The Italian-Palestinian Expedition to Tell es-Sultan, Ancient Jericho (1997–2015): Archaeology and Valorisation of Material and Immaterial Heritage

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Abstract*:* Sapienza University of Rome and the Palestinian MoTA-DACH have been committed since 1997 to the protection, scientific re-evaluation and tourist rehabilitation of Tell es-Sultan, ancient Jericho. Excavations, surveys, and restorations over 15 field seasons allow an update of our knowledge on the history of this long-lived site of the ancient Near East, as well as making it possible to match data collected by three previous expeditions within a single comprehensive picture.

Keywords*:* Epipalaeolithic, Neolithic, Chalcolithic, Early Bronze Age, Middle Bronze Age, Late Bronze Age, Iron Age, Tell es-Sultan, architecture, biblical archaeology, burial customs, chronology, fortifications, heritage, urbanisation, valorisation.

Introduction

This paper offers a provisional summary of the major results of the Italian-Palestinian Archaeological Expedition to Tell es-Sultan, a joint pilot project carried on by Sapienza University of Rome and the Department of Archaeology and Cultural Heritage of the Palestinian Ministry of Tourism and Antiquities (MoTA-DACH) between 1997 and 2015. The project is supported by the above mentioned institutions and by the Italian Ministry of Foreign Affairs and International Cooperation (MAECI). More detailed scientific information and full bibliography are available from the project's website: <www.lasapienzatojericho.it>. Eleven seasons (1997-2015) of excavations, surveys and restorations in 12 areas are reported on in this paper, allowing an overall re-examination of this outstanding archaeological site (Figure 1). A postscript notes the results of the more recent seasons.

Tell es-Sultan — identified since late antiquity with biblical Jericho, the Canaanite city-state of *Ruha* — was a major urban centre in Pre-Classical Palestine, but also one of the most prominent human settlements of the Fertile Crescent in the Neolithic Period (Nigro 2013a; 2017a). Nowadays, it is the centre of the Jericho Oasis Archaeological Park (JOAP), a primary cultural resource in the Palestinian Territories, visited by around 380,000 people per year (The Jericho Oasis Archaeological Park 2015).

Facing a Double Challenge

The archaeology of Jericho poses a multifaceted challenge. The history of the site, its archaeological exploration, and its worldwide fame are firmly connected to its biblical mention in the conquest narrative of the Book of Joshua (Joshua 2:6), making it an icon of biblical archaeology (Finkelstein and Silberman 2002, 96). Separate from the biblical narrative, discoveries by the two previous British expeditions to the site gained it the epithet of 'the oldest city of the world', making the urban character of the site the key measure for scientific evaluation of its cultural significance (see below). Both these interpretive paradigms are so deeply enrooted in Western culture that to put forward a somewhat different narrative would be challenging. This challenge was taken on by the Italian-Palestinian Expedition, starting afresh from the archaeological evidence with a re-appraisal and re-excavation of old trenches, as well as by matching old data for — as much as possible — a consistent historical reconstruction (Nigro and Taha 2009, 733).

The Rediscovery of Jericho's Heritage (1st – 19th Centuries AD)

The contribution of the Italian-Palestinian Expedition is only the most recent attempt in a 2000-year process of Jericho's rediscovery. Tell es-Sultan/Jericho and its oasis attracted pilgrims and travellers in antiquity as one of the main holy places in Palestine (D'Andrea and Sala 2011, 55–59). As documented by recent excavations at Tell es-Sultan (Marchetti and Nigro 1998, 106–107) and Tell el-Matlab (Clermont-Ganneau 1896, 17–20; Conder and Kitchener 1883, 222; Augustinović 1951, 145–215), and also by the Madaba Map (Avi-Yonah 1954, 22, 44), the Jericho Oasis was the seat of a flourishing Early Christian community from the 1st century AD. The site was mentioned by the Pilgrim of Bordeaux in

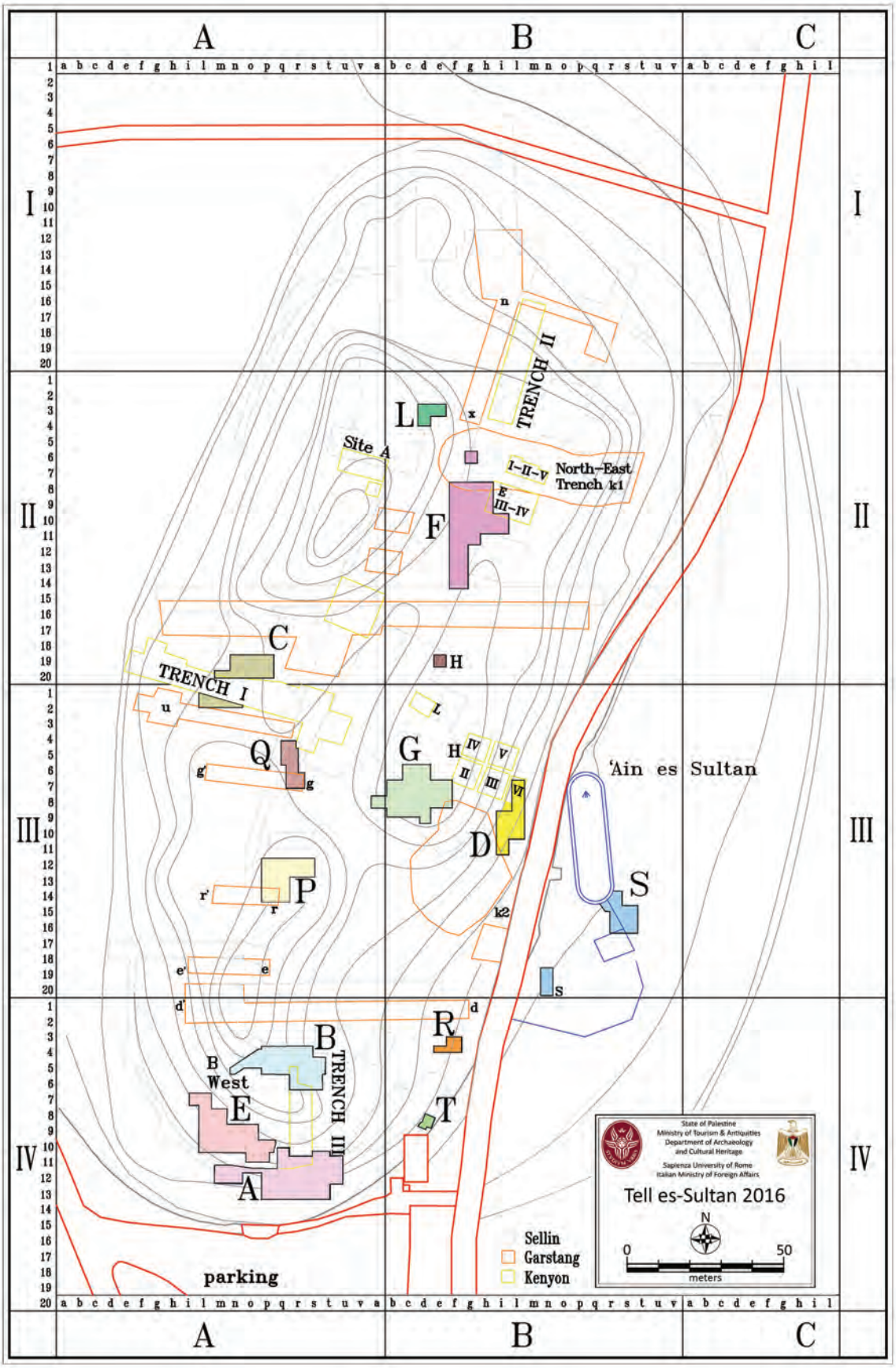

Figure 1. Map of Tell es-Sultan with areas excavated by the Italian-Palestinian Expedition (1997–2016). Copyright University of Rome 'La Sapienza' ROSEPAJ.

AD 333, the two Roman noble women Egeria (AD 381–384) and Paula (AD 404), the archdeacon Theodosius (AD 530), and an anonymous pilgrim from Piacenza (AD 570), giving accounts of the numerous churches and monasteries present in the oasis. With the establishment of Islam, the Jerusalem–Jericho road became one of the main routes used for the holy pilgrimage to Mecca (D'Andrea and Sala 2011, 59). When the Omayyad Caliph Hisham ibn ʿAbd al-Malik (AD 724–743/105–125 H) built a magnificent palace at the northern edge of the oasis (Khirbet el-Mafjar), Jericho became an icon of wealth and peace in Islamic sources too (Taha and Whitcomb 2014). In the Middle Ages, sources mention Jericho yet again as the location of monasteries of both the Orthodox Church and the Franciscan *'Custodia Terrae Sanctae'* (D'Andrea and Sala 2011, 59–61). Since then, pilgrims and travellers have continued to visit through the Ottoman Period and beyond, creating an immense corpus of drawings, maps, photos and quotations. The safeguarding and valorisation of such material heritage is a goal of the current expedition. The springs of ʿAin es-Sultan, ʿAin ed-Deuk and ʿAin el-Auja with their *wadiat* and canals, Wadi Qelt and Wadi Nueima, vernacular mudbrick architecture, palm tree groves, flowers and aromatic plant cultivation, are all elements of the Jericho landscape, as much as the more than 103 archaeological sites identified by the Italian-Palestinian Expedition, equally to be protected and promoted to the public (Taha and Qleibo 2010; Nigro *et al.* eds 2011).

The Archaeological Exploration of Tell es-Sultan (1868–2015)

Charles Warren of the British Royal Engineering Corps was the earliest modern explorer of Tell es-Sultan. He cut east–west trenches through the edges of the tell, missing the Neolithic Tower by less than 1 m, and concluded that the site was devoid of any particular interest (Warren 1869, 14–16). In 1907–1909 an Austro-German Expedition led by Ernst Sellin and Carl Watzinger, a theologian and a classical archaeologist, started a systematic exploration of the site, largely removing the uppermost layers dating from the Islamic, Byzantine, and Roman times, down to the Iron Age city. The Austro-German Expedition documented the multilayer history of the site for the first time, although their chronological sequence, where they labelled the Early Bronze Age as 'Canaanite', the Middle Bronze Age as 'Israelite', and the Iron Age as 'Judean', is now understood to be erroneous. Nonetheless, the prompt and rigorous publication of architecture, stratigraphy and finds in the German *Wissenschaftliche Veröffentlichungen der Deutschen Orient-Gesellschaft* series (WVDOG) established a milestone in the archaeology of Palestine (Sellin and Watzinger 1913).

The second major archaeological expedition to Tell es-Sultan was the Marston-Melchett Expedition, led by the distinguished British archaeologist John Garstang of the University of Liverpool from 1930 to 1936. This had the explicit goal of demonstrating the reliability of the biblical account of Joshua (Garstang 1927; Garstang *et al.* 1935). Despite this specific objective, Garstang's expedition was the first to reveal Mesolithic and Neolithic layers. He also discovered the huge necropolis west and north of the site and excavated a series of family tombs from the Early, Middle and Late Bronze Ages (Garstang 1930; 1931; Garstang *et al.* 1935; 1936).

After the Second World War, the second British Expedition to Tell es-Sultan was led by Kathleen M. Kenyon, who recruited an international team and set new standards for Near Eastern archaeology by employing the stratigraphic excavation method developed by Sir Mortimer Wheeler, based upon 5 x 5 m square trenches with vertical sections left on unexcavated baulks. From 1952 to 1958, Kenyon's expedition produced a comprehensive re-evaluation of the archaeology of Tell es-Sultan. She excavated three main trenches, expanding previous soundings on the western (Trench I), northern (Trench II), and southern (Trench III) flanks of the tell. Moreover, she systematically excavated the huge necropolis extending to the north and west (Kenyon 1960; 1965). The stratigraphy and architecture were published in 1981 in a comprehensive report (Kenyon 1981). Kenyon's publication work was completed by Thomas A. Holland, who edited the last three volumes (Kenyon 1981; Kenyon and Holland 1982; 1983). After this project the site was abandoned until the 1990s, except for some soundings on the top of the tell carried out by the Israeli occupation authorities (Riklin 1996).

In 1997, following the Oslo and Madrid peace agreements, the Ministry of Tourism and Antiquities of the Palestinian National Authority started a new project combining exploration and re-evaluation of Tell es-Sultan in cooperation with Sapienza University of Rome. This pilot project was conceived in a fully post-colonial legal framework without a traditional 'excavation permit'. Instead, the joint Italian-Palestinian Expedition worked within the framework of a 'cooperation agreement' designed to approach the archaeology of Palestine in a new way, free of any preconceived constriction. The pilot project has so far carried out 15 seasons of excavations and restoration over 12 areas of the site, mainly focusing on the Bronze and Iron Age cities (Marchetti and Nigro 1998; 2000; Nigro 2006; 2013a; Nigro and Taha eds 2006; Nigro and Taha 2009; Nigro *et al.* 2011). The Italian-Palestinian Expedition identified the Bronze Age Lower City including the spring, and continued the exploration of the Early Bronze Age (EB) quarter on the northern plateau and of the EB III double fortification wall at the south-western corner of the site; it uncovered the EB Palace G on Spring Hill; it excavated the Middle Bronze

Figure 2. Artist's watercolour depicting the PPNA Round Tower with attached Town Wall.
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(MB) I fortification line preceding the construction of the ramparts in Areas A and D, the MB I–II Tower A1 and a stretch of the MB III Cyclopean Wall at the southern foot of the tell (Area A), also identifying a previously unknown MB II fortification wall, called the Curvilinear Stone Structure, as well as the MB II-III 'Hyksos Palace' with a built-up tomb below on Spring Hill (Area G). The basic contribution of the Italian-Palestinian Expedition was to put forward an overall periodization of the site (Table 1) reexamining and matching data produced by all the previous expeditions. The Kenyon Expedition surprisingly never produced a single unified periodization of the site, leaving each area with its own independent stratigraphic sequence.

Jericho and the Neolithic Revolution: Pre-Pottery Neolithic (8500–6000 BC)

Tell es-Sultan was an important Near Eastern site in the Epipaleolithic (Late Natufian) period (10,500–8500 BC, Sultan Ia; Kenyon 1981, 271–274), the Pre-Pottery Neolithic A (8500–7500 BC, Sultan Ib, also known as the 'Sultanian'; Kenyon 1981, 18, 121–122, 175, 224–226, 274–275; Crowfoot-Payne 1983, 623; Bar-Yosef 1995, 190, 194), and the Pre-Pottery Neolithic B (7500–6000 BC, Sultan Ic). Throughout this early period the site was occupied by a dynamic community. Both Garstang's and Kenyon's discoveries had provided much evidence for this thriving settlement (Garstang *et al.* 1935, 167–168; 1936, 68–70; Garstang and Garstang 1948, 58–62; Kenyon 1957, 51–76; 1981, 18–92, 122–136, 175–176, 178–181, 226–253, 267–271, 275–308). The Italian-Palestinian Expedition focused on the protection of already exposed Pre-Pottery Neolithic (PPN) layers and monuments, backfilling several areas to protect them, and re-examining the Round Tower, a unique feature from this period (Figure 2). Discovered by Kenyon in the easternmost stretch of her 70 m long Trench I (Kenyon 1981, 19–44, pls 5, 7, 9–13, 15, 203–212), the Tower was at risk of being damaged by section collapse. For this reason, dumps and upper layers (consisting of huge Byzantine or Islamic waste pits) were excavated, the sections of the trench trimmed, and a bridge was built with American financial support to allow tourists to view it safely. Rehabilitation of Trench I brought several unexpected finds to light, allowed the stratigraphy to be checked, and the architecture of the monument to be re-examined. PPN layers were reached and excavated in Areas A, F, and T (Nigro *et al.* 2011, 573, 577-578).

Figure 3. General view of Area T, at the south-eastern foot of the tell, from the south-west, with insert showing the PPNA Town Wall remains reaching in the Square TII deep sounding. Copyright University of Rome 'La Sapienza' ROSEPAJ.

The Round Tower and Town Wall

The Round Tower with the attached Town Wall are symbolic of this PPNA trailblazing community, which introduced plant cultivation and caprine management, and invented mudbrick architecture. At Jericho they built a unique oversized construction, around five times bigger than their ordinary houses: the Round Tower. The tower had a diameter of 8.5 m (including a 1.5 m wide skin wall), and a height of 7.75–8.25 m (Kenyon 1981, 8–10, 18–43, pls 5–11, 203–212). It was built with unworked stones collected in the nearby *wadiat*, bonded with a mud mortar, and was plastered with carefully smoothed clay-rich mud plaster. A Town Wall, which we now know to encircle the whole settlement (see below), was adjoined to the western side of the tower. The Round Tower was higher than the Town Wall and its basic purpose was the defense of the town from its top, reached by an internal staircase accessible through a passage at the ground floor. This dominant position would also have allowed game to be observed at the spring and facilitate hunting. The passage and the 20-step staircase were made of large dressed stone slabs. At the southern foot of the tower, there was a series of silos to store liquid and dry products. In a central phase of the PPNA, the monument underwent a major destructive event, which left a burnt fill inside the staircase with 12 human skeletons lying on the lower steps. Such destruction was considered the outcome of an enemy attack or a riot (Kenyon 1981, 32–33). An alternative hypothesis interprets these skeletons as a deliberate post-destruction multiple burial in the sealed-up tower. Whatever is the case, the Round Tower continued to be used for a certain while, and its top was reached through the reconstructed Town Wall.

The defensive needs of Jericho's PPNA community are further demonstrated by the Town Wall, a solid stone-built structure with a tapering body preserved up to the height of 3.65 m, originally at least 5 m high. The Italian-Palestinian Expedition uncovered a stretch of the PPNA Town Wall in Area T, at the south-eastern

foot of the tell, showing that it completely encircled the settlement (Figure 3). The Town Wall served two main essential purposes: to protect the town and its precious content (including managed livestock) from enemy attack or natural threats such as wild animals or floods (Bar-Yosef 1986, 159–160), and to physically express the town's dominion over the surrounding landscape. The Round Tower and the Town Wall made visible the community's control over the spring and the oasis, which had for the first time become a cultivated land.

PPN Society, Burial Custom and Ancestors' Cult: Plastered Skulls and Clay Statues

The affirmation of cultivation and sedentism during the PPNA deeply affected social organisation. Developments in agriculture and animal breeding commenced in the PPN, even though fully domesticated crops and animals were only produced after a long time span of at least two millennia. In the meantime, hunting (predominantly of gazelle) was still practiced to provide the community diet (Bar-Yosef 1995, 196; Kuijt and Goring-Morris 2002, 379; Twiss 2007, 27). Nonetheless, the connection between individual families to their cultivated and irrigated land became strategic. The family was the basic productive unit of the Neolithic rural economy and the owner of plant and animal resources. This radically changed the community ideology. Progenitors, land or livestock owners, achieved significant community roles, as reflected in funerary custom, normally single burial in a crouched position, and, for these special personages, skull separation and modelling (Goren *et al.* 2001; Kuijt and Goring-Morris 2002, 376; Fletcher *et al.* 2008; Marchand 2011–2012 ; Nigro 2017a). Beheaded skulls were buried in domestic or religious installations. A stone slab-lined cist burial found by the Italian-Palestinian Expedition at the edge of Trench I/Site F contained a separated skull accompanied by a flint microlith (Nigro 2016a, 7, fig. 4a–b). Some meters east of the Tower, Kenyon found a doughnut-shaped basin, carefully plastered, that she interpreted as an altar. The basin was erected upon a small stone foundation incorporating an infant burial and five infant skulls (Kenyon 1981, 49, pl. 32). The skulls were considered a foundation sacrifice, because the cervical vertebrae were present, showing the skulls were cut off from the intact bodies before decomposition. Another group of nine skulls, arrayed in three lines, was uncovered in a courtyard floor in Square DI (Kenyon 1981, 436, 442, 444). Moreover, Kenyon found several skulls set into mudbrick walls (Kenyon 1981, 298, 305, pls 163b, 171) or buried within pits concealed underneath floors (Kenyon 1981, 74, 287, pls 48b, 155). Skull separation was a typical feature of PPN funerary custom in Jericho and in Palestine, connected with the rising ideology of family (Goren *et al.* 2001; Kodas 2014; 2016; Fletcher 2015, 26).

In the Pre-Pottery Neolithic B (7500–6000 BC), this process results in an explicit ancestor cult, illustrated by plastered, painted and inlayed skulls (Kenyon 1981, 77, pls 50–59), and by a series of clay painted statues (Kenyon 1981, 290, pl. 72). Two groups of fragments, each originally consisting of three statues (a male, a female and a child — again pointing to the affirmation of the concept of family), were found buried in two votive pits by Garstang in his north-east trench not far from a PPNB shrine (Sala 2006, 275–276, figs 9–10). Only the head of one of these figures is well-known; it recalls the coeval statues from ʿAin Ghazal, in Jordan (Rollefson 1983; 2000; Grissom 2000; Schmandt-Besserat ed. 2013). The legs and foot of this statue, now in the Musée du Louvre in Paris, show the high finishing of this early plastic art (Figure 4). The two triads are possibly the emblematic representations of deities or deified familiar elders (Schmandt-Besserat 1998a; 1998b; Schmandt-Besserat ed. 2013; Cauvin 2000, 105–120).

Italian-Palestinian excavations demonstrated that the PPN town extended to the south in Area A beyond the line of the MB III Cyclopean Wall (Nigro *et al.* 2011, 577–578), and, to the east in the area around the spring (Area S). The Pre-Pottery Neolithic settlement at Tell es-Sultan, thus, extended to around 6 ha with an estimated population of around 1200 inhabitants (Figure 5), by far one of the largest sites of the Fertile Crescent in this epoch. The Town Wall and the Round Tower gained it the epithet of the 'oldest city of the world', even if PPN Jericho's social organisation more prosaically reflects a typical Neolithic farming village economy.

Early Bronze Age Periodization and Absolute Chronology at Tell es-Sultan

Before discussing features, or the pace, stops and accelerations of development in the EB Jericho community, it is necessary to deal with the issue of chronology in order to place it within a wider context across Egypt and the Near East. The relative archaeological periodization has been firmly established (Nigro 2006, table 1; 2016a, table 1). Recent absolute chronological re-assessments of the Early Bronze Age in Southern Levant have significantly increased it by about two centuries (Bruins 2001, 1150–1151; Bruins and van der Plicht 1998, 627; 2001, 1328–1331; Anderson 2006, 104–106; Holdorf 2010; Regev *et al.* 2012; Regev *et al.* 2014). This shift depends on a wide set of re-calibrated dates based on a new calibration curve applied to 4th and 3rd millennium BC samples (Bronk Ramsey 2009; Reimer *et al.* 2009). The new EB high chronology is thus founded on a calibration curve, that in turn is based upon dendrochronological sequences. For the time span corresponding to the EB something seems wrong with this calibration curve (Keenan 2002, 231). It is — up to now — not completely consistent with the stratigraphy, material cultural seriation and other dating methods

Figure 4. Head, legs and feet of the PPNB clay statue found by J. Garstang in the north-eastern Trench. Copyright University of Rome 'La Sapienza' ROSEPAJ.

adopted at Tell es-Sultan with samples from an almost ten-millennia long sequence. Radiocarbon aided re-assessment should preferably produce chronological determinations consistent for the whole history of the site, not just for a single period, leaving, for example, a stretched five-century gap between the EB and MB. A new sample series from Tell es-Sultan is being processed in the CEDAD Lab of Salento University, Lecce (Italy), collected from ten millennia of superimposed layers of human occupation (from Trenches I, II, III, the huge Garstang north-east trench, as well as from Italian-Palestinian fields) in order to double-check 4th and 3rd millennium BC determinations over a complete sequence. At the coeval site of Khirbet el-Batrawy in Jordan (Nigro *et al.* 2019), which provided a new set of data for the end of EB III from the 'Palace of the Copper Axes', the calibration curve proved to be not fully reliable (14 charred seeds produced dates ranging from 2900 to 2400 BC: Höflmayer 2014, 129–131, fig. 4). For this reason, the present author deems it more cautious to keep the traditional absolute scheme as a mere conventional indication. If the reader wants to compare Tell es-Sultan with recently re-dated coeval sites, he can easily add two centuries to our EB dates.

Rise and Collapse of an Ancient Palestinian City: The Early Bronze Age (3400–2300 BC)

After what Kenyon called a retrogression (Kenyon 1957, 83), which, in spite of the invention of pottery,

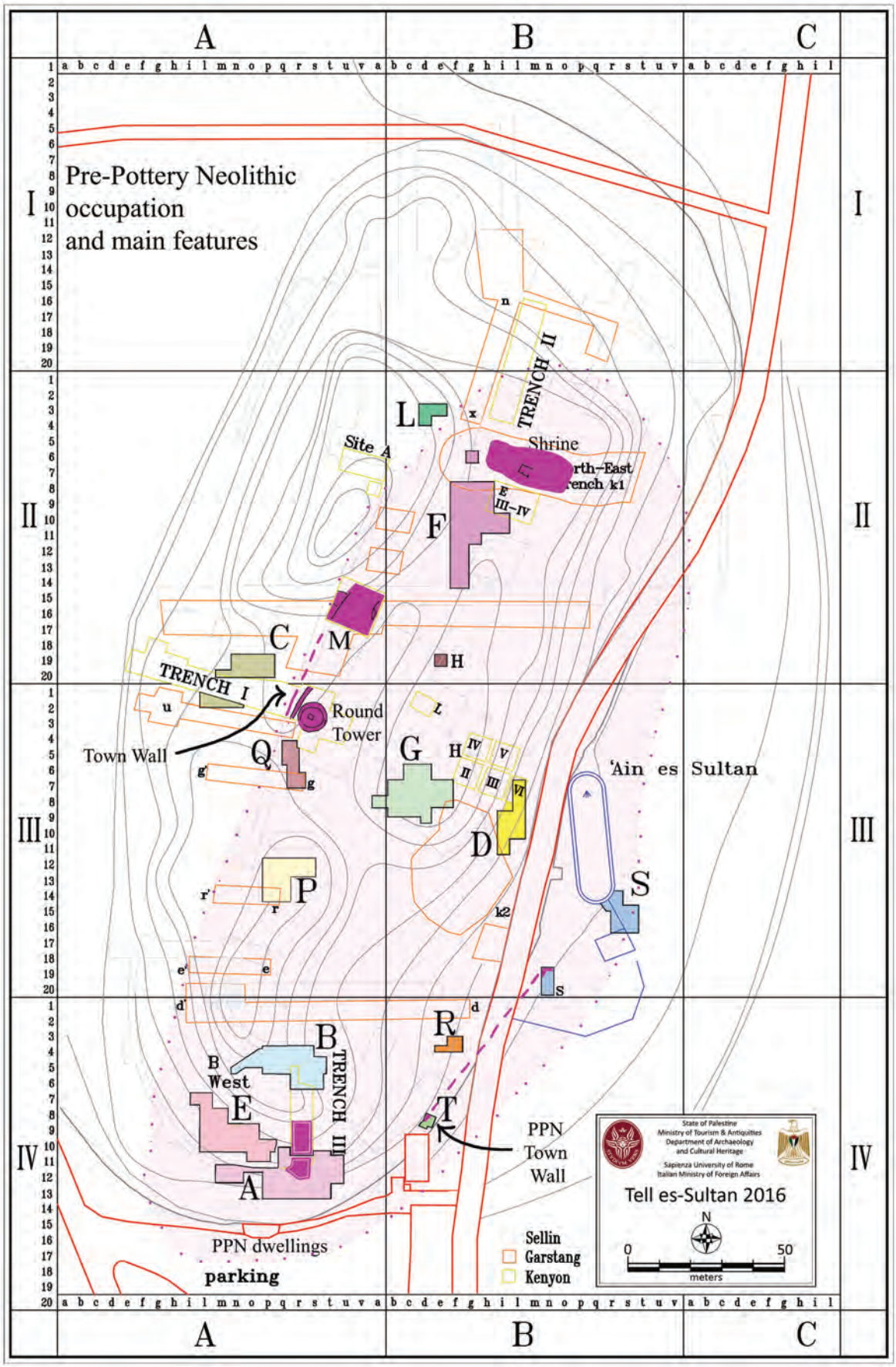

Figure 5. Reconstructive plan of the PPN settlement expansion at Tell es-Sultan/Jericho.
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characterizes the Pottery Neolithic (6000–4600 BC), a drastic reduction in water flow from ʿAin es-Sultan during the Chalcolithic (4600–3400 BC) led to the main settlement in the oasis moving to Tell el-Mafjar, 1.5 km to the east, on the eastern bank of Wadi Nueima (Anfinset 2006; Anfinset *et al.* 2011; Taha *et al.* 2004). A new group of pastoralists and agriculturalists settled down again over the ruins of Tell es-Sultan in the second half of the 4th millennium BC, bringing a new culture, that of the Bronze Age (Nigro 2005).

From Rural to Proto-Urban Village (Early Bronze I, 3400–3000 BC)

What Kenyon properly labeled a 'Proto-Urban' village (Kenyon 1957, 93–102) was reconstructed by the Italian-Palestinian Expedition by matching structures excavated but only partly published by Garstang on the north-eastern plateau in 1935–1936 (Nigro 2005, 15–41, 109–128, fig. 4.11; Nigro 2007, 14–20, figs 17, 22) with those uncovered by Kenyon in Trench II and in Squares EIII–IV (Hennessy 1967).

In the earliest stage (EB IA, 3400–3200 BC, Sultan IIIa1, Garstang level VII), domestic units, including domed round huts and fenced compounds, depict a flourishing rural community. Garstang also identified a broad-room shrine (Shrine 420, labelled as a 'Babylonian Shrine' for its resemblance to the Early-Dynastic temples of Mesopotamia), at the northern edge of his north-eastern trench. This form of cult building with a raised platform, a niche, and marble and stone cultic furnishings was typical of Southern Levant in the Chalcolithic and EB I–II (Sala 2005a; 2007, 58–64; 2008, 1–88; 2011, 5–6).

The newcomers transformed underground caves in the limestone bedrock plateau north-west of the site into tombs (Kenyon 1957, 95–102; 1979, 66–83; Nigro 2005, 199). Such rock-cut *hypogea* hosted extended families (100 individuals or more) and included disarticulated burials, characterized by grouping of skulls (Garstang's Tomb A, in its lowest strata; Kenyon's tombs A13, A84, A94, A114, A124, A130+A61, K1, K2, Kenyon 1960, 4–51; 1965, 3–32). Full sedentism is illustrated by changes in burial custom, with the gradual introduction of primary inhumation and the inclusion of food offerings and symbolic items such as mace-heads and incised bone flutes in funerary sets (Polcaro 2007, 101–103). The lowest layers of Tomb A, a clan tomb excavated by Garstang west of the tell, which continued in use for the whole EB, offers several examples of primary inhumation (Garstang 1932, 18–23; Garstang and Garstang 1948, 87). Such body treatment was reserved for selected individuals like number 24, who was laid on a raised platform in a seated posture with raised arms (Polcaro 2005, 62–64, fig. 3.53). His funerary set included some vases and a club, placed between his legs. The peculiar gesture of raising arms (also known from ethnographic parallels in Central America) has been compared with art representations in EB Palestine, such as on the Arad stela, where a figure with raised arms appears twice, once standing and then lying on a bed or a funerary canopy (Amiran and Ilan 1992, fig. 87). The same figure, a praying leader or divine personage, is also attested in glyptic and incised in the slab-paved courtyard of the EB I temple in Megiddo (Loud 1948, pl. 273; Keinan 2012, fig. 2.16). The marble mace-head — a status symbol imported from Egypt — points to the rank of the buried personage in the gesture of prayer: a chief or a priest (Polcaro 2005, 63, fig. 3.54).

Material culture and architecture reflect some significant socio-economic changes between EB IA and IB (Sultan IIIa1–2). EB IB specialized pottery productions, like Red/Grey Burnished, Band Painted and Line Painted wares (Sala 2005b, 171–177, pls 35–38), and a big apsidal building devoted to communal functions testify to increasing social complexity and incipient hierarchy (Kenyon 1981, 322–324, pls 174, 313a–314; Nigro 2005, 122–124, 200; Montanari 2012, 2–10). The construction of a terrace wall (Kenyon 1981, 96, pls 77–78, 229a, 313b–314; Nigro 2005, 23–25, fig. 3.14) and the enucleation of a central street (Nigro 2005, 36), as well as rectangular houses (initially with rounded corners) are precocious steps towards urbanization.

A decisive factor accelerating such a cultural phenomenon in Southern Levant was the connection with Egypt, revealed by a series of diagnostic finds — Egyptian marble mace-heads, schist palettes, lotus vases, and a *serekh*. Jericho, located at an important crossroads in Palestine, which gave access to valuable resources such as salt, bitumen, olive oil, wine, and wool was thus included in the Egyptian Early Dynastic trade network (Sala 2012; Nigro 2014a).

Urban Jericho: The Early Bronze II–III (3000–2300 BC)

The flourishing village of EB I was progressively transformed into a city. The nature of urban status has been discussed by several scholars and is a matter of scale and terminology (Philip 2001; 2003; Prag 2001; Rast 2001; Chesson and Philip 2003; Harrison and Savage 2003; Mazar and Rotem 2009; Harrison 2012, 630–638; Chesson and Goodale 2014). What is referred to here as a 'city' is a social organisation and related economy which is given a spatial configuration distinct from that labelled 'village', because of its *relative* dimensions in respect of other sites of the region, of its inner layout, as well as for the presence of an encircling city wall, and major public buildings (for example a temple, palace, granary, marketplace/gateway, or water reservoir) showing an internal hierarchy of spaces and functions (Nigro 2010a; 2010b). It is quite obvious that the concept of 'city' in Southern Levant needs deep reconsideration,

as attempted most recently and foremost by Chesson 2015 (*contra* Kafafi 2011; Greenberg 2003, 32–33; Greenberg *et al.* 2012, 91–94; Paz and Greenberg 2016); unfortunately, although she mentions Jericho, she does not refer to the Italian-Palestinian Expedition. However, I do not think that a description of city specifics, which measure how pre-urban settlements were transformed to early cities in this marginal region of the Near East, should require a negation of the intrinsic meaning of the term itself. Southern Levantine cities already existed in the 3rd millennium BC, but if some prefer to call these 'walled communities' (Schaub 1982; Schaub and Chesson 2007; Greenberg 2011, 237) this perhaps mainly illustrates the difficulty in perceiving the indicators of a more complex socio-economic organisation solely through archaeology and anthropology. Excavations at Tell es-Sultan, as well as at Khirbet el-Batrawy (Nigro 2013b, 491; 2016b), have provided a number of clues for a plausible definition of Southern Levantine early urbanism during the 3rd millennium BC.

What is a City in the Southern Levant?

As noted above, since the 1989 Emmaus Conference (de Miroschedji ed. 1989) debate on the nature of Southern Levantine urbanism in the 3rd millennium BC has been fiery. Scholars have argued that it did not reach the complexity of early urbanization as known from Egypt and Syro-Mesopotamia (Falconer *et al.* 2007). This may seem obvious, especially because of the — up to now — absence of writing. Palestinian urbanization had its own adaptive peculiarities and we may try to understand it by using the following ten parameters.

1. The relative dimensions of a site or territory. This is also in respect to the internal scale of each polity — which in the Jericho Oasis is defined by the proper city (the actual tell), with complementary environments administrated by the 'city' comprising small rural farms in the oasis, the two creeks Wadi Nueima and Wadi Qelt, the steppe, and a small portion of the Judean Desert nearby.
2. The presence of fortifications (massive works implying a costly use of labor and materials).
3. Inner spatial and functional differentiation (gates, streets, public buildings, markets, necropoleis); e.g. the site of Khirbet Kerak/Bet Yerah (Paz and Greenberg 2016).
4. Accumulation of wealth (such as metals, salt, and precious commodities, as well as great quantities of agricultural products).
5. Adoption of tallying systems (e.g. tokens, sea-shells and seals).
6. Precious metals exchange (as evidenced by weights of 1 to 5 shekels).
7. Social differentiation (visible in tomb furnishings, body treatments, and organisation of and inside the tomb).
8. Labour organisation (e.g. for building and maintenance of canals and of the city walls).
9. Craftsmanship and art (seen in wooden furniture, statuary and glyptic).
10. Material culture specialization and standardization (mainly detectable in pottery and architecture).

The combination of these elements describe what we might consider a city in the 3rd millennium BC (Kafafi 2011).

City territories show a scale of differentiation, increased localized diversity and coherence of identity within a territorial polity (the Jericho Oasis and down to the Dead Sea, and up to the mountain pass leading to ʿAi/et-Tell), and especially a rural and urban dichotomy in lifeways. At Jericho the opposition is between agriculture in the oasis, and the nomadic pastoral component on the nearby steppe, with a dichotomic participation and role in the new born urban system. Urban was in many cases opposed to pastoral and not to rural. Archaeology at Jericho testifies that the 'walled community' had accomplished 'urban' tasks: building and maintenance of city walls, excavations and management of the freshwater canals for irrigation of the oasis, import of a variety of raw and precious materials, and so on. There is a reason why the walls are called 'city walls' and not simply 'walls': an urban organisation is needed to both build and maintain them. They are thus the most solid proxy of the existence of a form (the Southern Levantine) of urbanism (Nigro 2009a, 350-351, 355).

Economic Foundations

In the case of Jericho, Italian-Palestinian soundings in Area S showed that a basic role was played by the spring of ʿAin es-Sultan, a 5000 litres-per-minute source of freshwater (Figures 6–7): control over water distribution implies centrally administrated intensive agriculture in the oasis (Nigro 2014b). This allowed the accumulation of agricultural surplus, witnessed by numerous silos and storage facilities for dry goods (cereals and legumes), easy to exchange for precious or rare stuffs (wood, stone, metal), but also needed to feed the pastoral element of the urban polity producing meat and wool. External interacting factors triggering the urban transformation of Jericho were the accumulation and distribution of Dead Sea raw materials (salt, bitumen, sulphur and semi-precious stones), and copper from the mines of Wadi ʿArabah (Nigro 2014a). Long distance specialized trade is another basic component of the urban phenomenon (Esse 1991). Due to its basic resources (water and salt) and strategic location, Jericho became a fixed stop

Figure 6. The spring of ʿAin es-Sultan before rehabilitation works carried out in 2009–2010.
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Figure 7. Canals with EB pottery found just east of ʿAin es-Sultan as found during the survey carried out by the Italian-Palestinian Expedition in 2009.
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for overland caravans running south to the Sinai and Egypt, as shown, for example, by the presence of an Abydos Ware juglet at the site (Kenyon 1960, fig. 25.34).

The EB II City Wall

At the very beginning of the 3rd millennium BC, with the erection of a massive city wall and the enucleation of a public area on the central mound overlooking the spring and the oasis (the so-called Spring Hill), Jericho became a city. Structural and architectural transformations, and material culture remains testify to the achievement of the urban status. Minor coeval sites like Tell Abu Hindi or Tell el-Mafjar or ʿAin ed-Deuk at the fringes of the oasis show the rural scale of the settlement pattern within the same polity (Nigro *et al.* eds 2011). The urban layout was planned — as demonstrated by recent investigations — in order to include the spring within the city and thus to exercise a direct control over its waters (Figure 8).

The EB II (3000–2700 BC, Sultan IIIb) city wall, made of yellowish bricks bonded by a thick ashy mortar, was identified and excavated by the Austro-German Expedition to the north (Sellin and Watzinger 1913, fig. 7, pl. I, '*Massiv*'), and both by Garstang and Kenyon again on the northern and western sides of the tell (Nigro 2010a, 12–36). In Trench I, Kenyon uncovered a semicircular tower (Kenyon 1981, pls 79b, 229b), a

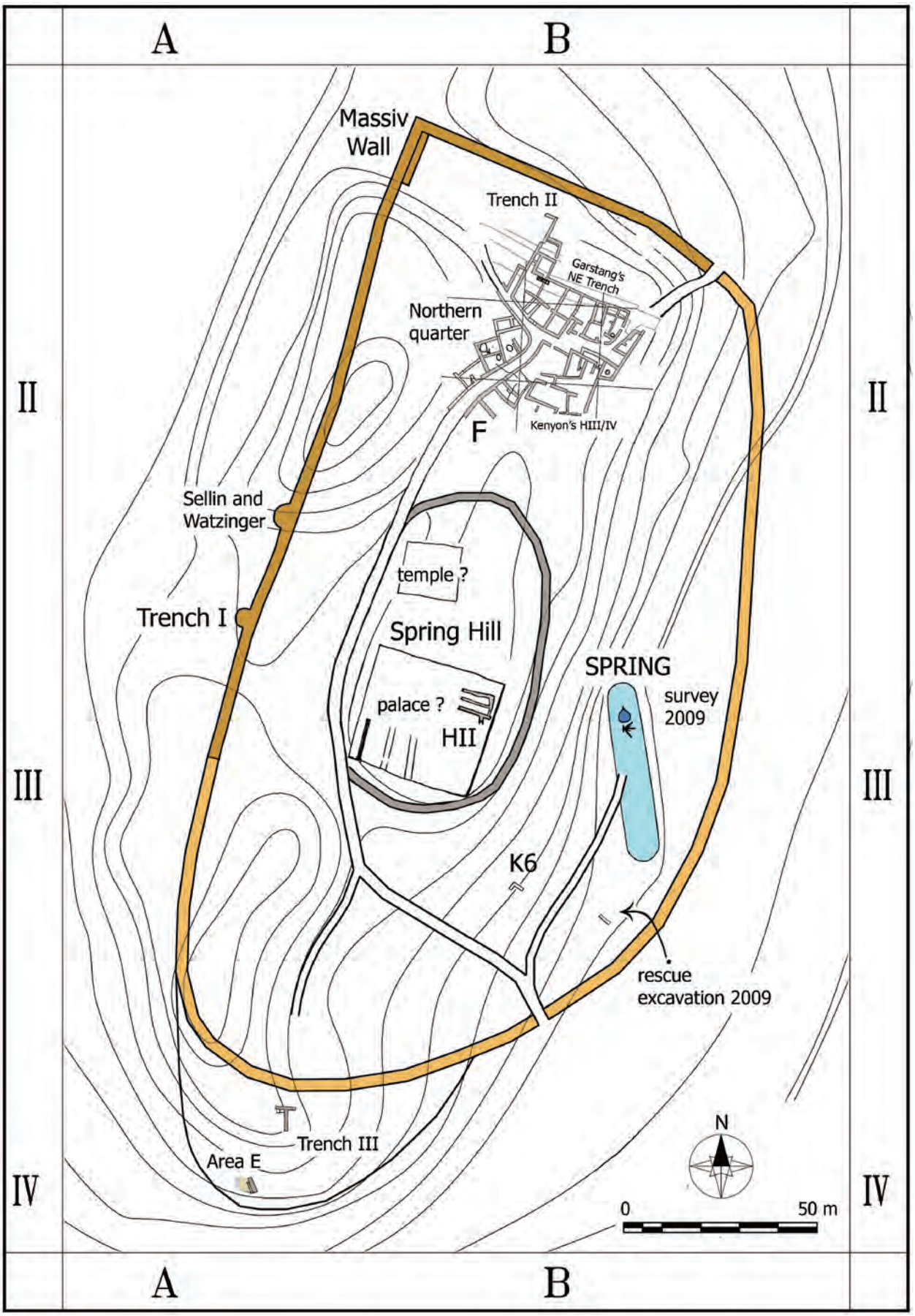

Figure 8. Reconstructive plan of the EB II city at Tell es-Sultan/Jericho. Copyright University of Rome 'La Sapienza' ROSEPAJ.

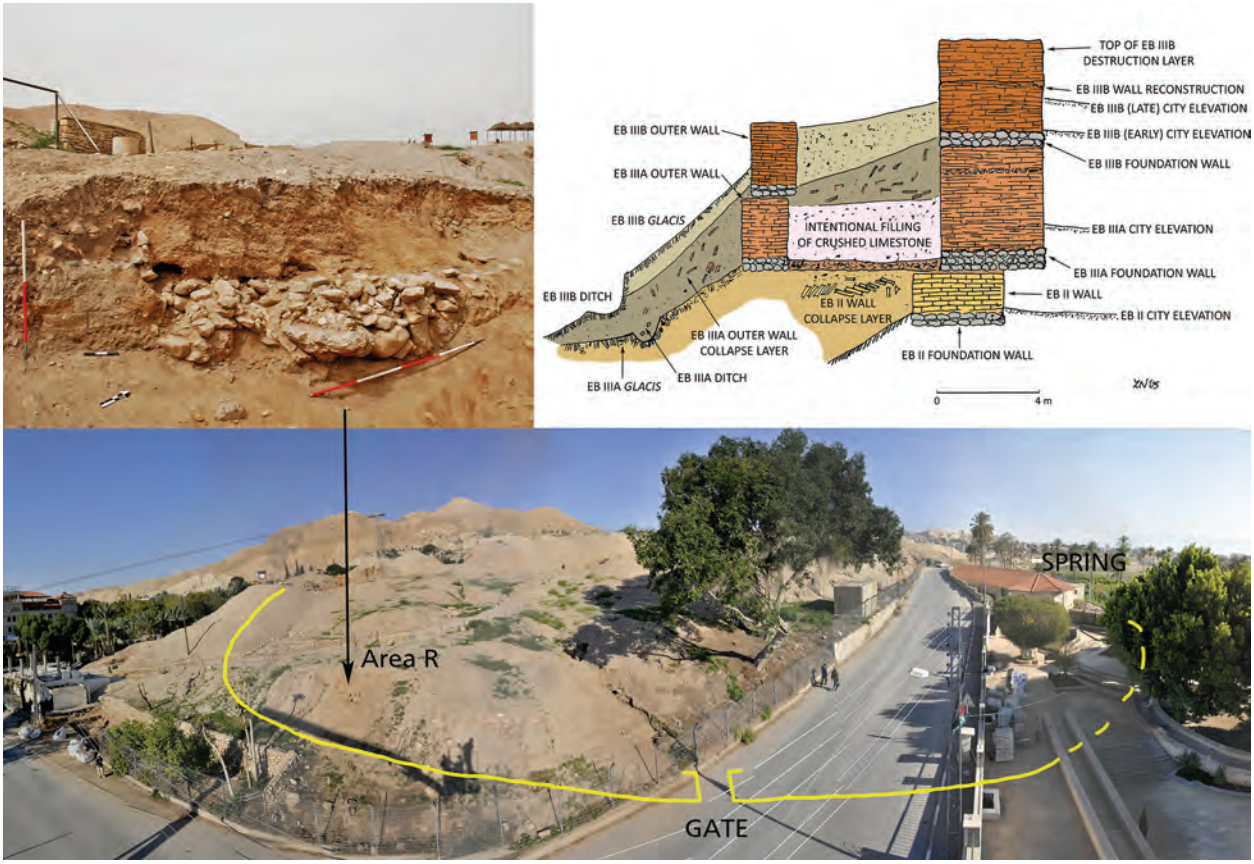

Figure 9. Detail of the Area R city wall (top left), section depicting the EB II–III city wall construction (top right), and view below of the south-western corner of Tell es-Sultan and the EB II city wall excavated in Area R (upper left), with outline showing how the original tell encompassed the spring within the city. Copyright University of Rome 'La Sapienza' ROSEPAJ.

typical defensive feature of this period which at Jericho was introduced in the second stage of the EB II. A second semicircular tower was excavated some 30 m to the north of this by Sellin and Watzinger, although they did not recognize it as such (Nigro 2010a, 5). The city wall, made with more than 2,000,000 bricks, had a twofold purpose: to delimit the place where public functions and wealth were gathered and protected, and to dominate the oasis as visible symbol of the new urban power (Nigro 2009a, 355–361). During the 2012–2015 seasons, another stretch of this wall was identified in Area R, to the south-east just to the side of the modern road cutting in between the tell and the spring (Figure 9). Excavation in Area R located the city gate that gave access both to the city center and to the spring itself. Remains of the South-East Gate, which is presently buried underneath the modern road, were traced east of Area R. Around 40 m north of the gate, just west of the spring, Garstang had excavated a densely occupied area dating back to EB II (Garstang 1932, 11, 17, fig. 5, pl. XXc). On the opposite eastern side of the modern road, a salvage excavation, carried out in 2009 during rehabilitation works conducted by the municipality, also identified EB II material remains and the eastern section of the wall connected to the gate (Nigro 2010a, 57–60). Additionally, restoration works at the Ottoman Pool confirmed the inclusion of the spring within the city by the EB II, as well as the earliest excavation of canals for irrigation. This major resource was, thus, linked with urban expansion at the beginning of the 3rd millennium BC. Abundant fresh water not only made it possible to make mudbricks in large numbers, as required by the city wall and other public buildings on Spring Hill (Ripepi in this volume), but also allowed cattle farming, which is marked by a dramatic increase in mean life expectancy for the inhabitants (35 years, with up to 35% of children surviving instead of 25%), and a marked increase of the urban/agriculturalist population versus the nomadic/pastoralist component of the society (Nigro 2014b, 32–33).

The city, supported by a solid agricultural production, extended its economic control over trade and industry, stabilizing its connection with Egypt, and with the flourishing district of the Dead Sea, which flourished at centres like Tell Hammam, Bâb edh-Dhrâʿ, Numeira and Arad (Schaub and Chesson 2007). EB II Jericho was a densely inhabited city of 6 ha, with a palace and a

temple on two central mounds dominating the spring and the oasis. It was encircled by a mudbrick city wall reinforced by round towers placed at irregular intervals all around its perimeter. A major rectangular defensive structure was located to the north-west. The overall layout exhibited an oval elongated shape, with the main gate at the south-east corner.

The End of the EB II City

The flourishing EB II centre was destroyed by a strong earthquake around 2700 BC. Evidence for this dramatic event was visible in all areas, with collapsed walls, fallen-down bricks, and broken items and furnishings (Nigro 2014c, 71–72). In the 28th century BC major seismic events along the Jordan Valley fault occurred so that several urban centres in the region were destroyed by violent earthquakes (Gallo 2014, 146–153). In the traditional historical reconstruction, this tectonic instability was coupled with a re-orientation of Egyptian commercial routes, which from the 3rd Dynasty preferred the seaborne route towards Byblos and the Syro-Lebanese coast (Nigro 1994, 5), thus reducing trade on the overland route through the Negev and Wadi ʿArabah. This would have been a major factor behind an abrupt crash of urban development in Southern Palestine. Scholars following the new high chronology have recently also raised this Egyptian shift to the north to the times of the 1st Dynasty or earlier (Bronk Ramsey *et al.* 2010). This is, however, only weakly supported by the evidence from Byblos (Saghieh 1983, 104–105). I more simply think that there is no evidence but *argumenta ex silentio* proving this shift. However, finds of cedar timber in the Umm el-Qaʿab necropolis at Abydos suggest that good commercial relationships with Byblos already existed in Pre-Dynastic and Proto-Dynastic Periods (O'Connor 1991; Wengrow 2006, 249–250, fig. 10.13), but this does not indicate if the Egyptians reduced their commercial activities in the Southern Levant during the EB III. Egyptian and Egyptianising finds at Tell es-Sultan during the EBA are relatively few and difficult to date (Hennessy 1967). Nonetheless, as Sala demonstrated in a thorough study (Sala 2012) the distribution of these Egyptian finds is almost constant through time, showing no increase or sudden fade in the Early Bronze III. Moreover, new discoveries in Wadi el-Jarf and in the Sinai (Tallet 2014), as well as finds in the 'Palace of the Copper Axes' at Khirbet el-Batrawy in Jordan (Sala 2014, 69–70; Nigro 2014a), suggest that the route to Palestine and Transjordan was still functioning in the EB III (Sala 2012; 2014, 70–72; Nigro 2014a). It should be recalled that both the palaces of Khirbet Yarmouk/Tel Yarmuth and Khirbet el-Batrawy were built using the Egyptian royal cubit of 0.52 m (Nigro and Sala 2012, 47; de Miroschedji 2013, 767, 784).

Towards the end of the EB II some major cities, like Arad (Amiran 1978a, 116; 1978b, 184; 1986), Tell el-Farʿah North (de Miroschedji 1993, 437), Tell Abu Kharaz (Fischer ed. 2008, 31, 34, 71, 181, 383–385), and Tell es-Saʿidiyeh (Tubb 1993, 1300; 1998, 42–43), were abandoned, while many other show northern (Syrian and coastal) connections (Nigro 2009b, 65–66, 74–75; Nigro 2017b). This northern wind generated a major cultural transformation, leading to what was labeled EB III (2700–2300 BC).

Jericho in the EB III: A New Flourish

Tell es-Sultan, again, beautifully epitomizes this regional trend. After the earthquake, the city was completely reconstructed according to a slightly modified layout (Figure 10). Fortifications were doubled by the addition of a lower outer wall to the main inner wall running on the upper edge of the mound, which was in turn refurbished with the addition of inner gaps and wooden beams to better survive earthquakes (Nigro and Taha 2009, 738–739). At the north-west corner of the city a rectangular tower, with robust stone foundations, took the place of the preceding EB II bastion (Sellin and Watzinger 1913, 23–26, pls 5, 6a, III, figs 6, 7). On the eastern flank of Spring Hill a monumental palace was built (Palace G), on a series of terraces (Nigro *et al.* 2011, 586–592).

The EB III Double City Walls

A large part of the city perimeter was razed and regularized with debris from EB II destroyed buildings. A small sloping rampart with a moat at its base was added to the double city walls. Excavations in Areas B and B-West thoroughly illustrated its building technique (Marchetti and Nigro 1998, 81–94; Nigro and Taha 2009, 738–739; Nigro *et al.* 2011, 580–581). The main inner wall was 4–4.2 m wide, while the outer wall measured 2.5 m. Both were made of big 0.60 x 0.40 m reddish-brown bricks set upon a foundation consisting of two to six courses of stones. As a response to the earthquake hazard, wooden beams and reed mats were embedded into mudbrick walls to strengthen their inner cohesion and help transpiration (Nigro and Taha 2009, fig. 15). In between the two walls, there were blind rooms and walkways, some of them filled with white powdered limestone; the latter was curiously misinterpreted as ashes from Joshua's destructions by Garstang (1931, pl. I) and Kenyon (1957, 176–177, pl. 37b; 1981, 211, pl. 122). The main inner wall was refurbished several times (in Trench III, Kenyon distinguished up to 17 stages), but it underwent only one major reconstruction indicated by a stone-lined foundation in EB IIIB (2500–2300 BC).

EB III City Gates

In 2009 an EB IIIA postern gate (L.1750) was identified in the western city wall (Nigro and Taha 2009, 740, fig. 16), while in 2010, an EB III South Gate was uncovered

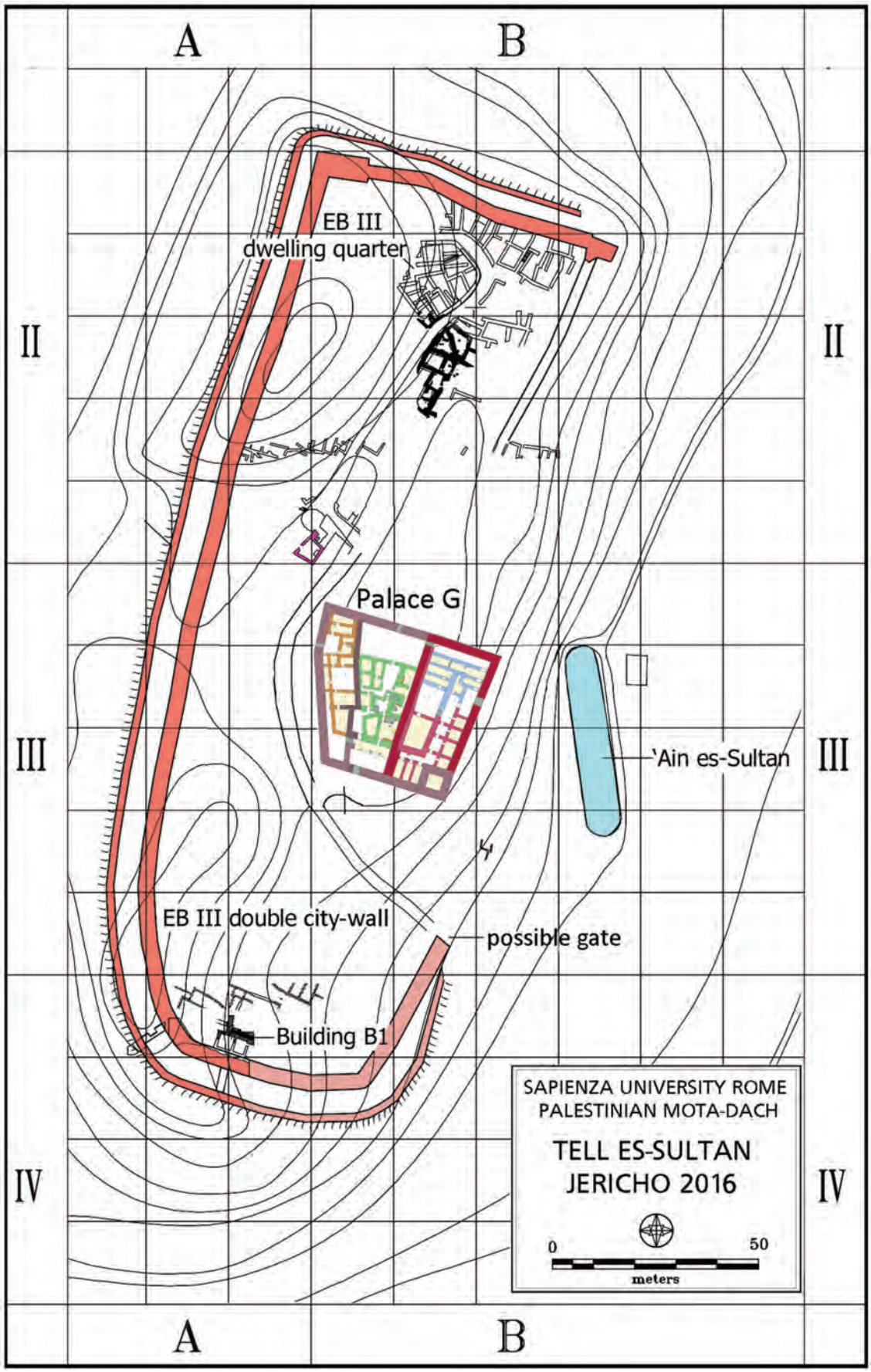

Figure 10. Reconstructive plan of the EB III city at Tell es-Sultan/Jericho.
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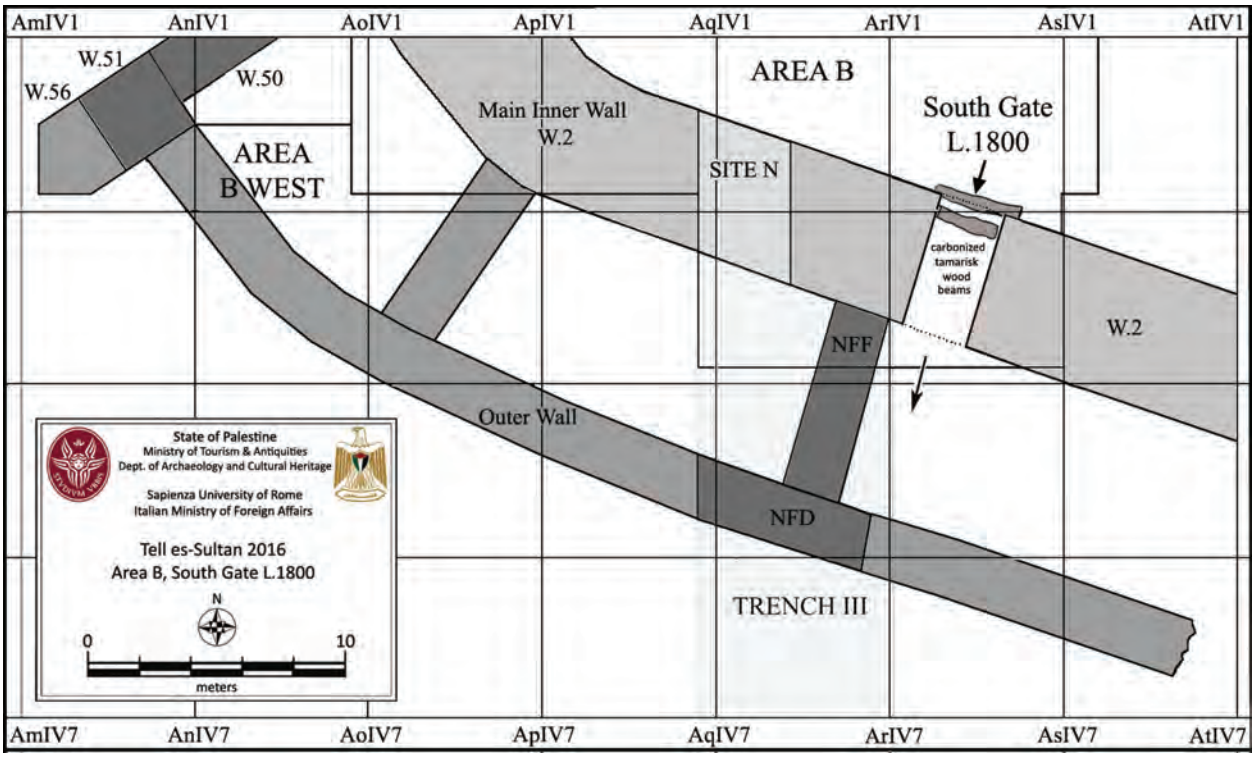

Figure 11. Plan of Area B with the EB IIIA city walls and South Gate L.1800.
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through the southern stretch of the MIW, filled with collapsed bricks and carbonized wooden (Palestinian tamarisk) beams. The South Gate (L.1800) was 2 m wide and had a 4.5 m long passageway (Figure 11), creating a walkway in between the inner and outer walls, approached from the east (Nigro *et al.* 2011, 580–581). When the city was set on fire at the end of EB IIIA, around 2500 BC, the South Gate collapsed, and, in the following EB IIIB stage a subsidiary building (B1) was erected in Area B, blocking this passage (Marchetti and Nigro 2000, 121–163).

The EB II–III Northern Dwelling Quarter

In Area F, on the northern plateau, an intensely populated dwelling quarter was excavated on both sides of the main street running south-west/north-east (Figure 12). Houses offered a vivid picture of ordinary life at the middle of the 3rd millennium BC, as well as a continuous stratigraphy through the whole Bronze Age (Nigro 2006, 5–6, 10–17; Nigro and Taha 2009, 740–741, fig. 17). Streets and houses developed over seven centuries in an intermingled network of mudbrick walls and floors of beaten soil forming an interconnected body of earthen architecture. Finds from Area F indicate the city economy and organisation: an incised bone cylinder seal, balance weights for precious metals (1 to 3 shekels), flint and stone tools, pottery tokens, and specialized pottery production such as Khirbet Kerak Ware (KKW), the lustrous ceramic imported from the north, characterized by its red/black polished surface (Marchetti and Nigro 2000, 15–51). Recent studies allow imported KKW to be distinguished from local imitations (Nigro 2009b; see also Medeghini *et al.* 2013).

Palace G and the Socio-Economic Foundations of the City

The palace, a building with mudbrick walls up to 2 m thick erected on three terraces, was located on the eastern slope of Spring Hill overlooking the irrigated and densely cultivated oasis. The main entrance was from the south, leading into a forecourt and a central hall. It had at least three storeys as shown by several staircases. After restoration work in the last three seasons, a new plan of the building was produced matching structures excavated by all expeditions (Nigro 2016a, 10–12). Finds from the palace indicate its functions and status (Figure 13): a copper axe (Kenyon 1981, fig. 15.4) and a dagger which preserved part of the wooden and leather handle (Nigro *et al.* 2011, 592), an Egyptian marble mace-head (Holland 1983, 804–805, fig. 365.5), a beautifully carved and inlayed ivory bull's head (Garstang 1932, 17–18, pl. XXa; de Miroschedji 2009) belonging to a piece of furniture or to an emblem of power, and a basalt stone potter's wheel (Dorrell 1983, 559–560), which recalls those found in the coeval palaces of Khirbet el-Batrawy

Figure 12. View of the EB II–III dwellings in Area F with House L.305, looking north-west.
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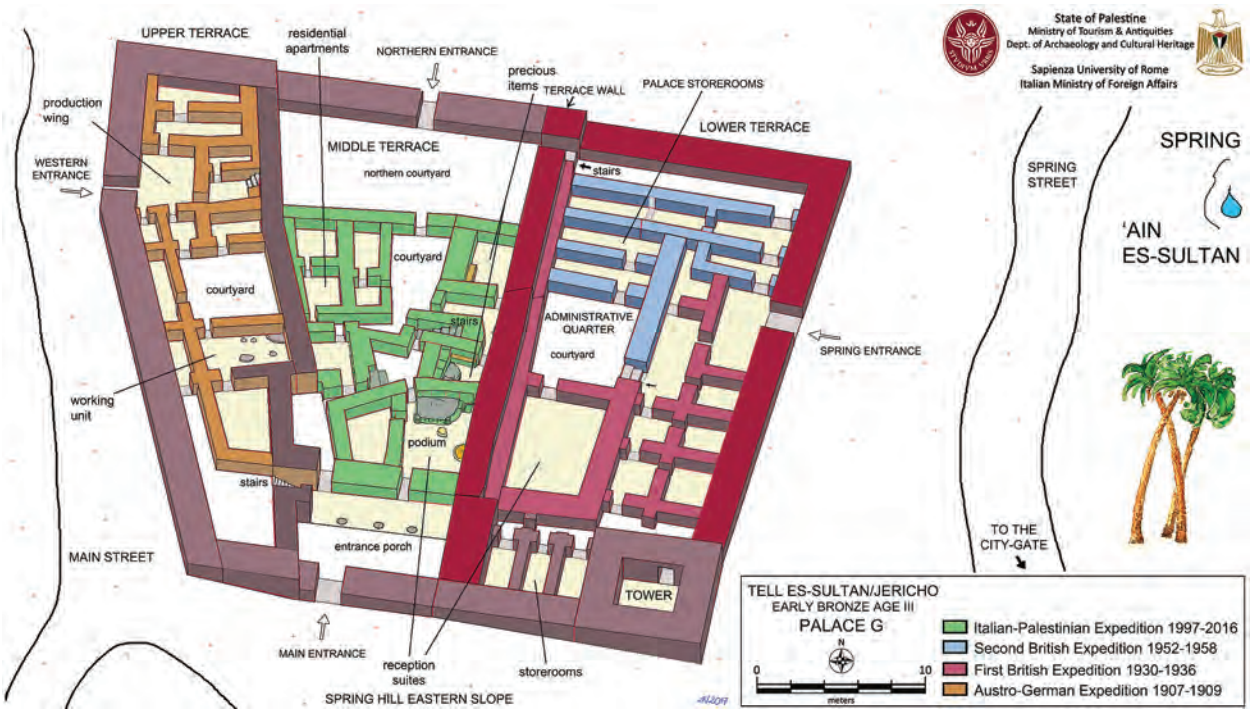

Figure 13. Axonometric reconstruction of EB III Palace G as excavated by the four expeditions.
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Figure 14. Copper crescentic axe found in Kenyon's Tomb A114 (Jordan Archaeological Museum). Copyright University of Rome 'La Sapienza' ROSEPAJ.

and Khirbet Yarmouk, thus pointing at centralization of innovative technological tools as one function of this kind of institution (Fiaccavento 2013).

Copper weapons were also found for the first time in the necropolis: a crescentic axe (Figure 14) with a prominent knob in Tomb A114 (Kenyon 1955; 1960, 179, fig. 66.1), and a dagger in Tomb F5 (Kenyon 1960, 174, fig. 66.3). Together with the dagger found in the palace they may indicate that a military class was emerging within the elite ruling over the city.

The central hall of the building contained a raised podium built against its northern wall, flanked by two columns; in the middle was a fireplace — a quite common installation in such palatial reception suites. Along the west side of the hall, four jars were arrayed: a Pattern-Combed jar for olive oil, a holemouth jar (usually for water), a *pithos* with wheel made neck for cereals, and a Metallic Ware jar for wine (the jar contents — except for the water — were established by photo-sensors and gas-chromatography in Sapienza University). The Pattern-Combed olive oil jar had an incised potter's mark at the bottom of its neck. A jar sealing was also found in the

Figure 15. EB III schematic jar sealings from Palace G at Tell es-Sultan, showing the dominant motive of the lion catching the gazelle. Copyright University of Rome 'La Sapienza' ROSEPAJ.

Figure 16. EB II–III Bull's heads found in Tell es-Sultan (site and necropolis).
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palace, showing two registers: in the upper one a lion is shown catching a gazelle (Figure 15). This subject was a popular one, as shown by three other seal impressions from the same palace (Sellin and Watzinger 1913, 97–98, fig. 66), and connected with a glyptic tradition affirmed on the Levantine coast at Byblos and Sidon (Doumet-Serhal 2006, 259–260). Another noticeable find from the Palace is a Red Polished jug, a ware characterized by a fine depurated buff fabric and by lustrous shining revetment, which is also attested to in other palatial contexts of the Southern Levant (Fiaccavento 2014; Medeghini *et al.* 2016).

The ivory bull head from the palace has two comparisons from tombs. These are made of inlayed limestone and show a somewhat rough style (Sala 2010). The subject was popular, as shown by two jar spouts and a ceramic figurine (Figure 16) found in the same palatial compound (Nigro *et al.* 2011, 591–592, fig. 21). This may indicate the role played by cattle in the early urban economy, which is also shown by faunal remains from the living area (Alhaique 2000). Cows and especially oxen had a prominent role in the intensive agriculture practiced in the oasis.

What Is a 'Palace' in the 3rd Millennium BC Southern Levant?

Discoveries in Area G contribute to a debate on what is a 'palace' in the Southern Levant (de Miroschedji

2015). As with the concept of 'city', this is not a mere question of scale and terminology. A palace in Palestine is defined in respect of the following:

1. Dimensions, both in respect of the extension of regular houses and the whole site.
2. Location within the city — usually either aside the gate, or in a dominating place.
3. Limits; it always has a perimeter wall.
4. Architecture (hydraulic devices, inner refining and monumentality).
5. Internal subdivision; circulation and layout show a hierarchy of spaces.
6. Multifunctional destination; different wings host different functions.
7. Concentration of wealth. Storerooms and furnishings show centralization of copious goods, the presence of imported luxury goods and attestation of specialized pottery wares.
8. Concentration of food supplies. Jars and *pithoi*, as well as other built-up storage devices indicate food gathering, distribution, and communal consumption of meals.
9. Presence of raw metals (gold, silver, copper) and finished metal items (especially weapons).
10. Collection of innovative technological tools, such as potter's wheels, crucibles, cylinder seals and sealings.

Palace G at Jericho fulfills all of these criteria.

The Final Destruction of Jericho in Early Bronze IIIB (c. 2350 BC)

Around 2350 BC Palace G suffered a violent conflagration. It was intentionally set on fire and burning ceilings collapsed, smashing items and vessels on its floors (Nigro 2009c, 187–188; 2014c, 77–80). Several carbonized wooden beams (Palestinian tamarisk, poplar, oak, and pine) have been uncovered. Such a terrible fire and collapse, documented in all excavated areas, may be ascribed to a human attack (Gallo 2014, 157–161), as major buildings were sacked before setting them on fire: furniture and columns had been removed from the palace. The flourishing city where wealth was concentrated had become a suitable target for enemies, being they either city-states or nomadic tribes. Its destruction marked the end of the urban Early Bronze Age at Jericho.

The Non-urban Interval: The Intermediate Bronze Age/ Early Bronze IV (2300–2000 BC)

The major contribution of the Italian-Palestinian Expedition to the study of the EB IV at Jericho has been the re-appraisal of the early occupation of the tell (Figure 17), including the arrival of new people, and a stratigraphic comparison between the site and the necropolis (Nigro 2003a), which has led to a subdivision of the period into two stages: Sultan IIId1 = EB IVA (2300–2200 BC) and Sultan IIId2 = EB IVB (2200–2000 BC).

A new community of semi-nomads settled on the ruins of the ancient city after about 50 years, initiating a completely new burial custom in the necropolis. Rock-cut tombs entered through vertical shafts contained individual primary burials with simple funerary furnishings, basically small pottery jars and copper daggers in male burials, beads and other simple personal ornaments in female ones. More than 360 tombs of this kind were excavated by Kenyon, who distinguished groups on the basis of tomb type (Dagger, Pottery, Bead, Square-shaft, Composite, Outsize and Multiple Burials), and considered this new group the 'vanguard of the Amorites', the new population entering the Levant from the south at the end of the 3rd millennium BC (Kenyon 1960, 180–262; 1965, 33–166; but see Prag in this volume). New approaches (Palumbo 1990; D'Andrea 2014a) significantly changed the interpretation of the necropolis. A more complex scenario has been depicted, with several elements interacting — a return to a rural productive system, a new population arriving with new social organisation, including nomadic warriors, and northern and southern cultural influxes merging each other. From this point of view, renewed excavations by the Italian-Palestinian Expedition have made it possible to compare data from the necropolis with a more clearly temporally defined picture of the site.

On the tell summit, we identified some early installations just upon the abandoned ruins of the EB III palace (Marchetti 2003, 303–304; Nigro *et al.* 2011, 586). Remains of a *tannur* and a tent illustrate the earliest occupation (EB IVA), when a tribal nomadic organisation still prevailed. Moreover, contrary to what Kenyon suggested, new finds show that the village extended from the summit down on the tell flanks, with increasing complexity through time (Nigro 2003a, 130–131, fig. 13).

During the succeeding mature stage (EB IVB), weapons found in tombs and a hoard of axes (including a broad fenestrated axe: Figure 18), and chisels found set into the ruins of the EB III North-West Tower (Nigro 2003b, 11–12, figs 3–5) testify to a revival of the copper industry. A full re-examination of all metal finds from this period led to the conclusion that the EB IVB witnessed the first non-occasional adoption of the bronze alloy of copper and tin (Montanari 2014, 106). This alloy was barely employed during the EB I–III but started to be used by the warriors' component of the EB IV newcomers. Metal weapons (47 items) were made of pure copper (6.5%) expressly used for funerary weaponry, arsenical copper (83.9%), which had a widespread use for hardening and giving a lighter and lucent look to blades, tin

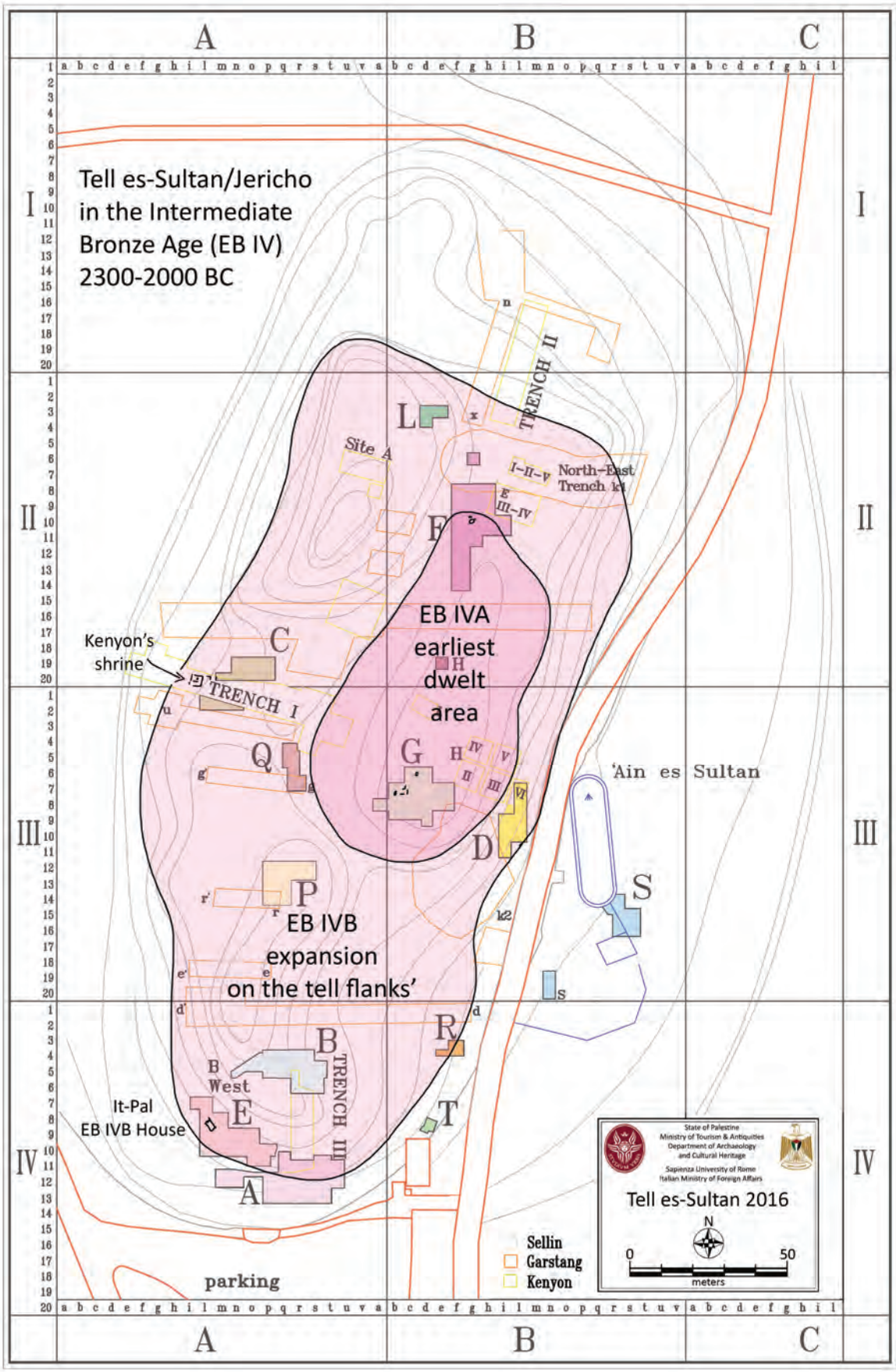

Figure 17. Reconstructive map of the EB IV village at Tell es-Sultan/Jericho.
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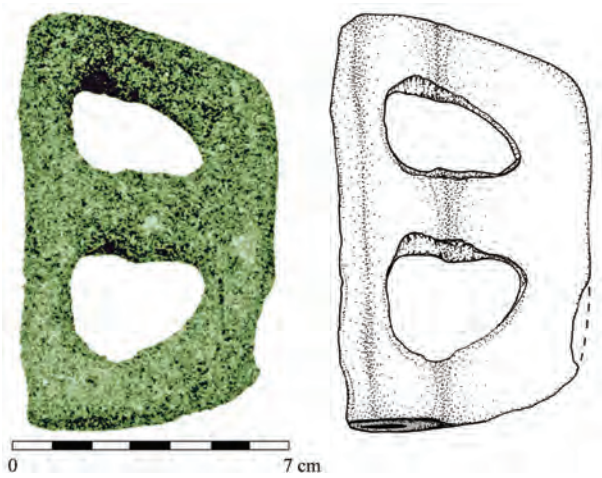

Figure 18. EB IVB copper fenestrated axe from a hoard set into the ruins of the EB III North-West Tower. Copyright University of Rome 'La Sapienza' ROSEPAJ.

copper (6.5%), mainly used for daggers or swords, and other alloys showing the developing stage of copper metallurgy during the Intermediate Bronze Age/EB IV (see Montanari in this volume).

Such technological innovations were probably due to itinerant metalworkers connected with the military groups considered 'the vanguard of Amorites' (D'Andrea 2014b, 156–157). A regional analysis, however, shows that arsenical copper was a southern tradition, while tin copper seems to arrive from the north, where it is more largely attested to (Philip *et al.* 2003, 101; Cohen 2012, 311–312; Kaufman 2013; D'Andrea 2014a, 244–245). In any case, finds from the Jericho necropolis suggest that the copper road to the ores of Wadi Faynan was still open.

The City of the Canaanite Lords: Ruha in the Middle Bronze Age (1950–1550 BC)

At the beginning of the 2nd millennium BC, a new city arose on the mound, with its centre on Spring Hill, where a new palace (excavated by Garstang and by the Italian-Palestinian Expedition) and a temple were erected, while a new defensive wall was built running along the enlarged southern and eastern sides of the Lower City, including also a portion of the oasis east of ʿAin es-Sultan, and a flat area to the south (Figure 19).

The Middle Bronze Fortifications

Four superimposed fortifications protected the MB city: a solid mudbrick wall with rectangular towers in MB I (1950–1800 BC), two successive earthen ramparts with a limestone revetment crowned by a mudbrick wall in MB II (1800–1650 BC), and a rubble rampart supported by triangular terrace-walls and a Cyclopean Wall at its foot in MB III (1650–1550 BC; Nigro *et al.* 2011, 573–577). Note that Marchetti (2003) and Burke (2008, 278) unify the two MB II ramparts distinguished by Hamamreh (2014). Such impressive defensive structures again emphasise the central power and complex social organisation needed to conceive, build and maintain them (Fiaccavento and Gallo, this volume).

Tower A1, the East Tower and the MB I Defensive Mudbrick Wall

Recent Italian-Palestinian excavations revealed a huge building in the southern Lower City (Area A), consisting of a rectangular tower with mudbrick walls upon an orthostatic foundation (Figure 20). Tower A1 was accessible from an upper storey, and it abutted an area densely occupied by a succession of houses, while to the west there was a courtyard, perhaps the inner space of a fortress (Nigro and Taha 2009, 731–735, figs 5–7; Nigro *et al.* 2011, 573–577, figs 3–5).

The tower was the earliest building erected in the Lower City, directly upon PPNB layers, at the beginning of the 19th century BC. It was connected with the East Tower, excavated by Garstang at the foot of Spring Hill (Garstang 1932, 15–17; Garstang and Garstang 1948, 85–86, fig. 4) and by the city wall (Wall 7), running at the foot of the tell on its southern and eastern sides (Marchetti and Nigro 2000, 167–171; Nigro 2006, 26). The MB city gate was located in between the two towers.

MB I Jericho ended with a violent destruction well documented stratigraphically on the southern and south-eastern sides of the tell, suggesting that human agency was responsible. Ceramic finds from the destruction layer of Tower A1, including a Tell el-Yahudiyeh juglet, suggest a date for this within the last decades of the 19th century BC (Nigro *et al.* 2011, fig. 7b). Who these new enemies were is difficult, if not impossible, to determine. The nearest MB polities were Hebron, Jerusalem, and Shechem, but a foreign intervention (perhaps Egypt) or nomadic raiders might equally be hypothesized. As this destruction was followed by the introduction of ramparts, one may surmise that battering rams were used during the attack, even though no traces of such a war machine were detectable, for example on Tower A1. During the MB II, a group of houses grew up against the eastern side of the Tower showing that Wall 7 (also excavated in Area D at the eastern foot of Spring Hill) had become an inner fortification line, and a dwelling quarter occupied the southern Lower City (Marchetti and Nigro 2000, 207–216).

The Curvilinear Stone Structure in Area E

A further massive defensive work was then erected to support the heavy earthen and debris masses of

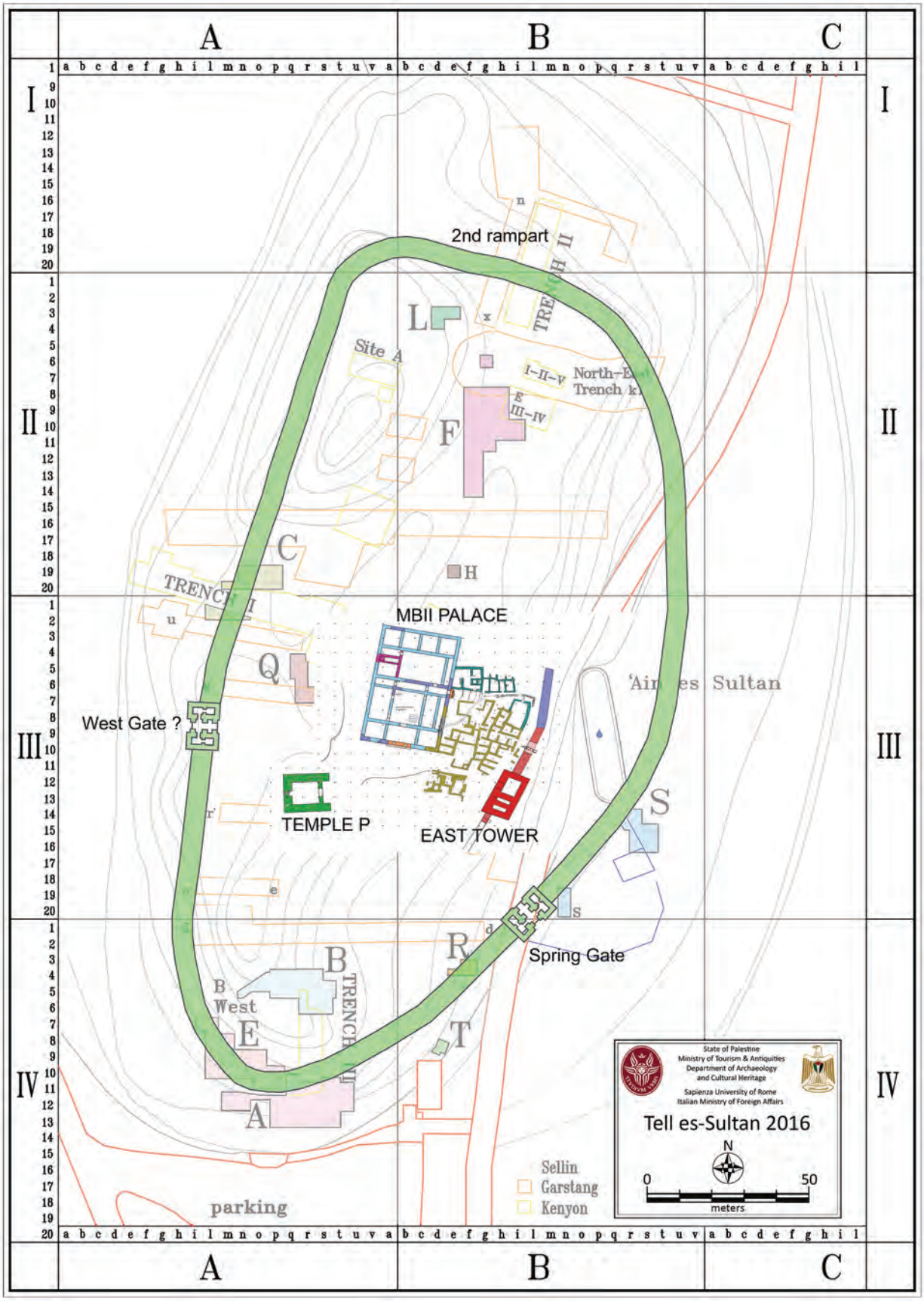

Figure 19. Reconstructive plan of the MB II city (second rampart) of Tell es-Sultan/Jericho.
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Figure 20. Restored MB I–II Tower A1 at the end of season 2015, from the south-east.
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the southern flank of the tell, the Curvilinear Stone Structure (CSS, Figure 21). This consisted of juxtaposed wall stretches made of big limestone boulders. A central buttress (W.270) abutted to reinforce the corner of the site (Nigro *et al.* 2011, 581–584, figs 13–14). Inside this structure, an MB II destruction layer was excavated, yielding a clay figurine of a roaring lioness. A street ran all around the CSS, possibly leading to an inner gate located to the west on the saddle separating Spring Hill, where the palace was located, from the southern central summit, where the main temple stood. This gate, the location of which is based upon a close examination of the ground, was approximately at the middle of the western side of the site (Burke 2008, 282).

Figure 21. Aerial view of the MB II Curvilinear Stone Structure in Area E, looking south-east.
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The MB II Ramparts

The main defensive feature of MB II Jericho are two earthen ramparts, supported by inner core-walls, strengthened by crushed limestone tongues and smoothly plastered with clayish lime. The top of these ramparts was crowned by a mudbrick wall (Sarie' 1998, 101–114, figs 3.1–8).

The 'Hyksos' Palace on Spring Hill

A new palatial building was erected in MB II on Spring Hill, levelling the remains of EB IV dwellings, and overlying the regularized ruins of the EB III palace (Figure 22). The final MB III reconstruction of this building was partially excavated by Garstang, who named it the 'Hyksos' Palace (Garstang 1933, 41; 1934, 100–101, pl. XV, nn. 80–81; Garstang and Garstang 1948, 99–101; Marchetti 2003, 306; Nigro *et al.* 2011, 585–586); its earlier MB II version was uncovered by the Italian-Palestinian Expedition in seasons 2012–2014. The western and southern wings of the palace were uncovered by Garstang, the north-eastern wing by Kenyon. The central part, connecting the two, was

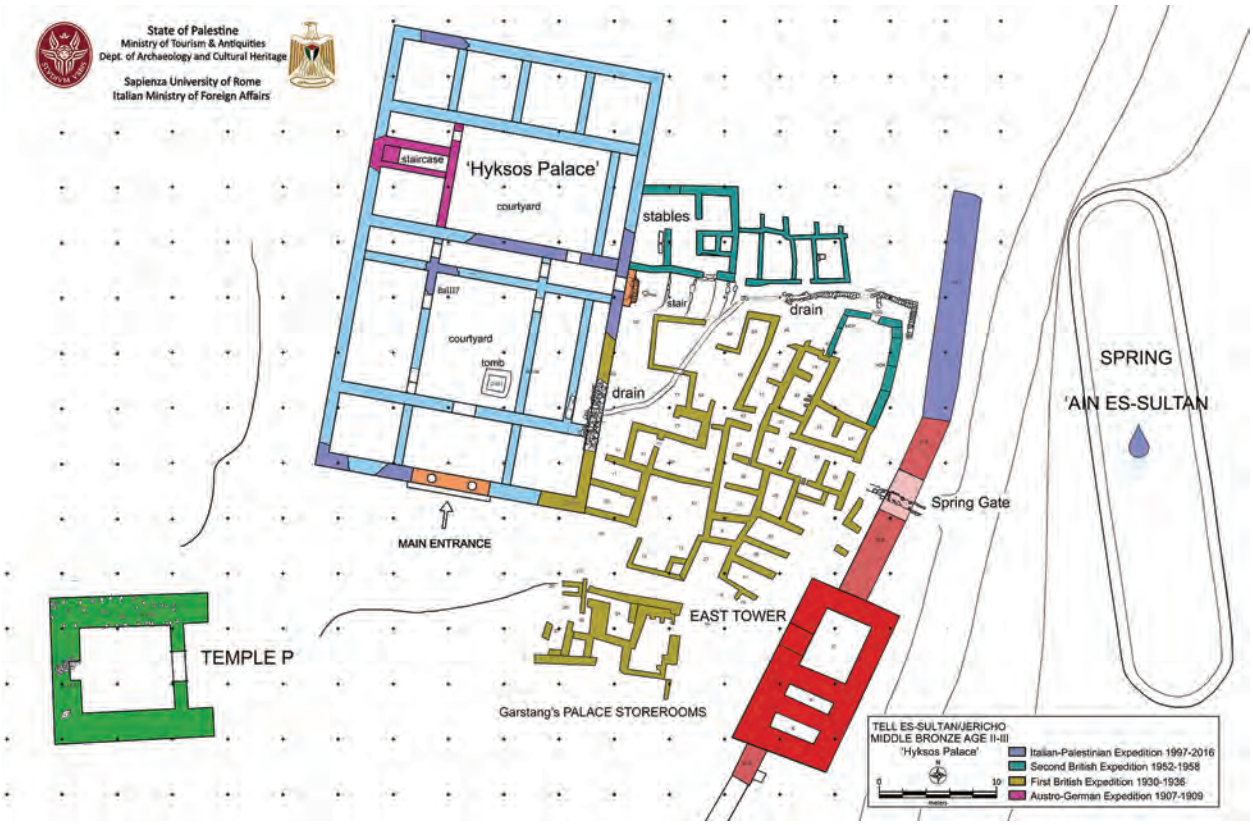

Figure 22. Plan of the MB II–III 'Hyksos Palace' on the eastern flank of Spring Hill, and nearby Temple P, partly excavated by the Italian-Palestinian Expedition in 2014. Copyright University of Rome 'La Sapienza' ROSEPAJ.

identified by the Italian-Palestinian Expedition. This allowed the plan of the building to be reconstructed (Nigro 2009d, fig. 9). At a reduced scale, this is similar to several coeval buildings of Syria-Palestine (the so-called 'Courtyard Palaces' like Palace II at Ras el-ʿAin/Aphek, Palace I at Tell el-ʿAjjul, Courtyard Temples at Tell Balata/Shechem, or Palace P at Tell ed-Duweir/Lachish; Nigro 1994, 29–118, 416–427, pls 12–14, 20–21).

The Canaanite Name of Jericho and its Relationship with 13th Dynasty Egypt

In 1999, underneath this palace, a square tomb was uncovered (D.641), with burials of a young lady (aged 12–14) and her maid (Figure 23). The tomb is one of a limited number of built-up tombs found underneath the palace, supposedly devoted to host the corpses of the people living into the palace, i.e. the ruling family (Nigro 2009d, 368–374). Ceramic finds from the tomb, including a Black Burnished piriform juglet, suggest a date at the end of the MB I, around 1800 BC (Nigro 2009d, 371). The lady wore several precious ornaments: two earrings, a necklace, a bracelet, a steatite scarab mounted on a ring (TS.99.G.458), and another scarab on her breast (TS.99.G.500). The latter was part of a signet ring, inscribed with hieroglyphics. The first word was composed of two signs: '*bûri*-fish' (*Mugil cephalus*), which is read *ʿdj*, and 'canal', which is read *mr*, giving all together the Egyptian title *ʿdj-mr*, 'administrator (of a province)' (Gardiner 1957, 477, K3; Helck 1958, 194–96, 199; Ward 1982), literally 'excavator of canal(s)' — a title in use since the Old Kingdom (Helck 1954, 21, 79–80; Martin-Pardey 1976, 13, 43–54). Underneath there are two more hieroglyphics: a crouching lion (Gardiner 1957, 460, E23) and the sun rising from a hill (Gardiner 1957, 489, N28), to be read respectively *rw* and *ha*, forming a name: *rwha.* No similar name is attested as an Egyptian nor as a Canaanite personal name. Moreover, in the large inventory of over 400 scarabs from Jericho (Nigro 2009d, note 18), only a few bear Egyptian titles or royal names. Conversely, it may be interpreted as an Egyptian transliteration of a West Semitic place-name. By comparison with the numerous biblical attestations, providing the ancient name of Jericho, one may consider *rwha* the Egyptian writing of a West Semitic/Canaanite place name, 'Ruha', corresponding to biblical 'Jericho'. Its hieroglyphic writing *rwha* adopts the same transposition attested to for 'Jerusalem' in the Egyptian Middle Kingdom Execration Texts where the latter is transcribed as *r()w-u-š()l-m-m* (Helck 1962, 52, n. 12). In both instances, the initial semi-vowel is lost. Ruha — like Rushalimum — could, thus, be the name of the city:

Figure 23. Plan, photo and funerary equipment of MB II Tomb D.641. Copyright University of Rome 'La Sapienza' ROSEPAJ.

'Jericho' (Nigro 2009d, 372–373, fig. 23; *contra* Mourad 2015, 159).

If this is the case, did the signet scarab bear the title of the local ruler? There is no proof, but the burial is a distinguished one, and it is located underneath the palace of the lords of Jericho. Hence, scarab TS.99.G.500 possibly indicates the Egyptian name of the city during the 13th Dynasty — Ruha — and, equally noteworthy, the title of the local ruler, *'djmr*, which was presumably

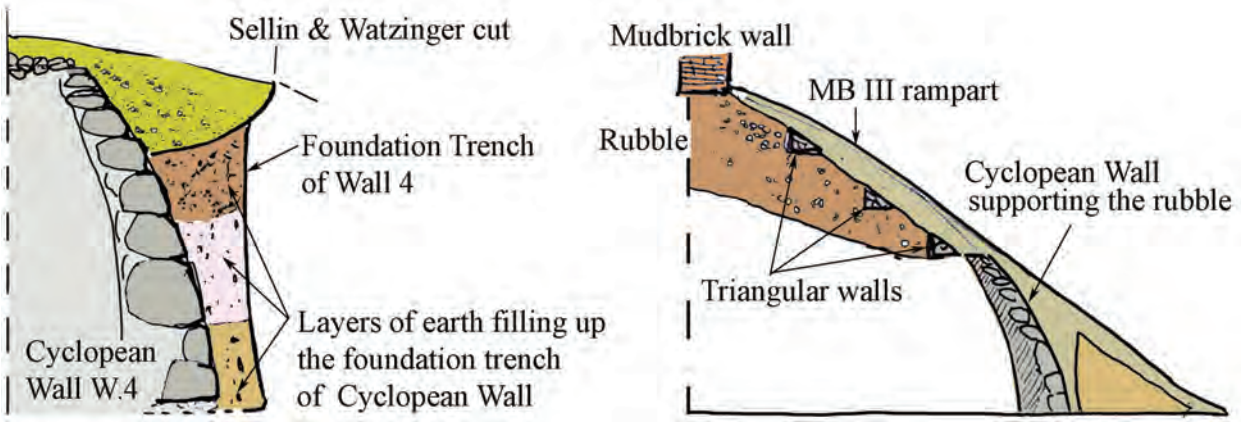

Figure 24. Sketch drawing of a section across the MB III Cyclopean Wall 4 and rampart in Area A. Copyright University of Rome 'La Sapienza' ROSEPAJ.

borrowed from Egyptian administrative titles, a detail which suggests strong relationships with Egypt (Massafra 2013, 149–150). Other important finds, such as a scarab bearing the name of Pharaoh *Hotep-ib-ra* (Garstang 1934, 130–131, fig. 4.7; Rowe 1936, 5, pl. I.18; Nigro 2018), found by Garstang in Tomb 30, or the bronze belt retrieved by Kenyon in the warrior tomb J3 (Kenyon 1960, 311, figs 117.1, 3–4, pl. XIII.2), which has a striking parallel at Tell ed-Dabʿa in the eastern Delta, the 13th Dynasty capital of Egypt (Philip 2006, reg. no. 6140, 83–84, fig. 38.2), corroborate such an interpretation.

The coeval necropolis marks the apex of the Canaanite culture during the MB II. A single extraordinary find of this period was found in Garstang's Tomb 9, a rhyton vase plastically depicting the head of bearded personage, possibly a lord or an ancestor (with magnified eyes, ears and nose), in Tell el-Yahudiyeh Ware (Garstang 1932, 45–46, fig. 9, pls XLII–XLIII). Bronze weaponry found in tombs of this period show the existence of a class of warriors and their close connection with the Asiatic groups inhabiting the eastern Nile Delta at Tell ed-Dabʿa (Nigro 2009d, 373–374).

The Middle Bronze III City: The Temple and the Cyclopean Wall

After a further destruction in the mid-17th century BC, Jericho was again reconstructed. A new monumental fortification arose, consisting of a rubble rampart supported by a series of terrace walls (called 'triangular walls') and by a massive Cyclopean Wall made of huge limestone boulders at the bottom (Wall 4; Figure 24). This monumental defensive structure reached a height of 8 m and extended into the oasis, including the spring (Burke 2008, 281; Fiaccavento *et al.* 2013). It was a common feature in several MB III sites of central and southern Palestine, found at sites such as Shechem, Megiddo and Gezer (Fiaccavento and Gallo, this volume).

In this stage, a southern wing was added to the palace — Garstang's so-called 'palace storerooms' (Garstang 1934, 101, 118–130, pl. 15; Garstang and Garstang 1948, 99–101), while the temple on the south-west summit of Spring Hill was reconstructed. The extremely eroded foundations of this building were uncovered in 2012: it had a rectangular plan (14 x 10 m), with the main entrance looking east. As in Tell Balata/Shechem, the temple was just inside the gate to the Upper City (Nigro 1994, 71–72).

In spite of its monumental defenses, MB III Jericho also underwent a terrible destruction, illustrated by Garstang in the area of his 'palace storerooms' on the eastern flanks of Spring Hill (Garstang and Garstang 1948, 103–104), and by the Italian-Palestinian Expedition in Area A. We again wonder who was responsible for such a terrible attack — an adversary city-state or a foreign enemy (Bietak 1991, 57–62; Ilan 1995, 314–315; Maeir 2010, 165–175; Massafra 2014, 196–197). One hypothesis is that Pharaoh Ahmose's revenge extended deep into Palestine reaching 'Ruha'; a royal signet bearing his names was found in the necropolis in a slightly later LB I tomb (Garstang and Garstang 1948, fig. 16). However, as Seger pointed out (1975), the same destruction may be alternatively ascribed to Tuthmosis III, during the famous military raid which reached the Euphrates (Bienkowski 1986, 127–130; Redford 2003, 193–194).

Figure 25. LB I–II mudbrick wall on top of Cyclopean Wall 4 (after Garstang 1931, pl. II).

Unfortunately, the reliability of royal-name scarabs to disentangle this passage of the history of Jericho remains weak, as a long-lasting debate demonstrates (Weinstein 1981, 2; 1991, 111; Hoffmeier 1989).

Jericho in the Late Bronze Age (1550–1200 BC)

The city of Jericho was still occupied in the Late Bronze Age (LB), although in a reduced scale (Bienkowski 1986). The burnt and collapsed MB III defensive system was refurbished by adding a mudbrick wall on top of the surviving crest of the Cyclopean Wall (Figure 25). The palace was scaled to a residency, called the 'Middle Building' (Garstang 1934, 100–102, 105–106, 108–116, pls XIII–XIV, XXXI–XXXVII; Nigro 1996, 52–55, fig. 8.2), while there is no evidence concerning the temple.

The most notable finds of this period are two royal signet rings bearing the insignia of Amenhotep III (1390–1352 BC) and the ceramic assemblages from Tomb 5, excavated by Garstang (Garstang and Garstang 1948, 120–130; Figure 26). The almost complete absence of any reference to Jericho in the Amarna Letters contrasts with the discovery by Garstang of an administrative tablet dating from the same period, which is a substantial piece of evidence in favor of the existence of a palace and a city during the 14th century BC (Figure 27; Garstang 1934, 116; Horowitz and Oshima 2006, 96–97, 231). In the following stage of LB IIB, the site was still occupied, in spite of the claimed lack of Mycenaean pottery, which led Garstang to conclude that the city had been abandoned (Garstang 1934, 116–117; Kenyon 1951, 113). The absence of Mycenaean pottery in an inland centre may not be chronologically meaningful. Moreover, as on the eastern flank of Spring Hill (Square H III), Kenyon uncovered dwellings dating to this period (Kenyon 1981, 371), and it seems clear that the 'Middle Building' was still in use. LB IIB layers were heavily cut by levelling operations carried out

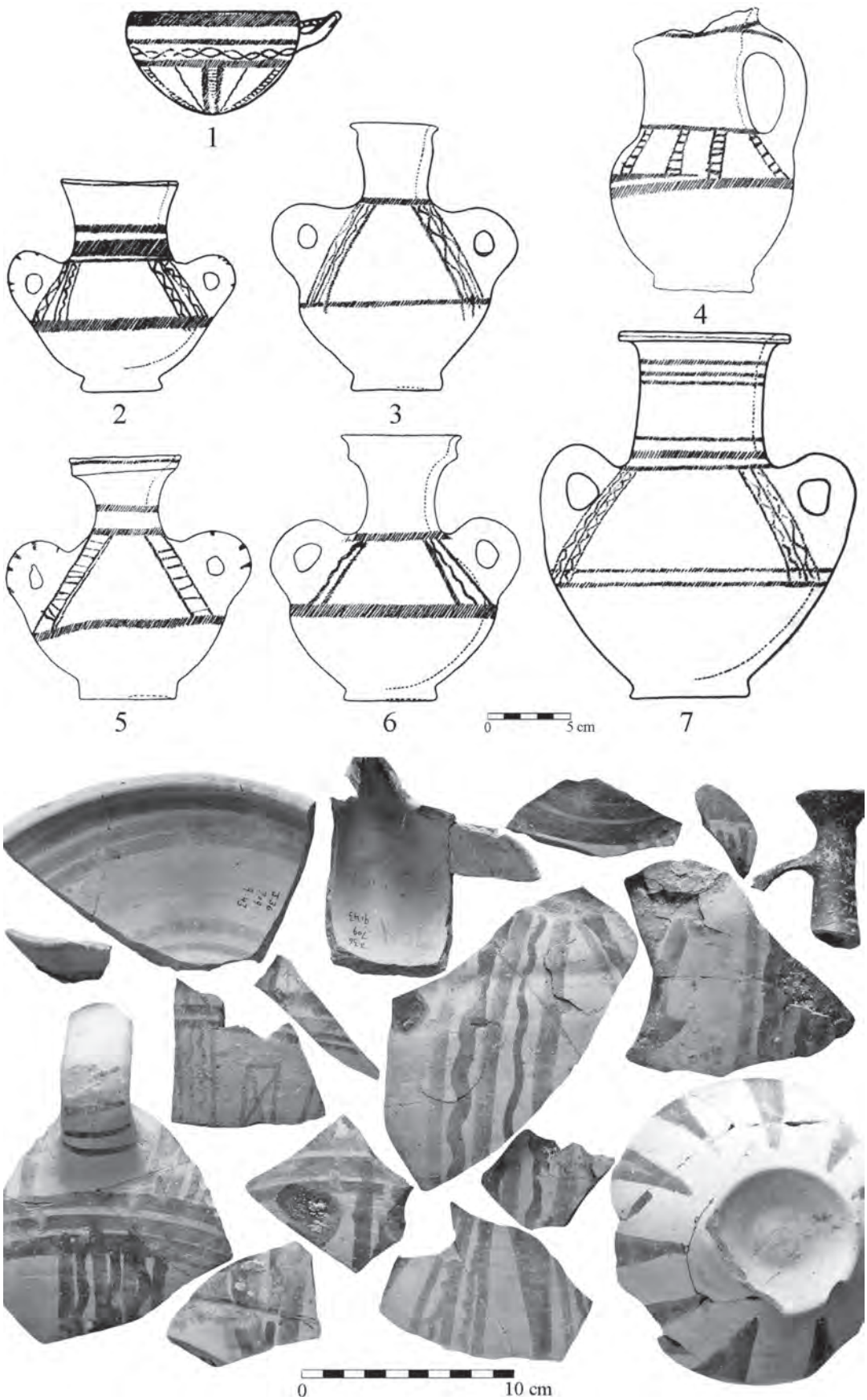

Figure 26. LB II pottery vessels from Garstang's Tomb 5.
Courtesy of the Photographic Archives, Sapienza University of Rome (no. Jer1033).

Figure 27. LB Age cuneiform tablet from Garstang's excavations (Rockefeller Museum 1485). Courtesy of the Photographic Archives, Sapienza University of Rome (no. 610).

in the Iron Age, and this explains the scarcity of 13th century materials.

LB II layers were also detected on the southern and eastern flank of the tell by the Italian-Palestinian Expedition in Areas A, E and T, as well as to the north-west, in Austro-German trenches. The overall stratigraphy of Tell es-Sultan through time may explain why Late Bronze Age layers were mostly preserved all around the tell on its flanks but were almost completely cut away from its top by Iron Age, Roman, Hellenistic and Byzantine building activities.

The Biblical Account of Joshua and Archaeology at Tell es-Sultan

Tell es-Sultan is the protagonist in one of the most famous accounts of Old Testament, the first major episode of the narrative, the conquest of Canaan by the Israelite tribes under the guidance of chieftain Joshua (Joshua 2:6). As with any literary narrative, the biblical text has its internal chronology, which fixes Joshua around 1480 BC, i.e. 480 years before David. This, of course, is an exegetic issue and not an archaeological or historical one. W. F. Albright, who wanted to let biblical stories play on a real historical stage, thought that Joshua's account might better fit the scenario of 13–12th centuries BC Palestine (Albright 1939, 18–20; 1963, 109, 112–113; see also Wright 1971, 84; Bright 1981, 130–133), exactly corresponding to a major occupational gap at the site (Kenyon 1979, 208). This was seen as a problem by those thinking that the biblical account should have had a literal archaeological correspondence, influencing in turn several scholarly (and popular) discussions (Noth 1960, 79–83; Mendenhall 1962, Albrecht 1966; Kitchen 1966, 63; Wright 1971, 50; J. Thompson 1972, 74; Gottwald 1979; Aharoni 1982, 162–172; Finkelstein 1988; Merrill 1991; Davies 1992; Long 1994; T. Thompson 1994). As excavations started at Tell es-Sultan, this became a tantalizing question debated both in archaeology and biblical studies. Although it is now accepted that this perspective is methodologically erroneous, it nevertheless deserves some comment. As a basic premise, one should remember that archaeology rarely succeeds in matching written sources and excavated evidence; only the retrieval of extraordinarily well-stratified inscribed items may allow such a positive correlation (and there are many cases where this has not been enough to achieve a reliable historical reconstruction). In any case, the ruins of Tell es-Sultan include massive collapsed and burnt mudbrick structures. One may imagine that the terrible destructions suffered by the Canaanite city both in the 3rd and 2nd millennium BC had surely become part of the local shared memory, and possibly were narrated as the Jerichoans had been able to overcome them almost every time. There is no way, however, to link them directly to the Bible, except for the fact that the biblical author may have reused one of these stories to validate the historicity of his narration (Liverani 2003, 316–317). The ruins at Tell es-Sultan are far older than the alleged date of Joshua's conquest. Moreover, if we consider the time when the biblical text was written (the 6th century BC), or that when it was orally transmitted (12–7th centuries BC), as well as the long story of its written transposition, it is clear how hazardous is any attempt to seriously identify something on the ground with biblical personages and their acts (Liverani 2003, 313–321). Nonetheless, the already famous ruins of Jericho were exploited by the biblical author giving them an everlasting fame.

Tell es-Sultan in the Iron Age (1200–586 BC)

The Iron Age was a major period of occupation at Tell es-Sultan, even though the archaeological record is poor due to later Persian, Hellenistic, Roman and Byzantine heavy levelling and dumping activities. Iron Age strata were extensively explored by the Austro-German Expedition in 1907–1909 (Sellin and Watzinger 1913, pl. I). Further elements were uncovered by the first British Expedition on Spring Hill (Garstang 1934, 102–103, pl. XXIX.3), and by Kenyon in the westernmost stretch of Trench I (Kenyon 1981, 111–113). The German scholars Manfred and Helga Weippert produced an overall synthesis (1976), focusing on the Iron IIA building called the '*Hilani*'. The Italian-Palestinian Expedition found additional Iron Age IIC installations in Area A and put forward an overall re-examination

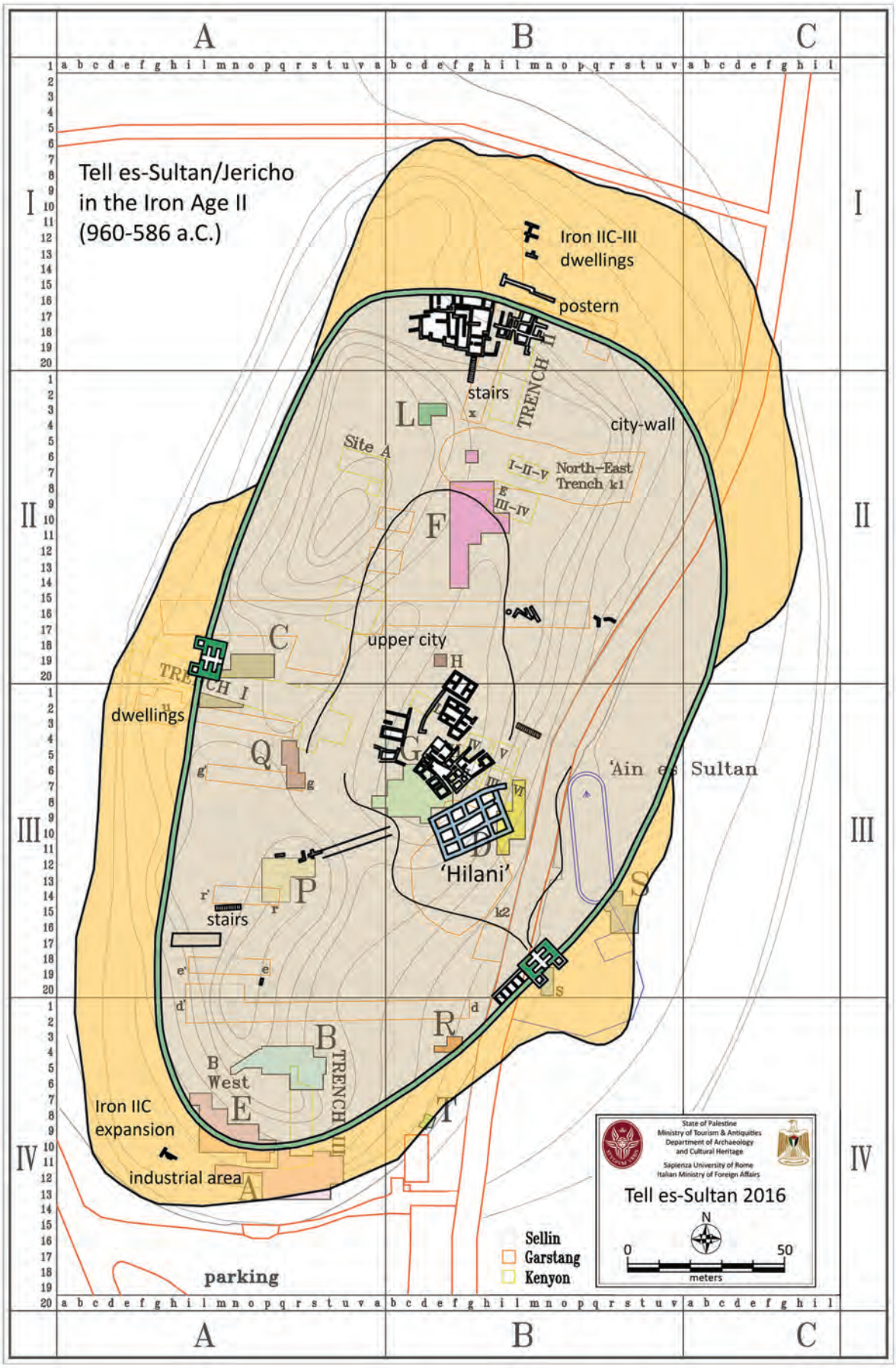

Figure 28. Reconstructive plan of the Iron Age II city of Tell es-Sultan/Jericho.
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of Iron Age stratigraphy and city-layout (Figure 28; see below). Iron Age I was detected only in a few places on Spring Hill. Diagnostic ceramic material was dated to the 11th century BC and may be related to a rural village that rose over the ruins of the LB city (Weippert and Weippert 1976, 139–146).

In the 10th century BC the town was fortified, again re-employing the surviving MB III–LB Cyclopean Wall. Additionally, due to the accumulation of debris, the steep flanks of the tell were climbed by stone paved staircases (exposed on its northern, western and eastern flanks), and an upper fortification line made of casemates was erected (Sellin and Watzinger 1913, fig. 26). A major tripartite building overlapped previous palaces on the eastern flank of Spring Hill, slightly rotated towards the south-east. Due to its plan, which recalls that of Palace 6000 in Megiddo (Cline 2006, 107–114, fig. 8.6), it was considered a *hilani*, the reception pavilion-palace typical of the Syro-Aramean culture of the north (Sellin and Watzinger, 1913, 67–70, fig. 42, pls 15–16, I, IV; Garstang 1934, 102–104, pl. XIII; Marchetti 2003, 317). Private houses of the four-room type were excavated on the central summit of the tell and in its northernmost region (Kenyon 1981, 111–113, 171–173, 219).

It is impossible to reconstruct the history of the city during the Iron II, when it passed in and out of the control of the Moabite and Israelite kings. At least six major biblical accounts are set in Jericho during the Iron Age, which is mentioned overall more than 100 times. Jericho was conquered by Joshua at the sound of rams-horns (Joshua 6), with the sudden collapse of its city walls and the curse over the reconstruction of the city itself; Eglon, the king of Moab, conquered the city at the time of Judge Ehud (Judges 3:12–26); in the time of David, the Jerahmelite tribe living in the nearby steppe decisively supported David's alliance with the Benjaminites; David's envoys, who had half their beards shaved off by Hanun, king of Ammon, were told to wait at Jericho until their beards had grown (2 Samuel 10:5); Hiel, king of Bethel, reconstructed the city at the time of Achab (1 Kings 16:34); after Elijah's ascent to heaven at the river Jordan, the prophet Elisha healed the waters of the spring — which had become bitter and caused disease and death (2 Kings 2:19–22).

An 8th-century BC *LMLK* jar found by Sellin and Watzinger may belong to one of these phases (Sellin and Watzinger 1913, 150, pl. 42h). In this period, Jericho was a flourishing city, which probably made it necessary for the biblical author to include the city in the conquest narrative. It further expanded in Iron IIC (733–586 BC), when occupation extended for the first time outside the walled city to the west and the south-west. In Area A, a domestic installation included three silos and a pebble paved area (Nigro *et al.* 2011, 578–580, figs 7–9).

Later Periods

During the Persian period Tell es-Sultan still supported a stable occupation, even if the barycentre of the oasis was then moving south towards the Wadi Qelt and the road to Jerusalem. Since Roman times the oasis became a flourishing productive centre of sandalwood oil (*Santalum album*) and other exotic fragrances, and several rural villas arose. A major fortress was erected at Tulul Abu el-ʿAlayiq, where in the Hellenistic period the Hasmonean kings built their winter palaces (Netzer 2001). In Late Roman and Byzantine (Beliaev 2010) times the oasis was intensely inhabited, and a variety of villas and monasteries populated it. In the Islamic period, with the erection of the magnificent palace of Caliph Hisham, the focus came back to the north of the oasis (Taha and Whitcomb 2014).

Conclusions: The Jericho Oasis Archaeological Park

Fifteen seasons of excavation and restoration at Tell es-Sultan over a period of 22 years have provided new data on the occupational history of this major Near Eastern site, from the Neolithic to the Byzantine and Islamic periods, and allowed the joint Italian-Palestinian Expedition to experiment with a post-colonial approach to the archaeology of Palestine. The stratigraphy of Spring Hill with the city centre (palace) has been clarified; the long history of the city defenses has also been established, identifying one of the city gates during the EB. Thanks to cooperation with the Palestine Exploration Fund, information gathered by four expeditions has been correlated to put forward a coherent and hopefully reliable narration of the site's history.

In early Spring 2015 the Ministry of Tourism and Antiquities and Sapienza University of Rome under the aegis of the Italian Ministry of Foreign Affairs and Cooperation rehabilitated 13 sites in the oasis, and incorporated them into the Jericho Oasis Archaeological Park, with Tell es-Sultan at its centre (Nigro *et al.* 2015). The Jericho Oasis preserves the memories of the extremely long history of its community, which is a valuable part of our shared culture. This special piece of humankind's heritage still deserves our full commitment for its protection, presentation to public, and socio-economic sustainable valorisation.

Postscript

Four more field seasons were conducted during the publication process for this paper (12th–15th, 2016–2019). Important new discoveries included a hoard of nacreous shells from the Nile which was retrieved from an early 3rd millennium BC house, corroborating previous interpretations regarding the Egyptian connection with the Palestinian urban rise in the Early

Bronze Age II (Nigro *et al.* 2018c). An overall re-appraisal of Pre-Pottery Neolithic finds in Garstang's north-east trench and a study of all of the separated crania (including plastered specimens) and the plaster statues found in two votive pits in this area, have now allowed a comprehensive illustration of these images of ancestors to be put forward (Nigro 2017a). In addition, a study of all of the radiocarbon dates available from the Early Bronze Age strata of Tell es-Sultan was undertaken to better define the absolute chronology of each major stratigraphic period at the site (Nigro *et al.* 2019; Nigro 2019a; 2019b). Additional studies include an analysis of scarabs bearing the *prenomen* of Pharaoh Hotepibra found in Jericho (Nigro 2018), a study if a turtle dove *rhyton* from the area of the MB palace (Nigro 2019c) an analysis of the metal of a dagger from a tomb in the necropolis (Nigro *et al.* 2018b), and 3D applications on the nacreous shells (Nigro *et al.* 2018a).

Acknowledgements

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Digging Up Jericho

Past, present and future

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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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