CHAPTER 1

INTRODUCTION

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The cemetery at Bet Dagan (map ref. NIG 1840/6558) is located to the southeast of the remains of the Arab village and ancient tell of Beit Dajan (Fig. 1.1), on a red loam (*ḥamra)* hill 33 m above sea level, halfway between Jaffa and Ramla. The *ḥamra* hill on which the site was located had been previously damaged by extensive quarrying, and only part of it remained to be systematically excavated. The nature of construction at the site dictated the necessity to expose a wide area, after which the entire hill was leveled and no longer existed. During the two seasons of excavations, two cemeteries of different periods were exposed. A cemetery dated to the Intermediate Bronze Age was found in the eastern part of the site (Areas A and C), while a Muslim cemetery dated to the Mamluk period was revealed on the western summit (Area B).

The present report deals with the finds from both cemeteries. The first part presents the 128 Intermediate Bronze Age tombs and their contents, including 398 pottery vessels, 15 copper objects, and 35 beads, as well as animal bones and anthropological remains. This is one of the largest tomb assemblages dating to this period to have been excavated. The tomb data are followed by a general discussion and conclusions. The second part presents the graves from the Mamluk period, which did not contain any burial goods. The

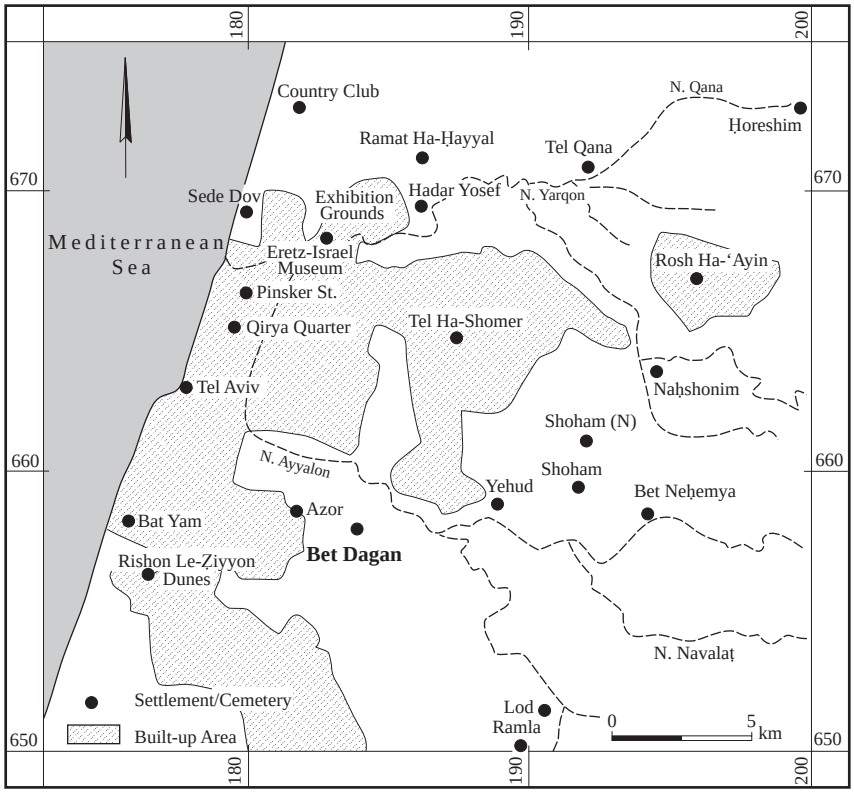


Fig. 1.1. Intermediate Bronze Age sites and cemeteries in the Naḥal Ayyalon and Yarqon basins.

anthropological remains from these graves and their significance are discussed.

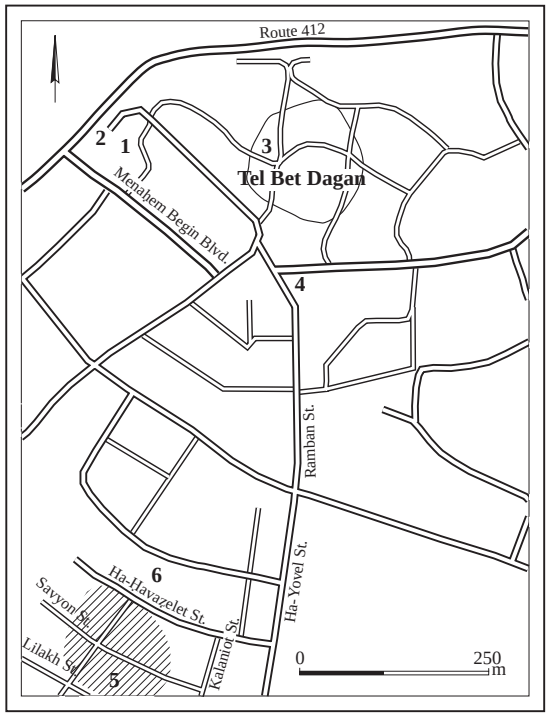
The tombs and burials in both cemeteries were mostly dug into the *ḥamra* soil, whose corrosive nature resulted in severe damage to the skeletal remains and the pottery vessels (when relevant). This characteristic of the soil affected the ability to thoroughly analyze the anthropological finds, and in most cases, identification did not go beyond a general description of postcranial bones.

History of Excavation (Fig. 1.2)

The cemetery at the site had been damaged in the past, possibly as a result of the establishment of an irrigation system in the orchards that had occupied the site in the 1920s and 1930s, including the digging of wells. This apparently is the source of three copper blades from Bet Dagan that are on exhibit in the British Museum (Shalev 1988:303).[1]

The initial, formal excavations at the site were conducted under the auspices of the British Mandate, led by Jacob Ory in 1941–1942, during the course of construction of a police headquarters at the Bet Dagan intersection, about 200 m to the west of the excavation discussed in this volume.[2] This excavation, which was never published, revealed a number of stone-lined cist graves along the southern perimeter of the police compound, near the Jaffa–Ramla road, dated by Ory to the Roman period. In 1950, agricultural activity of the Vulcani Institute and development of the area south of the Jaffa–Ramla road, c. 300 m east of the Bet Dagan intersection, resulted in damage to a number of Intermediate Bronze Age tombs (Gophna 1974:91). An illicit excavation that was never reported to the Israel Department of Antiquities and Museums took place; one intact storage jar found in that excavation reached the Tel Aviv artist, Nachum Gutman, who incorporated it in the background of several of his paintings.[3]

An additional excavation was conducted at Bet Dagan in 1996, directed by Martin Peilstöcker, who uncovered a large Byzantine winepress to the west of the ancient tell of Bet Dagan, c. 500 m northwest of the excavation discussed in the present volume. Peilstöcker excavated, also in 1996, several squares along the western edge of the tell (Permit Nos. A-2572, A-2545, A-2980, A-3421), which yielded sherds from Iron Age I, Iron Age II and the Persian period (Peilstöcker and Kapitaikin 2000). In yet another excavation (Permit



1. Peilstöcker 1996
2. Sharvit 2003
3. Peilstöcker and Kapitaikin 1996
4. Rauchberger 2006
5. Yannai 2004–2005
6. Peilstöcker 1998

Fig. 1.2. Bet Dagan excavations (by year).

No. A-2980), Peilstöcker, in 1998, uncovered five tombs c. 40 m to the north of the cemetery discussed in the present volume, seven dating to the Intermediate Bronze Age and two to the Roman period (Peilstöcker 2006). Excavation was also conducted by Jacob Sharvit in 2003, along the road between Bet Dagan and Yehud (Permit No. A-4039), revealing remains of a plastered winepress (unpublished). An excavation was conducted by Lior Rauchberger in 2006 (Permit No. A-4664) to the south of the tell and some 250 m northeast of the excavation discussed in the present volume (Rauchberger 2008). The western part of the Mamluk cemetery discussed in the present volume was excavated in 2005 by Yehudah Guvrin on behalf of the Hebrew Union College (License No. B-296) and remains unpublished.

Geographical and Geological Background

The site of Bet Dagan is located on the edge of a *kurkar* ridge overlaid with *ḥamra* (Yaalon and Dan 1967; Karmeli, Yaalon and Ravina 1968). The lower eastern

part of this *ḥamra* unit adjoins alluvial clay that is part of the Naḥal Ayyalon basin. The relations between the *ḥamra* and the alluvial soil affected the location, shape and state of preservation of the two cemeteries.

The accelerated development in the greater Tel Aviv area and the area south of Bet Dagan caused severe damage to the geological infrastructure and did not permit an orderly mapping of the excavated area. Information concerning the geological conditions can be gathered from old maps from the end of the eighteenth century (Jacotin 1799), the Palestine Exploration Fund map of Jaffa (Conder and Kitchener 1886) and Sandel's map (1880) from the late nineteenth century, German and British maps from the beginning of the twentieth century, and British Mandate maps that were compiled prior to the development of the area that caused the aforesaid damage. Aerial photographs are a source of information as well.

The coastal plain landscape was shaped during the Quaternary period. Climatic changes mainly in the Late Holocene contributed to the formation of the present topography, hydrology and geomorphology of the lower Naḥal Ayyalon basin, where Bet Dagan is located. To the north of Naḥal Ayyalon is an exposed calcareous sandstone (*kurkar*) and *ḥamra* ridge, while to its south are the young sand dunes of Rishon Le-Ẓiyyon that extend until Lod. Naḥal Ayyalon crossed the *kurkar* ridge and deposited eroded soils from the Samaria Hills and the lowlands of Lod and Gezer. The rocks and soils in the area of Bet Dagan today include *ḥamra*, *nazaz* (pseudogley), sand and *kurkar*.

The site of Bet Dagan is located on the third *kurkar* ridge, extending 3–4 km from the lower part of the Naḥal Ayyalon basin on the west and up to Bet Dagan on the east. The *kurkar* is composed of two layers, a lower massive unstratified layer formed of marine sediments and an upper crumbly stratified layer, identified as aeolianite (Picard and Solomonica 1936; Emery and Neev 1960). This upper layer, along with sand and clay *ḥamra* and other derived soils, such as *nazaz*, gray *nazaz* (which was used to block the tomb entrances) and brown grumosol (Dan and Yaalon 1968) served as the base into which the Bet Dagan burials were dug.

The geographic setting during the periods of use of both cemeteries discussed in the present volume differed from that seen today. During the Intermediate Bronze Age, the *ḥamra* and *kurkar* ridges were exposed, with only a small part near the coast having been covered by shifting sands that were dated by ^{14}C to 4810–3770 BP (Almagor 2005:138). Calibration of these dates (Stuiver and Kra 1986; Stuiver and Becker 1993) yields a range of 5580–4110 BP. New sands were deposited along the coast at the end of the Byzantine period, a process that continues until today. The use of the cemetery during the Mamluk period took place while large areas south of Naḥal Ayyalon were covered by sands, known as the Rishon Le-Ẓiyyon dunes, which blocked the outlet of Naḥal Ayyalon to the sea, creating extensive swamps that affected passage through the area, limited raw material sources and the ability to utilize the soil for agriculture, thus profoundly affecting the settlement pattern in the region (Netser 1994:117).

Despite the fact that the soil makeup of the *ḥamra* and *kurkar* ridges was the same in both periods of the cemeteries, different modes of burial were used, clearly reflecting cultural and not technological choices. During the Intermediate Bronze Age, the tombs contained shafts and burial chambers that were dug well into the hard soil layers, entailing a special effort, while during the Mamluk period, the graves were merely shallow pits, sometimes marked with bricks.

Description of the Site

The hill into which the two cemeteries were dug is composed of three ridges on a north–south axis, each comprising different soil combinations. On the uppermost part of the hill, the Intermediate Bronze Age shaft tombs and burial chambers were dug into a composite *ḥamra* of coarse dark red sand that contained layers of light red and sandier *ḥamra*. The *ḥamra* layer was preserved only 1 m deep, its uppermost part having been removed during development of the area, as well as by natural erosion; it is thus impossible to reconstruct its original depth. Under the *ḥamra* layer was a dark yellow *kurkar* layer, 7–8 m deep, underneath which was a layer of light yellow sand. The borders between these layers were erratic and pockets of *ḥamra* sand were found penetrating into the *kurkar*. Modern elements found on the summit of the hill included a well on the northern edge of the hill and remains of terraces and concrete retaining walls.

The site had suffered much natural and man-made damage in the modern era. The uppermost part of the cemetery hill (in the area of the central and eastern ridges) was lower than its original height due to

erosion and agricultural activity, including the planting of an orchard, the shallow pits of which are still seen throughout the excavation site. The hill was subjected to extensive illicit quarrying of sand and *ḥamra*, resulting in deep ravines and pits that damaged many tombs throughout the site, compounded by the paving of a road between Areas A and C. None of these destroyed burials were documented. As a result of these activities, only three parts of the hill remained intact and thus, three excavation areas were established: Area A on the north, Area B on the west, and Area C on the south. Areas A and C contained tombs from the Intermediate Bronze Age (Fig. 1.3), and Area B, tombs from the Mamluk period. In the former, preservation of the skeletal remains and pottery was very poor, although the burial goods were well-preserved. The skeletal remains in the Mamluk cemetery were in an extremely poor state of preservation and there were no burial goods. The quarrying damaged the western part of the Intermediate Bronze Age cemetery, so that the exact border between it and the Mamluk cemetery to its west remains unknown (see Fig. 1.3).

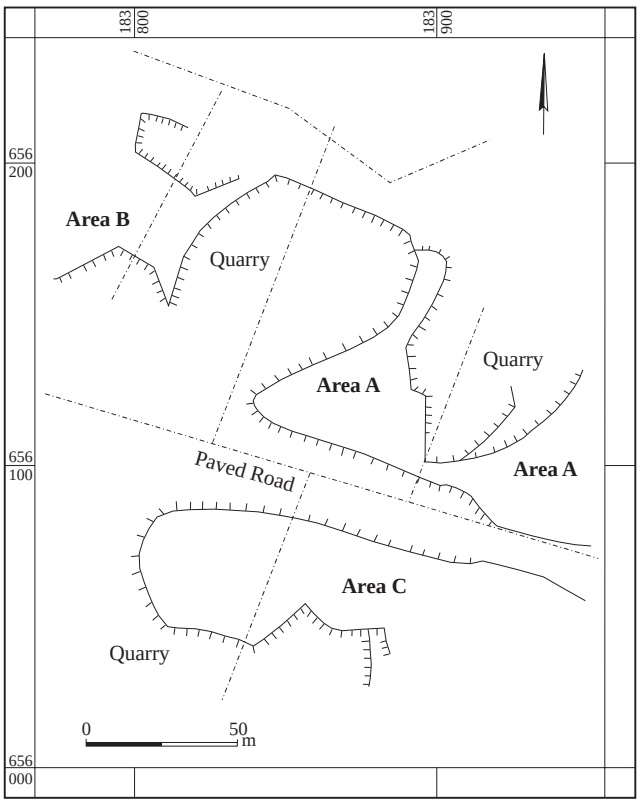


Fig. 1.3. Bet Dagan cemeteries, excavation areas.

The full extent of the Intermediate Bronze Age cemetery remains unknown, due to several factors: the abovementioned quarrying; the construction of modern buildings along the northern and southern sides of the site; and the coverage of a 4–5 m deep layer of eroded alluvial soil above the *ḥamra* layer on the eastern side, which prevented excavation and where additional modern construction also took place. Above, it was mentioned that Intermediate Bronze Age tombs were damaged during development work south of the Jaffa–Ramla road; no tombs were found in the plowed fields to the south of this area, so it seems that this might represent the southern border of the cemetery of this period. If this is correct, then the cemetery extended some 300 m to the south of the excavated area.[4] The northernmost tombs uncovered in Area A seem to delineate the northern border of the cemetery, since further to the north, where modern buildings were constructed, apparently no additional tombs existed. To the west of Area C is an unexcavated area that might represent the continuation of the cemetery. It seems that in light of the above data, only about half of the original cemetery has been preserved.

Significance of the Site

Intermediate Bronze Age tombs have been found at many sites in the Naḥal Yarqon and Ayyalon basins (see Fig. 1.1)—in a large cemetery at Azor, excavated by Shapira (Yannai 2007), at Ḥoreshim (Gilboa and Yannai 1992), Yehud (Yannai 2004b), Ramat Ha-Ḥayyal (Yankelevitz 2005), in the Qirya Quarter in Tel Aviv (Braun and van den Brink 2005), at Shoham (Kletter 2003) and Shoham North (van den Brink and Gophna 1997:84–85). The excavations at Azor and Yehud did not yield anthropological remains. The anthropological remains from the cemeteries at Ḥoreshim and Bet Neḥemya are sporadic and of no statistical significance. The cemetery at Bet Dagan (despite damage caused during development and construction at the site), with its numerous tombs and anthropological remains, affords us a rare opportunity to closely and intensively examine a large corpus of tombs and deceased and to conduct a comparative study of Intermediate Bronze Age society. As well, it provides much data concerning the processes and finds associated with burials in the coastal plain. Until the excavations at Bet Dagan, shaft tombs had been found exclusively carved into *kurkar* ridges (i.e., Azor—Ory

1944; Yannai 2007) and soft limestone hills (i.e., Dhahr Mirzbâneh—Lapp 1966, Finkelstein 1990; Jericho—Kenyon 1960, 1965). The Bet Dagan cemetery is the only one in which shaft tombs were dug into *ḥamra* soil. Despite our assumption that tombs dug into *ḥamra* would be pit burials, the *ḥamra* around Bet Dagan was deliberately chosen as the location for this shaft-tomb cemetery. Clay-like *ḥamra* has a stone-like consistency; it seems that the ancient inhabitants who chose this location for their cemetery were familiar with this feature and related to the *ḥamra* as though it were stone.

The significance of the Muslim cemetery lies in the fact that it is unique in having no tombs, grave goods or child burials.

NOTES

[1] See also Chapter 4.

[2] The report of this excavation, including text, plans and photographs, is kept in the IAA Archives at the Rockefeller Museum, File No. ATQ786, dated 5.2.1942. I would like to thank Arieh Rochman-Halperin for his help in locating this information.

[3] I would like to thank Prof. Ram Gophna for this information and Prof. Hemi Gutman, Nachum Gutman's son, for generously allowing me to view the storage jar, which belongs to the artist's estate.

[4] I would like to thank Prof. Ram Gophna for this information.