

Digging Up Jericho

Past, present and future

Edited by

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Cover image: One of the Jericho workers standing next to Pre-Pottery Neolithic burials in square F1. Photographed by Leo Boer during a site tour on 10 March 1954. Courtesy of the Leo Boer Archives

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Metal Weapons and Social Differentiation at Bronze Age Tell es-Sultan

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Abstract: The diffusion of copper weapons during the late 4th and 3rd millennia BC in the Southern Levant marks a distinct transformation of the economy and society of this region, as it coincides with the earliest urban experience. This paper provides an overview of copper and copper-alloyed weapons through a study of the technology and functional features of this material at the key site of Tell es-Sultan/Jericho in Palestine.

The case of Jericho offers the opportunity to observe weapons in their original contexts, allowing a comparison of their use in the settlement and necropolis, and a consideration of their significance as potential markers of social differentiation. At the same time, it provides a diachronic perspective on changes in weapon type, and the appearance of new forms, which may reflect changing social needs both in the realm of ideology — as symbols of power — and in warfare.

Keywords: Early Bronze Age, Middle Bronze Age, Jericho, copper, copper alloy, metallurgy, warrior tombs, weapons.

Introduction

Metals are attested at Jericho since the Pre-Pottery Neolithic Period (Nigro 2017a), with over 100 beads, pendants, and artefacts made of ‘greenstone’, as well as copper ores in the form of malachite and metal descending minerals being retrieved from Pre-Pottery Neolithic A layers (Wheeler 1983, 781, fig. 356; Talbot 1983, 788–789, figs 359–361). During the Early and Middle Bronze Ages, Copper and copper alloy objects became a significant part of local assemblages (Nigro 2018; Nigro *et al.* 2019), raising questions about the origin of this material and the technology behind it (Nigro *et al.* 2018a, 120). Jericho still lacks evidence for primary smelting activities, such as crucibles and blowpipes, but secondary activities are attested by metallurgical material such as drops, scraps, smelted and slagged ores, which have been found in strata of the Early and Middle Bronze Ages, indicating local melting or re-melting practices.

The question of provenance has always been a key issue in the study of Bronze Age metallurgy, with a range of chemical-physical and isotopic analysis techniques being applied to the problem (Hauptman 2007, 257–261, 272–280, figs 8.2, 8.13). However, as recent studies have shown, frequent recycling of copper and bronze in antiquity can make it difficult to successfully trace raw materials to their point of origin (Knapp 2000, 36–38; Hauptmann *et al.* 2011, 75), while not all material is available for scientific analysis. Consequently, a typological approach, evaluating the functional and contextual aspects of Early and Middle Bronze Age weaponry, still has a role to play in any study of the historical or archaeological significance of this class of object. This paper will explore the range of weapons

found at Jericho, their typological variability, and the contexts in which they have been found, in order to assess their potential role as markers of social differentiation, as well as considering how the material from the site compares to wider practices across the Southern Levant.

Early Bronze Age (3400–2000/1950 BC)

A range of bronze weapons and other objects have been excavated from the tell (Sellin and Watzinger 1913, figs 104–105; Kenyon 1981, 375, fig. 15.4; Nigro *et al.* 2011, 592) and tombs at Early Bronze Age Jericho (Kenyon 1960, figs 66–70; 1965, figs 24–41; Nigro 1999, figs 1.1–2, pls I–II). Compositional studies of 22 examples from this period have shown these to be composed of either >90% copper (two objects), copper-arsenic alloys (16 objects, with average arsenic content from 1.1% to 4.76%), and, in the final phase of the period, copper-tin alloys (two objects, with a tin content between 8% and 15%; see Table 1). Other copper alloys accounted for a further two examples. These studies were based on a variety of methods including point-source linear x-ray spectrometer analysis (Moorey and Schweizer 1972), compositional and microstructural SEM-EDS analysis (Kaufman 2013), atomic absorption analysis (Philip 1991; Nigro 1999), trace element analysis (Khalil 1980; 1983; Nigro *et al.* 2018), x-ray fluorescence, atomic absorption and emission spectroscopy (Khalil 1980; 1983) and energy dispersive x-ray diffraction analysis (Nigro *et al.* 2018).

Early Bronze Age Weapons from Settlement Contexts

The Early Bronze weapons were mainly concentrated in the area of Spring Hill, on the top of the tell, and in

Table 1. Comparative table of daggers recovered from EB IV tombs in the Jericho Necropolis.

Tomb	Dagger Type	Metal Composition	Tomb Type	Tomb Date	References
A23	Small	-	Dagger	EB IVA	Kenyon 1960, 194, fig. 70.6
A26:1	Regular	Cu 95.24%, As 4.76%	Dagger	EB IVA	Kenyon 1960, 196, fig. 70.8–9; Khalil 1980, 88, 91; Kaufman 2013, table 5
A26:2	Regular	Cu 95.58%, As 4.36%			
A28	Regular	Cu 98.51%, As 1.49%	Dagger	EB IVA	Kenyon 1960, 198, fig. 70.11; Khalil 1980, 90; Kaufman 2013, table 5
A82	Regular	Cu 96.3%, As 1.9%	Dagger	EB IVA	Kenyon 1960, 190, fig. 70.3; Khalil 1980, 87
A86	Regular	Cu 96.21%, As 3.82%	Dagger	EB IVA	Kenyon 1960, 189, fig. 70.1; Khalil 1980, 87; Kaufman 2013, table 5
A91	Regular	-	Dagger	EB IVA	Kenyon 1960, 194, fig. 70.7
A95	Regular	Cu 95.28%, As 3.31%	Dagger	EB IVA	Kenyon 1960, 191, fig. 70.4; Khalil 1980, 88; Kaufman 2013, table 5
A110	Small	Cu 93.1%, As 1.91%	Dagger	EB IVA	Kenyon 1960, 196, fig. 70.10; Kaufman 2013, table 5
A111	Small	Cu 98.1%, As 1.9%	Dagger	EB IVA	Kenyon 1960, 189, fig. 70.2; Khalil 1980, 90; Kaufman 2013, table 5
A128	Regular	-	Dagger	EB IVA	Kenyon 1965, 52, fig. 24.1
A129	Regular	-	Dagger	EB IVA	Kenyon 1965, 51, fig. 26.2
A131:1	Regular	Cu 97.9%, As 2.1%	Dagger	EB IVA	Kenyon 1965, 53, fig. 24.4–5; Khalil 1980, 93; Kaufman 2013, table 5; here Figure 2
A131:2	Regular	Cu 98.72%, As 1.28%			
A132	Small	-	Dagger	EB IVA	Kenyon 1965, 51, fig. 24.3
B14	Regular	-	Dagger	EB IVA	Kenyon 1960, 191, fig. 70.5
D1	Small	Cu 96.67%, As 2.71%	Square-shaft	EB IVA	Kenyon 1965, 89, fig. 84.3; Khalil 1980, 91; Kaufman 2013, table 5; the tomb also contained a javelin (Kenyon 1965, 90, fig. 41.4)
G83	Regular	Cu 84.9%, Sn 15%	Composite	EB IVB	Kenyon 1965, 150, fig. 41.10; Kaufman 2013, table 5; the tomb also contained a javelin (Kenyon 1965, 150, fig. 41.11)
K26	Regular	-	Bead	EB IVA	Kenyon 1965, 83, fig. 41.1
L1:1	Regular	-	Dagger	EB IVA	Kenyon 1965, 56, fig. 24.7–8
L1:2	Small	-			
L2:1	Regular	-	Composite	EB IVA	Kenyon 1965, 146, fig. 41.7–8; Khalil 1980, 93
L2:2	Regular	-			
L3	Small	-	Dagger	EB IVA	Kenyon 1965, 57, fig. 24.9
L4	Regular	Cu 87.95%, Sn 8.45%, As 3.6%	Dagger	EB IVA	Kenyon 1965, 57, fig. 24.10; Khalil 1980, 90; Kaufman 2013, table 5
L5	Small	-	Composite	EB IVA	Kenyon 1965, 156, fig. 41.16
L6	Small	Cu 96.04%, As 3.96%	Dagger	EB IVA	Kenyon 1965, 54, fig. 24.6; Khalil 1980, 88; Kaufman 2013, table 5
L7	Regular	-	Composite	EB IVA	Kenyon 1965, 148, fig. 41.9
M13	Regular	-	Composite	EB IVB	Kenyon 1965, 153, fig. 41.12; the tomb also contained a javelin (Kenyon 1965, 153, fig. 41.13)
M16	Regular	Cu	Composite	EB IVB	Kenyon 1965, 155, fig. 41.14; Kaufman 2013, table 5; the tomb also contained a javelin (Kenyon 1965, 153–155, fig. 41.15); here Figure 3
P12	Regular	-	Outsize	EB IVA	Kenyon 1965, 136, fig. 73
TS.VAT.1	Small	Cu 98%	Dagger	EB IVA	Nigro 1999, 17, fig. 1.1, pl. I
TS.VAT.2	Regular	Cu 88%, As 11.2%	Dagger	EB IVA	Nigro 1999, 19 fig. 1.2, pl. II

the so-called ‘public district’, containing the palace and possibly a temple (Sellin and Watzinger 1913, figs 19–20; Nigro 2006, 364–365; see also Nigro in this volume). Palace G was excavated by the joint Italian-Palestinian Expedition between 1999 and 2019 (Nigro 2019, 91–94); this has produced a number of objects related to

its public function, such as seal-impressed storage jars, balance weights and pottery discs possibly used as counters in a tolling system (Nigro 2017b, 164), as well as pierced sea-shells, a mace-head, stone and bone tools. A copper dagger was found in the easternmost room of the lower terrace to the east, with the remains

of a wooden handle that had been originally bound with leather strips fixed with thin copper bands (TS.11.G.63; Nigro *et al.* 2011, 592; 2019, fig. 15).

This dagger, with indistinct rectangular tang, three rivets arranged into a triangular shape and a flattened cross-section, belongs to a simple type widely attested from the beginning of Early Bronze Age. It can be ascribed to a category of weapons discovered in palaces and public buildings, as attested at Beth Shan in Early Bronze I (Mazar and Rotem 2009, figs 13.1–3; 2012, 359, figs 9.3.1–3), Tell es-Sa'idiyeh in Early Bronze II (Tubb *et al.* 1997, 62; Tubb 1998, 47), and Khirbet el-Batrawy in Early Bronze III (Nigro 2010a, 568–570; 2010b, 119–120, 123; 2014, 264; 2015, 81–82).

A simple copper axe was found during Kenyon's excavations on the top of Spring Hill to the west of Palace G, on site L, in strata of phase G, dated to Early Bronze II–III (Kenyon 1981, 375; Nigro 2010c, 60). It features a rounded butt, slightly fan-shaped blade and bi-convex longitudinal section, easily comparable with an Early Bronze II example from Khirbet Kerak with rectangular butt (Miron 1992, 12, pl. 4.47), and an Early Bronze IIIA axehead with rounded butt from the Tell el-Hesi hoard (Bliss 1894, 38, n. 73), as well as to the Early Bronze IIIB Batrawy specimen (Nigro 2010b, 119–120).

Two other buildings of the Early Bronze II–III city were re-investigated by the Italian-Palestinian Expedition: Building B1, a public building for common food processing, connected with the southern defensive line, and a major rectangular tower, located in the north-western corner of the Early Bronze IIIB fortifications and jutting out from defensive wall. The latter was excavated by Austro-German Expedition and briefly re-explored by the Italian-Palestinian Expedition in 2000 and 2009 (Area L).

Just over the ruins of such a massive building, during the Sellin and Watzinger excavations in 1908, a hoard of arsenical copper items was found in a jar, hidden under the floor of an Early Bronze IVB house that was built up upon the ruins of the north-west tower (Sellin and Watzinger 1913, 117–119; Nigro 2003a, 123, figs 2–3).

The hoard included chisels, simple axes and adzes (Nigro 2003b, 12), two copper ingots, similar to those known from storerooms at Khirbet Hamra Ifdan (Levy 2007, fig. 7.5), and a broad fenestrated axe (Sellin and Watzinger 1913, fig. 105.16). Simple axes and adzes, generally cast in single open mould, belong to a type widespread across the Southern Levant (Miron 1992, 7), with a rectangular or rounded butt and fan-shaped blade. This type is found in hoards and foundation deposits of the Early Bronze I period (Montanari 2012), at sites such as Khirbet Khalalidya/Yiftah'el (Braun 1997, figs 11.3.1–2), Tell el-Hosn/Beth Shan (FitzGerald 1935, pl. III.21, 23),

and Qiryat Ata (Golani 2003, fig. 7.6.1); at Tell el-Husn/Pella during Early Bronze II (Bourke *et al.* 1999, 62–64, fig. 11), and at Tell el-Hesi in Early Bronze III (Bliss 1894, 36–38, figs 69–77; Montanari 2018, 240–241).

Nigro has suggested that bronze fenestrated axes were made by an initial casting in two separate parts, with the socket for the wooden haft then created using a single, closed stone mould (2003b, 11–12), similar to those found at Byblos (Dunand 1950–1958, 98, pl. CLXXXIV.7419; 10, fig. 5.6732).

The broad fenestrated axe from Jericho can be compared to others from funerary contexts at Ma'abarot Tomb 4 (Gophna 1969, fig. 2), Megiddo Tomb 84C (Guy 1938, pl. 163), and Tombs 59 and 79 at 'Enot Shuni (Caspi *et al.* 2008, figs 1a–b), where an embossed silver specimen was also found, suggesting this type of weapon had a symbolic significance; a similar example is also known from Byblos (Dunand 1950–1958, pl. CXXXVII.16711).

Early Bronze Weapons from the Necropolis

The Jericho necropolis initially extended to the north of Tell es-Sultan, then expanded to its west in the Middle Bronze Age. It was excavated by J. Garstang in the 1930s, with further work by K. Kenyon in the 1950s (Garstang 1932; 1934; Garstang *et al.* 1935; Kenyon 1960; 1965). Excavations revealed 12 family tombs that were in use during the Early Bronze II–III. Their funerary sets included pottery, personal ornaments, and precious items. Two of these tombs also included a copper weapon in their funerary equipment: Tombs F5 and A114.

Tomb F5 had been damaged by modern road work. It dated to the Early Bronze III period, had an irregular plan, and was of medium size and moderate wealth (Kenyon 1960, 172–174, figs 63, 66.3). Four skulls were retrieved, but the skeletons and funerary assemblage had been badly disturbed by modern activity. A copper dagger with four rivets was found in a wall recess in the south-eastern part of the tomb, comparable with a contemporaneous example from Charnel House A22 at Bâb edh-Dhrâ' (Maddin *et al.* 2003, 514, fig. 17.1.4).

In contrast, Tomb A114 was one of the richest in the necropolis (Kenyon 1960, 41–47, 179, fig. 66.1). Located on the top of the slope leading to the wadi, it was only partially preserved due to the collapse of its ceiling. It had initially been used during Early Bronze I, when numerous inhumations were deposited in the chamber, with skulls placed along the walls. Then, during the Early Bronze II–III, previous inhumations were moved into the western part of the tomb, and a large number of disarticulated skeletons, vessels and bone objects placed inside.



Figure 1. Crescentic axe from Jericho Tomb A114, Early Bronze II-III (Kenyon 1960, 179, fig. 66.1). Courtesy of the Citadel Museum, Amman.

A crescentic copper axe was found in this tomb (Figure 1); this is now on display in the Citadel Museum at Amman. It was not possible to associate it with a specific inhumation. It features three tangs, the central one for bending around the wooden handle, and a pronounced knob on both faces, which Kenyon interpreted as a vestigial reflection of what had originally been a rivet joining tang and blade (1955, 13). This can be compared with two crescentic axes from Charnel Houses A44 and A51 at Bâb edh-Dhrâ' (Wilkinson 1989, 447–450, figs 259.1–2), and with another axe found in the Tell el-Hesi hoard (Bliss 1894, 39, fig. 69; Montanari 2018, 240–241). Crescentic axes were probably made using a double stone mould, as suggested by a mould fragment found at Byblos (Dunand 1937–1939, pl. 108.5034).

Weapons are scarce in the Early Bronze II–III necropolis at Jericho, stressing their economic value and symbolic

significance, especially in the case of outstanding specimens such as the crescentic axe described above. The same pattern can be observed within settlement contexts: only a few weapons were excavated on the tell for this period, and they are associated with palatial contexts (Nigro 2016, 10).

At the beginning of the Early Bronze IVA new community settled on the ruins of the ancient city, inaugurating new burial customs in the necropolis (Nigro 2003a, 137). Inhumations take place in shaft tombs, which host individual primary burials with simple funerary sets, comprising small pottery jars and copper daggers for males, and beads and other simple personal ornaments for females. Kenyon excavated almost 400 tombs, which contained some 37 weapons, stressing the importance attached to this type of item in this period. These comprised 33 daggers and four javelins, which may be compared with finds in the cemeteries of Tell el-ʿAjjul, Lachish and el-Jib in Palestine, and Tiwal esh-Sharqi in Jordan.

The daggers in these tombs can be divided into short and long varieties (Montanari 2014, 102–105, table 1). Short daggers, dating to Early Bronze IVA, are



Figure 2. Dagger from Jericho Tomb A132, Early Bronze IVA. Courtesy of the Birmingham Museums Trust.

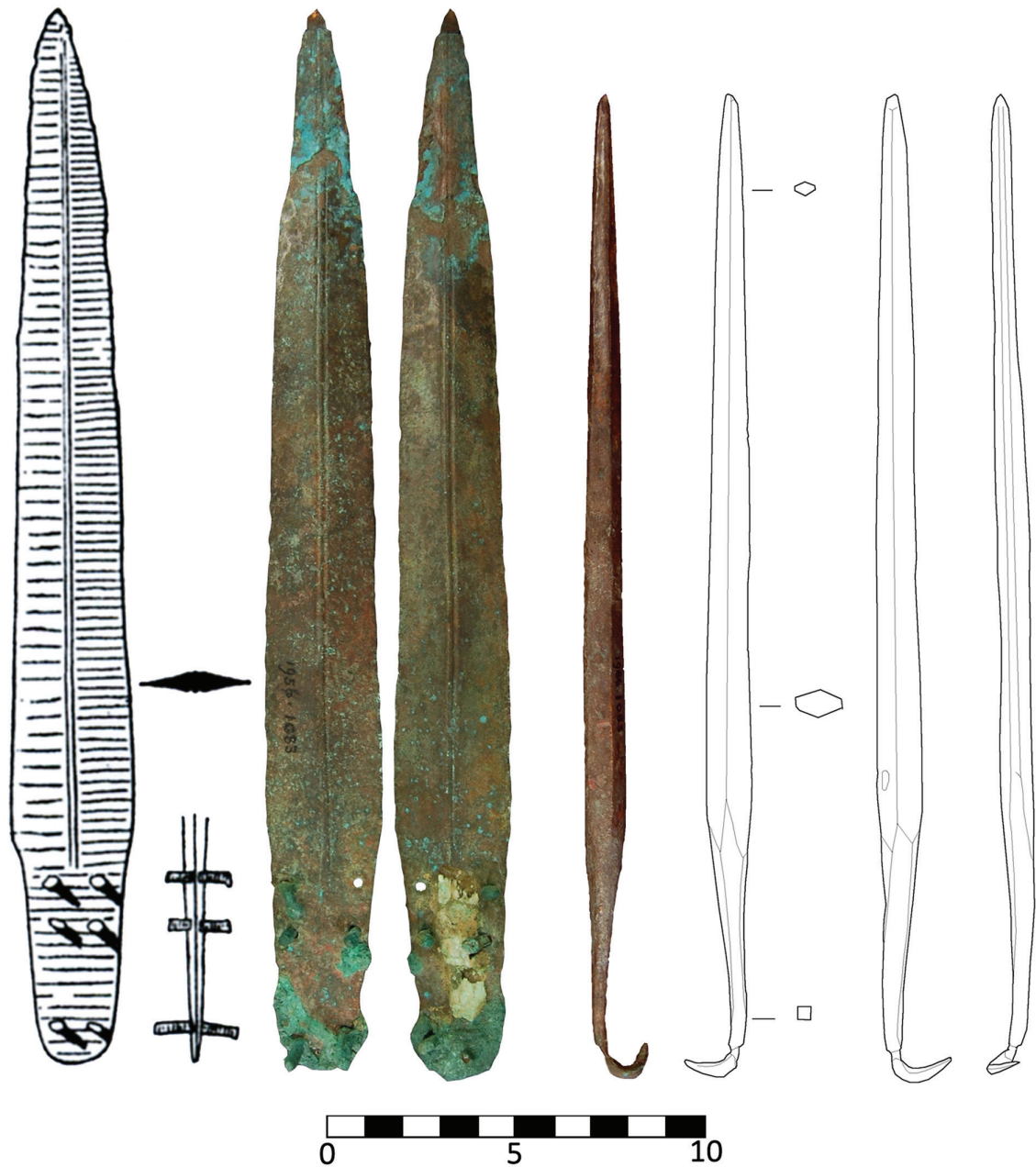


Figure 3. Dagger AN1956.1083 from Jericho Tomb M.16, 5 and javelin AN1956.1085 from Tomb M.16, 5, Early Bronze IVB. Courtesy of the Ashmolean Museum, University of Oxford.

represented by ten specimens; these have a blade up to 18 cm long and were made of arsenical copper. Long daggers, dating to Early Bronze IVA and B, are represented by 23 specimens, have a blade longer than 20 cm, and were made both of arsenical copper and tin bronze (Table 1). These daggers may be classified as Maxwell-Hyslop type 18 (1946, 21), Philip type 2 (1989, 103–104), and Gernez types P.3 and P.5 (2007, 472–480, 482–486).

The javelin form originated in Mesopotamia — see for an example a javelin with an inscription of Manishtusu

in the Ishtar Temple at Aššur (Braun-Holzinger 1991, 88, pl. 5.MW4) and another with the inscription of Urnammu in Tomb PG.25 at Ur (Woolley 1934, pl. 227.U.7925). The repertoire at Jericho includes a simple, poker variety represented by two examples, and a leaf-shaped type, also represented by two specimens; they are both made of arsenical copper and date to the Early Bronze IVB period (Montanari 2013). The simple type corresponds to De Maigret's types A4ii and A4iii (1976, 70–77, figs 14–15), and to Philip's types 5 and 13 (1989, 75–77, fig. 15); it is sometimes referred to in the literature as a pike; the leaf-shaped type corresponds



Figure 4. Dagger AN1958.628 from Jericho Tomb G83a 1 and javelin AN1958.629 from Tomb G83a 2, Early Bronze IVB. Courtesy of the Ashmolean Museum, University of Oxford.

to De Maigret's types A3iv (1976, 63–67, fig. 12), and to Philip's types 6 and 13 (1989, 76–77, figs 17–18).

Weapons were found in tombs belonging to Kenyon's Dagger, Square-shaft, Outsize and Composite types, and seem to be deposited according to recurring customs: the sole dagger (after which the 'Dagger Type' tombs were named, dated to Early Bronze IVA), and the dagger and javelin pair. Tombs A132, M16 and G83A may be taken as case studies for the way in which these weapons were deployed.

Shaft-tomb A132 illustrates the case of single male inhumation with copper dagger, the latter generally placed next to the arms of the dead (Kenyon 1965, 51, fig. 24.3; see Figure 2).

Shaft-tomb M16, dated to Early Bronze IVB and belonging to Kenyon's Composite type, illustrates the case of single male inhumation in a chamber with niche, provided with a funerary set containing four jars, a four-spouted lamp, a copper dagger and a simple javelin made of arsenical-copper (Kenyon 1965, 155, figs 41.14–15; see Figure 3). The dagger was placed next to the arms, while the javelin lay next to the chamber wall, roughly 1 m from the body, a distance that probably represents the length of the javelin pole.

Shaft-tomb G83A dated to Early Bronze IVB and also belonging to Kenyon's Composite type represents a single male inhumation equipped with a funerary set comprising a jar, a bowl, a four-spouted lamp, a bronze dagger and a leaf-shaped javelin made of arsenical copper (Kenyon 1965, 150, figs 41.10–11; see Figure 4).

The equipment of combined dagger and simple javelin set is known from elsewhere in the region, appearing in Tombs 50 and 52 at el-Jib in Palestine (Pritchard 1963, 54–56, 140, 142, figs 56.8–9, 58.6–7), and in Amman Tomb 1 in Jordan (Zayadine 1978, 66, figs 4.6–7). A set composed of a dagger and a leaf-shaped javelin was also recorded at Tiwal esh-Sharqi in Tomb SE1 (Tubb 1990, 90, fig. 40b).

Comparing the Early Bronze IV weaponry from the Jericho cemetery to those attested to in other South Levantine necropoleis (Montanari 2015; 2019, 144–148), it can be deduced that there were only two classes of weapons used in these contexts — daggers and javelins — and that the most widespread type was the dagger (D’Andrea 2013, 138). According to some scholars, the scarcity of javelins may be related to these weapons being assigned a symbolic role, connected to the owner’s status (Lapp 1966, 53; Greenhut 1995, 31; Greener 2012, 44).

As far as the male funerary customs of Early Bronze IV Jericho are concerned, a shift may be noted from the Early Bronze III period towards single burials accompanied by weapons, as has been noted across the entire region (Cohen 2009, 6). Two kinds of weaponry were adopted at this time, one suitable for hand-to-hand contest (the dagger) and the other useful in ranged fighting (the javelin). While the dagger simply shows the male gender of the tomb owner, a more articulated weaponry may symbolize the status and power reached in life and replicated in the afterlife (Greener 2012, 44). In these cases, the Early Bronze IV tombs with weapons seem to anticipate the well-known ‘Warrior Burials’ of Middle Bronze I (Philip 1995, 140, 145, 151, 153 and Gernez 2014–2015, 47–49; Oren 1971, 131; Palumbo 1986; 1991, 109; Nigro 1999, 16; Thalmann 2000, 50–53; Antonetti 2003; 2005, 6, 20; Doumet-Serhal 2004a, 175; Doumet-Serhal and Griffiths 2007–2008, 202; Doumet-Serhal and Kopetzky 2011–2012, 9–10; Cohen 2012, 309).

Middle Bronze Age (1550–1500 BC)

Numerous metal weapons and objects have been recovered from the Middle Bronze Age settlement (Marchetti and Nigro 2000, figs 5.32, 5.56; Nigro 2007–2008, 293–297) and necropolis at Jericho (Garstang 1932, pl. XXVIII; 1933, figs 2, 10; Kenyon 1960, figs 117, 128, 146, 165, 177, 207). These were composed of either arsenical-copper or tin-bronze alloys, showing how Jericho maintained a role within the trade of metal items from both the southern districts — with the copper resources of Wadi Faynan and Timna — and the northern and north-eastern regions, which were rich in arsenic.

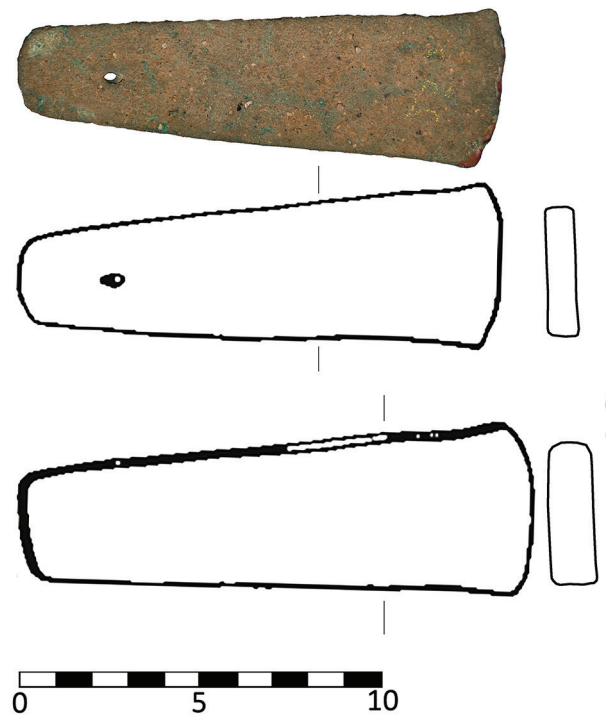


Figure 5. Axes from Room 73 at Jericho, Middle Bronze Age. Courtesy of the Birmingham Museums Trust.

Middle Bronze Age Weapons from Settlement Contexts

Some bronze weapons were recovered from Garstang’s so-called ‘Palace Store-rooms’, in a wing of the Middle Bronze Age palace. Two bronze axes were found in Room 73, which was located in the row to the west of the eastern boundary of the palace (Garstang 1934, 126, pl. XXVI.18–19; Figure 5). Two bronze daggers were discovered in Room 44, in the easternmost wing of the palace, facing the spring; these were associated with small vessels, jars arranged alongside the walls, and carbonized grain (Garstang 1934, 129, pl. XXIV.5–6).

Middle Bronze Age Weapons from the Necropolis

During the Middle Bronze Age, the necropolis was partially reused and expanded to the west. This area was investigated by John Garstang, who excavated some 26 tombs (namely Tombs 1–5, 8–9, 12–15, 19–23, 30–32, 35, 40–43, 350–351), and by Kathleen Kenyon, who dug around 80 tombs in the northern part of the cemetery, some of which had been reused from the Early Bronze IV period. A total of 18 tombs included weapons as part of their funerary assemblages; amongst these, four tombs shared common features: Tombs 9, D9, D22, and J14. These were multiple burials, which are linked by the use of similar pottery equipment and tomb layouts with distinctive characteristics.

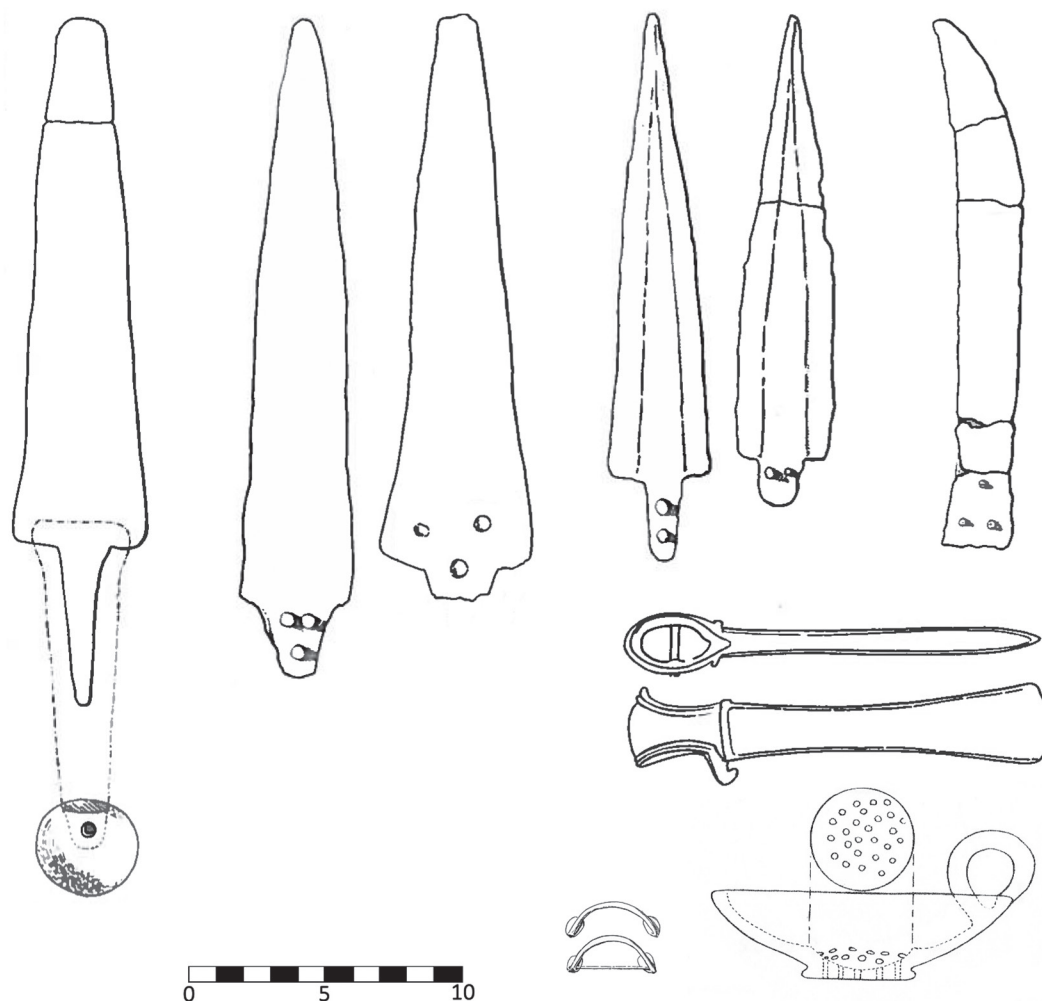


Figure 6. Weaponry and selected funerary equipment from Tomb 9 at Jericho, Middle Bronze II (after Garstang 1932, fig. 10, pls XXV.6, XXVII.1-7).

Tomb 9 provides a good case study for defining the distinguishing features of this group (Figure 6). This was one of the easternmost tombs excavated by Garstang, and it is roughly 4 m wide and 4 m deep. Its equipment included intact pottery vases, pins, alabaster, scarabs, and seven bronze weapons (Garstang 1932, 44–49, pls XXX–XXXVII); amongst the pottery repertoire was the well-known Tell el-Yahudiyeh rhyton in the shape of a bearded head (Garstang 1932, 45–46, fig. 9, pl. XLIII). The pottery assemblage suggests that Tomb 9 had been in use since the beginning of Middle Bronze I.

All the bronze weapons were found in the Middle Bronze II strata of the tomb. These included five daggers. Two of these featured triangular blades, short tangs and limestone pommels (Garstang 1932, pl. XXVII.4, 2), while another dagger had a triangular blade and long peduncular tang (Garstang 1932, pl. XXVII.1). Two other daggers had flattened central ribbing, riveted tangs and limestone pommels (Garstang 1932, pl.

XXVII.5–6; now located at the Rockefeller Museum of Jerusalem, and similar to examples from Tombs D9 and D22 — see Kenyon 1965, figs 111.11, 3). There was also a curved knife with short rectangular tang and three rivets (Garstang 1932, pl. XXVII.7). Comparable curved knives were found in Jericho Tombs D9 and D22 (Kenyon 1965, figs 111.13, 9), hinting at the possibility that the combination of flat ribbed dagger and curved knife could be used to define some kind of status in the necropolis of Middle Bronze Jericho. A socketed axe was also found (Garstang 1932, pl. XXVII.3). This is a weapon type that has been particularly noted in funerary contexts (Nigro *et al.* 2015, 188); another example is known from Tomb 45 at el-Jib, where it was found together with a curved knife (Pritchard 1963, 139, figs 51.40–41). The Jericho axe exhibits a double ribbing along the socket haft and a hook.

Beyond the weapons themselves, there are two further elements that might point to some social differentiation

between tomb owners. The first one is a couple of belt fasteners (Garstang 1932, fig. 10), of a type also found in Jericho Tombs D9 and J14 (Kenyon 1965, figs 103.10–11), and in Tomb 1750 at Tell el-‘Ajjul, which also contained a socketed axe (Petrie 1934, 11, pl. XXXV.554, 556–557). These objects often seem to occur in tombs alongside curved knives and daggers with flattened ribbing.

The second element is represented by the strainer (Garstang 1932, pl. XXXV.6). Pottery strainers were also recovered from Jericho Tombs 9 and J3 (Kenyon 1965, fig. 116.7), hinting at the preparation of a drink, such as beer, as part of a funerary ritual practice (Garfinkel and Cohen 2007, 61). This is also suggested by the appearance of bone strainers in Middle Bronze IIA tombs at Gesher, and at other Middle Bronze II sites (Maeir and Garfinkel 1992). Drinking practice was something that could be managed by ruling elites, as a way of distinguishing factors such as age, gender and status (Bunimovitz and Greenberg 2006, 28).

Amongst the metal finds of Tomb J3 were a bronze belt (Kenyon 1960, 311, fig. 117), that can find comparisons at Sidon (Doumet-Serhal and Griffiths 2007–2008, 197–201, fig. 5.3, pl. 3) and at Tell el-Dab‘a (Philip 2006, 83, fig. 38.2), as well as a battle axe, and dagger that point to the warrior status of the owner; a similar object was found in Tell el-Far‘ah North Tomb A (de Vaux and Stève 1947, pl. 20).

Contextualising the Metal Weaponry of Jericho Within a Wider Framework

The attestation, distribution and associations of weapons differs between the EB II–III, EB IV and MB I–II periods, perhaps indicating different cultural traditions.

Early Bronze Age

Daggers and axes were attested at Jericho throughout the entire Early Bronze Age period, while javelins only appeared in the final, Early Bronze IV, phase. Spearheads and arrowheads, however, do not appear in this terminal phase, in contrast to the pattern seen at contemporary sites in the region, such as Tell el-‘Ajjul, Lachish, and Tiwal esh-Sharqi.

At Jericho, metal weapons appear in Early Bronze IV tombs of the shaft type, similar to the practice at other south Levantine sites such as Lachish Tombs 2032, 2049, 2100 and 2111 (Tufnell 1958, 75–78, 278, pl. 22.1–5), and Cemetery 100–200 at Tell el-‘Ajjul (Petrie 1931, 8). However bronze weapons were also associated with the stone-built tomb type in some burials in Tell el-‘Ajjul Cemetery 1500 (Petrie 1932, 14–16) and in the necropolis of Tiwal esh-Sharqi (Tubb 1990).

The existence of a northern and a southern weaponry tradition within funerary contexts during Early Bronze IV (D’Andrea 2013, 138–139), can be traced also during the following Middle Bronze Age I (2000–1800 BC).

Middle Bronze Age

The warrior tombs of Middle Bronze I Jericho are placed in shaft-tombs and do not show a distinctive architecture, in contrast to those excavated in northern sites, which are usually built-up or lined with stones (Genz and Sader 2007–2008, table 1). Examples of the northern tradition include Tell ‘Arqa Tombs T14.14 and T14.51 (Thalmann 2006, 34; Gernez 2008, 229), Sidon burials 5, 12 and 78 (Doumet-Serhal 2001, 164, 167; 2009, 18), and Gesher, Tombs 2 and 13 (Garfinkel and Cohen 2007, 16, 35). It has been suggested the Jericho warrior tombs belonged to a nomadic component of the society surviving from the Early Bronze IV (Nigro 2003a, 137).

Weaponry consisting of an axe, usually fenestrated, and a spearhead (Garfinkel 2001, 155; Schiestl 2002, 331; Gernez 2014–2015, 59) makes up the typical set of this northern/coastal tradition. Examples may be noted from Sidon Burials 5, 12 and 78 (Doumet-Serhal 2003, 42, 38–40; 2004b, 151; 2009, 18–19, figs 9, 9a, 9b); Tell ‘Arqa Tomb T14.14 (Thalmann 2006, 34–36, 44–45; Gernez 2008, 226–229; Thalmann 2010, 98), Beth Shan Tomb 92 (Oren 1971, 111–117), and Gesher Tombs 2 and 13 (Garfinkel and Cohen 2007, 60). Moreover, Middle Bronze Age tombs at Jericho are regularly equipped with different kinds of daggers, as is the case in other southern necropoleis, including el-Jib (Pritchard 1963, figs 34, 51) and Khalet el-Jam‘a (Nigro *et al.* 2015, figs 7, 12). This is quite different from what is known from some northern necropoleis, such as Gesher, where no daggers were recovered from any of the warrior burials (Garfinkel and Cohen 2007, 63).

Final Remarks

The settlement and necropolis of Early and Middle Bronze Age Jericho offer a stimulating and complex case-study for the appearance, spread, use, and symbolic value of metal weapons in the Southern Levant.

Within the settlement areas, bronze weapons were found in palaces or in public quarters, relating to administrative and government functions, possibly within a kind of palatial system for managing goods, including an exchange system for metals and other precious materials, as suggested by the recovery of balance weights.

Copper was the most common metal at the site until the beginning of Early Bronze IV, when arsenical-copper alloys dominate, in contrast to patterns elsewhere in

the Southern Levant, where arsenical-copper and tin-bronze seem to spread in similar quantities.

In the case of the necropolis, weapons were placed in tombs according to the social role and status of the dead. It may be that the custom of burying warriors with individual weapons crystallized at Jericho, as other sites in Southern Levant use weapon sets to replay the status reached in their lifetime after death. These kind of burials have been seen as strongly connected with similar 'warrior' tombs of the subsequent Middle Bronze Age (Cohen 2009, 7), thus pointing to the emergence of a warrior class in the Southern Levant (Philip 1995), as has been shown by the case of Tomb 9.

Jericho therefore appears to be a useful site for examining the diffusion and use of metal weapons over the course of the Early and Middle Bronze Ages. It can testify to the use of weaponry both during and after life, showing how these items can be related to the marking of status and social differentiation (Nigro 2003b, 41; D'Andrea 2013, 139), over the changing course of Jericho's history, from its first urban foundations, through a non-urban interval and into a rebirth of the city during the Middle Bronze Age.

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