze Age trend. On the other hand, the fact that it consists only of silver seems to herald the Iron I hoards.

CONCLUSIONS

The size of the Abel hoard, as well as its date, contents, context and type of container, suggest that it belonged to a small-scale local merchant or was an accumulation of wealth of a single household, rather than part of the formal, palace-based commercial activities in which elites were engaged during the Late Bronze Age (e.g., Monroe 2015). Such activities were likely concentrated at nearby Hazor, the major city-state in the region during the Late Bronze Age, to which Abel Beth Maacah was probably subordinate.

The Abel hoard, dated to the Late Bronze Age IIB, may be seen as a material correlate of the economic behaviour that took place during the latter part of the Late Bronze Age, wherein merchants increasingly practiced unofficial, independent, small-scale exchange in the shadow of the palatial-controlled economy. At this time in the Hula Valley, when Hazor, the 'head of all those kingdoms', was waning and was ultimately destroyed (Zuckerman 2007a: 627; 2007b), perhaps such activity became increasingly possible and the small silver hoard from Abel Beth Maacah can be viewed as a local expression of such a process.

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