

# THE ASHKELON TROUGH SETTLEMENTS IN THE EARLY BRONZE AGE I: NEW EVIDENCE OF MARITIME TRADE

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## Abstract

Archaeobotanical research carried out in several dispersed Early Bronze Age Ia (ca. 3500–3350 B.C.E.) sites excavated along the Ashkelon troughs (Afridar) offers new evidence indicating trade relations between southern Canaan, Lebanon and Egypt much earlier than had been believed previously. Wood from two native Lebanese trees, *Cedrus libani* (Cedar of Lebanon) and *Quercus cerries* (Turkey Oak) found in EB Ia strata confirms the northern connections. Analysis of charred wood remains and fruits found at all Ashkelon sites shows that more than 90% of the wood assemblage was *Olea europaea* (Olive) and all fruit remains were olive stones. The assumption that olive orchards characterized the Ashkelon area as early as the EB Ia period suggests olive oil production and most likely export to Egypt. Thus, the archaeobotanical data support the assumption that maritime trade between the southern Canaan coast with Lebanon and Egypt existed as early as EB Ia.<sup>1</sup>

## Introduction

Tel Ashkelon (map reference 107.119) is located on the southern coast of Israel. Archaeological data accumulated up to the early 1980's demonstrated that the earliest occupation of the site began in the Middle Bronze Age in the first half of the 2nd millennium B.C.E. (Avi Yonah and Eph'al 1975:125). The new excavations at Tel Ashkelon of the Leon Levy Expedition directed by L. E. Stager revealed for the first time evidence of an Early Bronze Age occupation at the northwestern part of the site. According to Stager, the earliest EB remains date to EB Ia (Stager 1993:105–106).

Recently, rescue excavations conducted along the Ashkelon trough, north of Tel Ashkelon revealed three EB Ia sites under dunes (Table 1). These three sites, together with EB Ia Tel Ashkelon, represent a distribution of settlements along 2.5 km. (Fig. 1; Baumgarten 1996; Braun and Gophna 1996; Golani 1995:109–110;

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Halaila, pers. comm.). The sites are scattered within an area of ca. 2.6 km<sup>2</sup>. This group of sites demonstrates that the EB Ia pottery discovered at Tel Ashkelon is not an isolated phenomenon in this area; thus it seems that the Ashkelon trough was intensively inhabited during EB Ia. This settlement pattern can be interpreted in light of the specific environmental conditions along the southern Canaan coast. It can also explain the long history of Tel Ashkelon.

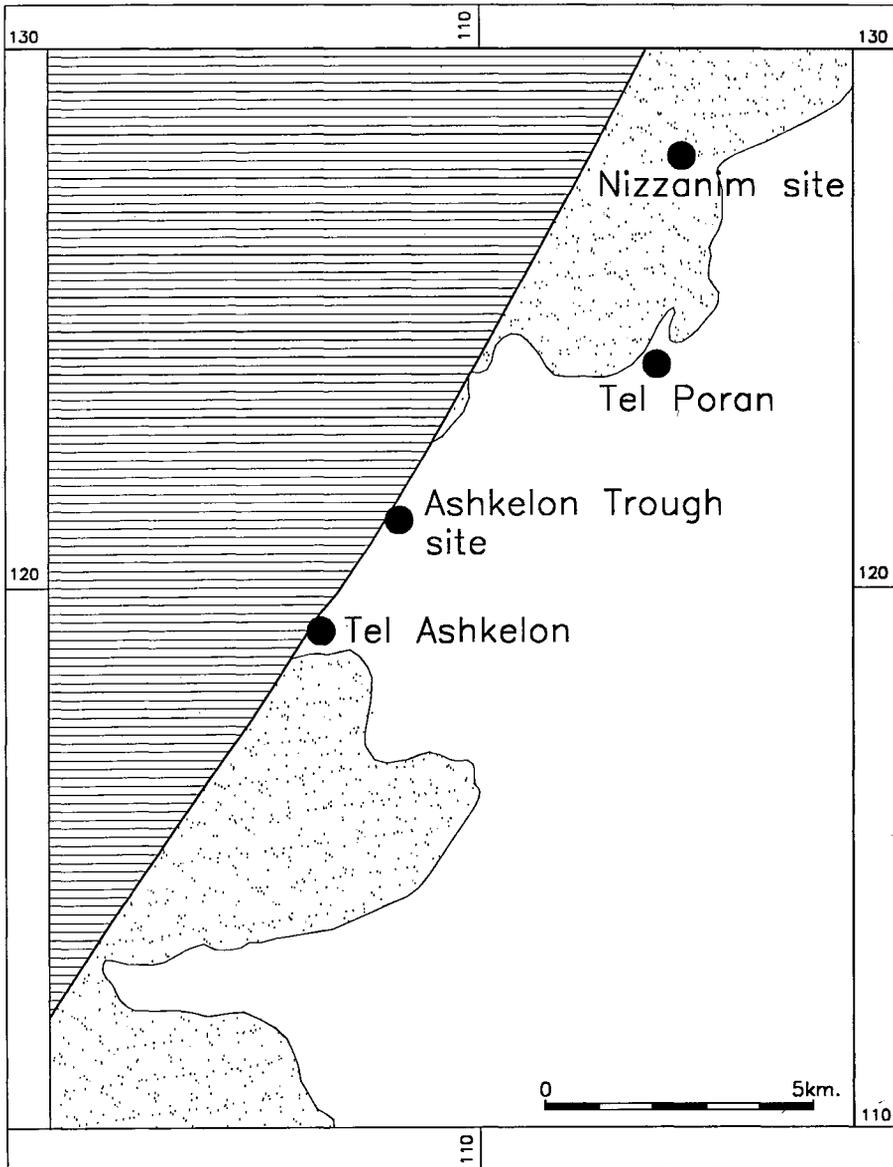


Fig. 1. EB sites along the Ashkelon trough.

**TABLE 1. EB Ia SITES IN THE ASHKELON REGION**

<i>Location</i>	<i>Reference</i>	<i>Map reference</i>
Tel Ashkelon	Stager 1993:105–106.	1070.1195
Ashkelon-Afridar	Braun and Gophna 1995:83–84. Wolff 1994:486–487.	1085–7/1210
Ashkelon-Afridar	Baumgarten 1995:87. Halaila, pers. comm.	1084.1206 1803–5/1205–7
Ashkelon-Afridar- Marina	Golani 1995:109–110.	108.100/120.875
Nizzanim	Yekutieli and Gophna 1994:162–185.	1136.1283

The area of Ashkelon is characterized by *kurkar* sandstone ridges with intervening troughs, *hamra* and alluvial soils. Today, the troughs are covered by the recent overlay of sand dunes. The archaeological sites in the area are located on an elongated *kurkar* ridge of Pleistocene age that was covered mostly by natural and anthropogenic sediments. The topography of the coastal *kurkar* ridge was lower during antiquity than at present. The region has a Mediterranean climate and receives a mean annual precipitation of 437 mm. (measured at Majdal, 31.40N 34.35E, 40 m. elevation; Meteorological Notes 1967). Fresh groundwater at a level close to sea level is easily reached by digging (Nir, pers. comm.). According to recent investigations, it was found that the existence of groundwater at a relatively shallow depth below the surface of the seashore enabled water exploitation by digging as early as the Late Bronze Age. Apparently, the exploitation of shallow groundwater by primitive methods started in much earlier periods (Nir and Eldar 1986; 1987:3–6; 1988:1765–1771). It is assumed that during EB Ia the population of Ashkelon enjoyed ample shallow groundwater.

The native climax vegetation of the Ashkelon region is not known. The primary vegetation of the whole region was destroyed during historic times, and no remnants remained. The present day cover is a secondary one, segetal and ruderal. Today the area is urbanized and the alluvial plains of the region are under cultivation.

### **Archaeobotanical Research of the Ashkelon Region**

The recent archaeobotanical findings at three of the EB Ia Ashkelon trough sites permit an evaluation of the agricultural potential of the Ashkelon area as well as its function as a port for maritime trade as early as that period. Five EB Ia sites in the region of Ashkelon (Table 1), four located in the Ashkelon trough, and one to the

north (Nizzanim), were included in this survey. They produced numerous archaeobotanical findings, including wood fragments, fruits and seeds (Liphschitz 1990b; 1992a; 1993; 1995a; 1995b; 1995e).

The archaeobotanical research carried out at the Ashkelon Marina site (Liphschitz 1995b; 1995e) revealed that the native vegetation of the area was of lentisk (*Pistacia lentiscus*), terebinth (*Pistacia palaestina*), tamarisk (*Tamarix aphylla*), shrubby salt bush (*Atriplex halimus*), and acacia (*Acacia raddiana*). The environs of Ashkelon were therefore, probably characterized by a vegetation composed of the components of the kermes oak (*Quercus calliprinos*) — terebinth (*Pistacia palaestina*) association, the dominant association of the Mediterranean region during antiquity (see Liphschitz and Biger 1990:70), and of semi-arid species, such as *Tamarix aphylla* and *Acacia raddiana*. However, most of the local wood identified in all the EB Ia sites — about 90% — was of olive (*Olea europaea*), and all fruit remains except one seed of grapevine (*Vitis vinifera*) found at Nizzanim, were olive stones (Table 2). It is therefore clear that the environs of Ashkelon were characterized, as early as the EB Ia, by olive orchards. Radiocarbon dating of two olive wood samples collected at the Ashkelon Marina site gave the following results: 3781–3667 B.C.E.; 3500–3400 B.C.E. (Carmi and Segal, pers. comm.).

The most important archaeobotanical finding was the existence of wood from Cedar of Lebanon (*Cedrus libani*) in two of the sites in three locations and of Turkey Oak (*Quercus cerries*) in one of those two sites (Table 2). Both *Cedrus libani* and *Quercus cerries* are native to Lebanon and never grew in the Land of Israel; thus they were imported to Ashkelon from Lebanon. Indeed, the small size of the wood fragments precludes identification of their original use. Accumulated evidence

**TABLE 2. LOCATION OF OLIVE WOOD AND STONES AT EB Ia SITES IN THE ASHKELON REGION**

(Liphschitz 1992a; 1993; 1995a; 1995b; 1995e)

<i>Site</i>	<i>Wood</i>	<i>Stones</i>	<i>Other wood</i>	<i>Excavator(s)</i>
Afridar	9 (1 log)	+	<i>Cedrus libani</i> (1)	Braun and Gophna
Afridar	1	—	—	Baumgarten
Afridar	5 (1 log)	+	—	Halaila
Afridar-Marina	60 (121 baskets)	+	<i>Cedrus libani</i> (2), <i>Quercus cerries</i> (1), local species (9)	Golani
Nizzanim	—	+	—	Yekutieli and Gophna

from numerous dendroarchaeological investigations indicates that precious timber of cedar was imported into Canaan only when wide ceilings demanded straight, long logs (Liphschitz and Biger 1991:169, 172–174). Since no buildings more than ca. 3–4 m. wide were uncovered in the EB Ia settlements at Ashkelon, local wood could have supplied the necessary ceiling requirements. Therefore, it is suggested that these remnants of cedar and Turkey Oak originated from precious objects.

## Discussion

Cultivation of olives in Canaan started as early as the EB I period. Percentages of olive trees within the native Mediterranean vegetation became proportionally higher from that period onward (Liphschitz, *et al.* 1991:450–451). This phenomenon is most apparent at some EB I sites, as at Shoham (van den Brink and Gophna 1995:75–76) in the central coastal Plain, where 80% of the wood originated from olive, and at Tel 'Erani in the southern Coastal Plain, where 52% of the wood originated from olive (Liphschitz 1987; 1990a; 1994; 1995c; 1995d). These findings, as well as the archaeobotanical evidence concerning the expansion of olive culture already in EB Ia Canaan (Liphschitz, *et al.* 1991:450–451), suggest that, although no direct evidence of oil production at Ashkelon is yet available, olive oil was one of the major products produced in southern Canaan, including the Ashkelon trough, and presumably was one of the goods exported to Egypt (Ben-Tor 1986:14).

Prior to the recent discoveries at Tel Ashkelon, it was accepted that only the land route was used for trade between Canaan and its neighbours during EB I. It was surmised that Canaan's commercial relations in this period were severely hampered by the fact that it was an exclusively overland trade. No harbour towns are known in Canaan prior to the second millennium B.C.E., and all goods in EB I were transported to and from Canaan by land, greatly restricting the size and weight of the cargo. This prevented Canaan, in contrast to Syria, from exporting timber (Ben-Tor 1986:9). This assumption was greatly influenced by the investigation concerning the EB I overland route along the coast of northern Sinai (Oren 1989:386–406). Except for the discussions by Prag (1986:59–71) and Moorey (1990:62–69) concerning the relationships between the Lebanese-Syrian coast and Egypt during the second half of the 4th millennium B.C.E., the possibility of similar maritime trade at that period with southern Canaan was not taken into consideration.

According to most recent archaeological research, trade was the most significant innovation during EB Ia, and eventually contributed to the socio-economic development of southern Canaan (Yekutieli 1995). Direct evidence of trade connections between southern Canaan and Lebanon can be derived from the Cedar of Lebanon and Turkey Oak wood fragments found at the Ashkelon sites. However,

these are not the only finds which indicate commercial relations with the Lebanese-Syrian coast during EB Ia.

During the excavations of the EB Ia settlement at Taur Ikhbeineh (ca. 30 km. south of the Ashkelon trough and 3 km. from the present coastline), a fragment of a cup attributed to the pottery of inner Syria of the 4th millennium B.C.E. was found in Layer IV. This cup represents the period of Uruk expansion in the third quarter of the 4th millennium (Uruk IVa). The cup is best paralleled with the Syrian painted wares from phase F of the Amuq sequence (Oren and Yekutieli 1992:371). This finding suggests the possible sea connections between the southern Canaan coast and the coasts of Syria and Lebanon during EB Ia. The excavators of Taur Ikhbeineh ignored this kind of connection since they focused on land connections with Egypt.

In support of the above conclusions, wood from Cedar of Lebanon found at Maadi (Kroll 1989:134–135; Rizkana and Seeher 1989:76), and coniferous wood — cedar (*Cedrus libani*), pine (perhaps *Pinus halepensis* or *Pinus brutia*), cypress (*Cupressus sempervirens*), and probably juniper (*Juniperus*) found at Badari, in an earlier phase of the Pre-dynastic sequence in Egypt (ca. the first half of the 4th millennium; Brunton and Caton-Thompson 1928:38, 62–64, 95), affirm Egyptian maritime trade with the EB Ia Levant.

Archaeological data from Byblos and Pre-dynastic Egypt also suggests a sea-borne trade between Lebanon and Egypt from the middle of the 4th millennium, and even in earlier Badarian times (Fig. 2; Prag 1986:59–71). In recent excavations at Buto (Tell el-Farain), located in the western Delta, finds from Stratum I point to connections between this site and Canaan during the Chalcolithic and EB Ia periods. Von der Way describes Buto as a port connecting the northern Delta by sea with north Syria (Von der Way 1987:241–250; 1993:26–31, 67–75). However, it was the recent discoveries of settlements dated as early as EB I at Tel Ashkelon that led Stager to the conclusion that Ashkelon played an important role in maritime trade during the 4th and the beginning of the 3rd millennium B.C.E. (Stager 1993:105–106). The finding of cedar wood in the Ashkelon troughs may offer for the first time, direct evidence to the existence of a sea trade from Lebanon via Canaan to Egypt as early as EB Ia, as was previously suggested by Rizkana and Seeher (1989:80).

Accumulated recent archaeological data may also point to the possibility of seafaring along the littoral during EB Ia. Except for the port at Jaffa, there is no natural anchorage along the coastline south of the Carmel ridge. Since EB Ia settlements were also discovered along the coastal troughs north of Ashkelon, for example at Nizzanim (Yekutieli and Gophna 1994:162–185), Palmahim (Braun 1992:21–23), and at Holon (Gophna 1996:108–111), it is tempting to assume that despite the lack of EB remains (so far) in Jaffa, such a natural harbour was

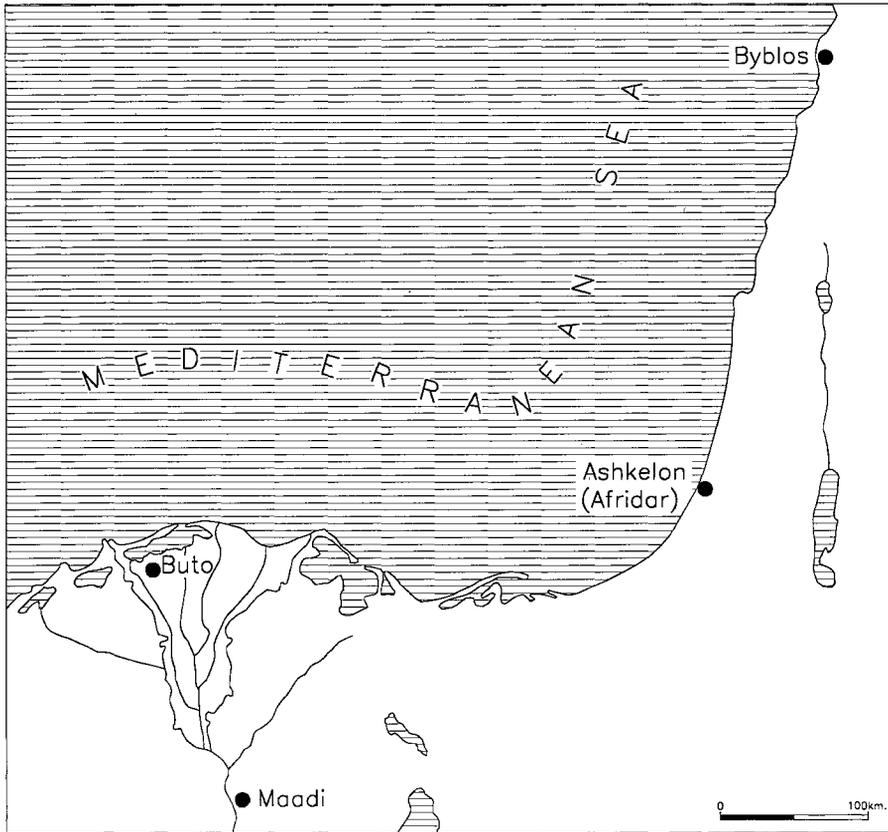


Fig. 2. The southeastern Mediterranean littoral: a possible maritime trade route in EB Ia.

exploited at least as early as EB Ia. The potential of the site of Jaffa lies not only in its harbour, but also in its hinterland which was an agriculturally fertile region. Even during the 19th century C.E., the fertile Jaffa hinterland was famous for its vegetable fields, vineyards and olive orchards (see map in Sandel 1878/9; Schwartz 1880:44–51). Similarly, a map of Ashkelon drawn in 1858 by Rey (1885: Pl. XIX), clearly shows gardens stretching across the ruins, as it existed until Israel's War of Independence.

The late settlement pattern of the 19th and early 20th centuries C.E. reflects the special agricultural potential of gardens and orchards that existed during antiquity, both in Ashkelon and Jaffa. Thus, a possible counterpart to the linkage between the EB I Ashkelon trough settlements and Tel ʿErani (ca. 20 km. east of Ashkelon) may also be suggested between Jaffa and Azor (ca. 6 km. east of Jaffa) already during EB Ia (Fig. 3; Golani and van den Brink 1995:58). However, at both Tel ʿErani and Azor, Egyptian finds were discovered: in an EB Ia-b context at Azor (Perrot

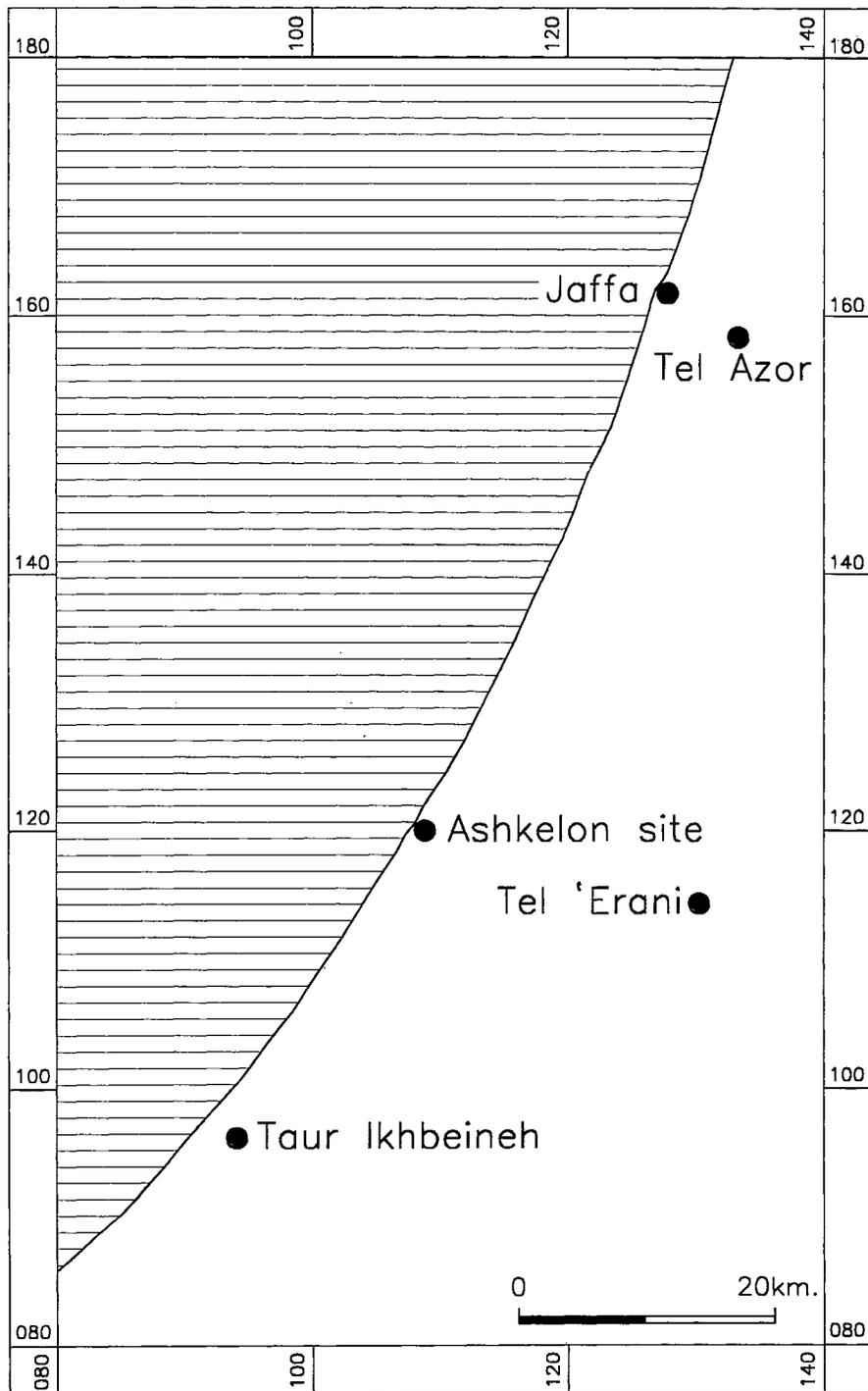


Fig. 3. Suggested linkage between southern coastal sites during EB Ia.

1961:61; Fig. 40:14–15; Ben-Tor 1975: Pls. 19; 21; Amiran 1985: Pl. XLVI:1), and in EB Ib strata at Tel ʿErani (Kempinski 1993:419–421). At Tel ʿErani, more than 50% of the wood was from olive, suggesting the existence of olive orchards and most probably olive oil production (Liphshitz 1987; 1990a). Whereas at Ashkelon, one may assume that olive oil was exported to Egypt via the port of Ashkelon, a similar system might have been active during EB I between Azor and Jaffa.

In conclusion, new evidence on the maritime trade of the southern Coastal Plain with Lebanon is an important addition to the accumulated data on the intensive land route trade that was operating during EB I, first with Lower Egypt and later with Upper Egypt, during the Late Pre-dynastic period.

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