

NAHAL TUT (SITE VIII): A FORTIFIED STORAGE DEPOT FROM THE LATE FOURTH CENTURY BCE

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INTRODUCTION

Geographical Background

Site VIII of Nahal Tut (hereon 'Nahal Tut'; map ref. NIG 2032/7236, OIG 1532/2236) is located on the present-day main road linking Yoqne'am with Zikhron Ya'aqov, 10 km southwest of Tel Yoqne'am, 11 km east of Dor and 14 km west of Megiddo (Fig. 1). The site nests in the low hills at the juncture between the southern extent of the Carmel mountain range and the northern edge of the Menasseh hills. The building remains are located on a moderate slope (145 m asl), running down to the Nahal Tut riverbed (140 m asl) (Fig. 2). Nahal Tut (Wadi el-Shaqaq) begins 4 km northeast of the site, c. 30 m to the west, at Moshav Elyaqim; it is fed by the springs of 'En

Elyaqim, 'En Yo'ah, 'En Boded and 'En Tut, and continues its flow to the southwest into Nahal Daliya and thence westward, meeting the sea 3 km south of Dor. Though the river is perennial, the water dwindles to a trickle in the summer months of drier years. In ancient days the water may have been more plentiful, flowing all year round. The local bedrock is the chalk of the Lower Eocene period and the soil coverage is shallow. Traditional land exploitation includes the cultivation of dry crops in the winter and grazing in the summer months.

Site VIII was listed in the Daliya map of the Archaeological Survey of Israel as a small tell-like hillock with surface sherds from the Persian and Roman periods (Olami 1981:57, No. 94). The site was subsequently examined

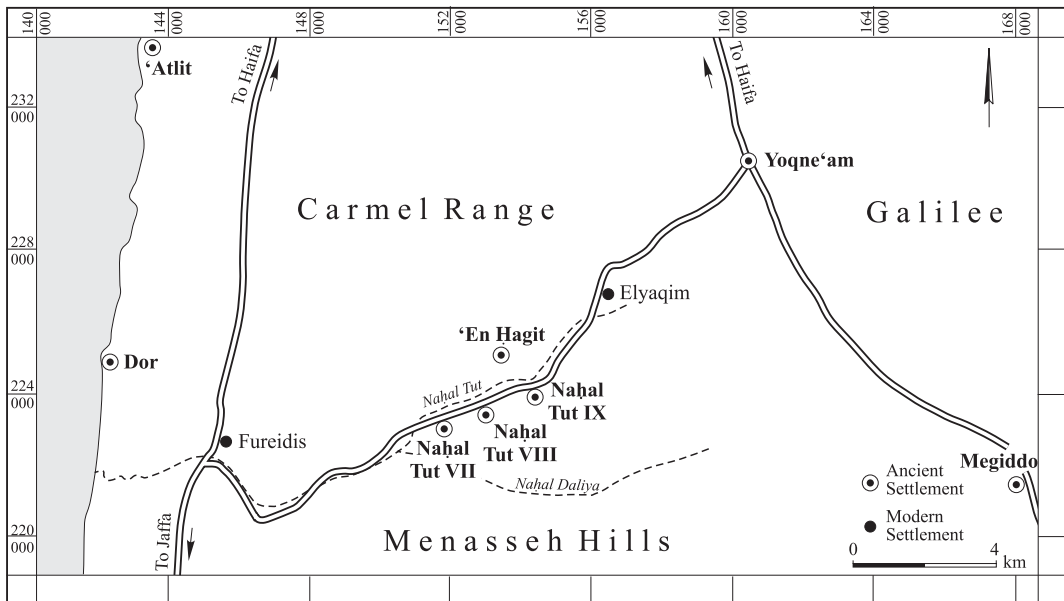


Fig. 1. Nahal Tut, location map.



Fig. 2. Site prior to the excavation (foreground); beyond the site, Naḥal Tut is covered by foliage, looking west.

by A. Siegelmann and Y. Werner following damage caused by roadworks in the 1970s; the unpublished results were mentioned by Olami (Olami 1981:57).

The Excavations

The salvage excavations were carried out at the site in the summer of 1993, prior to the widening of the main road from two to four lanes, and were financed by the Department of Public Works for the Ministry of Construction and Housing.¹

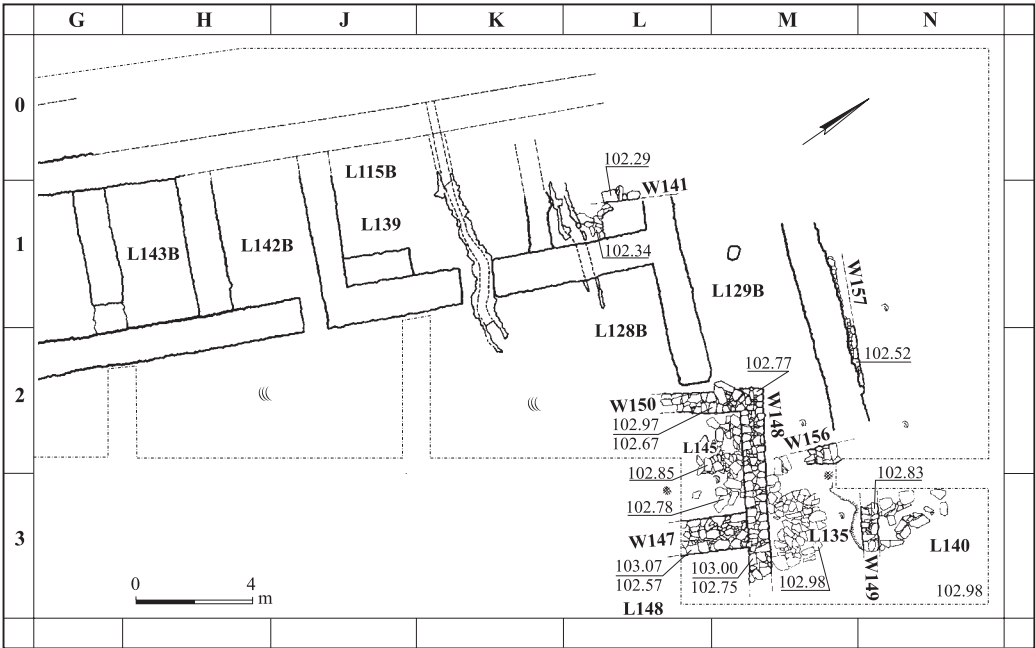
A strip, 15 m wide and c. 55 m long, was excavated at the site. Building stones were visible on the surface prior to the commencement of the dig. The excavations revealed that the site was occupied at the very end of the Persian (Achaemenid) period by a large building complex constructed directly on bedrock. Beneath the northern part of these remains, walls of a Middle Bronze Age building were discovered. Subsequent to the destruction of the Persian-period complex the site was abandoned. It served as a cemetery in the Mamluk–Ottoman periods, some of the graves exploiting the extant ruined walls.

On the completion of the archaeological excavation, steps were taken by the Conservation Department of the Israel Antiquities Authority to conserve and cover up the architectural remains that lay beyond the extent of the planned road. The walls were covered with a sheet of geotextile and a layer of sand and the excavated areas were subsequently backfilled.

THE MIDDLE BRONZE AGE II PERIOD

The Architecture (Plan 1)

The architectural remains of the Middle Bronze Age were extremely limited and did not permit the reconstruction of a comprehensive plan. The walls and related floors were exposed only at the northwestern corner of the major storage complex (see below) and were actually incorporated in the stone-paved floor of the fourth-century BCE building (Fig. 3). The removal of a few stones of the later (fourth century BCE) pavement revealed that parts of it consisted of earlier walls that lay directly on the bedrock and were preserved to a maximum height of 0.5 m, or two courses. Three walls of a



Plan 1. Plan of the MB II remains.

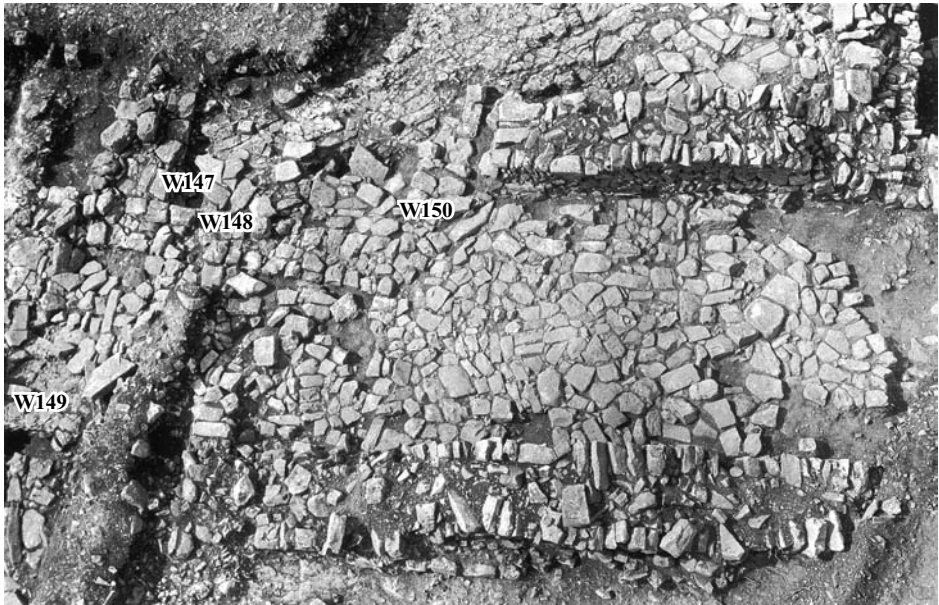


Fig. 3. Middle Bronze Age walls protruding through the later storage complex, Room 129, looking south.

single room or building (L145) were identified (W147, W148, W150) and three additional short sections of walls (W149, W156, W157) were revealed (Figs. 4, 5). A section of a stone-

lined pit (W141) is also associated with these structures. The walls were built of medium-sized, roughly-worked fieldstones. The floor of the building was the bedrock, levelled up with



Fig. 4. Middle Bronze Age L145, looking north.



Fig. 5. Middle Bronze Age walls, looking west.

patches of flagstone paving (L145). Wall 149 was 0.6 m wide, W148 and W150 were 0.7–0.8 m wide and W147 was 1.1 m wide. Walls 149, 156 and 157 may predate Building 145, as W148 of the latter building seems to have cut W156, but this could not be conclusively determined due to the fragmentary nature of the architectural remains. A considerable quantity of Middle Bronze Age pottery was found over a large area of the later (fourth century BCE) building complex, at bedrock level, the overwhelming majority in the northern half of the complex. It is probable that significant buildings existed at the site in the Middle Bronze Age, but these remains were no longer in evidence when the constructors of the later complex arrived at the site, or they might have been dismantled by the later builders. The incorporation of the Middle Bronze Age fragmentary stone walls in

the paving of the later storage complex is a fine example of secondary use after a lapse of some 1500 years!

The Pottery (Figs. 6, 7)

Scattered Middle Bronze Age pottery sherds were found on the bedrock in most of the rooms and in the courtyard of the later storage complex. The pottery from the flagstone floor in Room 145 is presented as a separate unit as its architectural limits were well defined (Fig. 6). In addition, pottery sherds from Loci 115B, 128B, 129B, 135, 138, 139, 140, 142B and 143B are presented together (Fig. 7). The loci defined with a suffix 'B' are loci of the later, fourth century BCE building complex, in which small quantities of Middle Bronze Age sherds were found on the bedrock, not associated with contemporary architectural remains, together with the mass of the later ceramic material.

The pottery repertoire is domestic, consisting of bowls, kraters, cooking pots, jugs, juglets, storage jars and pithoi. The bowls include small red-slipped, sometimes burnished, carinated bowls (Figs. 6:2; 7:1–6) and a red-slipped platter bowl (Fig. 6:4). A holemouth krater (Fig. 7:8) and the cooking pots are of the handmade, straight-walled type with applied decoration (Fig. 6:8–12). The juglets have button (Fig. 7:13), pointed (Fig. 7:14, 15), or small thick flat bases (Fig. 7:16) and some have triple handles (e.g., Fig. 7:12). There are storage jars (Fig. 6:13–16) and pithoi with profiled rims (Fig. 7:17–21). The pottery conforms to MB IIA repertoires bearing strong affinities to the Tel Afeq pre-palace and palace phases (Beck 1975; 1985; Kochavi and Beck 2000). For similar bowls, storage jars and pithoi in repertoires of the MB IIA–B, see e.g., Tel Qashish, Stratum IXA (Ben-Tor and Portugali 1981: Fig. 13) and Tel Mevorakh (Stern 1978: Figs. 14–16).

The Animal Bones

A few animal bones were recovered with the Middle Bronze Age sherds on the bedrock in Rooms 142 and 143 of the later storage complex (L142B, L143B) and adjacent to the stone pit

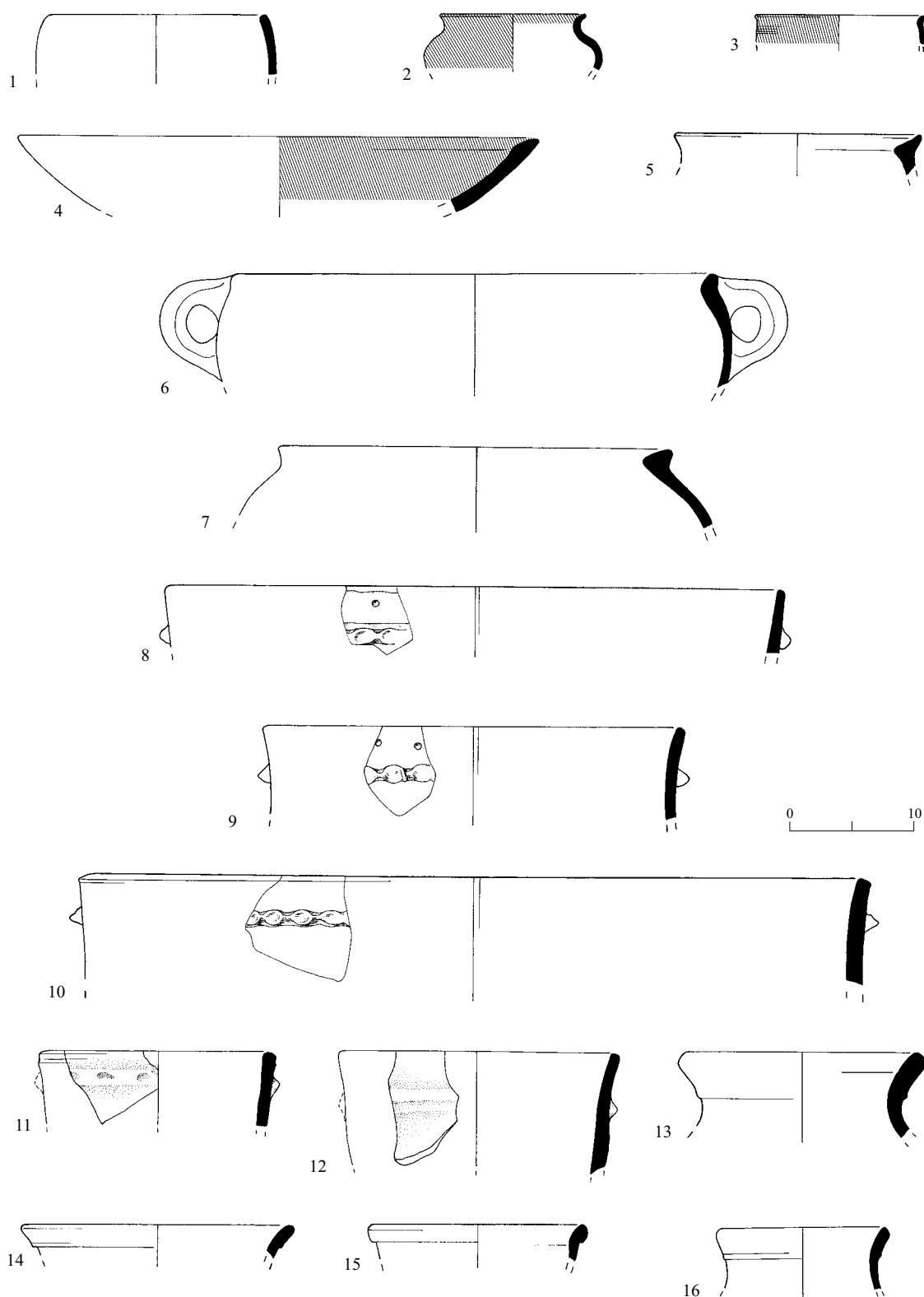


Fig. 6. Locus 145: Middle Bronze Age pottery.

◀ Fig. 6

No.	Object	Reg. No.	Description
1	Bowl	1252/7	Red ext. and int., gray core
2	Bowl	1252/8	Orange ext., int. and core; red slip, burnished
3	Bowl	1225/7	Orange, red slip, burnished
4	Bowl	1225/1	Light brown ext. and int., gray core, red slip
5	Krater	1242/24	Orange ext. and int. gray core
6	Krater	1252/5	Light pink-brown ext. and int., gray core
7	Krater	1242/9	Buff-ochre ext. and int., and gray core; gritty
8	Cooking pot	1252/3	Brown/gray ext. and int. and core; brittle, large grits, burnt from use
9	Cooking pot	1251/2	Brown ext. and int., gray core, brittle, burnt from use
10	Cooking pot	1245/2	Brown ext. and int., gray core
11	Cooking pot	1252/6	Light brown ext. and int., gray core, gritty
12	Cooking pot	1252/4	Light brown ext. and int., gray core, gritty
13	Storage jar	1242/11	Ochre/light brown ext. and int., gray core, heavy ware
14	Storage jar	1225/5	Orange ext. and int., gray core
15	Storage jar	1225/3	Light brown ext. and int., gray core, medium grits
16	Storage jar	1242/19	Gray/buff ext., int. and core

Fig. 7 ▶

No.	Object	Reg. No.	Locus	Description
1	Bowl	1081/2	129B	Buff/orange ext.; buff int. and core
2	Bowl	1081/1	129B	Orange ext. and int., gray core, red slip, burnished
3	Bowl	1143/3	141	Orange/pink ext. and int., gray core, red slip
4	Bowl	1143/4	141	Orange/brown ext. and int., gray core, red slip, burnished
5	Bowl	1116/1	128B	Orange ext. and int., gray core, red slip
6	Bowl	1232/1	143B	Orange ext. and int. gray core, red slip
7	Bowl	1152/5	138B	Buff/yellow ext. int. gray core
8	Krater	1076/1	128B	Light brown ext. and int., gray core
9	Jug	1076/5	128B	Buff, black paint
10	Jug	1144/4	140	Orange ext. and int., gray core
11	Jug	1071/1	128B	Orange ext. and int.
12	Jug	1042/7	115B	Orange ext. and int., gray core
13	Juglet	1127/1	135	Orange ext., gray int. and core; red slip, burnish
14	Juglet	1123/3	128B	Orange/brown ext., gray int. and core
15	Juglet	1129/3	129B	Orange/light brown ext., buff int. and core, red slip
16	Juglet	1225/2	128B	Gray ext. (burnt), gray/brown int. and core
17	Storage jar	1132/1	135	Orange ext. and int., gray core, coarse
18	Storage jar	1157/3	142B	Buff ext. and int., gray core
19	Storage jar	1142/6	139B	Orange ext. and int., gray core
20	Storage jar	1129/2	128B	Orange ext. and int., gray/black core
21	Storage jar	1124/3	128B	Red ext. and int., gray core

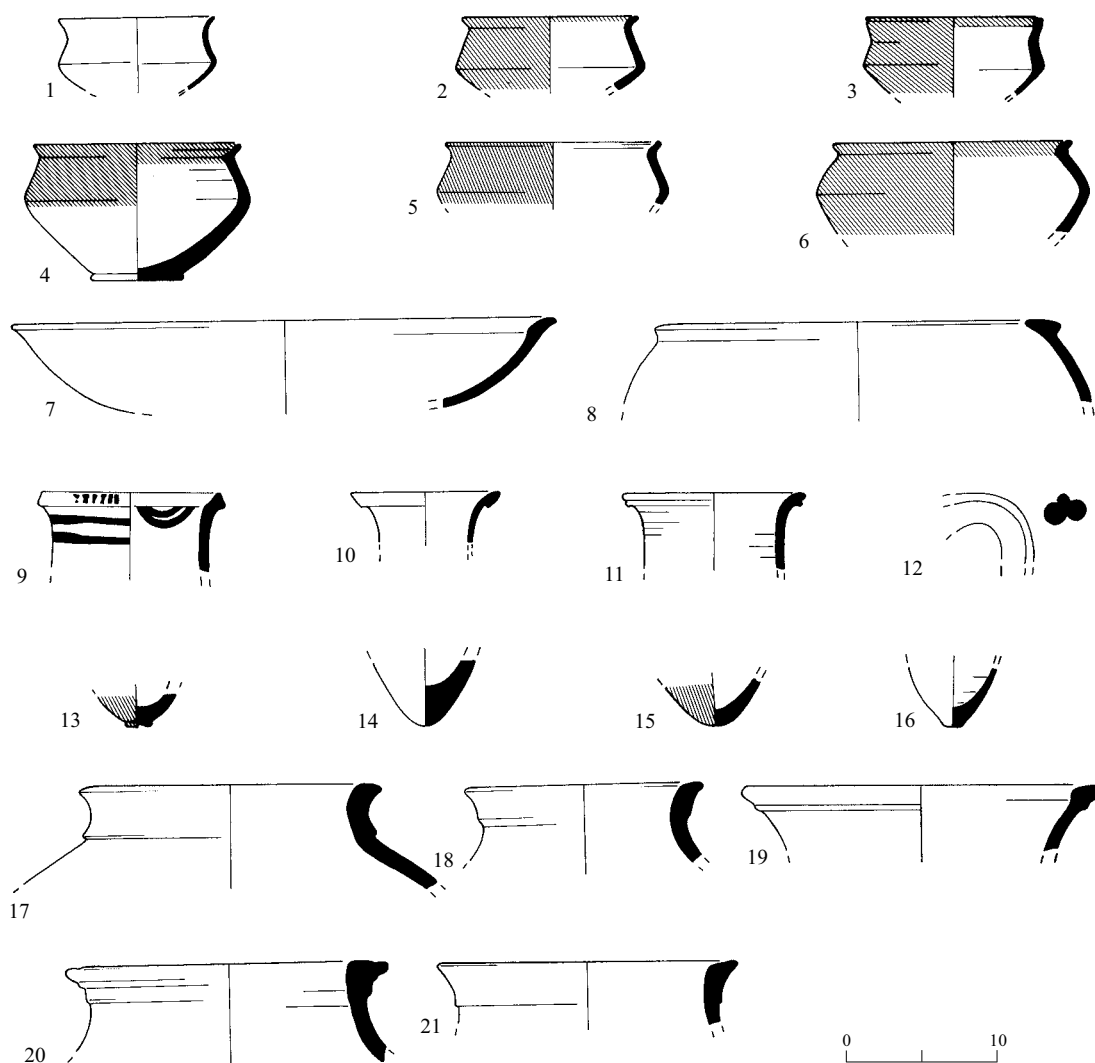


Fig. 7. Middle Bronze Age pottery.

W141 in the complex. The bones were of deer, goat/sheep and rabbit.

Chronology and Conclusions

The dating of the limited Middle Bronze Age remains is based on comparable pottery repertoires. The parallels point to a date in the MB IIA or MB IIA–B period. The fragmentary nature of the remains precludes any significant comments on the nature of the occupation. It is, however, unlikely that this was part of a fortified settlement, as the site is neither located at the highest point, nor are there any surface

indications of fortifications in the immediate vicinity. The *raison d'être* for the occupation may be found in its location in the vicinity of arable land, its proximity to a reliable water source and possibly its location on a navigable road from the north via Yoqne'am to the coast.

In the Daliya survey map about 35 sites from MB II were revealed in the Menasseh Hills within a radius of c. 5 km from the Nahal Tut site. By contrast, only six MB I sites and three Late Bronze Age sites were discovered (Olami 1981: Map 2, following p. 101). The cause for the large number of MB II sites is to be

sought in the role of the low Menasseh Hills serving in this period as a crossing point from the coastal strip to the Jezreel Valley and the north. The higher Carmel hills to the north were prohibitive and no sites were identified in this region. Khirbat el-Manshiya, a site c. 300 m northeast of our site, was recorded in the survey of the Daliya map (Olami 1981:56–57, No. 93) and a small excavation was carried out there in 1993 (Naḥal Tut, Site IX). The excavations revealed fragmentary remains of a small rural settlement datable to MB IIB, or the end of MB IIA (Lieberman-Wander 1999). Despite the proximity of Kh. el-Manshiya to our site there is no evidence to suggest that the building remains belong to a single site.

THE LATE FOURTH-CENTURY BCE STORAGE COMPLEX

The Architecture (Plans 2, 3)

The main excavated area was a long strip (c. 55 m long, c. 15 m wide) adjacent and parallel to the former single-lane Yoqne'am–Zikhron Ya'aqov highway. The excavation was carried

out on a grid of 5×5 m squares and the baulks were subsequently removed. The excavation exposed part of a large public building complex, on a general north–south axis (Fig. 8). The western wing of the building was entirely exposed for a length of 55 m, apart from the northwestern corner of the complex, which had obviously been destroyed by earlier roadworks (Olami 1981:57, Site 94; see above). Nineteen metres of the southern wing and 10 m of the northern wing of the building were uncovered. The presumed northeastern and southeastern corners of the building were located in two pilot trenches dug 55 m to the east of the northwestern and southwestern corners of the complex (Figs. 9, 10 respectively). The excavation in these two trenches exposed only wall tops and was not carried out to any depth as the areas lay beyond the strip destined for destruction by the widening of the road. On the basis of the walls exposed it can be deduced with a high degree of probability that the complex was a large square building with external dimensions of c. 55×55 m (Plan 3). The complex consisted of casemate walls built on bedrock around a large central

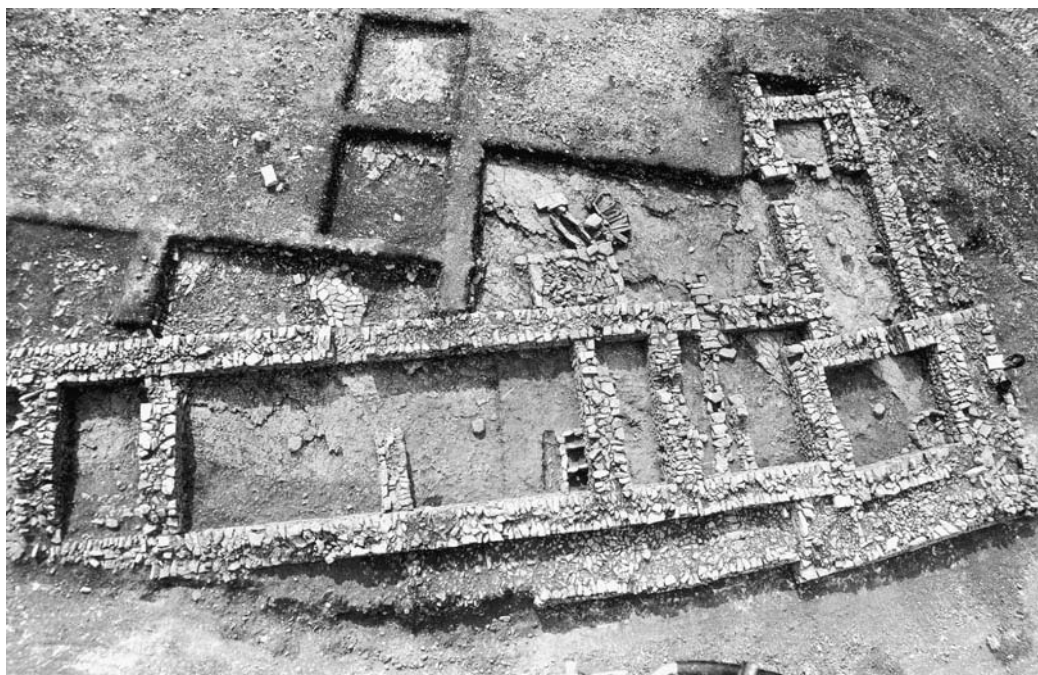


Fig. 8. Aerial view of the site.



Fig. 9. The northeastern corner of the storage complex, looking south.

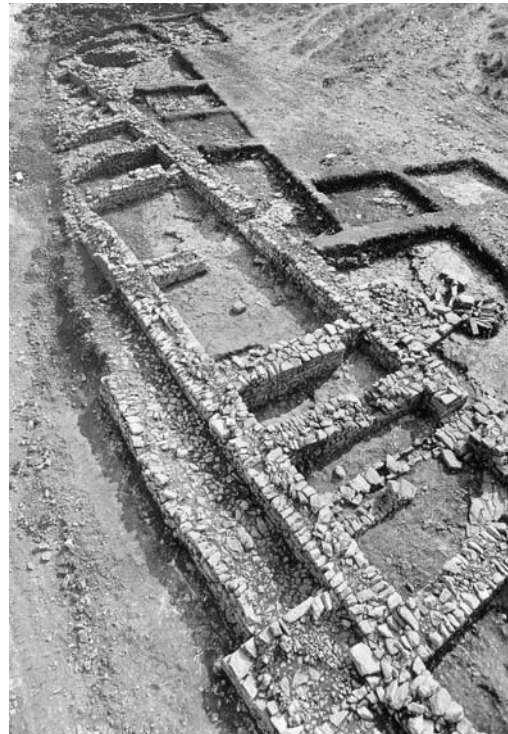


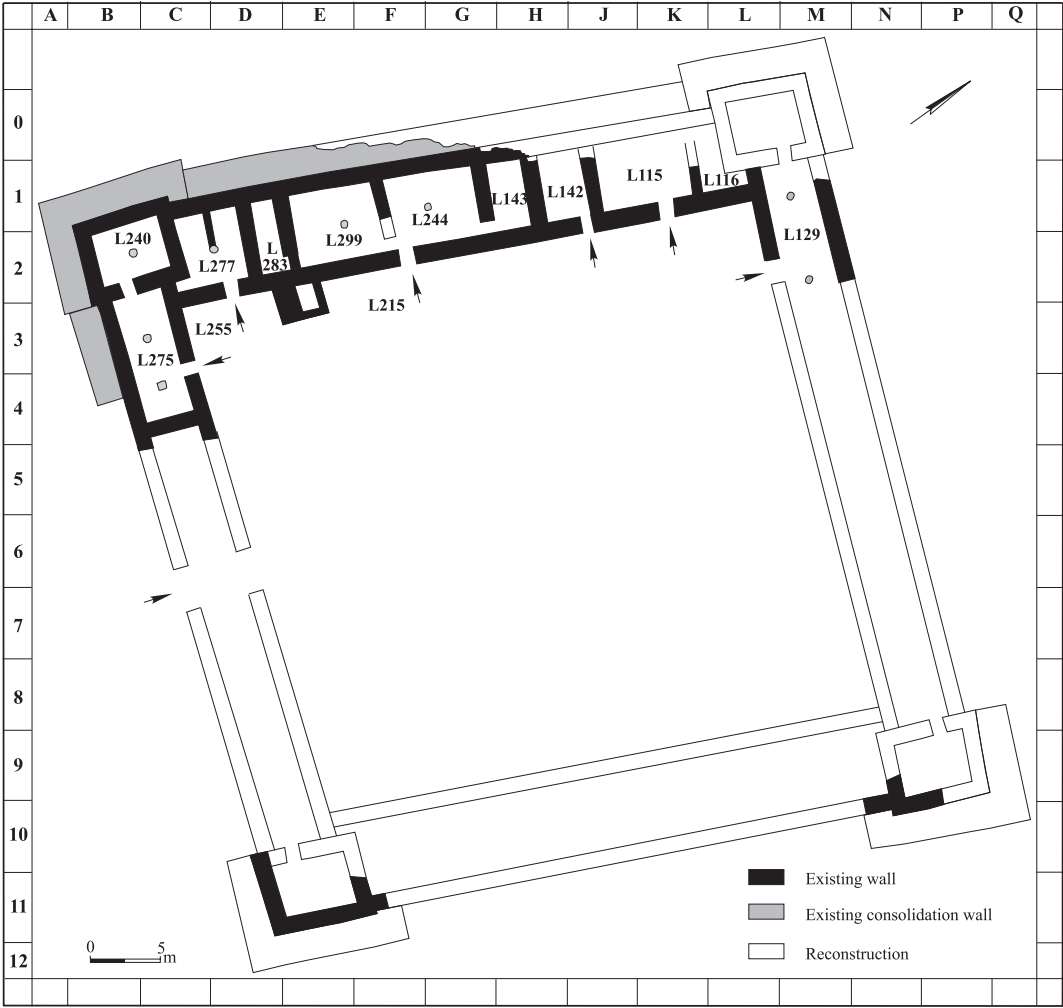
Fig. 11. Aerial view of the site.



Fig. 10. The southeastern corner of the storage complex, looking northwest.

courtyard (Fig. 11). The two main parallel walls on the western side (W218, W204), 5 m apart, were exposed for a length of 42 m. The walls, 1.3–1.4 m wide at the base and c. 1.2 m wide at the extant top, were preserved to an average height of 1.3–2.0 m, or 6–7 courses high (Fig. 12). The best-preserved sections of the walls were preserved 8 courses high. The

western inner casemate W204 was bonded to the southern inner casemate wall (W254), indicating that they were built together (Fig. 13). An additional broad revetment or consolidating W251 (c. 2 m wide) was constructed against the external face of the outer casemate W218, along the whole of its length, its outer face slightly sloped (Plan 2: Section 1–1; Fig. 14). The combined width of the two outer walls was c. 3.4 m; the depth of the fortification—casemate wall and outer consolidation wall—was almost 10 m. The consolidation wall, 5–6 courses preserved to a maximum height of 1.2 m, was constructed of large stones less regularly laid than the casemate walls. The original height of the walls cannot be ascertained but the quantity of collapsed stones in the rooms indicates that the outer casemate wall was at least two stories high. It is patent that the thick defensive walls were aimed to thwart the threat of a battering ram. A consolidating broad outer wall (W259)



Plan 3. Schematic plan of the storage complex.



Fig. 12. View of casemate walls, looking northeast.

was also exposed against the southern outer W260 of the building complex.

A well preserved tower (L240; outer measurements 6×7 m) was exposed on the southwestern

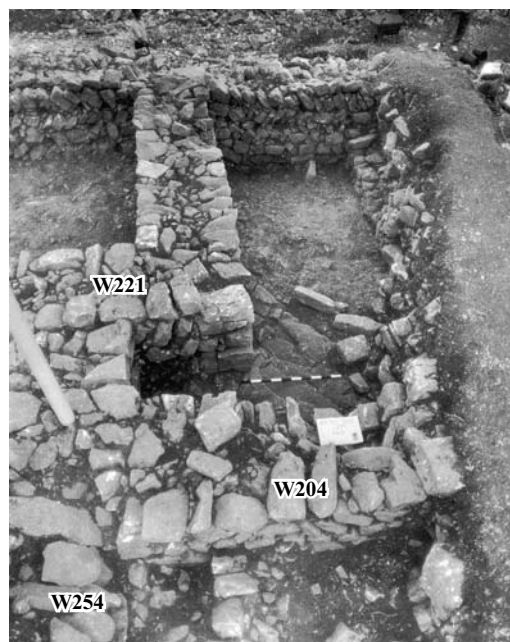


Fig. 13. Join between Tower 240, the western and southern casemate walls, looking south.



Fig. 15. View of Tower 240.



Fig. 14. The western consolidation W251 and the consolidation W249 of Tower 240. Note the drain outlet, looking east.



Fig. 16. View of tower, looking south.



Fig. 17. Consolidation walls of tower W249 and W297, looking northwest.

2.0–2.3 m wide, preserved to a height of 2.0–2.2 m, 6 courses high (Fig. 17). These sloping walls were similarly constructed against the outer face of the tower wall. It is extremely probable that originally there were also towers at the other three corners of the building complex. At the northwestern corner, destroyed by the 1970s' roadworks, there was almost certainly a tower. The pilot trenches at the eastern and southern

corners of the building verified that there were walls at these points and the juncture between W307, W308 and W309 indicates a tower.

The main entrance into the building was not exposed in the excavation, but it is clear that there was no entrance on the western side through W218 and W251. The topography and the stone piles on the surface suggest the existence of a gateway at the middle of the southern wall (see Plan 3). Only future excavations could verify this issue.

Cross walls were constructed between the outer and the inner casemate walls, at varying distances, forming rooms of equal width (5 m) but of different lengths (see Figs. 8, 11): large rooms (c. 5 × 9 m—Rooms 275, 129; c. 5 × 6 m—Room 115), medium-sized rooms (c. 4 × 5 m—Rooms 240 [the tower room], 277; c. 3 × 5 m—Rooms 142, 116) and small rooms (1.5 × 5.0 m—Room 283; 2 × 5 m—Room 143). A large double room or hall (5 × 13 m—Room 244/299) in the middle of the western wing had a poorly built partition wall (W267) in the middle.

It is possible to ascertain a sequence of construction from the joins at the junctures of

the long walls and the cross walls: first, the tower was built, then the long casemate walls, and finally the outer consolidation walls and the inner cross walls. This sequence, however, simply indicates technical stages, as most probably the whole complex was constructed contemporaneously.

The masonry deserves some special attention. The walls were built of chalk fieldstones from the immediate vicinity. The two faces of the walls were of larger, somewhat roughly-dressed stones and the inner core of smaller, unworked stones. As the local stone tends to split into geometrical forms, it could be utilized with limited additional working or dressing. The stones were placed diagonally against each other in rows, one course sloping to the left overlaid by a course sloping to the right (Fig. 18). This technique permitted the swift construction of strong walls without the need to employ mortar or bonding agents. The result was a rough and rather haphazard herringbone pattern. This herringbone masonry technique was utilized in conjunction with more carefully-dressed larger stones, placed horizontally at the joins and the corners (see Fig. 17). Such a haphazard herringbone type of masonry is found in the late Iron Age city wall of Megiddo and in the late Iron Age/Assyrian stone wall in the vicinity of the *bama* at Tel Dan (Wright 1985: Fig. 307). A better quality of herringbone masonry is found at a later date (e.g., the late Roman period masonry at Qumran; see also the late Roman fort courtyard building at Holyhead, Wales—Wilson 1980:83, Fig. 99). The broad outer consolidation walls do not feature the herringbone pattern technique.

Entry into the rooms was only via the central courtyard. Four entrances 0.9–1.1 m wide, exposed along the western inner casemate W204 led into Rooms 277, 244/299 (Fig. 19), 142 and 115 (Fig. 20). There was one entrance in the southern inner casemate W254 leading into Room 275, and one in the northern inner casemate W125 leading into Room 129. Entry into the tower Room 240 was via Room 275. The doorposts were constructed of large horizontally-



Fig. 18. Herringbone masonry.



Fig. 19. Courtyard 215 at the entrance into Room 244/299, looking west.

placed dressed stones, and the entrances had stone thresholds raised c. 0.15 m above the bedrock. Access to the small Rooms 283 and 143 was only via entryways in the double Room 244/299 and both of these entryways were found intentionally blocked with large stones (Figs. 21, 22). The entrance into Room 142 from the courtyard was likewise blocked with stones. In W144, between Rooms 142 and 143, there seems to have been some kind of disruption, which was subsequently carelessly repaired. The existence of a solid wooden door at the entrance into Room 244/299 is indicated by the discovery of over 30 large iron and bronze nails in the destruction debris in and around the entrance (Fig. 23). These nails were folded over 10–11 cm from the nailhead, thus



Fig. 20. Entrance into Room 115, looking west. Note the slab-covered drain.



Fig. 21. Blocked entrance in W280, looking south.



Fig. 22. Blocked entrance in W280, looking northwest.

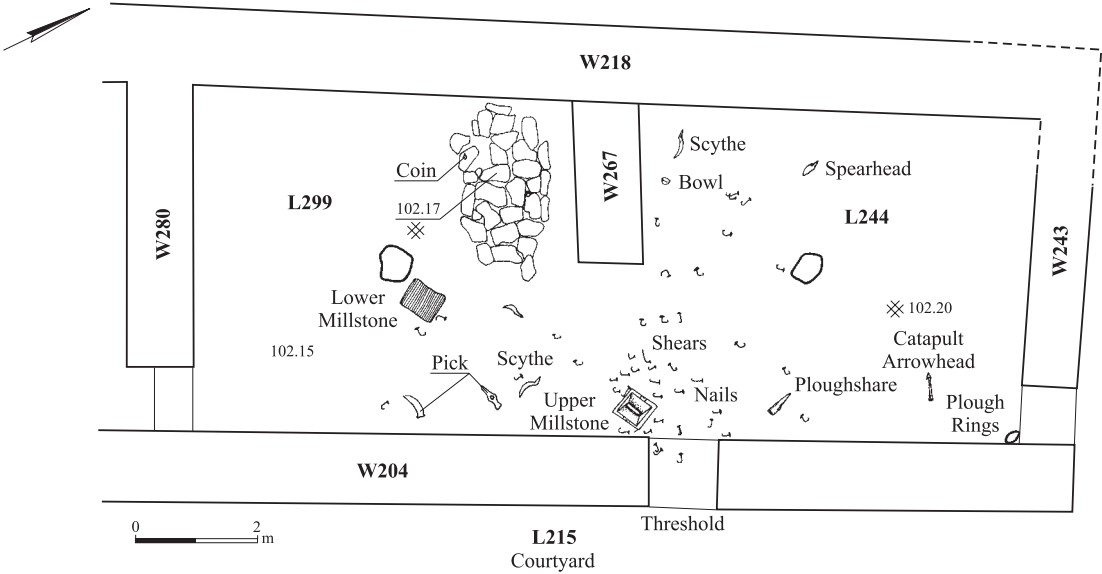


Fig. 23. Location of finds in Room 244/299.

indicating that the planks of the wooden door were 10–11 cm thick.

The entire complex was built directly on the bare bedrock, which sloped down gradually from east to west in the direction of Naḥal Tut, located 30 m west of the outer western wall of the complex. Two shallow 30 cm wide stone-lined channels were constructed on the bedrock close to the northern and southern corners of the fort: Channel 307 in Room 277 (Fig. 24) and Channel 123 in Room 115 (Fig. 25, and see Figs. 14, 20). These channels drained the run-off water from the central unroofed courtyard through the casemate walls and the outer consolidation wall down to the river, 30–35 m to the west of the complex. The channels, which ran under the entrances of Rooms 277 and 115, were covered with flat stone slabs to facilitate access. The channel in Room 277 was carefully built integrally into the outer casemate W218 and the consolidation W251 (see Fig. 14). At the exit from W251, the channel was 30 cm wide and 40 cm high. The floors of the rooms consisted of a thin layer of packed earth (c. 0.1 m) directly on bedrock.

There were a few areas of stone-paved floors—in the entrance into Room 244/299 (see Fig. 19), small patches in Room 299 (see Fig. 23) and in Room 115 and the entire Hall 129 (Fig. 26). Some of the pavement stones of Hall

129 were secondary use of the obsolete Middle Bronze Age walls (see above).



Fig. 24. Covered drain in Room 277, looking south.



Fig. 25. Covered drain in Room 115, looking west.



Fig. 26. Paved floor in Room 129, looking east.



Fig. 27. Pillar bases in Room 275, looking south.

Stone pillar bases found in the center of the medium-sized Rooms 240, 277, 244/299 and two in each of the larger Rooms 129 and 275 provide evidence of the rooms' ceilings (visible in Figs. 8, 15). In Room 275 two stones were found one on top of the other (Fig. 27). The average distance from the walls to the pillar bases was 2–3 m. The smaller rooms (Rooms 142, 143, 283) could no doubt have been roofed without a central pillar.

The rooms contained some built-in installations, including various small stone-lined tructures with rounded walls—two in Room 275, one in tower Room 240 (Fig. 28), one in the courtyard. Storage jars were found standing in, or against the installations. Two stone platforms (measuring c. 1.0 × 2.2 m and c. 0.3–0.5 m high) were exposed in the corner of Rooms 115 and 275 (Fig. 29). These may have been large shelves, but were more probably the remains of stairwells, which would have led to an upper story. The existence of an upper story is fairly certain from the 3 m of collapsed stone wall found in Room 244, on the basis of which W218 should be reconstructed to the height of at least 4.5 m (Fig. 30). A row of three small, square stone-



Fig. 28. Stone installation and pillar base in Tower 240, looking west.

built installations was found in the corner of Room 299, probably intended for some storage or manufacturing process (Fig. 31).

A small area of the central courtyard was excavated (c. 200 sq m), indicating that the a courtyard measured c. 37 × 37 m—an area of almost 1400 sq m (1.4 dunam). The bedrock served as the floor of the courtyard and there was no evidence of any walls within the excavated area of the courtyard. A single stone-built platform (W206; c. 2 × 3 m, of up to 0.8 m high) was exposed at the western side of the courtyard (Fig. 32). This platform was most



Fig. 29. Room 275 with stone stairwell at far right, looking east.



Fig. 30. Collapsed W218 in Room 244, looking south.



Fig. 31. Paved section of floor and stone installation in Room 299.



Fig. 32. Stone podium in courtyard. Note the later graves, looking west.

probably a podium for drilling soldiers (see isometric reconstruction of the building in use, Fig. 33).

There is minimal evidence for changes carried out in the building and it is therefore certain that the building had a short lifespan. The evidence

for stages in the construction of the building should be regarded as technical stages (see above) and thus contemporaneous, with no time lapses between them. Neither is there evidence for raised floors. The blocked doorways do not reflect a change in the architectural concept,

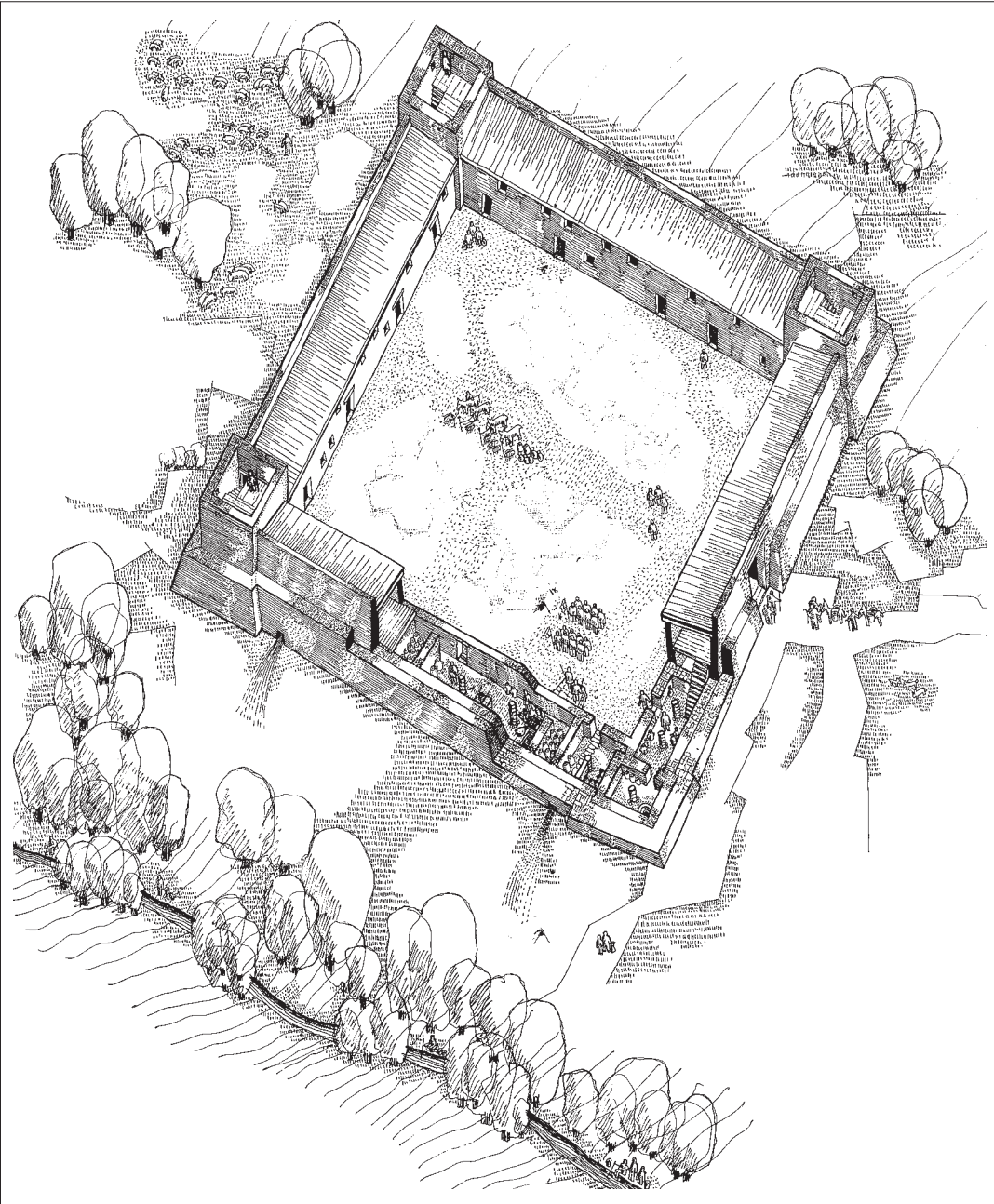


Fig. 33. Reconstructed isometric view of the fortified storage facility (by Stephen Rosenberg).

but the blocking of the storerooms, once they were packed full with storage jars, was to protect the stored goods. The homogeneous and monotonous nature of the ceramic repertoire (see below) further supports the concept of a short-lived facility.

The Destruction of the Complex

There was extensive evidence for a violent destruction and a sudden abandonment of the building complex. The double Room 244/299 was packed solid with the remains of a most violent and dramatic fire. The walls collapsed in and the stones were fused into lime by the high temperature. The room was full of heavily burnt white limy material, burnt stones and burnt mud-brick material (Fig. 34). The contents of the double room were covered by the burnt debris. The fire penetrated the blocked entrances into the small storage Rooms 283 and 143, but not into the rooms beyond. All the excavated rooms were full of collapsed stones.

A poignant sign for the violent nature of the catastrophe was the discovery of a few long human bones and an adult skull with a hole perpetrated by a stone lying under the debris on the floor of Room 277 (Fig. 35). The skull

was identified as that of a female adult (Fig. 36). Additional fragmentary human bones were discovered in Rooms 240, 275 and 299, but from their fragmentary condition it was only possible to conclude that one infant, two children, a youth and two adults are represented.

In the other rooms many pottery vessels were found *in situ*, in the place they had been left at the time of the destruction. Thus, complete storage jars were found leaning against the walls of the rooms. There were iron objects in several of the rooms, also untouched since the destruction and abandonment.

Additional evidence for the military nature of the catastrophe is to be found in the catapult arrowhead with the bent tip found in Room 244. Its location suggests that it hit W204 and had rebounded off it (see Fig. 23). In addition, a few rounded stones, which may have been fired from stone catapults, were found in the rooms (Fig. 37); alternately, these stones may have been used for industrial purposes. It is this violent destruction and catastrophe that preserved the complex in the state that it was



Fig. 34. Burnt stone debris from destruction.



Fig. 35. Crushed human skull in Room 277.



Fig. 36. Skull after cleaning in laboratory.



Fig. 37. Round stones (ballistic? industrial?).

left on the fateful day, with the finds in their original context, thus permitting an unusually comprehensive reconstruction of the function of the complex and its history.

THE FINDS IN THE ROOMS

The contents of the individual rooms are briefly described here as they shed light on the functions of the rooms within the complex (see Figs. 48–63, finds presented according to rooms).

Double Room 244/299 contained major finds (see Figs. 23, 53–59). In the corner of Room 299 there was a pair of large basalt hopper-rubber millstones (Fig. 38, and see below Fig. 59). The stones were in excellent, hardly worn condition, but broken no doubt as a result of the violent conflagration, and all the parts were found *in situ*. The stones were probably installed in W204 and the milling took place there. Also found in this room were a large iron ploughshare (Fig. 39) and three diamond-shaped iron rings that were used to clamp the wooden parts of the plough together. Two of the iron rings were hidden in the corner of the room under a stone of the wall, seemingly an attempt to hide potential spoil from the enemy (Fig. 40). In addition, there were a pair of iron



Fig. 38. Grinding stone in Room 244.



Fig. 39. Iron ploughshare in debris.



Fig. 40. Plough rings in corner of room.

shears, three iron scythes and over 50 iron and bronze nails (see Figs. 56, 58). There were also large quantities of fragmentary storage jars and a few other pottery vessels, fiercely burnt and covered with the lime that filled the

whole room. The state of the debris whereby the sherds fused together with the loose debris, prevented a reliable vessel count for this room. All the finds attest to the activities carried out by the occupants of the complex. Two metal finds attest to the fate of the fort, rather than the activities carried out within it. Thus, the blunted catapult arrowhead (see above, and below Fig. 57:5) and a small spearhead (see Fig. 57:4) were found in the room.

The small Rooms 283 and 143, accessed only from double Room 244/299, were packed full of crushed storage jars and almost no other vessel types (Figs. 41, 42; see Fig. 60). Room 142 contained some twenty jars (Fig. 43; see Fig. 61:12–14). A rim count (one rim sherd per jar) suggests that Room 283 contained some forty jars and Room 143 some hundred jars. A rough calculation of the area of the rooms (Room 283: 7.5 sq m; Room 143: 10 sq m), divided by the surface area required per jar (c. 0.16 sq m),

multiplied by the number of jars points to the conclusion that the jars were stacked in two layers.

It is thus clear that these rooms served as storage rooms and that jars filled with produce were packed there. If the capacity of a single jar was c. 30 litres, the two storerooms (283, 143) would have contained 4200 (140 × 30) litres of grain.

The milling activities carried out in the double room suggest that the jars may have been filled with ground flour and subsequently stored in the side rooms. The entrances into the rooms were probably blocked once the storerooms were completely full, thus protecting the produce for long-term storage or emergency supplies.

The tower Room 240 contained few vessels—complete storage jars lying on the floor and against the wall (Fig. 44), and sherds from eight more storage jars—an iron ring and a couple of nails and a bronze fishing hook (see Fig.



Fig. 41. Storage rooms containing crushed storage jars.



Fig. 42. Room 143.



Fig. 43. Storage Room 142 containing crushed jar sherds.

52:1–5). The fragmentary human bones (a circa five-year-old child and an adolescent) found in the tower attest to the fate of the inhabitants of the complex.

The large Room 275 contained an impressive variety of artifacts, including several complete and broken storage jars, some of which were found leaning against the walls (Fig. 45). In addition, there were two mortaria bowls (Fig. 46), cooking pots, jugs and juglets, a lamp, a fragmentary alabaster (calcite?) vessel, a small bowl and an imported Attic bowl (Fig. 47, and see Figs. 48–50). The metal implements included an iron pick, iron shears and iron and bronze nails (see Fig. 51). Here too were found a few fragmentary bones of an infant (1½–2 years old).

Room 277 contained a few objects, including a cooking pot and sherds of storage jars (see

Fig. 52:6–14). A skull recovered in this room was perhaps that of a victim (see Figs. 35, 36).

The finds in Room 129 included three storage jars, a cooking pot and a mortarium bowl (see Fig. 61:7–11). The finds in Room 115 were minimal (see Fig. 61:1–6). This is at least partially due to the destruction caused by the roadworks in the 1970s.

The courtyard (L255, L215, L128) revealed a limited number of finds, including a metal chain, mortaria bowls and storage jars, including handles of basket-handle jars (see Figs. 62, 63). A flask was found in the courtyard near the entrance into the double room (see Fig. 19 and Fig. 62:10).

Clearly, the excavation of the rest of the complex would permit a fuller reconstruction of its functions and the activities carried out within.



Fig. 44. Tower 240 with crushed jar on far right.



Fig. 46. Mortaria bowl in Room 275.



Fig. 45. Storage jar in corner of Room 275, looking southwest.



Fig. 47. Small bowl and jar base in Room 275.

The available evidence indicated that the main activities were carried out in double Room 244/299 and Room 275. The overwhelming majority of the artifacts were agricultural implements, food-processing artifacts and storage jars. Apart from the storage jars, there was a limited quantity of plain domestic pottery, consisting of large mortaria, cooking pots, a few jugs and juglets and three lamps. The small number of vessels suggests that the complex was inhabited by relatively few occupants, including women and children. The paucity of luxury artifacts is also striking. It is patent that the major occupation of the inhabitants of the complex was agricultural production and processing. There is evidence for field cultivation, grain reaping, grain processing and storage, as well as of secondary activities that included sheep rearing and fishing.

The Pottery (Figs. 48–63)

The pottery assemblage recovered in the excavated area includes bowls, kraters, cooking pots, a flask, jugs and juglets, storage jars and lamps. The assemblage consists of almost 400

pottery vessels (excluding the Middle Bronze Age pottery), on the basis of the count of whole vessels and of sherds, for which one rim sherd represents one vessel. However, the repertoire is strikingly limited in forms and utilitarian in nature, and the overwhelmingly dominant vessel is the storage jar (80% of all the pottery vessels, see Table 1).

The pottery is coarsely manufactured with little attention to finish. The storage jars are characteristically asymmetrical, exhibiting bulges and dents in the profile. The clay is not well-levigated and is fairly brittle, though air bubbles often encountered in the Persian-period wares are rare (Singer-Avitz 1989:139). Two basic tones are evident in the clay of the repertoire. The storage jars are manufactured either from clay of orange-pink–light brown hues or from a buff or greenish-buff clay. The buff clay seems to be grittier and more metallic. The two types are present in about equal quantities. A similar observation is true for the large mortaria bowls. The ware may be an indication for the manufacturing location of the vessels, but no such distinction was observed

Table 1. Quantities and Percentages of the Different Pottery Vessel Types in the Main Rooms and the Courtyard of the Storage Complex

Vessel Type Location	Bowls		Cooking Pots		Storage Jars		Jugs and Juglets		Lamps		Total No. of Vessels in Rooms	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Large Room 275	5	10.8	5	10.8	30	65.4	5	10.8	1	2.2	46	100
Tower 240	1	8.3	1	8.3	10	83.4	-	-	-	-	12	100
Small Room 277	1	6.3	2	12.5	13	81.2	-	-	-	-	16	100
Storage Room 283	-	-	-	-	43	97.7	-	-	1	2.3	44	100
Large Room 244/299	13	18.1	12	16.8	41	56.9	5	6.9	1	1.3	72	100
Storage Room 143	1	1.0	-	-	95	99.0	-	-	-	-	96	100
Storage Room 142	-	-	-	-	24	100.0	-	-	-	-	24	100
Large Room 129	2	10.6	1	5.2	16	84.2	-	-	-	-	19	100
Courtyard 255-215	9	20.5	4	9.1	29	65.9	2	4.5	-	-	44	100
Total No. of Vessel Types in Rooms	32	8.6	25	6.7	301	80.6	12	3.3	3	0.8	373	100

in the petrographic analysis (see Gorzalczy, this volume). The cooking pots are made of characteristic dark red cooking ware.

There are two small imported Attic bowls (Figs. 53:1; 62:1) and one imported lamp (Fig. 53:18), all clearly discernible by their finely levigated clay and finish. Local decorated vessels are limited to a single juglet with a careless red band (Fig. 53:10) and two lamps with vestiges of red slip (Figs. 49:1; 60:20), which are local imitations of imported lamps.

The large quantities of similar storage jars lying crushed in the storage rooms, the skew forms and the brittle quality of the ware led to the decision to restore only a few of the vessels and retain the rim sherds of the others. In one case, a crooked storage jar was fully restored, and a day after the painstaking work was completed the storage jar simply collapsed! The number of storage jars in each room was counted on the basis of the rims (complete rims rather than individual sherds).

The pottery and the other finds (metal and stone objects) are presented in the figures by rooms in order to illustrate the functions of the individual rooms. The pottery discussion is presented according to types and relates predominantly to Stern's pottery classification (Stern 1982). Owing to the repetitive nature of the Naḥal Tut repertoire parallels to the vessels are not presented in the figures. The discussion refers to parallels as provided by Stern (from excavations published by the end of the 1970s) and is updated by finds from more recently published excavations (Stern 1995b). The parallels from Dor are especially valuable because of the proximity of the site (c. 11 km to the west), and the similarity of the wares in stratified Late Persian and Early Hellenistic levels at the site.

Small- and Medium-Sized Bowls (Figs. 48:1; 53:1; 61:1; 62:1, 6).— The small number of occupants living in the complex may account for the paucity of regular bowls at the site. However, this phenomenon has already been noted at sites of the Persian period, e.g., Tel

Mevorakh (Stern 1978:30) and Tel Mikhal (Singer-Avitz 1989:139). It is plausible that in this period the larger mortaria bowls replaced the function of individual bowls and may have served as communal serving and eating bowls (see below).

Two small bowls with incurved rims and worn matt mottled red and black slip are Attic imports (Figs. 53:1; 62:1). Similar bowls are found in strata dated to the mid-fourth century BCE at Dor (Marchese 1995:127, Fig. 4.1), at Tel Mikhal Stratum VI (Singer-Avitz 1989:133, Fig. 9.13.5) and at Shiqmona Stratum B (Elgavish 1968:44, Pl. LVI, Nos. 125, 126). This bowl type continues in use in the Hellenistic period (Guz-Zilberstein 1995:289).

A single bowl with a low ring base, rounded walls and an inverted rim (Fig. 48:1) belongs to Type A1 (Stern 1982:94 and references therein) and may owe its form to the smaller Attic prototypes.

Two larger bowls with a rounded profile (Figs. 61:1; 62:6) are similar to Type B2 (Stern 1982:96 and references therein).

Small Closed Bowl (Fig. 48:3).— This is an unusual closed bowl of coarse buff ware for which there are no parallels. It may be a variation of a small krater or jar form that appears at some sites, e.g., Apollonia-Arsuf Stratum Persian 1 (Tal 1999:126, Fig. 4.22:13 and see references therein).

Large Heavy Mortaria Bowls (Figs. 48:2; 53:2–4; 60:1; 61:7; 62:2–5).— There are several mortaria bowls or large heavy bowls with outflaring walls. They were found predominantly in the larger (living) rooms and only one bowl was retrieved from a storage room (Room 143; Fig. 60:1); a considerable number were found in the courtyard. The majority of these bowls have flat bases and only one has a raised ring base (Fig. 53:4). The walls of the bowls are wavy. Some of the bowls are of buff or greenish-buff, somewhat metallic clay but others are found of orangish–light brown softer clay. Much has been written about these bowl forms (see Stern

1982:96–98; Salles 1985:199–212; Bennett and Blakely 1989:196–203; Blakely and Bennett 1989:45–65). It aspires that they appeared in the Levant as early as the eighth century BCE (see e.g., Area B at Ḥorbat Rosh Zayit; Gal and Alexandre 2000:190, Fig. VII.11:19), and are an integral part of the Persian-period pottery repertoire. The petrographic analysis of one mortarium revealed that it was produced in Cyprus (see Gorzalczany, this volume). Some bowls continue into the Hellenistic period, e.g., at Dor (Guz-Zilberstein 1995:295, 356, Fig. 6:9). The fact that this type appears in fourth-century BCE contexts (e.g., here at Nahal Tut—Fig. 53:4, and at Apollonia-Arsuf—Tal 1999:98, Fig. 4.21:14) disclaims Blakely and Bennett's (1989:46, 60–62) claim that the raised ring base was no longer produced in the fourth century BCE. Several theories are proposed for the function of this bowl type: mortar grinding bowls, military grinding mortars (Blakely and Bennett 1989:46, 60–62), commercial grain measuring bowls (Salles 1985:209), daily ration bowls, salaries or ritual offerings (Salles 1985:207). Its capacity of 2–3 litres (Salles 1991:219) seems to indicate that it served as a communal dish. This interpretation could explain the almost total absence of regular-sized bowls.

Kraters (Figs. 53:7, 62:7).— The kraters have a globular body and two large vertical handles from rim to body (Fig. 62:7) and bear a similarity to a krater from Samaria (see Stern 1982:99, Type 2a).

Cooking Pots (Figs. 48:4–7; 52:6, 7; 53:5, 6; 61:2, 8; 62:8, 9).— Cooking pots were found predominantly in living rooms, rarely in storage rooms. The cooking pots are globular or sack-shaped, have a low or higher neck and two handles from rim to shoulder. The reddish ware contains calcite grits. The cooking pot in Room 129 (Fig. 61:8) is globular, whereas at least two of the cooking pots in Room 275 (Fig. 48:4, 5) are sack-shaped. The other two cooking pots from Room 275 (Fig. 48:6, 7), though

incomplete, seem to be more globular in form. Similar cooking pots were found at Tel Mikhal Stratum VII (Singer-Avitz 1989:Fig. 9.8:4–7). Figure 62:8 has a distinctly higher neck, a trait common in the Hellenistic period, but the neck is less angular than that of the Hellenistic cooking pots from Dor (Guz-Zilberstein 1995: Fig. 6.17).

Jugs (Figs. 48:8–10; 53:8; 62:11).— The jugs are sack-shaped with a single handle extending from rim to shoulder. The jugs are similar to Type H (Stern 1982:117 and references therein), are also found at Tel Mikhal Stratum VI (Singer-Avitz 1989: Fig. 9.10:9), and appear in the early Hellenistic levels at Dor (Guz-Zilberstein 1995:309).

Juglets (Figs. 53:9, 10; 61:3).— Three juglets were found at the site. A heavy flat-based juglet with a band of rough red slip (Fig. 53:10) may be compared to a juglet from Tel Mikhal Stratum VI (Singer-Avitz 1989: Fig. 9:10). One of the juglets (Fig. 61:3) has a rim similar to that of a juglet from the Wadi ed-Daliyeh cave (Lapp 1974:Pl. 22:4).

Flask (Fig. 62:10).— An almost complete two-handled flask has a short neck, wide everted mouth and two short handles from mid-neck to mid-shoulder. Its large and squat globular body is made up of two parts though it does not have the common side-band. Flasks are not a common form, but this type is found in the Persian period, e.g., Type A (Stern 1982:114) and the early Hellenistic-period flask at Dor (Guz-Zilberstein 1995:310–311; Fig. 6.34).

Basket-Handle Jars (Figs. 49:4, 5; 53:11; 60:19; 62:12).— A small number of broken handles and thick bases attest to the presence, if rare, of basket-handle jars at the site. The jar form cannot be reconstructed on the basis of this limited evidence but it is of the type that has upright handles, is widest at the shoulder rather than the waist, and narrows down toward a pointed or truncated base, conforming to

Types H, J, or K (Humbert 1991:587–589). One fragmentary handle is of orange ware, another greenish-buff and a third pinkish-brown, the color may be reflecting firing techniques rather than the composition of the clay (Humbert 1991:578). One basket handle analyzed appears to have been produced in Cyprus (see Gorzalczy, this volume). This jar type is dated to the fifth–fourth centuries BCE. The two heavy bases seem to have been filed smooth at the edges and may have been in use as stoppers (Fig. 49:4, 5).

Storage Jars (Figs. 50:1–10; 52:1–3, 8–12; 53:12–17; 60:2–18; 61:4, 9–15; 63:1–4).— The storage jar was by far the most common vessel at the site. The jars display minor variations in size, ware, neck and rim forms, but nonetheless exhibit an overall homogeneity. The jars have a cylindrical body broadening into a rounded or bag-shaped base and rounded shoulders; they lack a neck; the rims vary from a simple thickened rounded rim (e.g., Figs. 50:8, 9; 52:3) to a more profiled squared rim (e.g., Figs. 53:16; 60:12, 14) or a triangular-shaped rim (e.g., Figs. 50:10; 60:16). Most of the jars are 60–70 cm high, but there are some smaller examples (e.g., Figs. 50:6; 52:2). They are characterized by a clear disregard for symmetry. This jar type is considered characteristic of the northern coastal plain, the Sharon and Galilee (Type F1: Stern 1982:104–105). Similar jars were found at Tel Mikhal Strata VII–VI (Singer-Avitz 1989: Figs. 9.9:4; 9.10:3) and at Dor (Stern 1995b:58, Fig. 2.6), in late fourth-century BCE levels. The jars from the Wadi ed-Daliyeh cave indicate that the type was in use around 331 BCE (Lapp 1974:30, Pls. 18–20). An earlier version, with a higher neck and a more pointed base, is found at many fifth-century BCE sites, including Tel Mikhal Stratum VIII, where they were found in a kiln, indicating that they had been produced

locally (Singer-Avitz 1989: Fig. 9.4). The same jar type continues into the Hellenistic period bearing a slightly more defined rim, e.g., Shiqmona (Elgavish 1974: Pls. X:212; XXVII: 268, 269) and Dor (Guz-Zilberstein 1995:311 Pl. 6.37).

There were no flat-shouldered Phoenician jars at the site, and this type seems to have disappeared by the late fourth century BCE (Stern 1995b:62).

Lamps (Figs. 49:1; 53:18; 60:20).— Three closed lamps were found. One, made of well-levigated clay with a plain finish, is probably an import (Fig. 53:18). The other two are of coarser ware, red-slipped and probably local imitations of imports (Figs. 49:11; 60:20). The closed lamps appear at Tel Mikhal Strata VII–VI (Singer-Avitz 1989:130, Figs. 9.9:6, 7; 9.10:11, 12) and Shiqmona Stratum B (Elgavish 1968: Nos. 135, 136, 186). They are absent from the latest Persian levels at Dor and are considered to reflect the transitional Persian–Hellenistic period (Stern 1995b:67). At Naḥal Tut there are no examples of the large open flat-based lamps.

The pottery in the Naḥal Tut complex consists of bowls, cooking pots, storage jars, jugs, juglets and a few lamps (see Table 1). The high proportion of storage jars at the site (c. 80% of the pottery vessels) suggests that the complex was a storage facility. The pottery repertoire at Naḥal Tut is homogeneous in chronological terms, apparently contemporary to the Wadi ed-Daliyeh cave, Tel Mikhal Stratum VI, Dor Stratum VA, Shiqmona Stratum PB, Tel Abu Hawam Stratum IIB and Ḥazor Stratum II. On the basis of ceramic parallels the pottery repertoire dates within the second half (third quarter?) of the fourth century BCE and thus to the transition between the Persian and Hellenistic periods (c. 350–325 BCE).

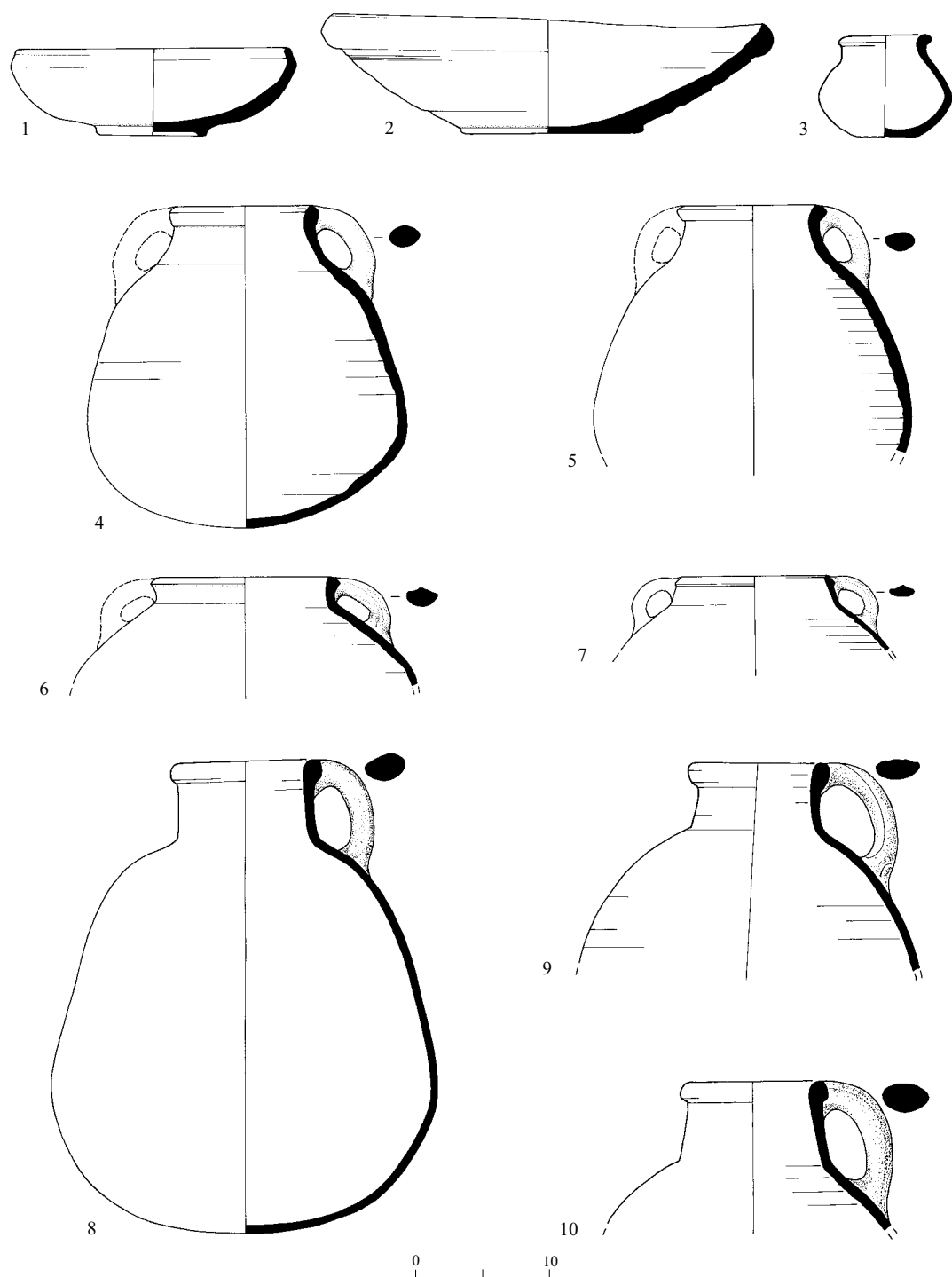


Fig. 48. Pottery from Room 275.

◀ Fig. 48

No.	Object	Reg. No.	Description
1	Bowl	2311/4	Light brown/orange ext., int. and core; red grits
2	Mortaria bowl	2344	Buff ext., pink/buff int. and core
3	Small bowl	2246	White/buff ext. and int., grits
4	Cooking pot	2282	Dark red ext., int. and core; calcite grits, burnt from use
5	Cooking pot	2331/1	Dark red ext., int. and core; calcite grits, burnt from use
6	Cooking pot	2282/1	Dark red ext., int. and core; calcite grits
7	Cooking pot	2409/5	Dark red ext. and int., gray core
8	Jug	2410/3	Pink/light brown ext. and int.
9	Jug	2253/2	Yellow/buff ext., pink int. and core
10	Jug	2283/1	Buff ext., pinkish int. and core

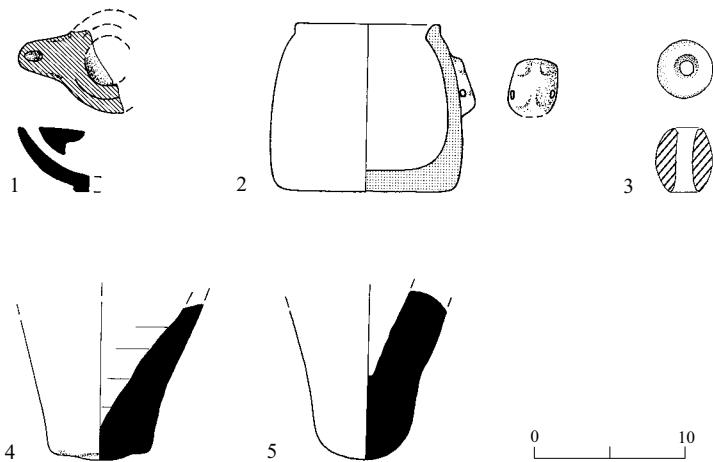


Fig. 49. Pottery from Room 275 (cont.).

No.	Object	Reg. No.	Description
1	Lamp	2258	Orange, coarse ware, red slip, burnt from use
2	Alabastron	2301	White marbled, animal head
3	Bead	2327	Limestone
4	Jar base	2259	Dark orange ext., int. and core
5	Jar base	2250	Dark orange ext., int. and core

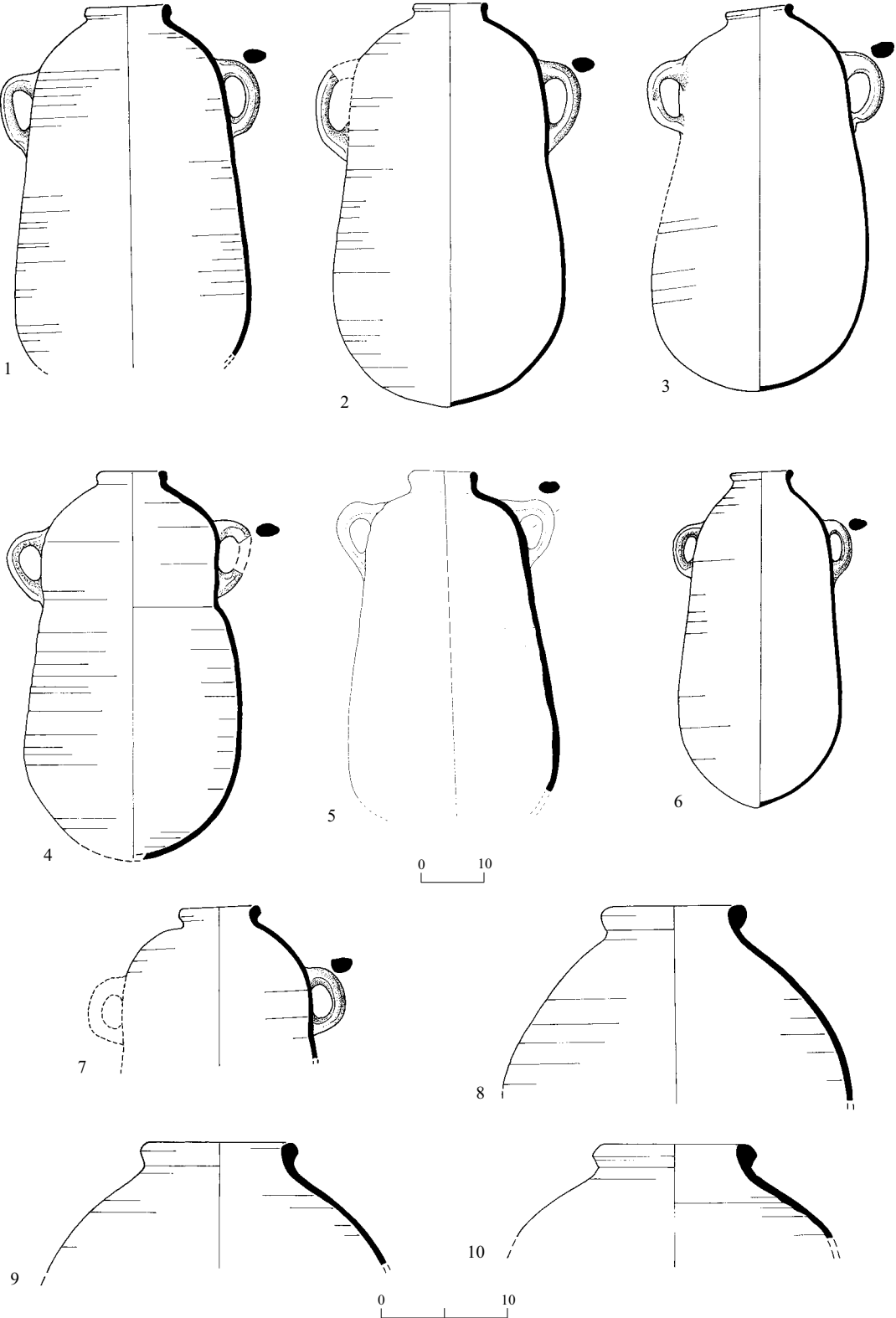


Fig. 50. Storage jars from Room 275.

◀ Fig. 50

No.	Reg. No.	Description
1	2253	Orange/pink/buff ext., pink int. and core
2	2427	Whitish greenish gray ext., gray int. and core
3	2329/2	Yellowish/ochre ext., Int. and core
4	2410	Buff/ochre
5	2261/3	Buff/ochre ext., int. and core
6	2262/2	Buff/light brown ext., int. and core
7	2247/3	Buff/ochre ext., int. and core
8	2330/4	Buff ext., orange int. and core
9	2251/4	Pinkish buff ext., int. and core
10	2254/1	Beige ext., gray int. and core

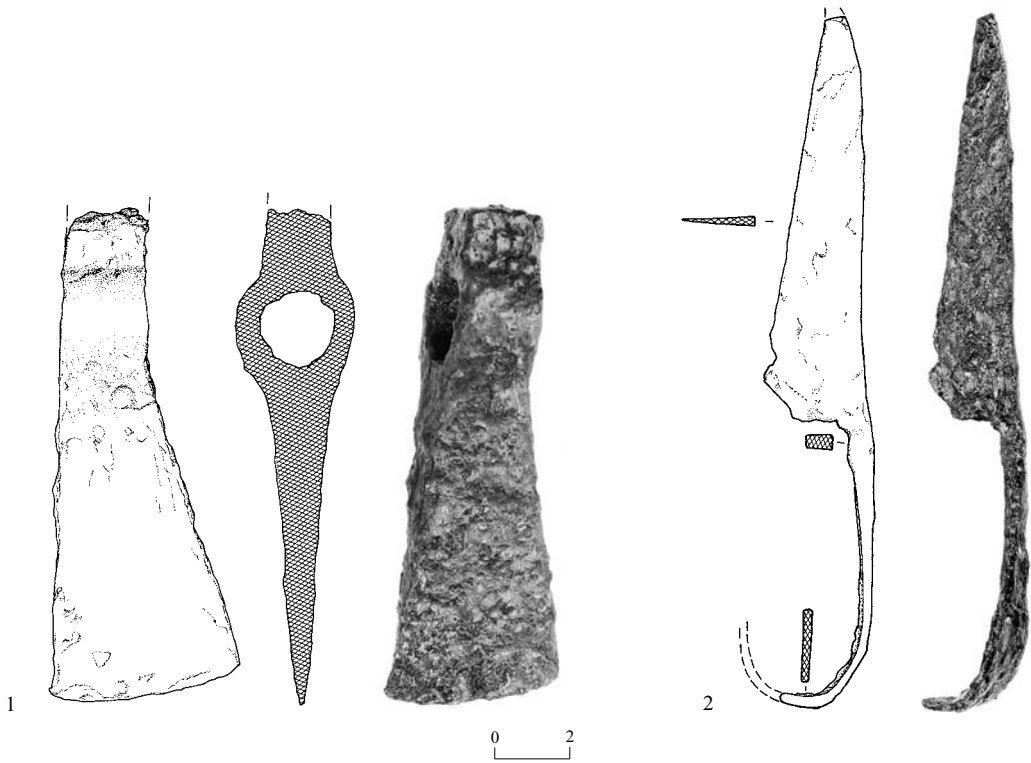


Fig. 51. Iron implements from Room 275.

No.	Object	Reg. No.	Description
1	Pick-axe	2372	Iron
2	Shears	2260	Iron

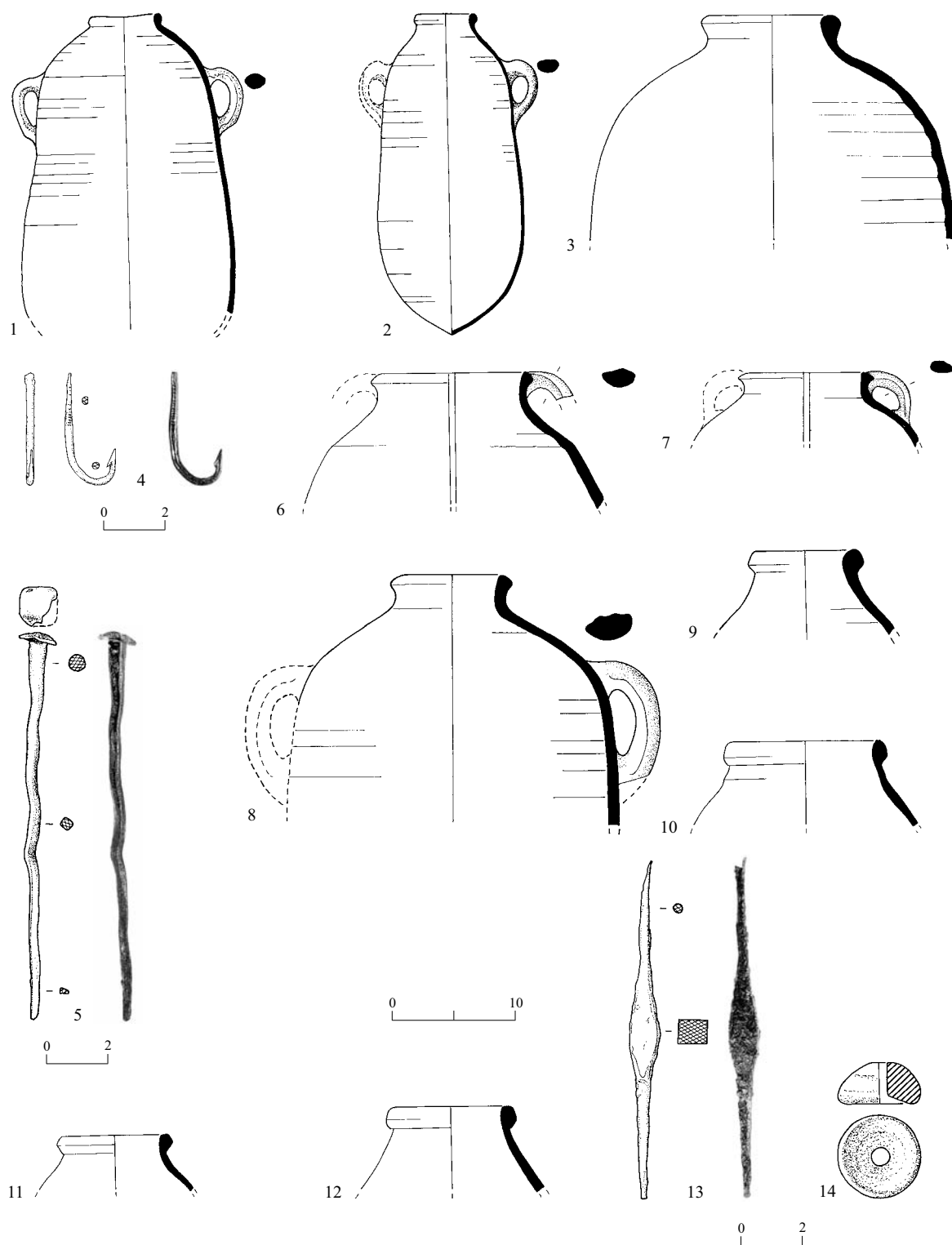


Fig. 52. Pottery and iron from Tower 240 (1–5) and Room 277 (6–14).

◀ Fig. 52

No.	Object	Reg. No.	Locus	Description
1	Storage jar	2209	240	Ochre ext., orange/pink int. and core
2	Storage jar	2212	240	Buff/ochre ext., int. and core
3	Storage jar	2181	240	Buff ext., int. and core
4	Fishing bit	2176	240	Bronze, notched
5	Nail	2089	240	Bronze
6	Cooking pot	2245/3	277	Dark red ext., int. and core
7	Cooking pot	2318/2	277	Dark reddish-brown ext., int. and core
8	Storage jar	2295	277	Buff ext., int. and core
9	Storage jar	2374	277	Buff/orange ext., int. and core
10	Storage jar	2406/1	277 (284)	Buff/beige ext., int. and core
11	Storage jar	2416/8	277	Pinkish-brown ext., int. and core
12	Storage jar	2389/3	277	Pinkish-orange ext., int. and core
13	Awl	2481	277	Iron
14	Whorl	2299	277	Black stone

Fig. 53 ▶

No.	Object	Reg. No.	Locus	Description
1	Attic Bowl	2122	244	Red and black glazed ext., red slip int., light brown core, well levigated
2	Mortaria bowl	2402	299	Missing
3	Mortaria bowl	2421	299	Buff ext. and int., many gray grits
4	Mortaria bowl	2205	244	Greenish buff ext. and int.
5	Cooking pot	2341/6	244	Dark red ext., int. and core; burnt from use
6	Cooking pot	2106/1	244	Dark red ext., int. and core
7	Krater	2446/2	299	Buff ext., gray int. and core
8	Jug	2402	299	Yellowish ext., pinkish int.
9	Juglet	2221/4	244	Buff
10	Juglet base	2462	299	Buff ext., gray int. and core, red band
11	Basket handle	2354/1	299 (295)	Pinkish-brown ext., int. and core
12	Storage jar	2104/4	244	Buff ext., int. and core
13	Storage jar	2206/3	244	Buff ext., int. and core
14	Storage jar	2298/5	244	Orangish-pink ext., int. and core
15	Storage jar	2190/1	244	Pinkish-brown ext., int. and core
16	Storage jar	2131/1	244	Buff ext., int. and core
17	Storage jar	2165/2	244	Buff ext., int. and core
18	Lamp	2192	244	Light brown ext., int. and core, well levigated

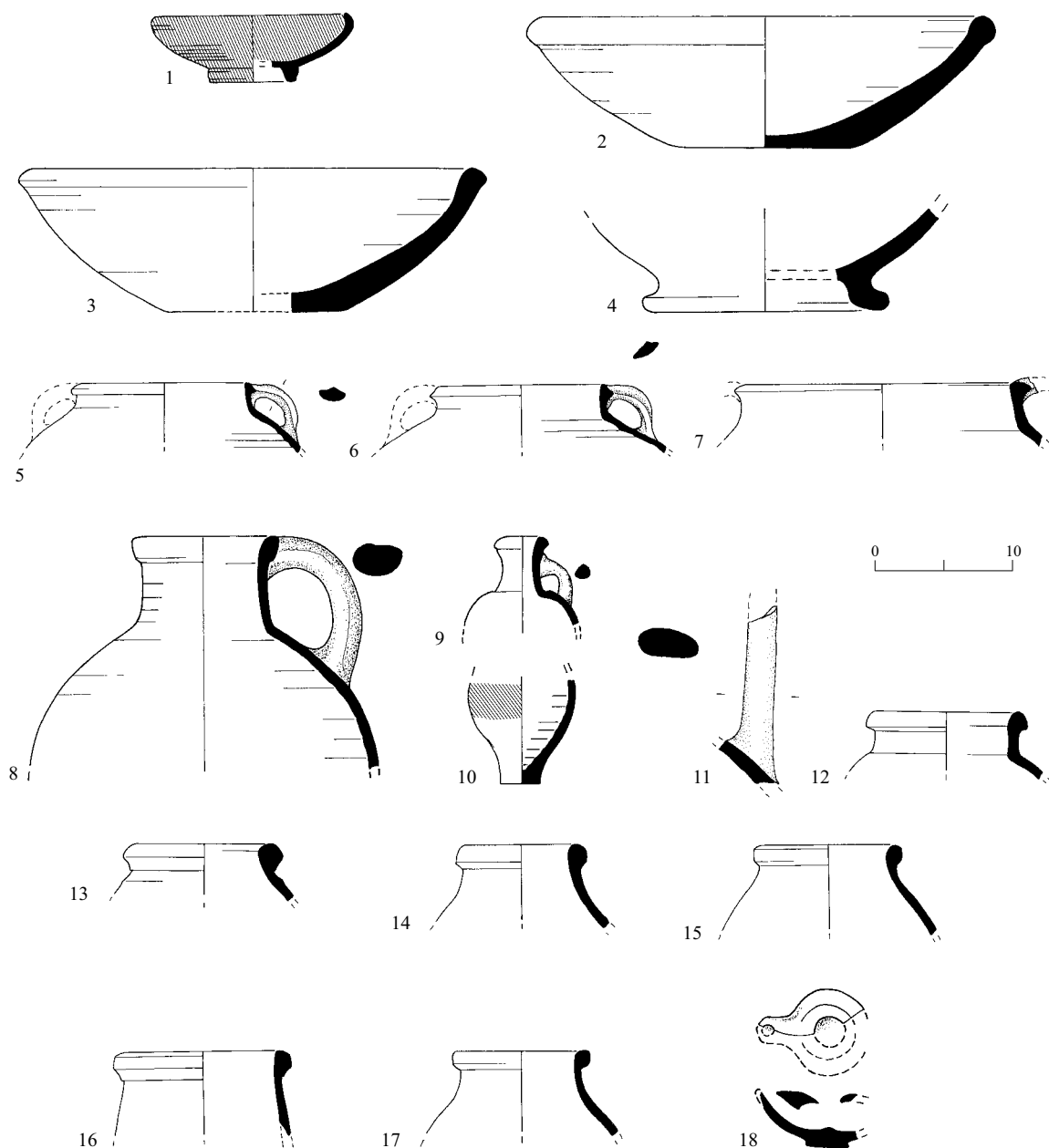


Fig. 53. Pottery from Room 244/299.

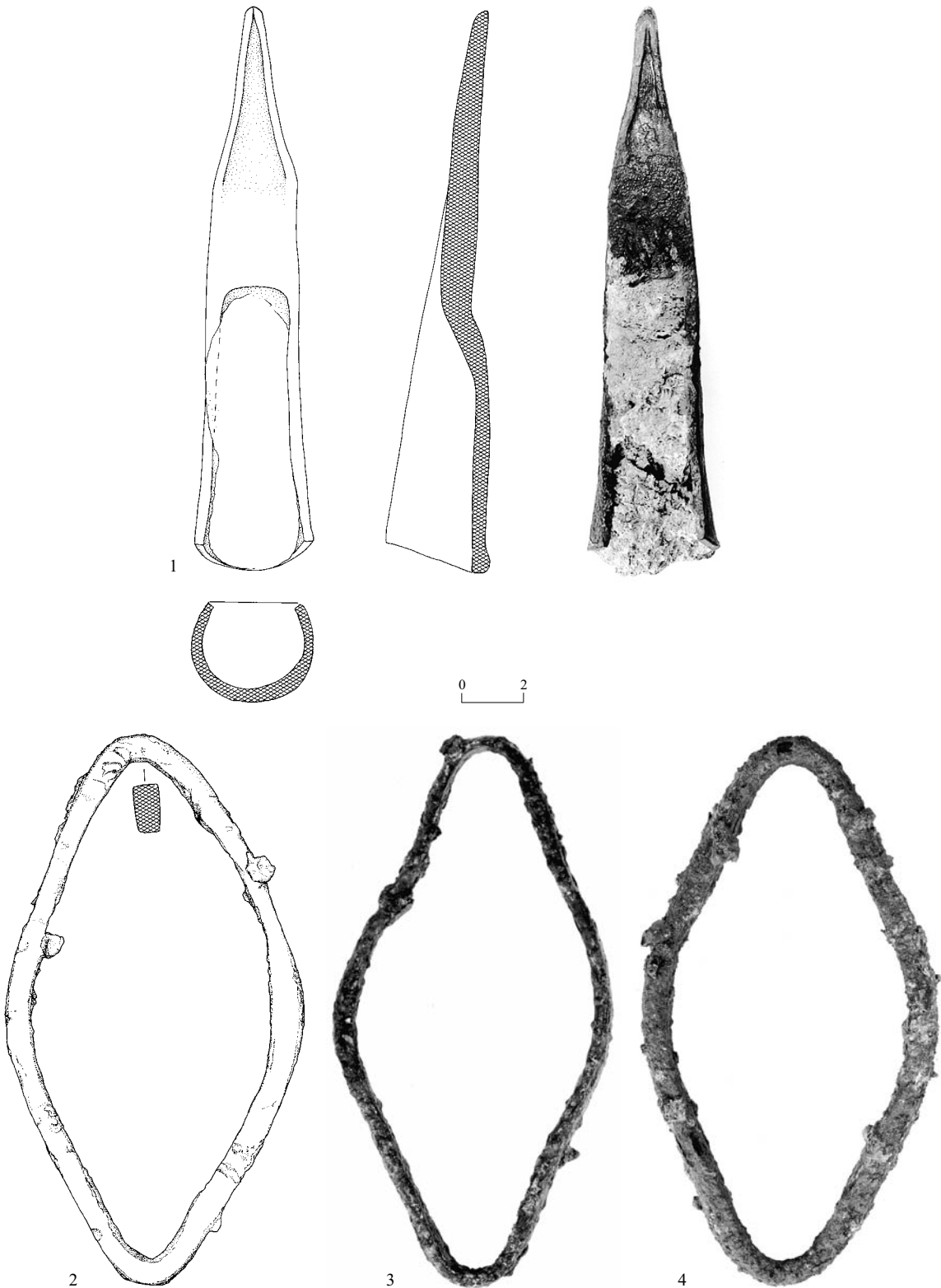


Fig. 54. Iron implements from Room 244/299.

◀ Fig. 54

No.	Object	Reg. No.	Locus	Description
1	Ploughshare	2119	244	Iron
2	Plough ring	2158A	244	Iron
3	Plough ring	2203	244	Iron
4	Plough ring	2158	244	Iron

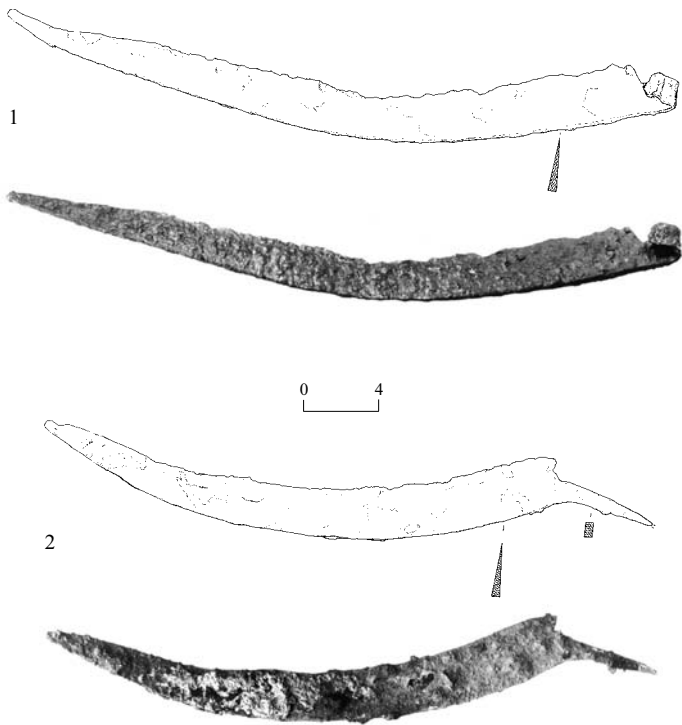


Fig. 55. Iron implements from Room 244/299 (cont.).

No.	Object	Reg. No.	Locus	Description
1	Sickle	2371	244	Iron
2	Sickle	2121	244	Iron

Fig. 56 ▶

No.	Object	Reg. No.	Locus	Description
1	Pick-axe	2380	295 (299)	Iron
2	Shears	2145	244	Iron
3	Ring	2442	299	Iron

Fig. 57 ▶ ▶

No.	Object	Reg. No.	Locus	Description
1	Buckle	2218	288 (299)	Bronze, schematic duck's head
2	Accessory	2465	299	Iron, hollow, broken
3	Fibula	2328	244	Iron
4	Spearhead	2169	244	Bronze
5	Catapult arrowhead	2219	244	Iron

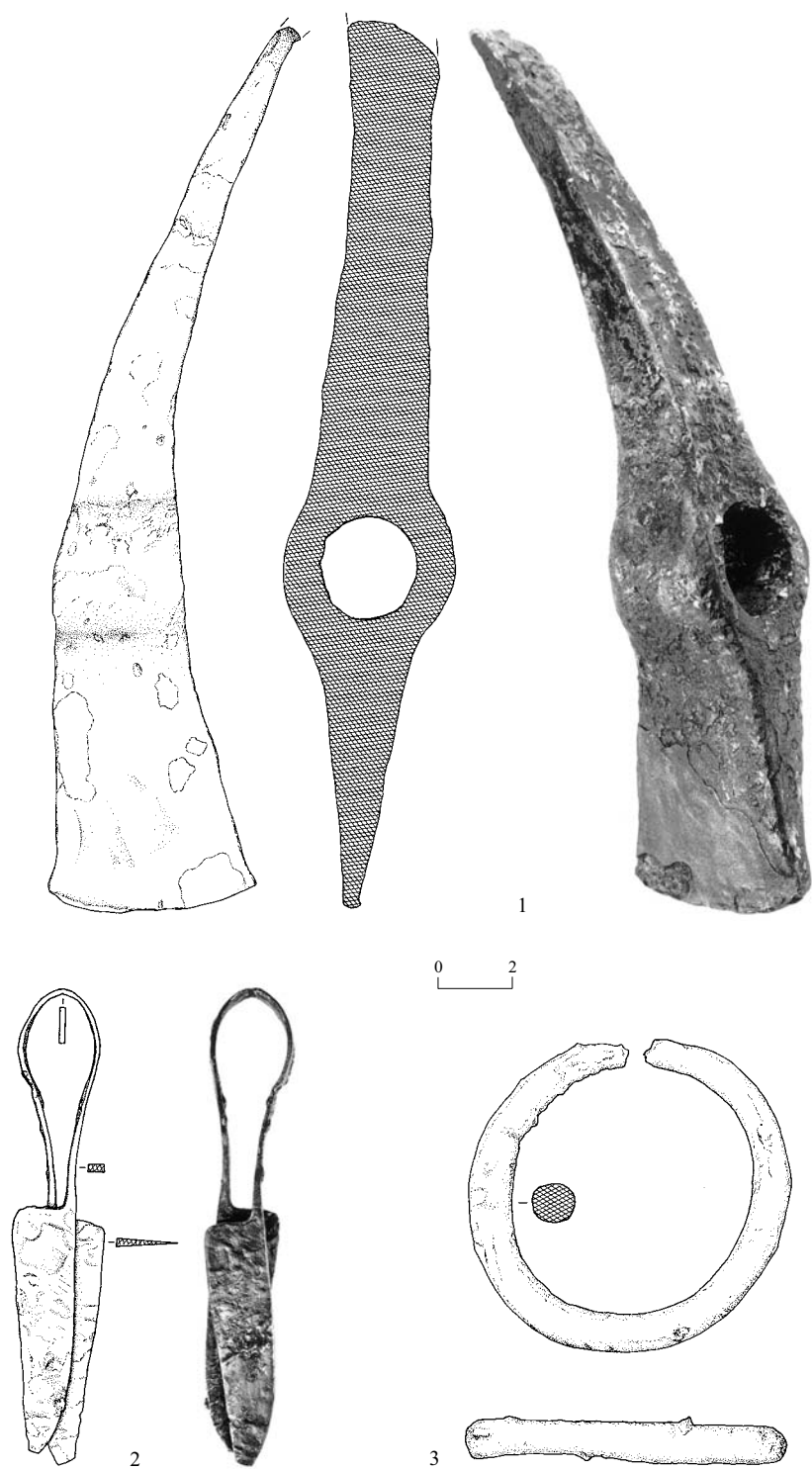


Fig. 56. Iron implements from Room 244/299 (cont.).

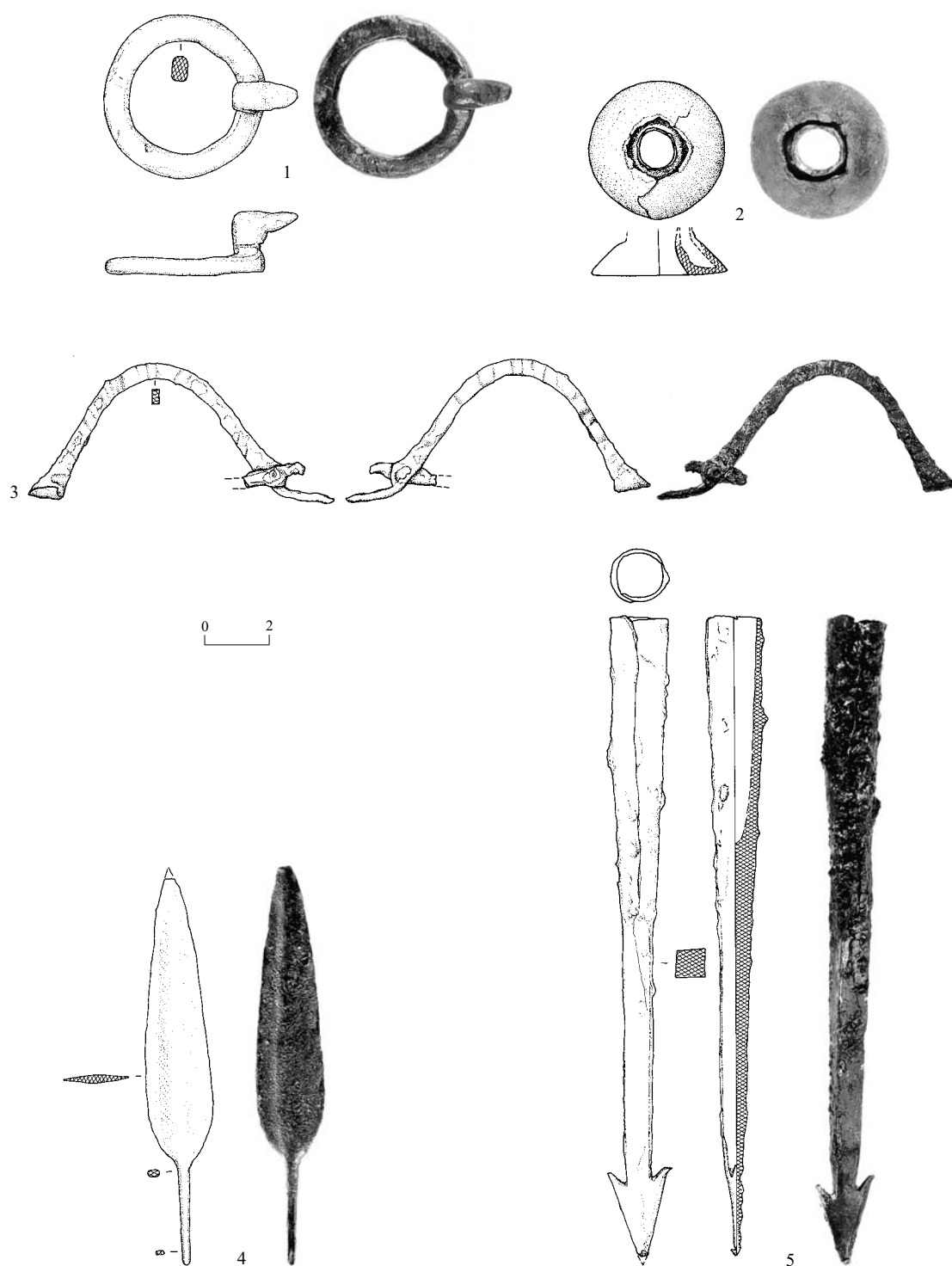


Fig. 57. Iron and bronze implements from Room 244/299.

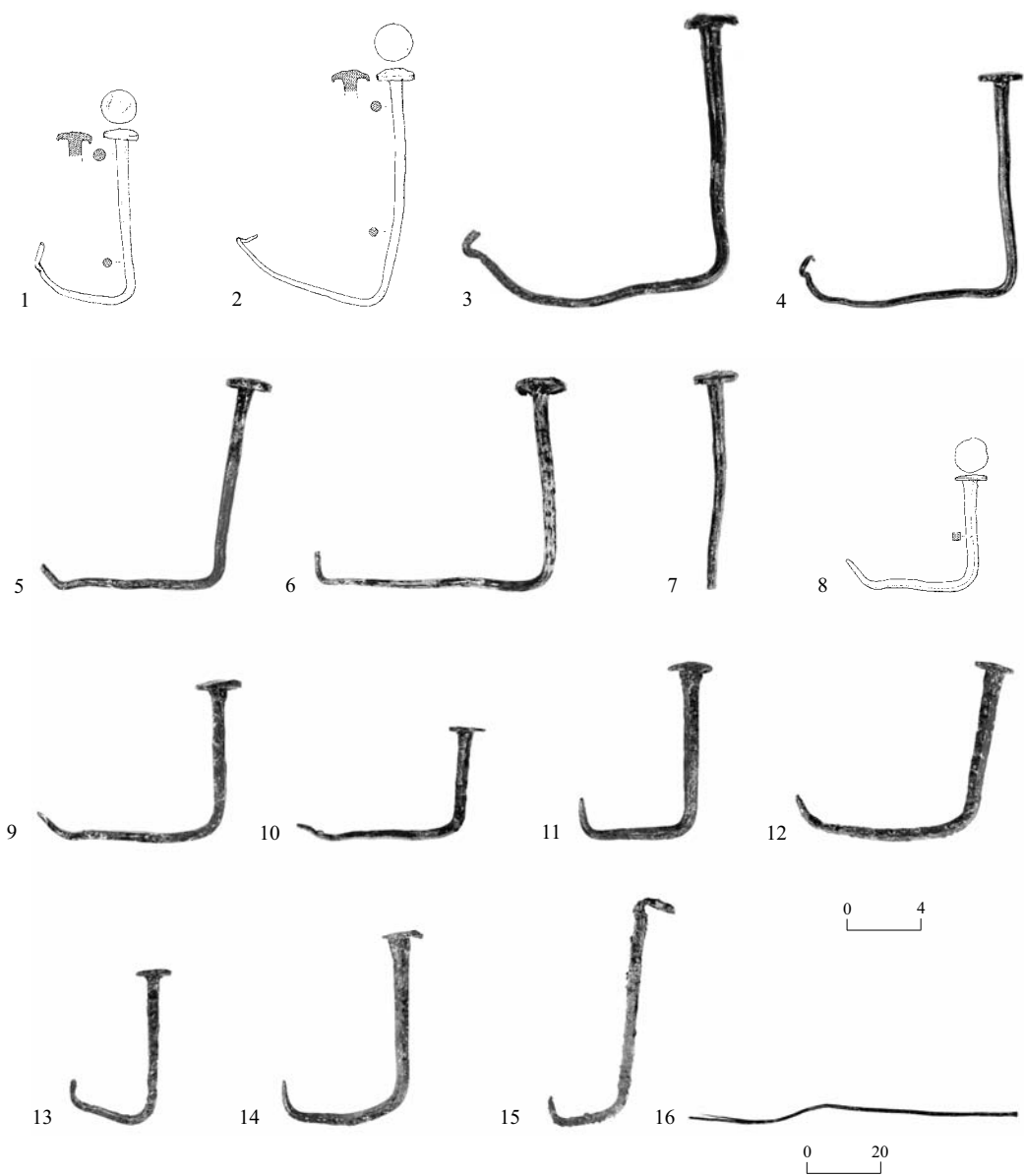


Fig. 58. Iron and bronze nails from Room 244/299.

No.	Reg. No.	Locus	Description	No.	Reg. No.	Locus	Description
1	2386	299	Bronze	9	2436	299	Iron
2	2105	244	Bronze	10	2461	299	Iron
3	2058	224 (244)	Bronze	11	2419	299	Iron
4	2052	224 (244)	Bronze	12	2455	299	Iron
5	2078	224 (244)	Bronze	13	2433	299	Iron
6	2060	224 (244)	Bronze	14	2135	244	Iron, triangular head
7	2055	224 (244)	Bronze	15	2133	244	Iron, triangular head
8	2422	299	Iron	16	2435	299	Iron, extra long, small head

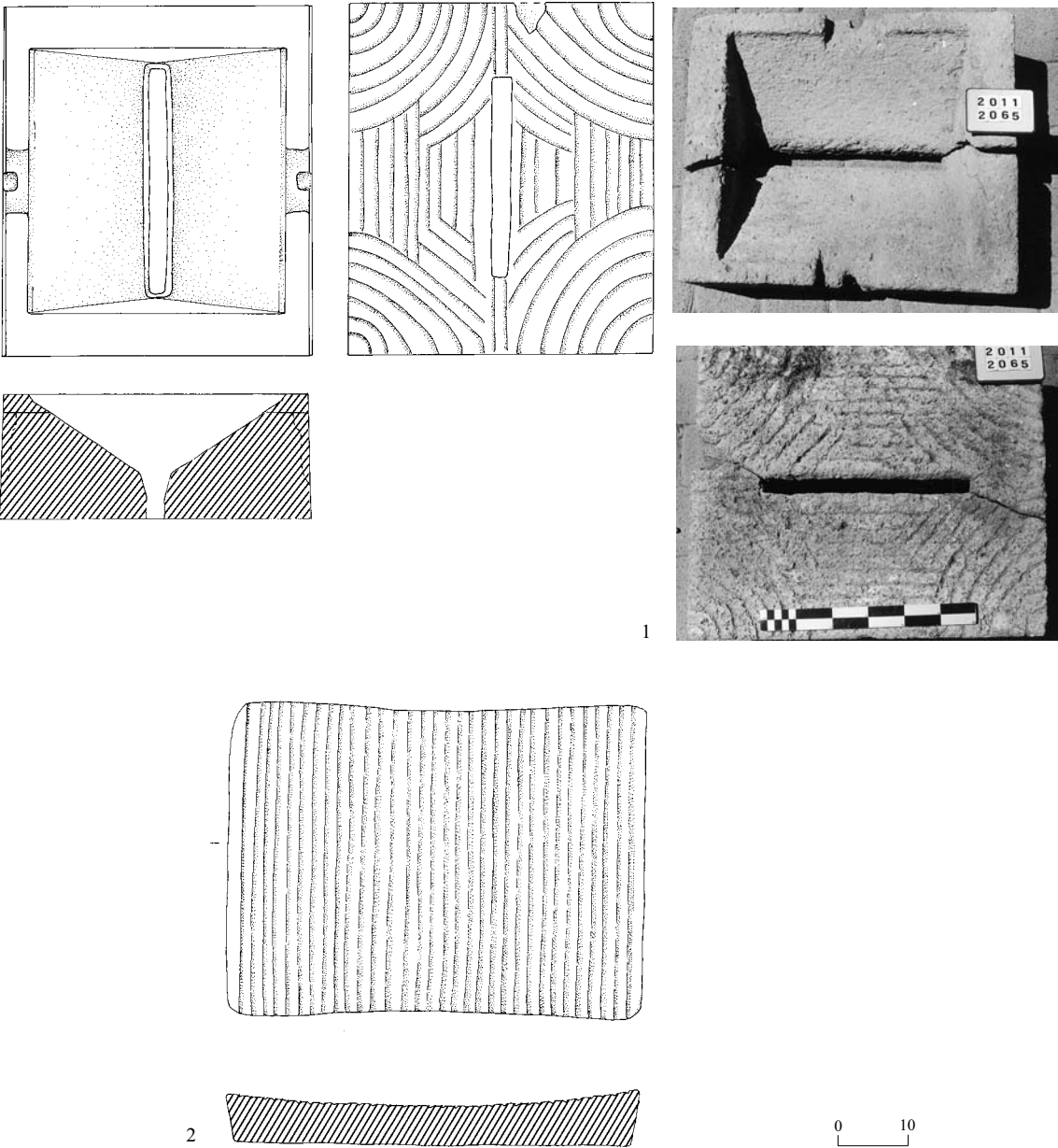


Fig. 59. Hopper-rubber millstone from Room 244/299:
(1) upper stone; (2) lower stone.

No.	Object	Reg. No.	Locus	Description
1	Upper millstone	2065	224 (244)	Basalt
2	Lower millstone	2467	299	Basalt

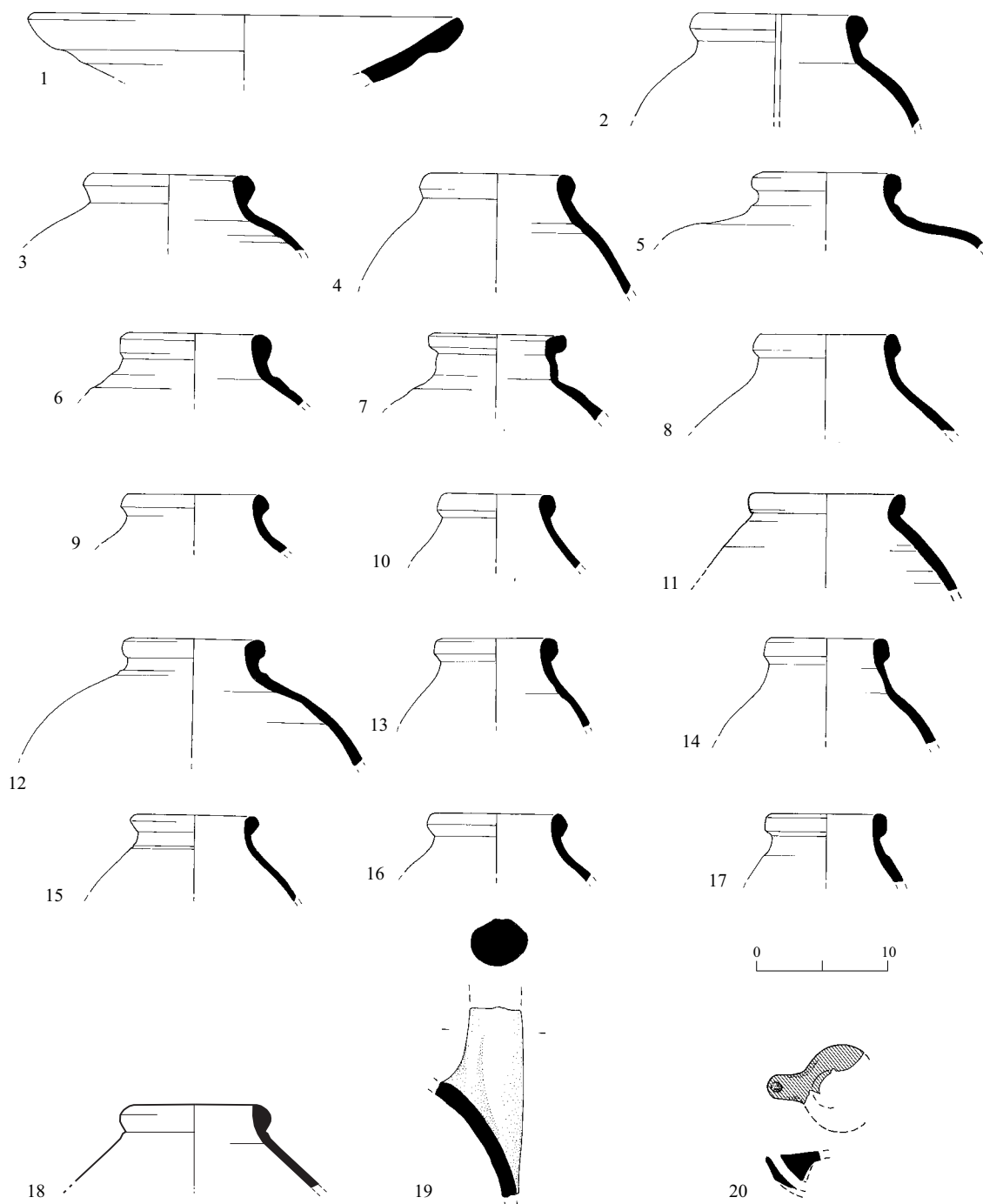


Fig. 60. Pottery from Storerooms 143 (1-10) and 283 (11-20).

◀ Fig. 60

No.	Object	Reg. No.	Locus	Description
1	Mortaria bowl	1150/2	143	Greenish-buff ext., light brown core
2	Storage jar	1162/6	143	Buff ext., int. and core
3	Storage jar	1150/1	143	Orange ext., int. and core
4	Storage jar	1187/4	143	Yellowish-ochre ext., int. and core
5	Storage jar	1181/2	143	Light brown ext., int. and core
6	Storage jar	1194/4	143	Buff/gray ext., int. and core
7	Storage jar	1161/7	143	Orange ext., light brown int. and core
8	Storage jar	1190/4	143	Buff ext., light brown int. and core
9	Storage jar	1175/2	143	Whitish-buff ext., int. and core
10	Storage jar	1195/6	143	Yellowish-buff ext., int. and core
11	Storage jar	2278	273 (283)	Yellowish ext., pinkish int.
12	Storage jar	2384/9	283	Buff/light brown ext., int. and core
13	Storage jar	2384/7	283	Light orange ext., int. and core
14	Storage jar	2384/5	283	Light orange ext., int. and core
15	Storage jar	2471/1	283	Buff
16	Storage jar	2384/6	283	Buff
17	Storage jar	2473/1	283	Buff
18	Storage jar	2384/8	283	Buff
19	Basket handle	2170/1	283 (273)	Buff/palish green ext., int. and core
20	Lamp	2483	283	Light brown ext., int. and core; red slip, burnt at nozzle

Fig. 61 ▶

No.	Object	Reg. No.	Locus	Description
1	Bowl	1051/8	115	Buff ext. and int. pinkish core
2	Cooking pot	1051/1	115	Dark red
3	Juglet	1062/1	115	Buff ext., int. and core
4	Storage Jar	1139/3	115 (139)	Buff ext., int. and core
5	Whetstone	1139	115 (139)	Yellow sandstone
6	Pestle	1060	115	Black stone, shiny from wear
7	Mortaria bowl	1072/1	129	Buff ext., int. and core
8	Cooking pot	1071	129	Dark red ext., int. and core
9	Storage jar	1085	129	Buff/pink ext., pink int. and core
10	Storage jar	1104/	129	Light brown ext., int. and core
11	Storage jar	1104/1	129	Brown ext., gray int. and core
12	Storage jar	1227/1	142	Buff ext., int. and core
13	Storage jar	1227/6	142	Buff ext., int. and core
14	Storage jar	1227/4	142	Buff ext., int. and core
15	Storage jar	1231/3	142	Orangish-brown ext., int. and core

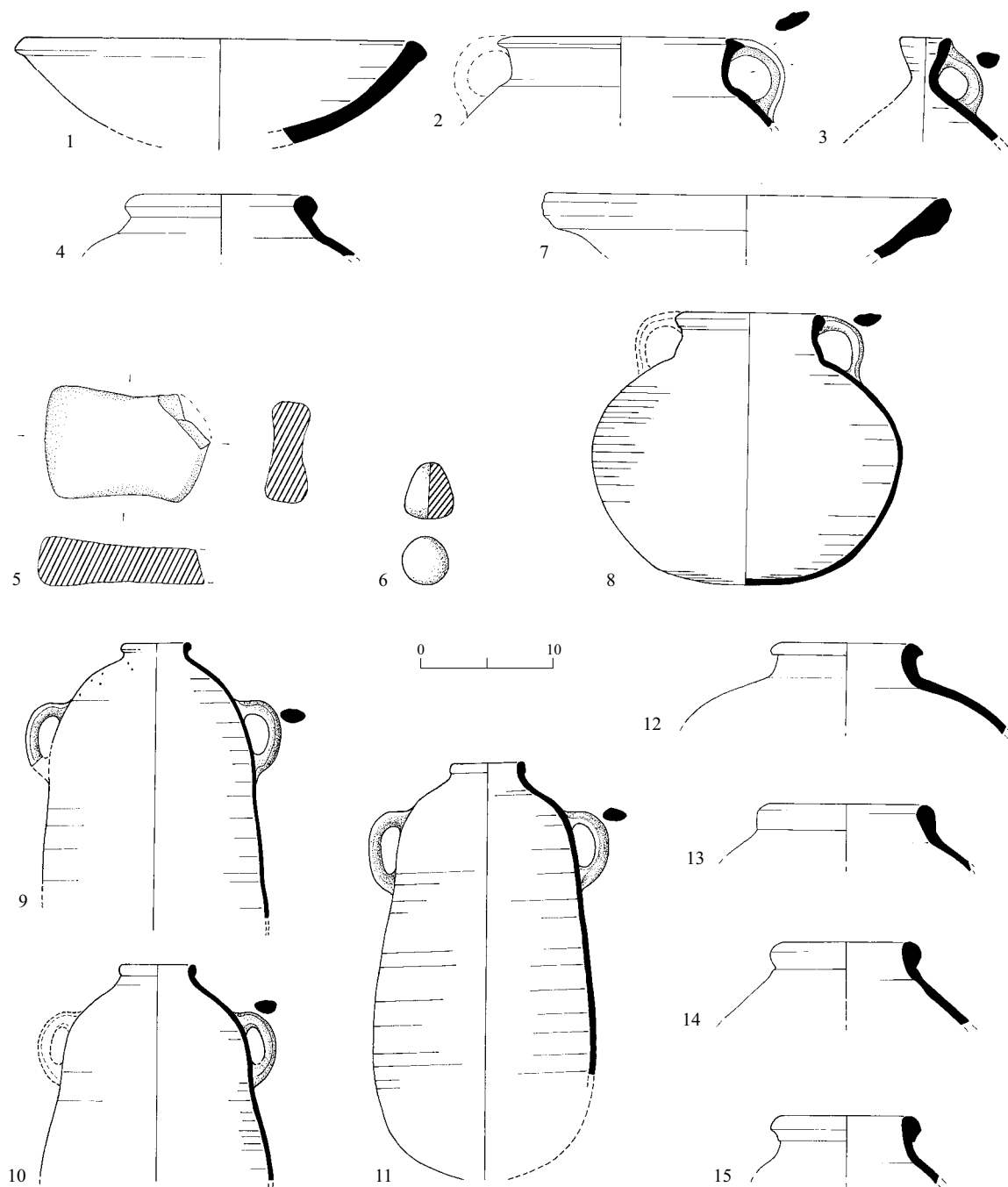


Fig. 61. Pottery and stone objects from Rooms 115 (1-6), 129 (7-11) and 142 (12-14).

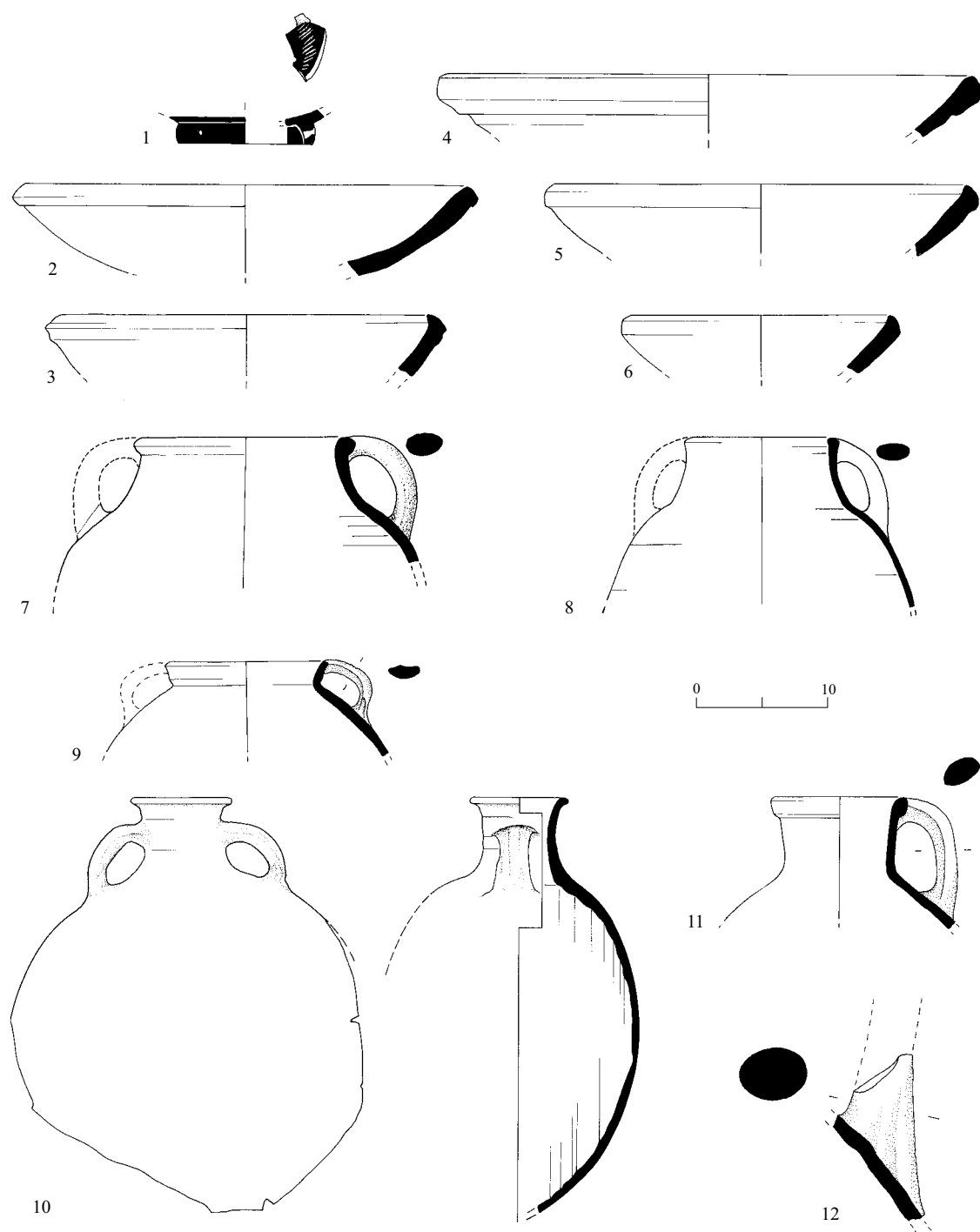


Fig. 62. Pottery from courtyard (L128, L215, L255).

◀ Fig. 62

No.	Object	Reg. No.	Locus	Description
1	Attic bowl	1029/2	215 (106)	Orangy-brown clay, black slip
2	Mortaria bowl	1044/5	128 (114)	Buff/orange ext., int. and core
3	Mortaria bowl	2035	215	Brown ext., int. and core
4	Mortaria bowl	1034/8	215 (106)	Orangish-brown ext., int. and core
5	Mortaria bowl	2487/4	255 (279)	Orange/light brown ext., int. and core
6	Bowl	2504	255 (279)	Orange/light brown ext., int. and core
7	Krater	2478	255(279)	Orange/pink ext. and int., gray core
8	Cooking pot	1030/4	215 (106)	Dark red ext. and int., gray core
9	Cooking pot	2365/1	255	Dark red ext. and int., gray core
10	Flask	2049	215	Ochre/buff ext., int. and core; grits
11	Jug	1031/6	128	Orange ext., int. and core
12	Basket handle	2091/2	215	Orange ext., int. and core

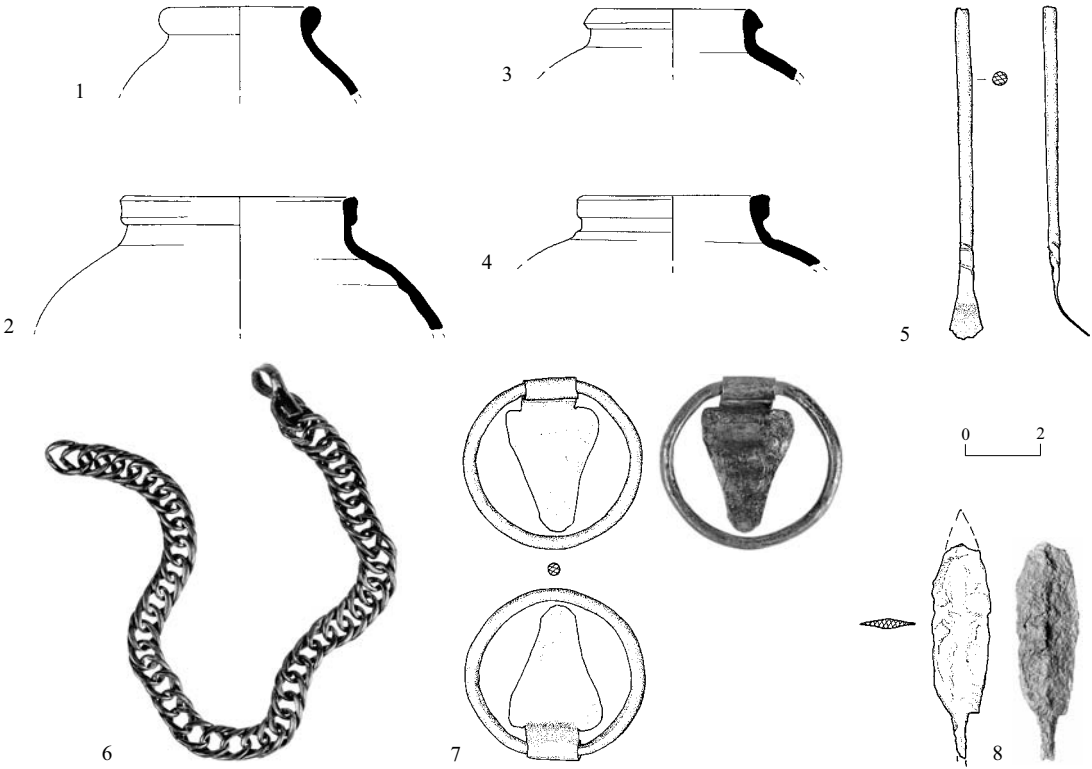


Fig. 63. Pottery and metal finds from courtyard (L128, L215, L255).

No.	Object	Reg. No.	Locus	Description
1	Storage jar	1073/1	128	Light orange ext., orange int. and core
2	Storage jar	1031/8	128	Orange ext., int. and core
3	Storage jar	2117/2	255	Buff ext. and int., orangish-brown core
4	Storage jar	2476/3	255	Buff ext., orangish brown int. and core
5	Spatula	1013	128 (114)	Bronze
6	Chain	2103	255	Bronze (alloy)
7	Buckle	2036a	215	Bronze
8	Arrowhead	2098	215 (252)	Iron

Metal Tools and Weapons

An impressive quantity of metal, chiefly iron tools, was retrieved from the Nahal Tut complex (in total 88 artifacts). The fine state of preservation of the finds is noteworthy and included both finds covered by the stone collapse and those covered with burnt debris. Remarkable is the similarity of the implements to a twentieth century tool kit! It is only the secure stratigraphical context of the finds that vindicates the fourth-century BCE date. The repertoire of the agricultural cultivating tools includes a ploughshare and plough rings, pick-axes and scythes. Animal breeding is indicated by sheep shears and fishing by a fishing hook. Ironmongery is represented by iron rings, an awl, a chain and some 56 nails. The use of iron as a clothing component is to be seen in the buckles and fibula. Weapons are rare and include a small spearhead, an arrowhead and importantly a catapult arrowhead.

Iron Ploughshare and Plough Rings (Fig. 54:1–4).— The iron ploughshare, 45 cm long, has a collar-shaped shaft-socket 90 mm in diameter. The petrified chalk debris that adhered to the ploughshare could not be removed and therefore the implement could not be weighed. Iron ploughshares of similar form and dimensions were recovered in a late Hellenistic context at Sha'ar Ha-'Amaqim (Segal and Naor 1989:431–432; Naor 1989), and in the first century CE stratum at Gamla (Gutman and Rapel 1994:128). A similar ploughshare was found in the Late Persian–Early Hellenistic stratum at 'En Hōfēz (for site, see Alexandre 1997:54). The plough rings are 18–19 cm long, 10–11 cm wide. By analogy to present-day traditional ploughs the rings were used to clamp the iron ploughshare to the wooden plough-stake (Avitsur 1976: Fig. 48:3, 49:4; Feliks 1963:84) and to clamp together the wooden parts of the plough. Similar examples come from the Hellenistic sites at Sha'ar Ha-'Amaqim (Naor 1989:12), Ḥorbat Zemel (Hartal 2002:110, Fig. 34:6, 7) and Shiqmona (Elgavish 1974: Pl. XXIX:280) and from the

Roman period at Gamla (exhibited at the Qazrin Museum).

Iron Sickles (Fig. 55:1, 2).— Three iron sickles were found, two 32 and 34 cm long, the third broken. Attachment to the wooden handle was either by folding the iron around the handle (Fig. 55:1) or by inserting a tang into the wood (Fig. 55:2). Similar sickles come from several sites including the Persian-period fort north of Ashdod (Porath 1974: Fig. 6:7, 8, one with a folded-over tang, the other with a straight tang).

Iron Pick-Axes (Figs. 51:1; 56:1).— Three iron pick-axes were found. One (Fig. 56:1) is 25 cm long, its shaft 2–3 cm in diameter. This two-edged implement has one bow-shaped end which served as a pick—digging and uprooting weeds—and another, a straight-bladed axe that served for wood-chopping and pruning (Avitsur 1976:154–155, Fig. 411). Similar implements from the Hellenistic period were found at Ḥorbat Zemel (Hartal 2002: Fig. 34:2, 3; see parallels therein).

Iron Shears (Figs. 51:2; 56:2).— One complete pair and one half pair of sheep shears are both of the same type, and relied on the flexibility of the iron handle to produce the cutting movement. Shears of a similar type from the Roman period were found at Metulla (Tsaferis 1982: Fig VII:5) and several other sites in the Roman world (White 1967). Shears of similar design still serve in the twentieth century.

Fishing Hook (Fig. 52:4).— The bronze fishing hook has a small tang. Similar fishing hooks were found at an Iron II level at Tel Abu Hawam IV (Hamilton 1934: Pl. XXXIII:193) and at Shiqmona in Persian and Hellenistic levels (Elgavish 1968: Pl. XLIV:72; 1974: Pl. XXXII:291).

Iron and Bronze Nails (Figs. 52:5; 58).— In Room 244/299 56 nails were recovered in the vicinity of the entrance. These were probably

associated with a wooden door. Thirty nails were of bronze and 26 of iron; they have large rounded heads and were bent in two places. The diameter of the heads of the bronze nails is c. 2.5 cm and they were bent at 10–12 cm and again at 22–24 cm from the nailhead. They are of square section close to the head, hammered out into a rounded section along the nail's length. The iron nails have somewhat smaller heads (1.6–2.0 cm), bent at 9–10 cm and 17–18 cm from the nail head. The nails were probably used to attach wooden planks with a square profile of 9–10 cm (the iron nails) and of 11–12 cm (the bronze nails). Additional nails of varied form and dimensions were also recovered. Similar nails were found at Hellenistic Shiqmona Stratum HH (Elgavish 1974: Pl. XXXII:296).

Iron Awl (Fig. 52:13).— One iron (Fig. 52:13) and one bronze awl (not illustrated) were found.

Iron Rings (Fig. 56:3).— Three iron rings 5–9 cm in diameter were found.

Chain (Fig. 63:6).— A linked chain, c. 25 cm long and in outstandingly good condition, was found on bedrock in the courtyard.

Buckles and Accessories (Figs. 57:1, 2; 63:7).— Two buckles, probably belonging to belts, were found. One has a schematic duck's head (Fig. 57:1) and another has a leaf-shaped insert (Fig. 63:7). Figure 57:2 may be an accessory.

Fibula (Fig. 57:3).— A simple iron fibula with a clasp was found. Similar fibulae, usually of bronze, are known from several sites of the Persian period including 'Atlit (Johns 1933:55, Fig. 13, Pl. XXIV:613, 632), Mount Gerizim (Magen 1993: Fig. 39:2) and Shiqmona Stratum B (Elgavish 1968:Pl. LXIV:177).

Spatula (Fig. 63:5).— A small bronze spatula came from the courtyard floor.

Weapons

Very few weapons were found in the excavation. The paucity of weapons, specifically of arrowheads, may suggest that the complex fell to the enemy after a very brief battle.

Spearhead (Fig. 57:4).— A thin bronze leaf-headed spearhead, 9 cm long, has a 3 cm tang for attachment.

Arrowhead (Fig. 63:8).— A single leaf-shaped tanged iron arrowhead was recovered at the site. Similar arrowheads were found in Tomb 35 at 'Atlit (Johns 1933:101, Pl. XXXV:963, 964). Iron arrowheads are far less common than those of bronze in the Persian period (Stern 1982:156).

Catapult Arrowhead or Bolt (Fig. 57:5).— A socketed iron catapult bolt (or *katapultos*) with a blunted tip was found in Room 244. It must have been attached to a wooden stem and launched from a catapult machine. This is the earliest example of a catapult bolt found in Israel. A form of catapult is first recorded as having been used by Dionysius I of Syracuse in the early fourth century BCE siege of Motya (Diodorus XX 48.1.3). Greek historians record that Tyre was extensively equipped with catapult engines during the 333 BCE siege by Alexander and that Alexander was wounded by a catapult bolt in the attack on Gaza in 332 BCE (Diodorus XVII. 41.3; Arrian II 27). This weapon type was employed both by the Greeks and by their enemies in the late fourth century BCE.

The Stone Implements

Basalt Hopper-Rubber Millstones (Fig. 59).— A pair of fine basalt millstones of the hopper-rubber type, also known as the Olynthus mill, was found on the floor of Room 244/299, the two parts lying 3 m from each other. The lower (*meta* or hopper) stone was broken into six pieces, and the upper (*catillus* or rubber) stone

into two, no doubt as a result of the destruction and fire. The *meta* is flat and rectangular, measuring 43 × 60 cm, 5 cm high, and weighs 30 kg. The upper surface has 32 straight grooves running lengthwise. The *catillus* is rectangular, measuring 42 × 50 cm, 17 cm high, and weighs 61 kg. It has a raised edge on the upper surface and a rectangular funnel-shaped hopper center with a slot 31 cm long and 2 cm wide. The base of the upper stone has curved grooves radiating outward symmetrically. Two indented notches, carved out of the long sides of the *catillus*, were intended for a rod. The grain was poured into the funnel slit of the upper *catillus*, percolated down and was ground by pushing the *catillus* over the *meta* back and forth with a rod. It is probable that the rod was used as a lever by wedging one end into the wall. A slight disruption in W204 (hardly visible in Fig. 38) close to the location of the *catillus*, suggests that the rod may have been anchored there. Levered rectangular hopper-rubber mills are depicted on a fourth century BCE Megarian bowl (Moritz 1958: Fig. 1). The fine and unworn state of the Naḥal Tut millstones suggests that they were in use for a brief duration.

Hopper-rubber mills are found in Greece from the late fifth century BCE onward, produced at specialized quarries in the Aegean islands including Nisyros and Kimilos (for an extensive study see Williams-Thorpe and Thorpe 1990; 1991; 1993; Frankel 2003). The earliest securely-dated hopper-rubbers are from Athens (425–400 BCE) (Williams-Thorpe and Thorpe 1993) and Olynthus (Frankel 2003:7). There is considerable evidence that these well-made hopper-rubber mills were exported from the Aegean islands to mainland Greece, Cyprus, Western Turkey and Egypt (Williams-Thorpe and Thorpe 1993:304). Amiran suggested that this type was introduced in Iron II (Amiran 1956:47), but there are no well-dated examples to support this early date. There are examples dated to the Late Persian period, e.g., at Tel Mikhal (Singer-Avitz 1989:350–351, Fig. 31.2, Pls. 76:3.5–9.10) and at Tel Ḥamid (Wolff and Shavit, in prep.) and the type is very common in Israel in the Hellenistic

and Roman periods (see distribution in Frankel 2003:3). An additional example was found at 'En Hofez, a Late Persian–Early Hellenistic site in Yoqne'am 'Ilit (unpublished; for preliminary note see Alexandre 1997). A pair of finely-carved basalt millstones of similar dimensions (length 0.54 m, width 0.46 m, height 0.1 m) was retrieved from the sea near 'Atlit (on exhibit at the Dagon Museum). The fine workmanship of the Naḥal Tut and the 'En Hofez examples suggest that they are of Aegean manufacture. The millstones were sampled by A. Shapiro and subjected to geochemical analysis by I. Segal (this volume). A comparison of the results to the data published by Williams-Thorpe and Thorpe (1993) clearly indicates that the millstones of Naḥal Tut were manufactured in the Nisyros region in the Aegean. It is possible that they reached Israel as a traded item, but trade imports of basalt millstones are rare in Israel, as basalt was a local commodity in the Levant (see origin of Levant millstone samples in Williams-Thorpe and Thorpe 1993). We propose that millstones were transported to the Levant by the Macedonian army. The fourth century BCE historian Xenophon (referring to the wars of Cyrus), details handmills as an essential item of equipment carried by armies traveling long distances (Xenophon, *Cyropaedia* VI.ii.31). Thus the introduction of the hopper-rubber millstone into the Levant may probably be assigned to Alexander's army. This conclusion greatly enhances the importance of petrographic analyses.

Whetstone (Fig. 61:5).— A rectangular yellow sandstone found on the floor of Room 115 may have been used for sharpening knives.

Grinding Stones and Stone Pestle (Fig. 61:6).— Several basalt and limestone grinding stones of various sizes and shapes were found throughout the fort and a small black stone pestle was found in Room 115.

Round Stones (Fig. 37).— About six small worked round stones were found in various

rooms. These stones weigh less than 0.5 kg and may have been used for industrial purposes or as ballistic stones.

Varia

Small Alabaster Vessel (Fig. 49:2).— A single alabaster (calcite?) vessel of cylindrical shape was found. It was broken into three pieces, two of which were found in Room 275 and one in the adjacent Room 282. A schematic animal head (lioness?) was carved in relief on one side of the bowl.

Spinning Whorl (Fig. 52:14).— A small black whorl is the only evidence for spinning or weaving activities at the site.

Bead (Fig. 49:13).— A simple limestone bead is the only item of jewelry found at the site.

The Animal Bones

A minimal number of animal bones was recovered from the complex in Room 244, identified as donkey and horse bones. This find further corroborates the role of the complex as a storage depot.

The Numismatic Evidence

Danny Syon

A single find that dramatically brought to life the final day of the fort was a bronze coin found on the stone paving of the central room (L299), covered by ashes and soot that covered the entire floor, probably witness of the terminal conflagration.



Fig. 64. Coin from Room 299.

Reg. No. 2460, L299, IAA 57320, Fig. 64: Alexander III (The Great, 336–323 BCE), Macedonian mint(?).

Obv.: Head of Heracles r., wearing lion skin tied under the chin. Border of dots.

Rev.: Club and bow in case. Between them inscription: [ALEΞ] ANΔ

Æ, ↑, 5.14 gm, 17 mm

Price 1991: Pl. CXLV:266a ff.

This is the largest bronze denomination struck in the lifetime of Alexander (Price 1991:40). These coins were struck mainly in Macedonia, but also in some Asian and Phoenician cities (Price 1991:72), between 336 and 323 BCE. The condition of the present coin precludes identifying the mint with any certainty. As it can be safely assumed to have reached the fort with the army of Alexander, a Macedonian or Asian mint is indicated. Very few bronzes of Alexander were found in Israel (e.g., Ariel 1993:129, No.13). The present coin is the sole specimen deriving from a context directly related to Alexander's conquests in this country that I am aware of.

CONCLUSIONS, CHRONOLOGY AND HISTORICAL CONTEXT

The many facets of material culture exposed at Nahal Tut allow for several conclusions regarding the site and its geographical-historical and political context. Since only part of the site was excavated these conclusions are offered tentatively.

The Administrative Background

The administrative divisions within the Persian satrapy of *eber-nahari*, 'Beyond the River' are not well established and it is generally accepted that the Achaemenid government adopted the basic internal administrative divisions inherited from the Babylonian and Assyrian rules (Forrer 1921:6; Avi-Yonah 1966:12). Conceivably, there was a province (*phwh* or *medinah*) of Galilee, which included the north of the country and had its capital at Megiddo or at Hāzor

(Avi-Yonah 1966:25). Its exact borders are not known, but it is most likely that it incorporated Yoqne'am and Megiddo. The province of Samaria, well-attested as an administrative unit from contemporary biblical sources (Ezra, Nehemia), as well as from the Elephantine documents, Josephus and the Wadi ed-Daliyeh papyri (Cross 1974; Stern 1990b and references therein), was bordered by the province of Judea on the south, but its northern borders are not well defined. The Phoenician coastal cities (e.g., Aradus, Sidon, Tyre) secured a significant degree of autonomy and were not incorporated in provinces, but they were subordinate to the Persian sovereign (Briant 1996:505–506). The subordination of the coastal cities of Dor and Jaffa and the wheatland of the Sharon to Sidon in the fifth century BCE is evident from the inscription of Eshmun'ezer, king of Sidon (Gibson 1982:105–114) and Pseudo-Scylax, the fourth century BCE Greek geographer who refers to Dor as a 'Sidonian town' (Muller, *Geog. Graeci minor* I:79). It has also been suggested that Dor was a province in its own right and that special commercial rights were granted to Sidon by the Persian overlord (Stern 1990a:222). The site of Naḥal Tut was situated at a strategic location along one of the main north–south routes linking Damascus with Egypt. On a local level, the complex was located on the west–east road linking coastal Dor to the Galilee and the Jezreel Valley. Against the conjectured background outlined above, and taking into account the geography of the region, it is possible to propose that the Naḥal Tut site was located at the easternmost extent of the agricultural hinterland of Dor and at the western boundary of the province of Galilee though it is not possible to ascertain to which of the two political and administrative units it belonged.

The Plan and Function of the Naḥal Tut Complex

The Naḥal Tut complex was constructed at a vacant spot at this strategic location. The building was a planned and well-fortified

public structure that could only have been erected by a ruling power. The plan of the complex conforms to a basic square fort plan with a large open central courtyard defended by reinforced casemate walls and corner towers. The casemate walls were at least two stories high and the space between the walls was subdivided into rooms. The closest Persian-period parallel is a smaller fortress that was excavated 2 km north of Ashdod (Porath 1974). This is a square building (29 × 29 m) with four corner towers and a mud-brick casemate wall around an open courtyard (16 × 16 m). The casemates were of varying sizes. The eastern wing of the fort has a double room divided by a partition wall and two small rooms flanking the double room, in a strikingly similar plan and dimensions to the Naḥal Tut complex. The fortress is dated on the basis of the pottery to the fifth–early fourth centuries BCE. The fifth century BCE town at Tel Megadim II has a similar fortification system, with a casemate wall enclosing a rectangular area (c. 130 × 170 m). The fortification concept is similar to that of Naḥal Tut, and the dimensions of the casemate wall similarly comprise large rooms flanked by smaller rooms (Broshi 1993:1001–1002). The plan of the fortress of Stratum PB at Shiqmona is unfortunately not sufficiently clear. There are two smaller Persian-period fortresses with a similar architectural concept of a courtyard surrounded by casemate rooms at Ḥorbat Mesora, adjacent to Naḥal Besor (21 × 21 m; Cohen 1985) and Tell es-Sa'idiyeh in the Central Jordan Valley (22 × 22 m; Pritchard 1985:60). A recent attempt to attribute several fortresses of this type from the Levant to the mid-fifth century BCE and to interpret them all as 'the imperial response to the strategic challenges presented by the Egyptian revolt' lacks solid reasoning (Hoglund 1992:165–205, esp. 203). Square or rectangular complexes with casemate walls and at least four corner towers around a central courtyard also existed in the Iron Age Levant. Examples include the ninth-century BCE enclosure at Tel Yizre'el in northern Israel (Ussishkin and Woodhead

1994), the Iron II fortress at Qadesh Barne'a (Cohen 1983) and the ninth–seventh centuries BCE fortress at 'En Hazeva in the Negev (Cohen 1993:593–594). By contrast, there is no evidence prior to the Hellenistic period for square or rectangular complexes with casemate walls and corner towers in Greece or Asia Minor where irregularly shaped fortresses were built at sites exploiting natural irregularly-shaped cliffs and defenses (Lawrence 1979; Adam 1982). The earliest example of a rectangular fort (though with a solid wall) from the Greek world is the late fourth-century BCE rectangular fort at Theangela, Caria (Lawrence 1979:138, 179, Figs. 31, 441, n. 13). The basic square or rectangular *tetrapylon* plan with four corner towers acquired canonical standing in military architecture throughout the Roman and Byzantine empires (Lawrence 1979:178).

On the functional level, the complex was a fortified regional depot for agricultural produce, including storage and large-scale milling of grain to flour. It is possible that the fort complex was initially established with an intent of providing essentials and emergency supplies for military forces.

The Duration of the Complex

The results of the excavations at the site support the conclusion that the complex was occupied for a brief period of time. No architectural changes or consecutive living floors are of evidence in any of the excavated rooms. Thus there is no reason to attribute the occupation of the site to more than one decade. Moreover, the pottery repertoire is wholly homogeneous, and, on the basis of parallels from other sites (see above), it reflects a transitory stage at the very end of the Persian period and the very beginning of the Hellenistic period (c. 350–325 BCE). The pottery repertoire is characteristically local and coastal in nature with no evidence of the Persian imperial presence and few Greek imports.

The Destruction of the Complex

The building complex was destroyed by a violent destruction, which had claimed human

victims. The walls of the building collapsed and the extent of the damage was such that neither could the contents be retrieved nor could the building be reoccupied. An absolute date for this destruction is provided by a single bronze coin of Alexander III found on the floor of the double Room 244/299, directly covered by the destruction debris. Bronze coins of this type were struck chiefly in Macedonia, but also in Asia and in Phoenician cities, between the years 336 and 323 BCE. They are rare in Israel, their use in commerce being negligible. It is most likely that this coin, found directly on the floor of the building, beneath the stone collapse of the walls, reached the site in the pocket of a Macedonian official or soldier, who was manning the site when it came under attack. The coin almost certainly did not arrive at the site during or after the attack and destruction of the complex. The *terminus ante-quem* for the destruction should thus be dated in the decade between 333 and 323 BCE. The coin, as well as the wealth of metal finds on the floor of the double room, directly beneath the violent destruction, indicate that the room had not been penetrated by the attackers, and that the contents of the room, therefore, belonged to the occupants of the complex. An additional clue to the identity of the occupants is the pair of fine hopper-rubber millstones that were in use at the time of the destruction. The geochemical examination of the basalt has clearly indicated that these fine stones were imported from the Aegean (see Segal, this volume). That invading armies transported their own equipment for milling from home is clearly supported by a speech, attributed to Cyrus by the fourth century BCE Greek Xenophon (*Cyropaedia* VI.ii.31).

The Historical Context

Caution must be exercised when attempting to reconstruct the historical context that led to the construction and the destruction of the complex. In the absence of literary documents relating to the site, the archaeological assemblage pinpoints a limited time period but the specific *sitz im leben* needs still be postulated. Against

the background of the historical and literary sources, mainly the Greek ‘Alexandrian historians’, that account the political and military events it is possible to postulate a historical context at the end of the Achaemenid Empire and the beginning of Alexander’s rule.

Plausibly, the complex was constructed at the order of Alexander III of Macedon, while he was engaged in the lengthy siege of Tyre during the winter of 333–332 BCE and was desperately in need of supplies. Greek sources indicate that during the siege of Tyre, the Phoenician coastal cities of Byblos and Sidon surrendered voluntarily to Alexander (Curtius 4.3.4; Arrian II, 16; 20, 1–3). By the time the seven-month-long siege of Tyre was completed (August, 332 BCE), most of Syria and Palestine (excluding the town of Gaza) had submitted to Alexander’s control (Arrian II 20 1–3; 26–27). The archaeological excavations at Dor lack evidence of a destruction attributable to Alexander, and rather indicate a peaceful transition into the Hellenistic period (Stern 1995a:274–275). It is feasible that Alexander’s men established and managed a fortified agricultural storage depot at this location providing the essential supplies for the army. This depot would have been built and manned by the local population ‘collaborating’ with the Macedonians, thus explaining the local plan of the building and the local pottery. This interpretation explains the establishment of the fortified complex at a vacant site, its brief occupation and the presence of the new Aegean millstones. Similarly, the Macedonian coin, found on the floor of the complex, may have been part of the salary of one of the soldiers supervising food production at the fort.

Turning to the destruction of the complex, it may be explained in the context of the revolt of Samaria, in which the Samaritans captured and burned alive Andromachus, the newly-appointed Macedonian governor of Coele-Syria. This event is dated to the winter of 332 BCE whilst Alexander was in Egypt (Curtius IV 8–10). Alexander (or Perdiccas) quelled the revolt before it spread through the whole of the country and appointed Menon to replace the

assassinated Andromachus (Curtius IV 10, 11; Arrian fails to mention this revolt). The Naḥal Tut depot may have been burned down as part of this revolt. The victims included women and children, who were among the local occupants of the depot. The establishment of a Macedonian garrison at Samaria, probably by Perdiccas during Alexander’s lifetime, would have rendered obsolete the complex of Naḥal Tut. The collapse of the Persian Empire in 331 BCE led to entirely different political and administrative circumstances.

The above explanation seems to suit the evidence extremely well. Nonetheless, it is possible to argue for the construction of the complex by the Achaemenid government in the final years of the Empire (350–333 BCE). As shown above, the plan of the complex conforms to Achaemenid structures, though through almost two centuries, provisions for the Achaemenid central administration and army were supplied in the form of royal and satrapal taxes in money and kind, ‘hospitality’, corvees and levies from the local populations (Briant 1996:399–427). There is no proof for the construction of fortified storage depots in the agricultural hinterland in the *Eber-nahari* province. Specific events that required a more centralized organization of supplies were the campaigns of Artaxerxes III to retain control of the Levant and Egypt in the years 351–341 BCE (see Briant 1996:700–706 for the historical reconstruction of events and comprehensive list of sources). Encouraged by the failure of the Persian expedition to Egypt in 351/0 BCE, Tennes, the king of Sidon, revolted in 348/7 BCE and the Sidonians ravaged the Persian military supplies (Diodorus XXVI 40–46). There is no evidence that Tennes’ rebellion may have led to reprisals on the part of the Persians (Barag 1966). Egypt was reconquered in 341 BCE, but an enigmatic Egyptian papyrus indicates a possible revolt by the rebel Egyptian Khabbash in the years 337–335 BCE, between the death of Artaxerxes III and the accession of Darius III (see references in Morkot 1991:321–336). It is thus theoretically possible that the Achaemenid

rule established the Naḥal Tut complex in its last twenty years. If the construction was Achaemenid, the destruction of the site could be attributed to Alexander’s armies. The destruction levels at ‘Akko, Tell Abu Hawam, Megiddo and Shiqmona, towns subject to Tyre, are attributed to Alexander at the time of the siege of Tyre (Stern 1995a:274–275). Though there is no solid evidence, it is possible that the site of Naḥal Tut was destroyed by the Macedonians in this context. No doubt the former interpretation carries more weight and is the more convincing.

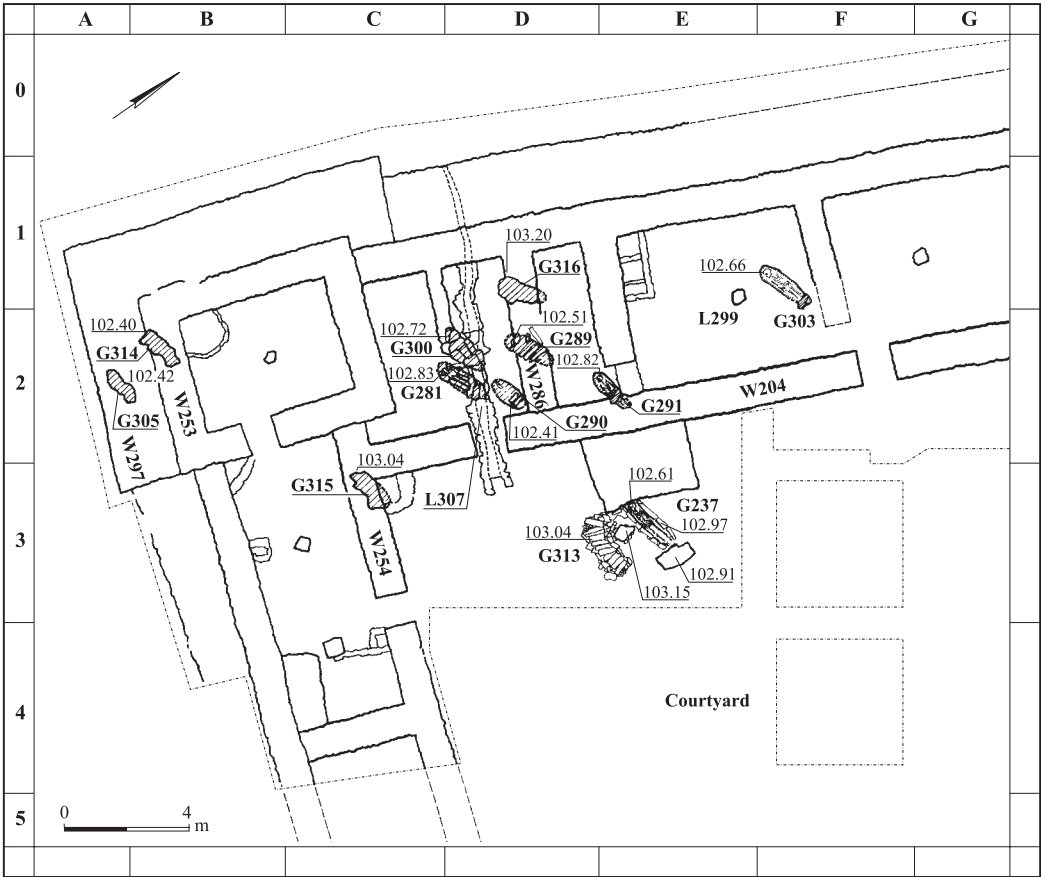
Conclusion

In summary, the attribution of the construction of the complex to Alexander at the time of the

siege of Tyre (333–332 BCE) and its destruction to the revolt of Samaria in the subsequent year (332–331 BCE) seems most plausible. Naḥal Tut then presents a rare example of a site illustrating specific historical events, providing a chronological framework for contemporaneous sites and repertoires.

THE MUSLIM GRAVES

The site was not reoccupied following the destruction of the Persian fort, apart from the later exploitation of some of the ruined walls for graves (Plan 4). Twelve graves were exposed (Table 2), concentrated in the southwestern corner of the Persian complex. Additional graves were identified on the surface, but were



Plan 4. The Muslim graves.

Table 2. The Muslim Graves

Grave No.	Construction of Grave	Stone Slab Covers	Orientation, Position, Gender and Age of Deceased	Accompanying Grave Goods
G237	Upstanding stones on bedrock	7 slabs	W–E on back side, well-preserved, face to south; female, 20–25	-
G281	Using drain L307 and small upright stones	4–5 slabs; incised headstone	W–E, on right side, well-preserved, face to south; female, 20–25; male, 30–40	4 bracelets, 1 ring, bone spatula
G289	Dug into W286	4 large slabs; incised headstone?	W–E, on back side, well-preserved, face to south; gender unknown, 30–35	-
G290	Dug into corner of W204 and W286	2 slabs; incised headstone	W–E, scanty bones	-
G291	Dug into corner of W204 and W308	1 slab	W–E on back side, partially preserved, face to south; female, 20–25	-
G300	Dug into W308, not fully excavated		W–E, at least two deceased—one 40 years old and a child	
G303	Dug into stone collapse of Room 299	1 slab; incised stone over feet	W–E, on back side, well-preserved, face to south; effeminate, >30	-
G305	Dug into W297, not fully excavated		W–E, male, 22–30	
G313	In courtyard next to G237, not opened	11 slabs	W–E	
G314	Dug into W253, not excavated		W–E	
G315	Dug into W254, not excavated		W–E	
G316	Dug into W286, not excavated		W–E	

not uncovered as they lay beyond the limits of the excavation. Of the 12 graves, eight were excavated, the others remaining sealed. Most of the graves exploited the ruined walls of the storage complex, once the floors of the building were covered by fill, at least 0.5–1.0 m deep. The graves were formed by removing a few stones from the side of the wall and inserting the corpse into the created space. A stone or two were replaced, often upstanding, to close the side of the grave. In some cases, where the corpse was not covered by an upper layer of stones from the original wall, a row of flat stone slabs was placed over the grave. Grave 303 was dug into the stone collapse of the storage complex, employing stones from the collapse rather than from walls. Two graves (G313, G237) were constructed on the bedrock in the courtyard and were built against the stone platform of upstanding stone slabs placed on the bedrock (Fig. 65). The graves were covered by

a row of large flat stone slabs. Grave G313 was covered by 11 slabs, the adjacent grave G237 by only seven (Fig. 66). Four of the graves had an incised slab with similar markings (Fig. 67). In two cases the incised slab was placed over the head (G281, G290), and in the other two, over the feet (G289, G303). Similar incisions were observed on grave stone slabs at Horbat Bet Ha-Gadi by N. Lalkin (1999:82*, Illustration 105: Fig. 147). These incisions were probably tribal markings, a system employed in the Levant and other parts of the world by tribes to mark their herds. The deceased were placed on their backs

Fig. 67 ▶

No.	Reg. No.	Locus	Description
1	2398	303	Limestone
2	2382	289	Limestone
3	2237	290	Limestone
4	2395	281	Limestone



Fig. 65. Graves G237 and G313.



Fig. 66. Stone slabs covering G237.

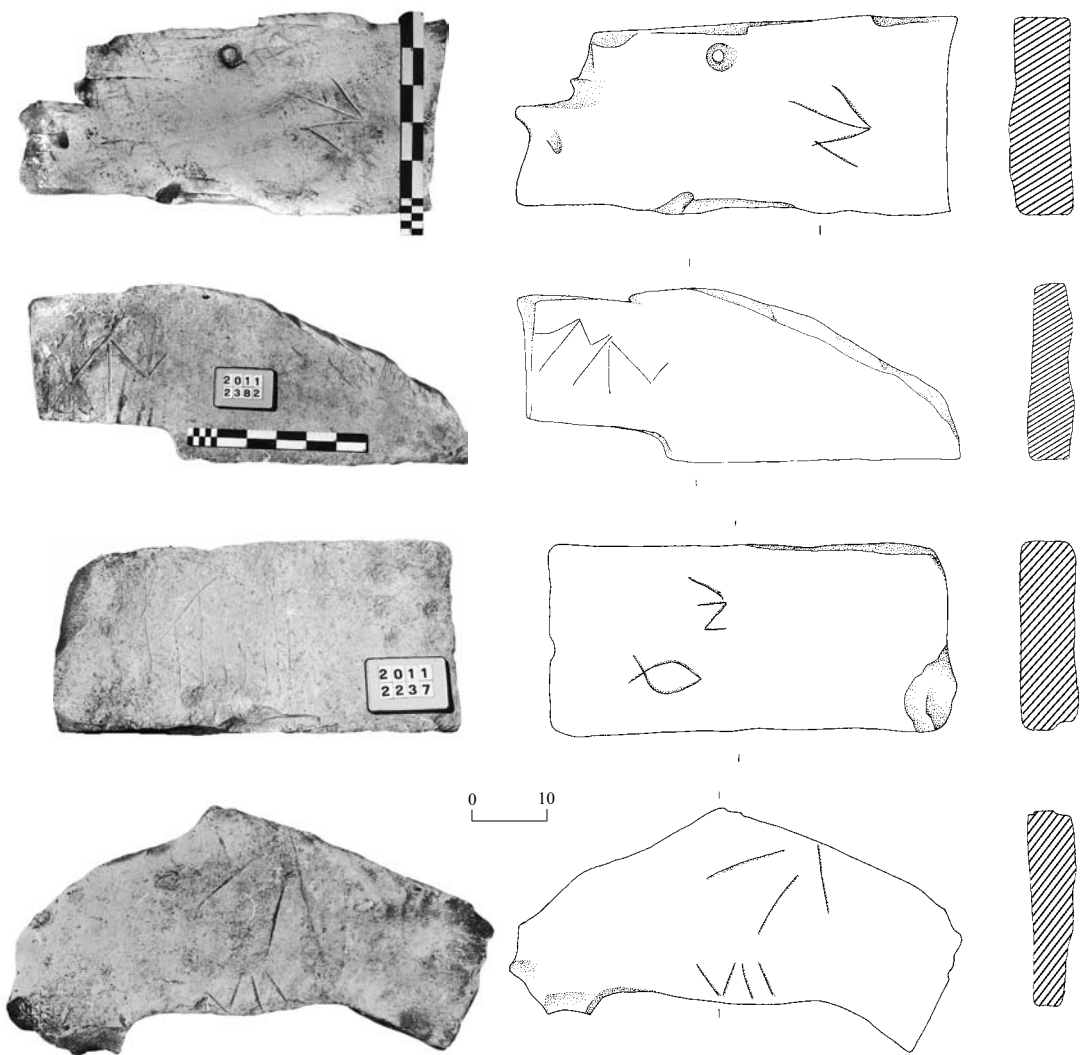


Fig. 67. The incised gravestones.



Fig. 68. Skeleton in G237.



Fig. 70. Grave 291.



Fig. 69. Skull in G237.



Fig. 71. Grave 281.

or on their right side, in a west–east orientation, facing south (Figs. 68–71).

The Grave Goods (Fig 72)

Few finds accompanied the burials, merely a number of tiny glass fragments, as well as four bronze bracelets, a bronze ring and a simple bone spatula accompanying the young woman in G281. The mold-cast bracelets are small with a diameter of 6–7 cm, and thus may have belonged to a young girl. Three of the bracelets were decorated with diamond shapes in relief,

separated by delicately incised lines (Fig. 72: 1–3). A fourth bracelet and the ring had spiral or twisted decoration (Fig. 72:4). Bracelets with similar spiral designs were found in the Muslim cemetery at Tel Mevorakh (Stern 1978: Pl. 46:2), at Tell el-Ḥesi (Eakins 1993: Pl.89) and in the Khirbat Shatta hoard (Kool and Arav 1997: Pl. 19:3). The bracelets thus belong to the Islamic world, but the dating could not be established firmly and they may be of Mamluk date or even later (Naama Brosh, pers. comm.).

Anthropological Remains

Some of the skeletons were in an unusually good state of preservation (see Table 2). They were all adults (20–40 years old): three male and three female. Four of the skeletons portray distinct African characteristics, with long narrow skulls (dolichocranic), short

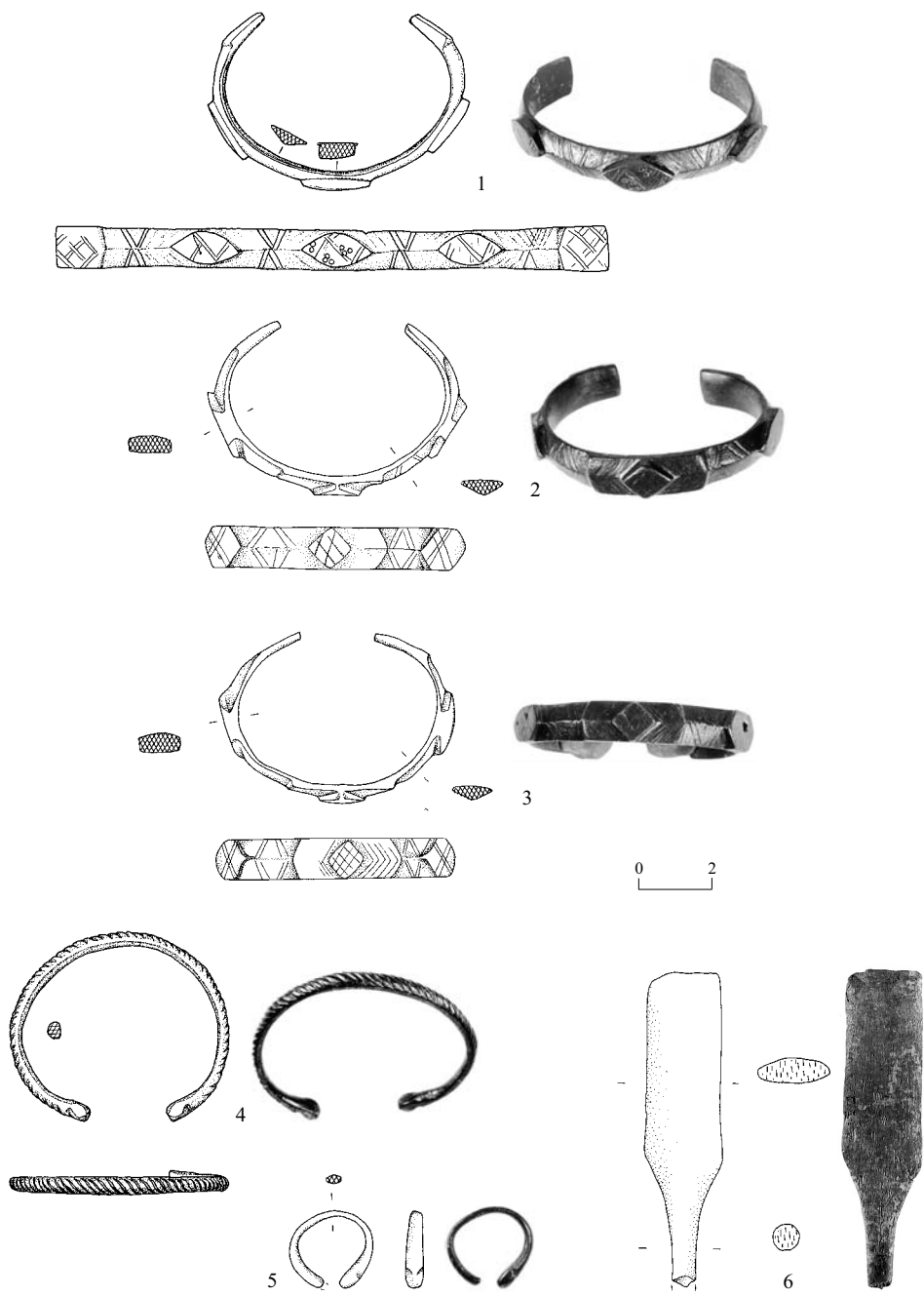


Fig. 72. Finds from Grave 281.

No.	Object	Reg. No.	Description	No.	Object	Reg. No.	Description
1	Bracelet	2400	Bronze	4	Bracelet	2401	Bronze
2	Bracelet	2403	Bronze	5	Ring	2304	Bronze
3	Bracelet	2404	Bronze	6	Spatula	2405	Bone

broad noses (platyrrhiny) and blunted, down-turned lower nose margins (nasal guttering). The hard palettes are relatively deep and the facial prognathia is large. These characteristics point to a population with clear African traits, possibly of African origin. One of the skeletons has a short broad skull and a sharp nasal sill, characteristic of Caucasian populations.

Chronology and Conclusions

The stratigraphy indicates that the graves post-date the storage complex considerably. The orientation of the faces to the south indicates that the burials were of Muslims, also corroborated by the Islamic dating of the bracelets. The anthropological data and the tribal markings point to a Bedouin population.

NOTE

¹ The excavations were directed by Yardenna Alexandre, and the area supervisors were Nimrod Getzov, Hanaa Abu 'Uqsa and Danny Syon, who also took the field photographs. The field plans were drawn by Avi Hajian and Valentin Shorr, with the assistance of the author's father Stephen Rosenberg; the final plans were drafted by Valentin Shorr and Elizabetha Belashov. The pottery was restored by Leea Porat and drawn by Gila Midbari and Hagit Tahan, who set up the pottery plates. The metal objects were processed by Ella Altmark and the staff of the Israel Antiquities Authority Metallurgical Laboratory. Geochemical analysis of the basalt millstones was by Dr. Irina Segal of the Geological Institute. The finds were photographed by Tsila

Sagiv and Clara Amit. The anthropological remains were studied by Dr. Yossi Nagar, the animal bones by Dalia Hacker. The numismatic evidence was studied by Danny Syon. Samples of the pottery were analyzed petrographically by Amir Gorzalczy. With the exception of Hacker, Rosenberg, and Segal, the participants are employees of the Israel Antiquities Authority.

The author was assisted in the processing of the material by Karen Covello-Paran (Middle Bronze Age pottery) and Dr. Eitan Ayalon of the Land of Israel Museum, Tel Aviv (iron artifacts). Some sections of this manuscript were read and commented on by Professor Oded Lipschits of the Tel-Aviv University. Sincere thanks are due to all.

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