Part I  The First Cities, Their Localization and Structure
1 Aside the Spring: Tell Es-Sultan/Ancient Jericho: The Tale of an Early City and Water Control in Ancient Palestine

Lorenzo Nigro

INTRODUCTION

Tell es-Sultan/ancient Jericho—nowadays an archaeological park in the Palestinian Territories under the aegis of the Ministry of Tourism and Antiquities, Department of Antiquities and Cultural Heritage—was one of the earliest towns of the Near East, exemplifying the extraordinary phenomenon that is the formation and growth of an integrated human society, a sociocultural achievement that gained the site the universally renowned title of “the oldest city in the world.” Jericho was one of the earliest sites in the Near East (and, indeed, in the world: as early as 10,500 years before present (BP)) to attain such a status (illustrated first of all by impressive architectural works—basically settlement defenses—defining the town space; Kenyon, 1957: 65–9). It was also one of the earliest to develop into a flourishing city (at the beginning of the third millennium BCE), thereby illustrating the rise of an urban center as manifest by impressive public architecture, social organization, economy, trade, craftsmanship, and international relations (illustrated by numerous finds from the site itself and from the nearby necropolis; Nigro, 2010). This chapter will discuss the urban development of Jericho from the perspective of water use and its contribution to the establishment and growth of the city, from the earliest times to the Ottoman Period.

The clue to the early success of this human community settled at the foot of the Jebel Quruntul (the Mount of Temptation), on the limestone plateau flanking the alluvial deposits of the Jordan River, most probably lies in the ‘Ain es-Sultan (also known in the Bible as Prophet Elisha’s Spring). This water source provided 4,000–5,000 liters of fresh water each minute (Figure 1.1). This generous flow of water (Figure 1.2) made possible the early development of animal breeding and agriculture, the domestication of sheep, goats, and later also cattle, as well as the growing of cereals and horticultural products. Located at the westernmost tip of the Fertile Crescent, on the rift valley connecting Asia and Africa,
Figure 1.1. View of the site of Tell es-Sultan, cut off to the east by the modern road, and of the nearby spring of Ain es-Sultan.
Jericho thus witnessed epochal steps in the story of humanity (Helms, 1988; Taha and Qleibo, 2010).

EARLY STEPS IN HUMAN CULTURE (10500–4500 BCE)

In the Mesolithic or Natufian Period (10500–8500 BCE), groups of gatherers and hunters started to camp on the limestone plateau overlooking the spring of ‘Ain es-Sultan. Their diet was based upon the hunting of the gazelle, which was widely spread in the Jordan Valley. Gradually this became a stable occupation, giving rise to a settlement that already in Pre-Pottery Neolithic times (8500–6000 BCE) marked a definite step in human cultural development. The earliest settlement (Pre-Pottery Neolithic A: 8500–7500 BCE) consisted of round single-roomed houses with walls made of loaf-shaped mud bricks rising up to a domed, tapering
roof (similar to the still-existing “beehive” houses of northern Syria for both storage and housing) (Kenyon, 1957: 70–2). This kind of architecture was made possible by a plentiful and continuous supply of water. The village was then encircled by a defensive wall made of stones, and had at least one huge well-known building: a round tower with a base diameter of 8.5 m, a preserved height of 8 m (Figure 1.3), and an inner staircase with 22 stone steps leading to the top (Kenyon, 1957: 67–9; 1981: 18–43, pls. 5–11, 203–12). According to the town’s excavator, Dame Kathleen Kenyon, this building was for defensive purposes, along with the attached “Town Wall.” Inside the tower, a layer of destruction was found containing the skeletons of 12 people who had apparently been killed during a fight or a riot (Kenyon, 1981: 32–3). Such finds shed light on the early history of one of the first communities in the world to control their water supply. This necessitated the development of protective devices and an embryonic management apparatus—these arose within the social groups living in the southern Jordan Valley. Moreover, thanks to the spring waters, Pre-Pottery Neolithic A inhabitants of Jericho were able to domesticate plants (especially cereals: wild barley, emmer wheat, and einkorn) and animals (caprovinies), thus laying the foundation for agriculture and livestock farming. Canals were dug from the spring, transforming the wild dry country into a cultivated oasis.

In the following Pre-Pottery Neolithic B period (7500–6000 BCE), the introduction of cigar-shaped, thumb-impressed mud bricks allowed the shift to rectilinear architecture, characterized by finely plastered walls and floors (Figure 1.4; Kenyon, 1957: 52–6). A typical feature of this period is the first appearance of plastic works associated with the rise of ancestor cults. A series of plastered human skulls with eye seashell inlays and painted decorations, also known in other Pre-Pottery Neolithic B sites of the Levant (Beisamoun, Tell Ramad, Yiftahel, KfarHahoresh, and Ain Ghazal; Milevski et al., 2008; Marchand, 2011–12), were found beneath house floors (Kenyon, 1957: 60–4; 1981: 77, pls. 50b–9c). Ancestor cults are apparently associated with the representation of the human figure by means of clay, marl, and water: a simply stylized human bust was found by Kenyon on the eastern side of Square DII in the upper Pre-Pottery Neolithic B layers (Kenyon, 1981: 531, pl. 72). It recalls two groups of stylized clay statues retrieved by Garstang in his North-Eastern Trench (190 and 195), in a stratigraphic spot attributable to Pre-Pottery Neolithic B or Pottery Neolithic A. Group 195 included a man, a woman, and a child (a kind of triad?), of which only the male head is renowned due to its state of preservation (Garstang, 1935: 355–6; Garstang et al., 1935: 166–7; Sala, 2006: 275–6). The statues are akin to the famous specimens from Ain Ghazal in Jordan (Rollefson, 2000), and they illustrate the ability to use water and clay, anticipating the invention of pottery.

The following stage in the history of Tell es-Sultan was, in fact, indelibly marked by the introduction of pottery vessels as one of the common
artifacts of ordinary life. Pottery was locally produced when technological features and architecture showed a cultural regression. The Pottery Neolithic A (6000–5000 BCE) village consisted of pit dwellings dug into the erosion layers (or even in previous Pre-Pottery Neolithic B strata), and flint and stone tools exhibit a cruder and less refined treatment in respect of
those of Pre-Pottery Neolithic. Earliest pottery was characterized by coarse, straw-tempered ware, usually decorated by burnished red-on-cream painted decoration. Nonetheless, it represents an extraordinary innovation in the economy of this early rural community.

Pottery Neolithic B (5000–4500 BCE) Jericho exhibits once again the shift to rectilinear architecture associated with the diffusion of a new kind of mud brick (bun-shaped). Nonetheless, Pottery Neolithic A and B layers produced a few remnants of plants and charcoal, thus suggesting that the Jerichoans were basically herdsmen and hunters during these periods. Pottery Neolithic is viewed as a culturally recessive period, when the site was slightly reduced in area and hosted a less developed village in respect of the preceding Pre-Pottery Neolithic (Kenyon, 1957: 77–92). This was possibly connected with a shift and reduction in the flow of water from the spring, due to earthquakes that occurred at the end of Pre-Pottery Neolithic.¹ Although it occurred in a negative sense in this case, water did significantly influence human life at Tell es-Sultan.

The following Chalcolithic (4500–3400 BCE) Period records a deal of marginalization of the site, possibly due to a reduction in the flow capacity of the spring. The major site in the oasis was Tell el-Mafjar (Taha et al.,
2004), on the northern bank of Wadi Nueima, around 2 km north-east of Tell es-Sultan. Several other camps existed on the northern bank of Wadi el-Qelt. At Tell es-Sultan, sparse ceramic finds and flint tools testify to an ephemeral occupation of the mound flanks during this period (Nigro et al., 2011a: 7–9).

WATER IN THE EARLY BRONZE AGE: FROM AGRICULTURE TO URBAN CULTURE (3400–3000 BCE)

During the second half of the fourth millennium BCE, a group of semi-nomadic people, bearing a distinctly different material culture from that of the Neolithic, settled upon the tell alongside the spring of Ain es-Sultan (Nigro, 2005). They arrived from the eastern highlands of Jordan, bringing their dead: disarticulated skeletons were buried in familiar tombs, using caves cut into the limestone bedrock of the plateau northwest of the spring, where skulls were usually piled in the middle of the cave, and long bones were accumulated at the sides (as illustrated by a series of tombs excavated by Kenyon: A13, A84, A94, A114, A124, A130+A61, K1, K2; Kenyon, 1960: 4–51; 1965: 3–32). The spring presumably induced this community to become sedentary and progressively to implement agricultural production, so that a new rural village grew steadily, with circular huts and annexed storage facilities and food-producing devices in Early Bronze IA (3300–3200 BCE; Nigro, 2005: 198–9; 2007: 14–17). The transformation from a semi-nomadic pastoralist society of hunters and herders into a flourishing agricultural community of farmers practicing intensive animal breeding in the oasis (made possible by the conspicuous water supply of the spring) is illustrated by finds and pottery, as well as by gradual changes in the burial custom, with the introduction of primary depositions and the inclusion of food offerings in open-shape ceramic vessels among the funerary equipment. Somewhat rare elements retrieved in tombs are pierced goat bones (caprovine metacarpals), incised with the schematic representation of a human face, which were interpreted as flutes, which again testify to the increasing complexity of funerary ideology related to a rural sedentary society.

It is not easy to correlate sedentarization with water control as a basic economic lever supporting agricultural surplus accumulation and prompting inner social differentiation of the community. A hint at such kind of phenomena is perhaps offered by a major elongated apsidal building erected in the Early Bronze IB, overlooking the spring and the underground cultivated oasis, possibly devoted to communal activities, excavated by Kenyon (Kenyon, 1981: 322, pls. 174, 176a, 313b; Nigro, 2005: 122–6).

Other distinguishing features of the earliest Early Bronze I village are the broad-room temple with raised platform and niche (Shrine 420),
containing marble and stone cultic furniture, excavated by J. Garstang (Sala, 2005); and a terrace wall (a mud brick structure on stone foundations), excavated by both Garstang (in the North-Eastern Trench; Nigro, 2005: 18–25, 35) and Kenyon (Wall ZZF–ZZT in Square EIV, and Wall EO in Squares DI–FI; Kenyon, 1981: 96, 315–22, pls. 77–8, 229a, 313–14; Nigro, 2005: 111–12, 120–2). These indicate that the inner space of the village had been progressively organized according to an established layout.

In the latest stage (Early Bronze IB, 3200–3000 BCE), rectangular houses take the place of circular ones, compounds are more clearly delimited, and at least a street is enucleated, leading from the spring inside the dwell area to the temple (Nigro, 2005: 200–2; 2007: 18–20). The latest stage of development of the village also shows a major increase in cereals accumulation, and a progressive specialization of pottery production. The latter were described by Kenyon, and used to identify different Early Bronze I cultural groups (Kenyon, 1960: 4–10). Actually, simple, storage, painted and red-burnished wares served to different economic and symbolic functions. They vary in fabric and surface treatment, as well as in decoration (Grain Wash and Band Slip, Red-Burnished and Line-Painted Wares), and vividly depict the progressive cultural growth of the Jerichoan community during the last quarter of the fourth millennium BCE.

Finally, the growing presence of status symbols during Early Bronze I, such as Egyptian or Egyptianizing items (e.g. stone mace-heads and palettes), indicates the inclusion of Jericho into the Egyptian trading network and reflects a cultural influence that is typical of the “Proto-Urban” Period in the Levant.

THE RISE OF THE EARLY BRONZE II–III (3000–2300 BCE) CITY AND WATER CONTROL

At the beginning of the third millennium BCE, the flourishing Early Bronze I rural village was transformed into a strongly fortified city, thanks to a massive utilization of the water resource (Nigro, 2010: 1–5). A defensive line, consisting of a mud brick wall, encircled the dwelling area for a length of approximately 1 km, thus proclaiming the urban status of Jericho (Nigro, 2006a: 355–61; 2010: 11–36). This structure, standing upon a solid stone foundation, was 2–2.5 m wide, and reached a presumed height of 5–6 m. It was made of made of dune yellowish bricks with a thick ashy mortar in between, realized through the use of large quantities of water. The richness of the spring made it possible to supply both agricultural and building needs at the same time, without affecting food supply for workers and the ruling elite. Semicircular towers and massive bastions protruded from the defensive line to the west and the north, while to the east the city wall apparently included the spring and its immediate surroundings within the newly arisen city. The palace of the rulers of the city was
erected on the eastern flanks of the hill overlooking the spring, while on the opposite western side, the city temple was built (Nigro, 2010: 51–4). This urban layout makes it clear that the city arose when an institution imposed direct control on the main water source of ‘Ain es-Sultan. This made water available both for agriculture (irrigated land was presumably under the administration of the Jericho rulers), and for building activities (basically the erection of the city walls, where at least 1 million bricks were employed together with mortar and plaster, all requiring at least 2 million gallons of water). The urban authority was presumably responsible for the maintenance of the spring and pools created to regulate the oasis irrigation. Ceramic fragments retrieved during a survey in the area of the spring in 2009 corroborate such a hypothesis (Nigro, 2010: 57–61). It may be surmised that the subdivision of the main flow of the spring into four streams or canals was first established in this period.

The improvement in agricultural production that occurred during the Early Bronze IB and that was further enhanced in urban Early Bronze II, as well as controlled access to the spring, brought about an accumulating food surplus that provided the economic foundations for the development of the early urban society of Jericho. Warehouses and storage jars at the site, as well as a number of other indicators in the material culture, point to economic growth, with the development of trade (including over long distance) for the collection and distribution of precious stuffs (salt, bitumen, sulphur from the Dead Sea, wool) and raw material (copper, wood, stone). At the heart of such a system was farming in the oasis, made luxuriant by the generous flow of ‘Ain es-Sultan.

During Early Bronze III (2700–2350 BCE) Jericho reached the peak of its growth in the third millennium BCE: the city wall was doubled through the addition of an Outer Wall to the main Inner Wall (Figure 1.5) at a constant distance of approximately 4 m (Nigro, 2006a: 361–75; 2006b: 8–9; Nigro and Taha, 2009: 738–40). The space in between the two structures, again built of mud bricks on stone foundations, was kept free for pathways or storerooms, or filled up with crushed limestone in order to strengthen the whole defensive line. Wooden beams (tamarisk and pistachio), and reeds set across the structure, served as chains and draining devices. Such an impressive work remained for millennia one of the distinctive emerging features of Tell es-Sultan, possibly inspiring the Biblical author in the Book of Joshua (6:1–27) to mention these ruins to support the reliability of his story.

The spring was again under the direct control of the palace, rebuilt on the eastern flank of the Spring Hill (Palace G, excavated by the Italian-Palestinian Expedition; Figure 1.6; Nigro et al., 2011b: 200–6); and other public buildings were excavated on the southern side (Building B1, possibly devoted to communal food processing; Marchetti and Nigro, 1998: 39–9; 2000: 130–8; Nigro, 2006b: 18–20), and at the northwest corner of the city wall (where a rectangular tower, excavated by Sellin
Figure 1.5. Tell es-Sultan: the southwestern corner of the site with the EB III (2700–2550 BC) mud brick inner wall, and the spring of Ain es-Sultan east of the tell, from the southeast.
and Watzinger stood; Sellin and Watzinger, 1913: 23–4 fig. 7; Nigro, 2006a: 367–9). Material culture, as evidenced also by tomb assemblages and finds, was characterized by a rich and specialized pottery inventory (a potter’s wheel was also found on the Spring Hill), by the presence of finely worked pieces of craftsmanship (namely stone and ivory bulls’ heads), and by the adoption of cylinder seals, possibly within a kind of palatial system of distribution of goods, including an exchange system for metals (copper, silver, and gold) and other precious stuff (salt, ointments, perfumes, sulphur, bitumen, etc.), as balance weights testify (Nigro, 2006b: 13–17). Jericho was at a pivotal crossroads in the early trade network of urban Palestine, as indicated by finds: seashells, exotic animals (hippopotamus), several items illustrating connection with Egypt (lotus vases, mace-heads, slate palettes, and the so-called ‘Abydos’ Ware in Early Bronze II), and Khirbet Kerak Ware (either imported or a locally produced imitation) pointing to a northern influence (Sala, 2008; Nigro, 2009b: 69–75).

Finds from the excavated 12 familiar tombs in use during Early Bronze II–III help to give a picture of this flourishing stage of Jericho’s history (Kenyon, 1960: 52–79). They were rich in pottery, including open shapes for food offerings, and jugs and juglets for ointments. Personal ornaments, cylinder seals, and other precious or rank items were also found, illustrating a variety of stones and gems traded. Among valuable finds, a crescent-shaped copper axe-head (form Tomb A114[B]) and a dagger (Tomb F5) have to be mentioned, as well as a bull’s head made of fine limestone with colored shell inlays from Tomb D12.

Although it is very difficult to estimate the overall population of ancient Jericho, one may surmise that at least 4,000–5,000 people lived in the city at its maximum \textit{floruit} in the Early Bronze Age.

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{image.png}
\caption{General view of the Spring Hill of Tell es-Sultan, with EB IIIB (2500–2350 BC) Palace G (to the right), the spring of Ain es-Sultan and the surrounding oasis (to the left), from the north.}
\end{figure}
In spite of its massive fortifications, the Early Bronze II–III city was destroyed by an intense fire, as part of an enemy attack, at the end of Early Bronze IIIB, around 2350 BCE, and did not recover for several decades.

THE URBAN INTERLUDIUM: EARLY BRONZE IV VILLAGE AND NECROPOLIS (2300–2000 BCE)

In the last quarter of the third millennium BCE, the spring of ʿAin es-Sultan in the Jericho oasis once again exercised its attractive power, sustaining a rebirth of the site. A new community of semi-nomads settled on the ruins of the ancient city in Early Bronze IV (called by Kenyon “Intermediate Bronze Age”; Kenyon, 1957: 186–209), inaugurating a new burial custom in the necropolis. Rock-cut tombs, entered through vertical shafts, hosted individual primary burials with simple funerary furnishings—basically small pottery jars and copper daggers in the case of male burials; beads and other simple personal ornaments in the case of female ones. More than 350 tombs of this kind were excavated by Kenyon (Kenyon, 1960: 180–262; 1965: 33–166), who distinguished groups on the basis of tombs types (Dagger, Pottery, Bead, Square-shaft, Composite, Outsize, and Multiple Burials), and considered this new group a vanguard of the Amorites, the new population entering the Levant from the south at the end of the third millennium BCE. Actually, the evidence from the tombs suggests a tribal organization in the early stage (Early Bronze IVA, 2300–2200 BCE), and integration into a large rural community, incorporating northern influences at a mature stage of the period (Early Bronze IVB, 2200–2000 BCE).

The same cultural horizon was also excavated on the tell, and was summarized in a recent study (Nigro, 2005), distinguishing an early stage (Early Bronze IVA), when a rural village occupied the central hill of the tell, and a later stage (Early Bronze IVB), when also the slopes of the tell were occupied by houses and domestic installations. During Early Bronze IVB, Jericho was actually a huge settlement, hosting a flourishing community with a distinguished ceramic production (in fabrics, shapes, and surface treatments), characterized by the use of a fine combing for decorating jars’ shoulders, in order to hide the junction between the handmade bodies and the wheel-made necks of vessels.

Copper and bronze daggers, and other items (a hoard of copper axes, including a broad fenestrated specimen, was found in the northwestern corner of the site by Sellin and Watzinger) point to a development of bronze technology during the last stage of Early Bronze IV, possibly transmitted by itinerant specialists in metallurgy.
LORDS OF RUHA, “ADMINISTRATORS OF CANALS”: THE CANAANEAN CITY OF MIDDLE BRONZE I–III (1900–1550 BCE)

At the beginning of the second millennium BCE, a new city arose at Tell es-Sultan, again with its center on the Spring Hill, where a new palace (excavated by Garstang and by the Italian-Palestinian Expedition) and a temple were erected (Nigro, 2009a). Oasis irrigation and intensive cultivation made possible another flourishing of the city, with a peak in population in the eighteenth to seventeenth centuries BCE that may be estimated at around 6,000–7,000 people.

A new city fortification was built, running along the enlarged southern and eastern sides of the Lower City, which also included a portion of the oasis around the spring. The earliest (Middle Bronze IB) defensive structure consisted of a solid mud brick wall on stone foundations, replaced in the Middle Bronze II by a series of terrace walls supporting earthen ramparts, coated with clay and crushed limestone, regularizing the huge ruins of the collapsed monumental Early Bronze III double fortifications on the southern, western, and northern sides of the tell, the Upper City. Such ramparts, with their distinctive shiny white appearance, became a typical feature of the city.

Recent Italian–Palestinian excavations have revealed a huge building in the southern Lower City, consisting of a rectangular Tower (Tower A1) with mud brick walls upon an orthostates foundation (Marchetti and Nigro, 1998: 124–135; 2000: 199–207; Nigro et al., 2011b: 187–91). The latter was the earliest building erected in the Lower City, directly upon Pre-Pottery Neolithic B layers, at the beginning of the nineteenth century BCE (Middle Bronze IB). It was probably contemporary with the huge (and similar) Eastern Tower excavated by Garstang alongside the spring (Garstang 1932: 15–17, pl. IX; Garstang and Garstang, 1948: 85–6, fig. 4), presumably devoted to its protection.2

After major destruction, possibly attributable to Pharaoh Amenemhat III’s campaign in Palestine towards the end of the nineteenth century BCE, the city was further fortified through the erection of ramparts supported by stone walls, like the curvilinear stone structure brought to light by Italian–Palestinian excavations at the southwestern foot of the tell (Nigro et al., 2011b: 195–7). Earthen ramparts were strengthened by crushed limestone tongues and plastered with clayish marl, and their top was crowned by a mud brick wall. This impressive work needed enormous quantities of water, in its erection but especially for marl and clay coating necessary in order to prevent heavy erosion. In the meantime, the fortification line had to incorporate channels to draw water outside the Lower City into the oasis. This made the eastern line of fortification a complex structure, with stone foundations incorporating such water streams.

The Middle Bronze palace occupied the central and eastern part of the Spring Hill. It was excavated by J. Garstang (“Hyksos Palace”; Garstang,
1934: 99–101, pl. XV [nn. 80, 81]; Garstang and Garstang, 1948: 99–101, fig. 4). Just below palace floors, a series of built-up tombs was uncovered by Kenyon and by the Italian–Palestinian Expedition (Nigro, 2009a). One of them (D.6+1) included the burial of a young lady bearing a scarab with the hieroglyphic inscription “Adjmer Rwha”—i.e. the Egyptian title “administrator” (literally “administrator of canals”—an appellation that goes back to the Old Kingdom) and the Canaanite word “Ruha,” possibly the ancient name of Jericho. Again, this title points to the strict relationship established at Jericho between the ruling institution and water control and administration.

Not far away from the palace, on the northwestern hilltop of the southern mound at the center of the tell, stood the Middle Bronze temple, looking east. This was uncovered in the later years, although it was very badly preserved.

Garstang excavated 23 Middle Bronze tombs in the necropolis (Tombs 1–5, 8–9, 12–15, 19–23, 30–2, 35, 40–2; Garstang, 1933: 4–38), collecting several Egyptian items (such as scarabs, alabaster, and faience objects). Kenyon also excavated 51 Middle Bronze tombs in the necropolis (some reused from Early Bronze IV period; Kenyon, 1960: 263–518; 1965: 167–478), subdividing them according to their pottery assemblages into five groups, ranging from Middle Bronze IB to Middle Bronze III (i.e. 1850–1550 BCE). Large caves were used as familiar multiple burials; they are characterized by the extraordinary state of preservation of the finds, such as wooden trays, combs, tables, chests and bowls, ostrich eggs, leather and textiles, as well as bone inlays of wooden boxes with geometric and bird decorations. Valuable finds include an Old Babylonian cylinder seal, a bronze belt of a distinguished type with circular studs, and two equids from Kenyon’s warrior Tomb J3.

A few Egyptian scarabs bear royal names and titles, including Pharaohs Hotepibre and Sobekhotep V or VI, suggesting a strong connection between Jericho and Egypt during the Thirteenth Dynasty. It is possible that Egyptians viewed Jericho as an attractive counterpart due to its oasis environment, which with its palm trees and waters echoed the Nile landscape.

The Middle Bronze city was destroyed at least three times and a drastic reconfiguration occurred during the seventeenth century BCE. At this time a new restricted area was encircled with a rubble rampart, supported by the huge Cyclopean Wall at its foot, and a series of terrace walls on the slope. The Cyclopean Wall was traced by the Austro-German Expedition, and extensively excavated by the Italian–Palestinian Expedition to the south. It was traced also in the oasis northeast of the spring (Figure 1.7).

After the destruction at the end of Middle Bronze III, the city of Ruha was further reduced in area during the succeeding Late Bronze Age (1450–1250 BCE; Sultan V), with its focus upon the eastern flank of the Spring Hill, where the palace was replaced by a relatively small residency (called the “Middle Building,” and excavated by Garstang; Garstang, 1934: 105–17).
Actually, the absence of Bichrome Ware and Cypriot imports suggested that Ruha was deserted between 1550 and 1450 BCE (Kenyon, 1951). However, the scarcity of finds does not confirm absence, since the Middle Building seems to replace the previous palace directly. One of the most interesting finds from the Middle Building (just east of it on the slope) is a cuneiform tablet, attributable to the fourteenth century BCE (Garstang, 1934: 116–17; Horowitz et al., 2006: 96).

Pottery vessels found by Garstang in reused Tombs 4, 5, and 13 can be attributed to the same time lapse (Garstang, 1933: 14–38; Bienkowski, 1986: 32–102). Actually, Tomb 5 shows vessels as early as the second half of the fifteenth century and the beginning of the fourteenth century BCE; Tombs 4 and 13, conversely, yielded vessels datable to 1375–1275 BCE. Tomb 5 also gave up a scarab of Thutmosis III and one of Hatshepsut (a second scarab of Thutmosis III was found in Pit Tomb 11 dating from Iron I, see below); while Tomb 4 yielded two scarabs with the cartouche of Amenophis III.

No evidence of a fortification system for this period existed and Garstang’s Wall of “City D” was incorrectly attributed to Late Bronze. This is, of course, fairly normal, since the majority of sites in Palestine are devoid of a new fortification system in this period, having been subject to the Egyptian Eighteenth Dynasty’s control.
BIBLICAL ACCOUNTS: JERICHO AND THE SPRING IN THE FIRST MILLENNIUM BCE (1150–586 BCE)

Waters from the spring of ‘Ain es-Sultan are also the protagonists of Biblical tales concerning Jericho, which was viewed in the Bible as a paradise, and a symbol of civilization and richness. According to the Old Testament, Jericho was one of the main centers of the tribe of Benjamin, marking the border with the tribe of Ephraim. Seven well-known Biblical accounts (Old Testament and New Testament) are centered on Jericho:

1. The heavily fortified city was conquered by Joshua to the sound of rams’ horns (Joshua 6), with the sudden collapse of its walls and a curse over its reconstruction.
2. Eglon, the king of Moab, conquered Jericho at the time of Judge Ehud (Judges 3:13), who eventually killed him.
3. At the time of David, his envoys, who had been shaved off half their beards, and had their garments cut off in the middle, at their buttocks, by Hanun king of Ammon, were told to wait at Jericho until their beards had grown (2 Samuel 10:5).
4. Hiil, king of Bethel, rebuilt the city at the time of Ahab burying his first-born son (Abiram) under the city walls and his youngest one (Segub) under the city-gates (1 Kings 16:34).
5. After Elijah’s ascent to heaven (by the Jordan), prophet Elisha healed the waters of the spring—which had become bitter and caused disease and death—by throwing a pot of salt in (2 Kings 2:19–22). The latter tale also gave the name of “Elisha’s Spring” to ‘Ain es-Sultan.
6. In the New Testament, Jericho is remembered due to the episode of Zacchaeus, the chief tax collector at Jericho. He climbed a sycamore tree to see Jesus, and then gave half his possessions to the poor (Luke 19:1–10).
7. The last episode is that of the blind man healed by Jesus due to his faith (Mark 10:46–52; Matthew 20:29–34).

Biblical narratives thus reflect the centrality of the site not only in the history of the region, but also in its cultural imagery, especially in relation to its waters and to the image of a luxuriant, cultivated land. This image was fixed in the Hasmonean Period, when the oasis became the seat of the kings’ winter palaces and of a number of villas belonging to the Jerosolimitane aristocracy. Jericho, the “City of Palms” (Judges 2:13; 2 Chronicles 28:13), was at that time intensively cultivated for the production of ointments and perfumes.

Different is the tale told us by archaeology, which has reconstructed the following history of the city and the annexed spring. In the final stage of the Late Bronze period, when Joshua’s attack is traditionally dated, Tell es-Sultan was unoccupied and only a few remains, datable to the early Iron
Age, could be identified. Garstang’s “Cremation Pit” (Tomb 11; Garstang, 1933: 36, fig. 11) can be dated to Iron I, a period also illustrated by pottery fragments retrieved by the Austro-German Expedition and studied by Helga and Manfred Weippert (Weippert and Weippert, 1976: 105–48). They were discovered in the foundation embankment of a monumental building erected on the eastern slope of the Spring Hill, the so-called “Hilani” (Sellin and Watzinger, 1913: 67–70, fig. 42, pls. 15–16, I, IV; Garstang, 1934: 102–4, pl. XIII), dated to Iron II (tenth to ninth centuries BCE) by the same scholars (the period in which the two Biblical episodes of David’s envoys (2 Sam. 10:5) and the episode of Hiel king of Bethel (1 King 16:34) would be situated). A possible occupation of the site in the ninth century is also suggested by Kenyon’s Tomb A85 (Tushingham, 1965: 482–9).

A continuous occupation from the eighth century to the sixth century, both on the summit of the tell and on its northern and southern slopes, was documented by all the expeditions. It was extensively excavated only by Sellin and Watzinger in the central and northern areas of the tell, where private houses and slab-paved staircases climbing the (by that time) steep mound (similar to those of Tell es-Sa’idiyeh) were brought to light. A tripartite building was also uncovered by Kenyon at the foot of Trench I to the west (Kenyon, 1981: 111–12, pls. 94, 232). A double-winged royal stamp on a jar handle (Bartlett, 1982: 537, fig. 220:1) may indicate that Jericho was included in the administration of the Kingdom of Judah in the seventh to sixth centuries BCE, even though its inclusion in the Kingdom of Ammon cannot be excluded.

After the Babylonian conquest of Jerusalem in 587 BCE and its destruction, Jericho fell under the Neo-Babylonian and then Persian administration (586–333 BCE). The site, though on a reduced scale, continued to be occupied (a barbed arrow head found in Trench I is a tangible relic of Persian warriors active in this area), even though this period experienced a decline in settlement and cultivation in the whole oasis (only one site, a ritual bath in Wadi en-Nueima, was attributed to Persian occupation; Dinur and Feig, 1986). An ostracon with an Aramaic inscription and some stamp seal impressions (Bartlett, 1982) can be also attributed to this period. Foreign powers were no longer interested in the development of the extraordinary agricultural potential of the oasis (Nigro et al., 2011a: 16–17).

TRIUMPH OF WATERS: JERICHO IN THE HELLENISTIC (HASMONEAN) AND ROMAN PERIODS (333 BCE–AD 324)

The situation reversed in the Hellenistic Period (333–64 BCE), when the Jericho oasis witnessed an extraordinary flourishing, with the systematic exploitation of the springs of ‘Ain Dyuk and ‘Ain el-Auja, and the aqueduct of Wadi el-Qelt, which gave rise to the building of numerous villas and
to an enhancement of productive capacities (palm date trees, wine, and *opobalsamum* (Balm of Mecca) for the perfume industry). The banks of Wadi Qelt, at the southern border of the oasis, were chosen as the site of a palatial complex by the Hasmonean rulers (Nigro *et al.*, 2011a: 17–18; Figures 1.8 and 1.9). Before the construction of the palace complex, a number of fortresses controlled access to the oasis (Tell el-Aqaba/Cypros, Nuseib ‘Uweishira and Jebel Quruntul). The huge palatial complex at Tell Abu el-Alayiq North extended over an area of c. 30 dunams (Netzer, 1996; 2001: 1–7, 11–174, 334–8). It included the First Hasmonean Palace, the so-called “Buried Palace,” and the “Pool Complex,” with its ritual baths, built by Johannes Hyrcanus (134–104 BCE) and later enlarged by Alexander Janneus (103–76 BCE), including the “Fortified Palace,” the “Twin Palaces,” as well as an industrial area with ritual baths, and a synagogue or *triclinium*. The palace complex became the winter residency of the Hasmonean rulers, and it was progressively enriched until the Roman Period, when it was rebuilt by King Herod after its destruction by an earthquake in 31 BCE (Herod’s Second, and then Third Palace; Netzer, 2001: 7–10, 229–98, 317–24, 326–30, 339–41; Figure 1.10). In this period, the whole oasis flourished and became a garden with flowers, trees, and abundant water running in aqueducts and canals (Netzer and

**Figure 1.8.** Tulul Abu el-‘Alayiq isometric view of Herod’s Third Palace, from the southwest (after Netzer, 2001: ill. 460).
Figure 1.9. Tulul Abu el-'Alayiq: plan of the area south and north of Wadi Qelt, including the Royal Estate, with the Hasmonean and Herodian winter palaces, and the water channels and installations (after Netzer and Garbrecht, 2002, fig. 6).
Garbrecht, 2002), with many rural villages spread in the countryside, such as Tell Abu Hindi, Khirbet en-Nitla/Tell Jaljul, and Tell es-Samarat, as well as other marginal settlements (Qasr el-Yehud, to the east, and Suwwanet eth-Thaniya and Wadi en-Nueima, to the north). As regards Tell es-Sultan, it hosted a number of small installations (an inscribed handle of a Rhodian amphora dates from 220 to 150 BCE; Bartlett, 1982: 542, fig. 220:6), while important hydraulic structures were erected by the spring of Ain es-Sultan.

In March 2012, the Ariha Municipality carried out rehabilitation work in the area of the spring of Ain es-Sultan, involving the two major buildings of the hydraulic installations: the Ottoman Pool and the Old Mill, connected with the former oval building through an aqueduct refurbish several times in history (Dorrel, 1993: 111; Taha, 2009). Work consisted of the removal of dump and residual material from building activities related to these installations. The filling yielded a mass of archaeological material, including pottery and stone implements dating from the Neolithic onwards. The oval wall of the Ottoman Pool was excavated down to its earliest layers, exposing a stratigraphy extending to the Roman Period, to which a magnificent tunnel 2 m wide with ashlar corbelled vault belonged. This structure lies beneath the Byzantine and Mameluk aqueduct, and came to light 15 m to the east alongside the mill and its water devices. Pottery from layers under the oval wall of the Ottoman Pool included Early Bronze Age fragments dating back to Early Bronze II–III, thus suggesting the longevity of the spring after its possible shifting occurred between Pre-Pottery Neolithic and Pottery Neolithic.

Actually, sparse architectural remains from the Roman Period (64 BCE–AD 324) were excavated on the tell, or retrieved in secondary contexts (Zagari, 2000: 357–9). They belong to rural installations and include a wine press with an associated signatum plastered bin. A Roman Corinthian capital was found on the tell, possibly re-employed in a Byzantine church, as well as other architectural fragments. The necropolis west of the tell was also used in Roman times. Seven tombs and 14 graves were excavated.

Figure 1.10. Tell Abu el-Magd, general view of the Hasmonean Palaces Complex (left) and of the northern wing of Herod’s Third Palace (right), from the south.
by Kenyon (Bennett, 1965: 516–545). A carved capstone of a monumental tomb was recovered by the Italian–Palestinian Expedition by the site. During the Roman Period, the main site in the oasis became Tell Abu Hindi, together with Tulul Abu el-Alayiq, where Herod’s palaces stood (Nigro et al., 2011a: 19–20).

BYZANTINE, ISLAMIC, AND OTTOMAN PERIODS

In the Byzantine Period (AD 324–636), Jericho appears on the Madaba Map, with the name and a basilica depicted in the mosaic. Already in the fourth century AD, at the dawn of the Byzantine era, Jericho was a place of pilgrimage and prayer, thanks to its religious significance; churches and monasteries flourished in the oasis, in the ‘Ain Hajla area, and on the surrounding hills (as Tell Abu Hindi, Khirbet en-Nitla/Tell Jaljul, Qasr el-Yehud, Early Bronze Jebel Quruntul, and Rujm el-Mugheifir North; Nigro et al., 2011a: 21–3). The main center of the oasis was the site of Tell el-Hassan, where present-day Jericho is. The Jericho oasis thus became a rich and variegated Byzantine enclave, where several Christian communities of monks lived (Orthodox, Catholic, Coptic, etc.), with monasteries and churches epitomizing Byzantine art in mosaics, frescoes, and stucco decoration (Donceel-Voûte 1999). On Tell es-Sultan (on the northeastern peak of the Spring Hill), a rural village arose, also producing dust pits that cut deeply into the Iron and Bronze Ages strata (Zagari, 2000: 357–65). In the nearby area of the spring of ‘Ain es-Sultan, a basilica was erected, of which a capital and some sparse remains are preserved today. The Byzantine Basilica is the first documented cult place directly connected with the spring of ‘Ain es-Sultan (Cirelli and Zagari, 2000: 566–7).

‘Ain es-Sultan retained its fundamental function also in the Islamic Period (AD 636–1516) through to the Ottoman Period (AD 1516–1918). However, after the passing of the Persian army in 614 and the arrival of the Arabs in 638, the number of inhabited sites at the Jericho oasis remained severely restricted (Nigro et al., 2011a: 23–5). Remains of Islamic occupation of Tell es-Sultan are represented by ceramic fragments dating from the Omayyad Period (Abassid and Mamluk pottery was also found; Zagari, 2000: 365–6). At the northern edge of the oasis, on the northern banks of Wadi en-Nueima, the magnificent residency of Caliph Hisham was built in the first half of the eighth century BCE, including baths paved with extraordinary mosaics, and wooden and stucco-figured decorations nowadays in the Rockefeller Museum (ex-Palestine Archaeological Museum), in Jerusalem (Hamilton, 1959). The Jericho oasis thus preserved its vocation as a seat of winter palaces, in this case for the caliphs of Damascus.

During the Crusader Period, some of the main installations near to Tell es-Sultan were the sugar mills of Tawheenah-Sukkar, fed by the spring of ‘Ain el-Auja (Taha, 2009). Already during the middle and late Islamic
Periods, however, the oasis and the site of Tell es-Sultan were gradually abandoned, although the spring of ‘Ain es-Sultan was preserved up until the Ottoman Period (AD 1516–1918), when a monumental pool (70 m by 15 m) was created and is still in use (although with an inadequate modern roofing) today.

JERICHO: THE CITY OF THE SPRING

This very brief overview of the history of Tell es-Sultan/ancient Jericho points to the central role played by the spring of ‘Ain es-Sultan, which was, as early as the Pre-Pottery Neolithic Period, the focal point of the village, and remained so for the city it had become in the Bronze Age. Fresh waters from the spring provided not only a basic resource for subsistence, but also a means to develop the economy and social organization faster, influencing land control and use, as well as animal domestication and breeding. The rise of agriculture, the key Neolithic process at Jericho (as elsewhere in the Fertile Crescent), was due here to the spring’s abundance and to the ability of the local community, whose knowledge allowed them to store and control the water. The manufacture of bricks, i.e. of modular architecture, and of pottery, also follows from the abundant water supply offered by ‘Ain es-Sultan. Both achievements represent basic steps in the history of humankind.

Archaeological excavations have made it possible to follow thoroughly the rise of the city in the Bronze Age, starting from the settlement of new groups alongside the spring at the end of the fourth millennium BC, gradually following the growth of a small hamlet, which, wisely exploiting the waters of the spring, became a large rural village and then, successively, a fortified town and a prominent city in the third and second millennia BC. This development reached its peak in the Middle Bronze Age, when the rulers of Jericho bore the Egyptian title of “adjimer,” i.e. administrator of canals—further proof of the social and economic role played by water control in the city of the oasis. The Lords of Jericho exercised their power over the spring and thus extended their control over the whole oasis, its surroundings, and the important routes crossing and following the southern Jordan Valley down to the Dead Sea. This established Jericho at a pivotal spot of the ancient road network on the long-distance trade routes, which the Egyptian connection also testifies.

In Hellenistic and Roman times, the perfume industry became one of the main activities of the oasis (again, thanks to the spring and of an exceptional system of irrigation), and it became the site for villas and the royal palaces of the Hasmoneans. It was ‘Ain es-Sultan and the other water sources of Wadi el-Kelt and Wadi en-Nueima that made such flourishing development possible. This
ancient city thus owes its historical parable to the spring it soon incorporated, and which, as the site of several biblical tales, has enjoyed everlasting fame.

NOTES

1 The presence of earthquakes fracturing and affecting Pre-Pottery Neolithic B layers and structures, registered by both Garstang’s and Kenyon’s Expeditions, points to repeated seismic events affecting Neolithic Jericho. In particular, a deep crack detected by J. Garstang in his North-Eastern Trench, crossing the floors of buildings at level X (the uppermost PPNB layer; Garstang et al., 1936: pl. XL, a; Garstang and Garstang, 1948: pls. VI [right end of the section, loci 453/297], IX), may appear to offer probative evidence that an earthquake occurred at the end of Pre-Pottery Neolithic.

2 At Jerusalem in the same period, the Gihon Spring on the eastern flank of the hill, where the Middle Bronze City arose, was protected with the erection of a couple of huge towers (Reich and Shukron 2004, 2008).

3 Also two synagogues arose in the oasis: the Synagogue of Shahwan, in the Tell el-Jurn area, and the Synagogue of Khirbet Na’aran.

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