Salvage Excavation Reports

No. 10

Sonia and Marco Nadler Institute of Archaeology Tel Aviv University

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FOREWORD

It is no simple challenge to bring together the work of dozens of excavators of over 20 diverse salvage excavation sites and weave their field work and analyses into a unified report. Yet here, after long and concerted effort by a wonderful team, we are proudly able to present reports of 20 salvage excavations from different periods, from different parts of the country, and from both rural and urban areas, all between the covers of one volume —all conducted under the auspices of the Institute of Archaeology of Tel Aviv University and the Israeli Institute of Archaeology and Ramot Archaeology. Most of the reports were written by the excavators themselves; a small number were written by researchers of the Institute of Archaeology.

I extend my gratitude to the director of the Institute of Archaeology of Tel Aviv University, Prof. Oded Lipschits. He recognized the importance of this volume in the Salvage Excavation Reports Series and spared no effort, despite the difficulties involved, and provided us access to all the Institute's technical and intellectual facilities. I also wish to thank Nirit Kedem, the administrative director of the Institute, who helped in every way possible to promote the project.

I thank Dr. Alon Shavit, head of the Israeli institute of Archaeology, for supporting the excavations and the very complicated publication and his staff, Efrat Ashraf, director of budgets and manpower, and Boaz Gross, head of Qardom- Archeological Excavations, for all their support and assistance from the outset of the project.

Processing of the material and preparation for publication of the final report was done in the laboratories of the Institute of Archaeology of Tel Aviv University. Restoration of the ceramic material was done by Yafit Wiener and Shimrit Salem. The finds, including pottery, stones, glass and metal, were drawn by Yulia Gottlieb, Itamar Ben-Ezra, Ada Perry and Na'ama Earon. Plates were arranged by Yulia Gottlieb. Maps and plans were produced for publication by Ami Brauner, Shatil Emmanuilov, Itamar Ben-Ezra and Noa Evron. All Photographs of the artifacts were taken and processed for publication by Pavel Shrago.

The scientific content of the manuscript was carefully edited by Dr.Meir Edrey, Prof.Ze'ev Herzog and Prof.Moshe Fischer.

Finally I wish to thank Myrna Pollak, director of publications of the Institute, for the English editing of the manuscript and supervision of editing and production throughout all stages. Noa Evron is responsible for the attractive graphic layout. Their efforts are gratefully acknowledged.

Efrat Bocher , March 2017

CHAPTER 1

ARD EL-SAMRA: A CHACOLITHIC, EARLY BRONZE AND INTERMEDIATE BRONZE AGE SITE ON THE AKKO PLAIN

Assaf Nativ, Ron Shimelmitz, Lidar Sapir-Hen, Inbar Ktalav and Mark Iserlis

Ard el-Samra is a multi-period site located on the eastern fringes of the Akko Plain at the base of the of the Upper Galilee mountains (Fig. 1.1). It stretches over a distance of more than 800 m, beginning approximately 200 m south of Tel Bira and spreading eastward along the foothills of the Western Galilee mountains, ending some 100 m before Nahal Hilazon. In anticipation of the widening of Route 70, a salvage excavation was conducted at the eastern end of the site on behalf of the Sonia and Marco Nadler Institute of Archaeology of Tel Aviv University. This excavation, along with a number of others conducted along the route, uncovered remains dating from the Pre-Pottery Neolithic through to the Intermediate Bronze Age (Getzov *et al*. 2009; Barzilai 2010; Getzov 2011).

Two excavation areas were opened at the site approximately 80 m distance from each other (Fig. 1.2). Excavation was conducted in 4 × 4 m trenches, separated by 1 m baulks for the maintenance of stratigraphic control. Whenever the baulks seemed to obstruct proper understanding of architectural or other features they were partially or wholly removed. All pits, floors and other well defined contexts were sieved; otherwise sieving was only selectively applied. Loci numbers were selectively assigned to features and fills only when their anthropogenic origin was beyond doubt (Appendices 3 and 4); otherwise only basket numbers were employed, carefully registering their provenance and elevations (Appendices 1 and 2).

STRATIGRAPHY

AREA Z

Area Z (labelled Area E in Getzov *et al*. 2009) consists of nine 5 × 5 m trenches and covers an area of 225 sq m. Four archaeological strata were identified. Strata I and II were dated to the Intermediate Bronze Age. Stratum III consists of eroded deposits containing Intermediate Bronze Age and Early Bronze remains, and Stratum IV is dated to the Chalcolithic period.

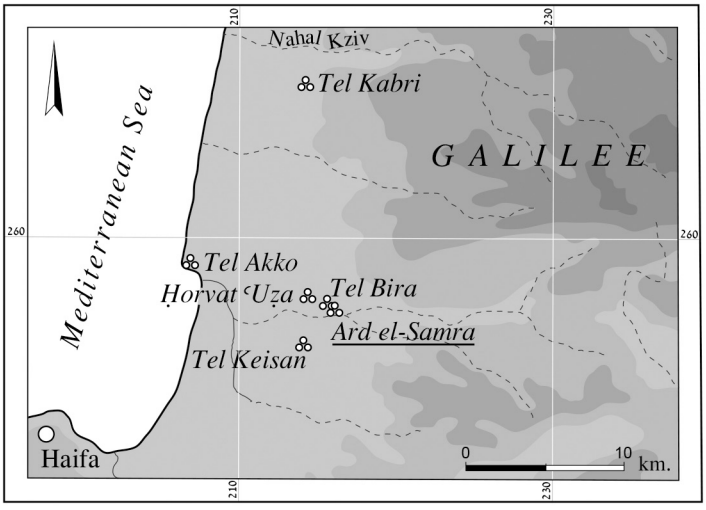

Figure 1.1: Site map.

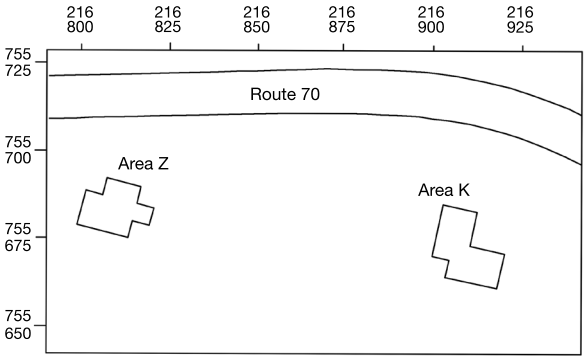

Figure 1.2: Map of excavation areas.

Stratum I

Stratum I consists of the fragmentary remains of architectural features, installations and floors (Fig. 1.3). These features were superimposed by a dark brown topsoil layer, with which several recent disturbances are associated. For the most part these include ploughing, which may be responsible for a great deal of the fragmentation of the stratum, and a modern trench excavated in the western sector of the area (Locus 100) in which a ceramic pipe was laid, cutting through archaeological deposits.

The thickness of the Stratum I deposits is difficult to ascertain. It is probable that a considerable portion of it was removed by ploughing and erosion. Often the architectural remains of Stratum I were observed to superimpose a yellowish sediment that apparently derived from the deterioration of mudbricks. This sediment is generally associated with stratum II below, but at times it seems to superimpose the remains of Stratum I as well, possibly suggesting that both strata were involved in similar sedimentological processes.

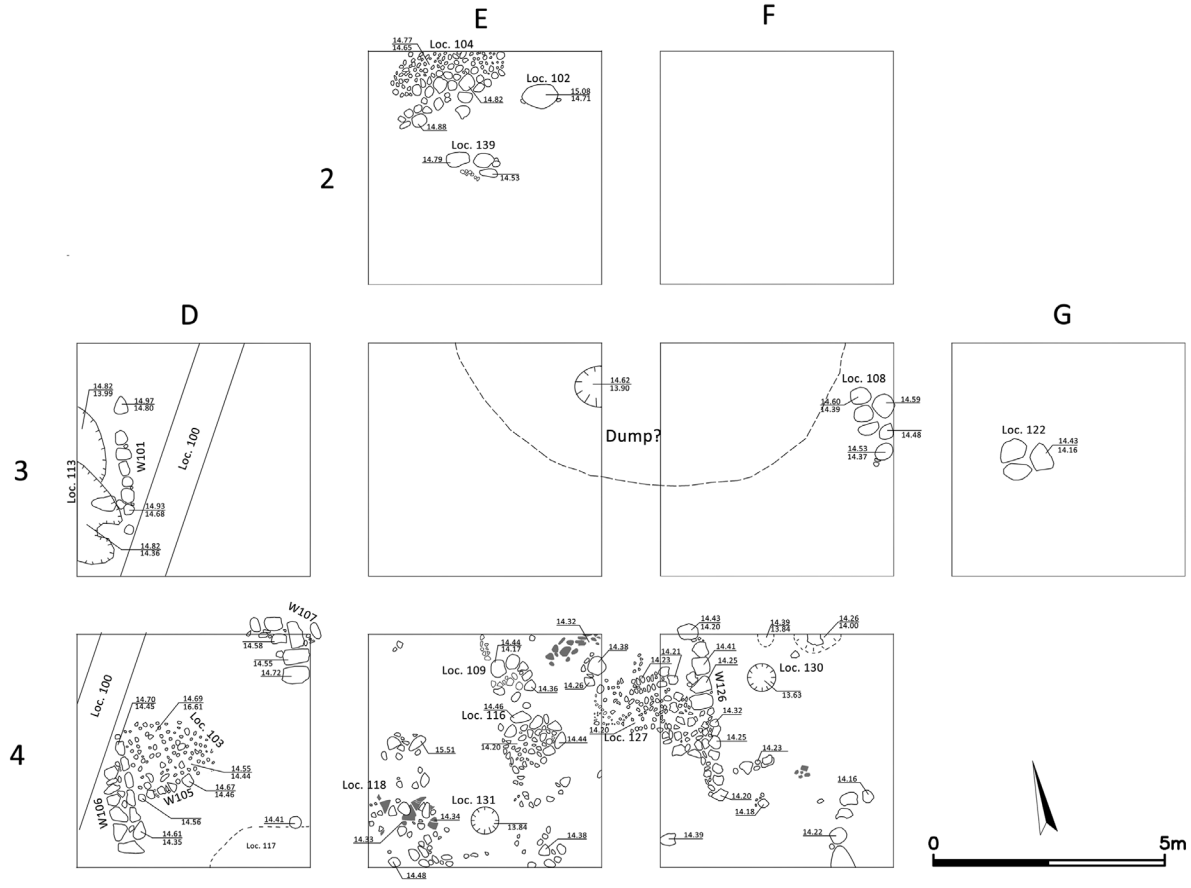

Figure 1.3: Plan of Area Z Stratum I.

The fragmentary remains of at least three, and possibly as many as four or even five, structures were uncovered in Stratum I. These include:

a. *Wall 101* in Square D3, which consisted of a single course of fieldstones that clearly sloped southward. No floor or surface could be associated with it. Two pits (Locus 113) situated to its west in very close proximity may have predated it. A single stone oriented perpendicular to the wall near its southern end hint at another adjoining wall, which also clearly superimposes the pits.

b. *Walls 106, 105 and Surface 103*. These are located in the middle and southwestern portion of Square D4. Wall 106 is comparatively substantial and consists of two rows of fieldstones, preserved to a height of one course. It is abutted from the east by Wall 105 that consists of a single row of fieldstones. A surface paved with small, angular stones marked the floor between the two walls (Locus 103). Wall 105 was observed to have superimposed Floor 103, indicating that it constitutes a later structural addition (Fig. 1.6). Another point of interest is that Locus 103 contained a fairly large amount of weathered Early Bronze Age pottery, probably collected together with the stones.

Wall 107 at the northeastern corner of the square might have been part of the same complex. Although it is not entirely clear, it may have been a corner that complemented Wall 106. It is worth noting that two construction methods appear to be involved. The north–south part of the wall was constructed of fairly large oblong fieldstones, whereas the east–west portion was built much like Wall 106, with two rows of stones.

c. *Wall 126 and Surface 127.* These features are located in the southeastern section of the area. Wall 126 consists of a single-course stone wall oriented roughly north to south. Two modes of construction were noted. The northern part of the wall is composed of relatively large fieldstones arranged in a single row, whereas the southern part consists of two rows. Slightly larger stones were used for the eastern face of the latter whereas smaller ones were used for the western. A small stone surface (Locus 127) abuts the wall from the west, reaching into Square E4. It is of note that the northern portion of the surface incorporates two parallel rows of small stones, 0.65 m long and 0.3 m wide, which may have constituted an architectural feature within the surface.

d. *Stone Surface 104*. In the northern section of Square E2, a stone surface was uncovered. It was composed of fieldstones of various sizes. The larger ones are located in the surface's southern portion whereas the smaller ones tend to cluster in the northern part. Although no clear distinctions can be made it is not improbable that these represent remnants of irregular walls and an adjoining stone surface.

Other than built stone surfaces, noted above, surfaces of activity zones have been recognized throughout the area, marked by installations and clusters of horizontally deposited artifacts. One form of installation that has been encountered repeatedly across the site consists of several medium to large fieldstones grouped together to produce an even upper surface. Three such features have been recorded in Stratum I of area Z: Locus 108, Locus 122 and Locus 139. Only Locus 139 had any definite association with another architectural feature (Surface 104, 1 m to the north); the remaining two are situated at the eastern end of the area, and seem to suggest a closer link with each other than with any of the other features. It is probable that these features were used in communal activities, or at the very least in activities that were practiced in the open. Unfortunately, nothing was found with these installations that might suggest their function. It is not unlikely however that they were multi-functional working surfaces that were used for a range of purposes.

A markedly different kind of space is represented by the tightly clustered finds and installations in Square E4, sandwiched between the architectural features to the east and west. Numerous pottery sherds were found laying on the surface. At times they were found beneath stones which may have fallen or were dropped on them (Fig. 1.7). In the northeastern corner of Square E4

and stretching further to the north and northeast a large concentration of fired rough clay fragments were recovered. They were fairly flat and no signs of curving could be observed. Their outer face was uneven and roughly smoothed while their inner face bore various impressions, sometimes identifiable as vegetal material, apparently reeds and small branches (Fig. 1.8). These seem to represent the remains of a free standing mud plastered installation that was supported on an organic skeleton. Given their distribution it is probable that it was situated north of the structure of Wall 126 and Surface 127, perhaps associated with Installations 108 and Locus 122.

Among the pottery and installation fragments scattered over the surface in Square E4, two stone built installations were recorded. Locus 109 near the northern section is a semicircular feature, the outer rim of which was constructed of medium sized stones while the interior was paved with smaller stones. It is possible that the installation originally consisted of a complete circle that was dislocated by modern field cultivation. A scar produced by a plough was seen to cut through the area and appears to have cut through Locus 109 (Fig. 1.9).

Locus 116 is located only 0.4 m south of Locus 109. It is a roughly circular feature approximately 1 m in diameter. Its outer wall, especially the northern part, is composed of larger stones than the remainder. Some of the stones were brittle and tended to disintegrate, whereas others were fractured, probably indicating that they had been subjected to heating (Fig. 1.9). It can therefore be suggested that this installation functioned as a hearth.

A small pit was also recorded here, located in the southern part of Square E4 (Locus 131). It was approximately 0.5 m in diameter and 0.3 m deep. A number of small stones were found at its base, above which fragments of several vessels were deposited (Fig. 1.10).

Evidence of surfaces in other parts of Area Z was very scarce, limited to an occasional cluster of sherds (e.g., east of Wall 126) and pits (e.g., northern part of Squares F4 and E3).

It is interesting to observe that despite the fair density of architectural and other features, the center of the excavated area was fairly empty. With the exception of Locus 108 at their eastern end, Squares E3 and F3 are essentially featureless. Yet in the northern portion of these squares loose pale yellowish-brown sediment containing a considerable amount of pottery and stones was noted. The precise contours of this accumulation are difficult to determine although a rough estimation is offered in Fig. 1.3. Given the loose nature of the sediment and the large concentration of finds, it is probable that we are looking at an intentional fill, possibly for constructional or clearance purposes. In view of the relative paucity of finds and features noted for Stratum II (see below), it is probable that some of it was removed by clearing and/or levelling activities prior to the establishment of Stratum I. Accordingly, the feature in question represents an accumulation of Stratum II material from the adjacent area.

Although ambiguous, the stratigraphic sequence, as represented in the section, seems to support this hypothesis. In section this accumulation looks like a fairly discrete block, located directly below topsoil and superimposing the accumulations of Stratum III (Fig. 1.4). It is also cut by a pit which probably originates from Stratum I. Stratum II, however, is practically not represented (other than the end of structure Locus 140), which can be attributed to levelling activities. If correct this implies that the architectural and other features uncovered were built around a small open area into which the residue of the previous occupation was drawn.

Stratum II

The deposits of Stratum II are often associated with a 0.3–0.6 m thick accumulation of relatively fine yellowish sediment. It is generally thicker to the north and thins towards the south. In the southwestern part of the area, deposits of conglomerate were recorded at the base of the stratum, indicating fluvial depositional and erosive processes (Figs. 1.5; 1.11).

Compared to the succeeding Stratum I, the remains of Stratum II were sparse (Fig. 1.12). The most remarkable feature is that of Locus 140, located at the juncture of Squares E3–4

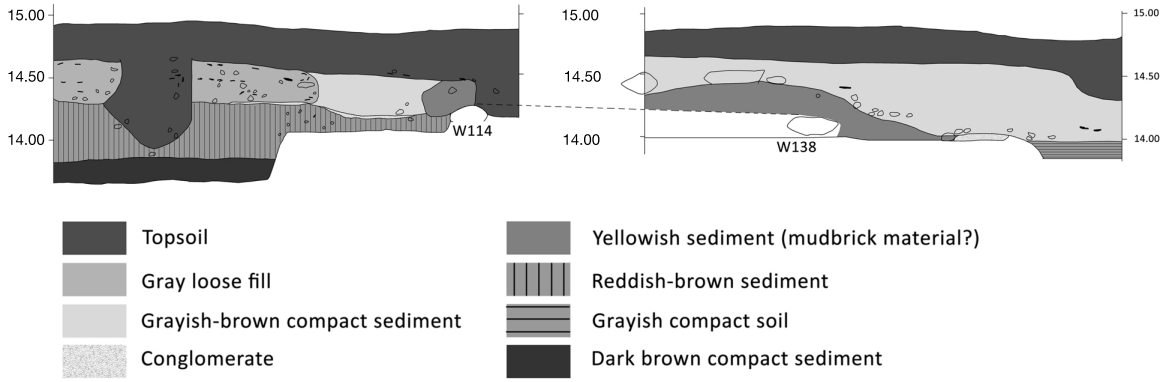

Figure 1.4: Squares E3–4, east section.

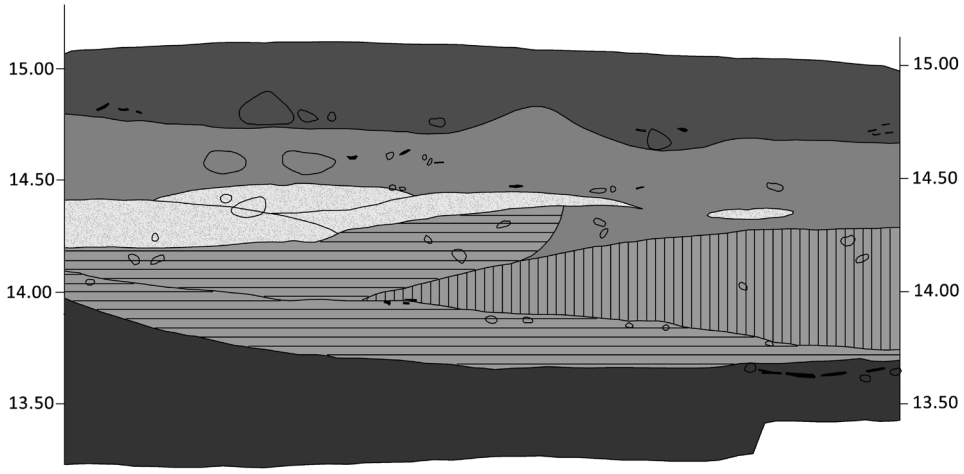

Figure 1.5: Square D3, east section.

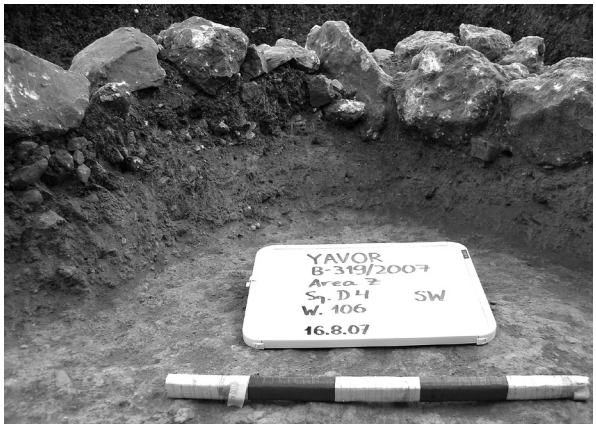

Figure 1.6: Wall 105 (left) abutting Wall 106 (right) and superimposing stone Surface 103. Note also the yellowish sediment below them.

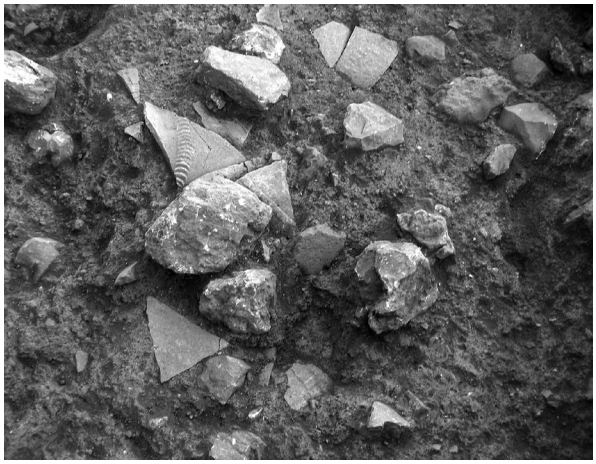

Figure 1.7: Detail of Locus 118, looking east. Note stones on top of smashed pottery sherds.

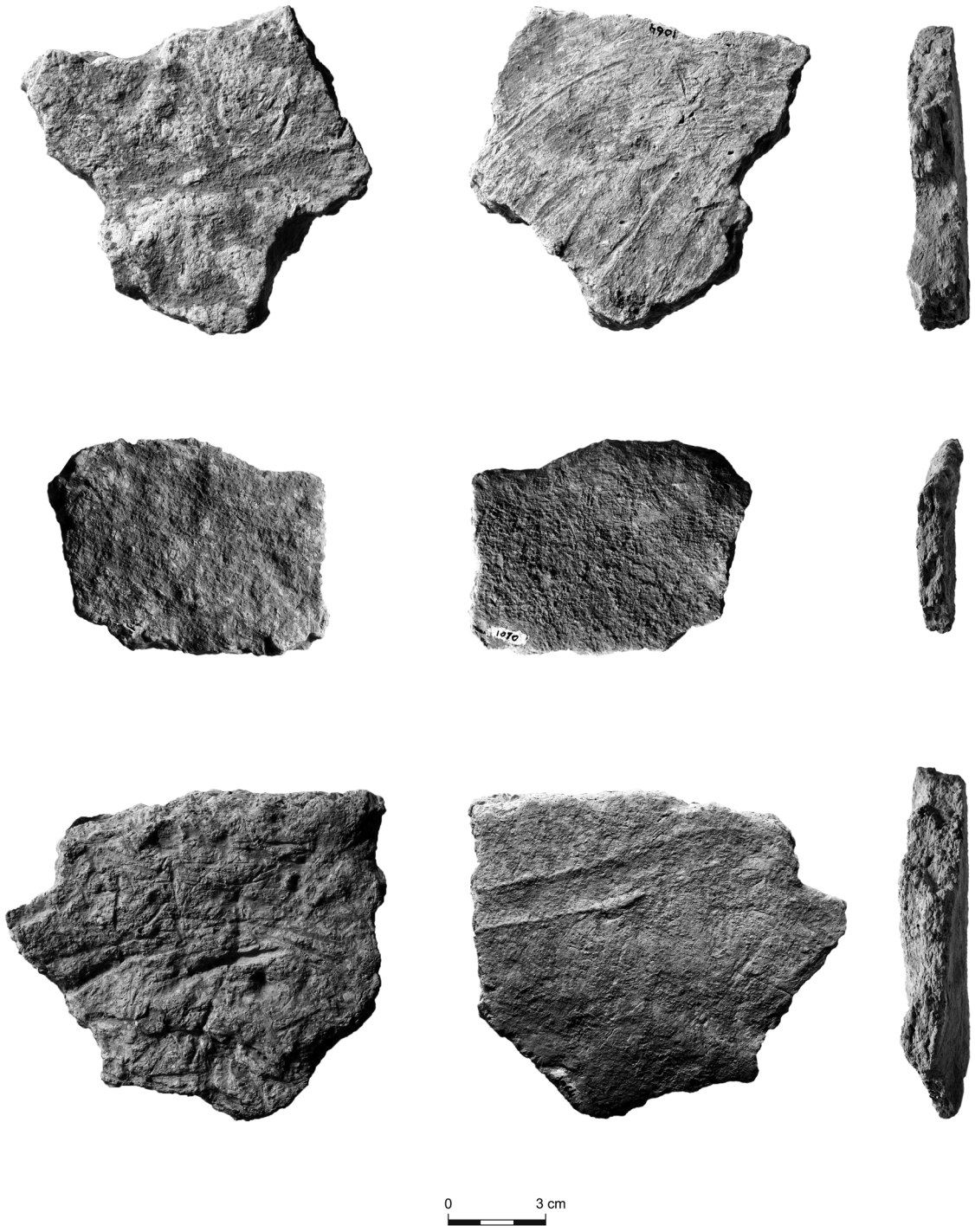

Figure 1.8: Exterior and interior face of mud plaster fragments (photo by Pavel Shrago).

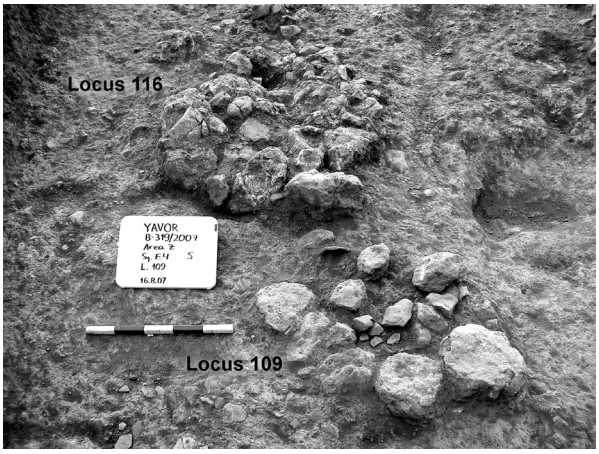

Figure 1.9: Stone installation Locus 109 (front) and Locus 116 (back), looking south. Note fractured and disintegrated stones of Locus 116. Note also scar of plough on the left side of Locus 116.

Figure 1.10: Section through pit Locus 131, looking west.

and F3–4. It consists of two well-built walls (W114 and W138) and a stone paved floor (Locus 140), representing the northwestern corner of a structure. The two walls are interconnected and were constructed as a single unit. They are built of two rows of stones of different sizes: the larger stones were used for the outer face, while the smaller ones were used for the inner face, a pattern that was more pronounced in Wall 114 than in Wall 138. The floor was paved with large and medium sized fieldstones. To the west of the building, a stone mortar was set against Wall 138 (Locus 120; Fig. 1.13). It was fractured in three

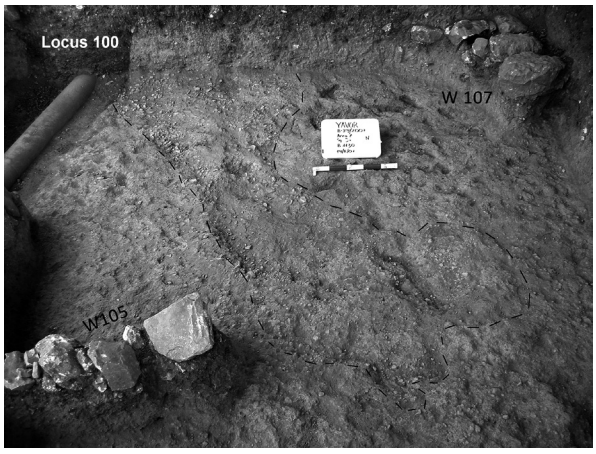

Figure 1.11: Square D4 looking north, showing area with fluvially deposited conglomerate at the base of yellowish sediment.

places and had a geode inserted into it, perhaps as a symbolic sealing of its function.[1]

Another seemingly built feature was recorded in the northern part of the area (Locus 111). It is an elongated surface composed of small angular fieldstones that stretches along an east-west axis. Interestingly, contrary to the natural inclination of the landscape in this area, the surface was seen to slope to the north, suggesting the presence of an artificial depression.

Other than the abovementioned two, only two more pits were recorded and assigned to Stratum II. These are Locus 110 near the eastern section of Square D3 and Locus 115 in the middle of Square E3. Very few finds were recovered from Locus 110, which was covered over by small stones (conglomerate?). In Locus 115, on the other hand, a large number of stones and pottery sherds were recovered.

Stratum III

Stratum III is an ambiguous entity. It consists mostly of reddish-brown sediment, 0.4–0.8 m thick, containing pottery dating from the Chalcolithic to the Intermediate Bronze Age, with considerable representation of EB I pottery. As a rule, the upper parts of the stratum are dominated by Intermediate Bronze Age pottery, which is gradually replaced

1 A similar practice, involving the insertion of stones into deep cavities in the rock has been recorded for the Natufian period (Nadel *et al*. 2009)

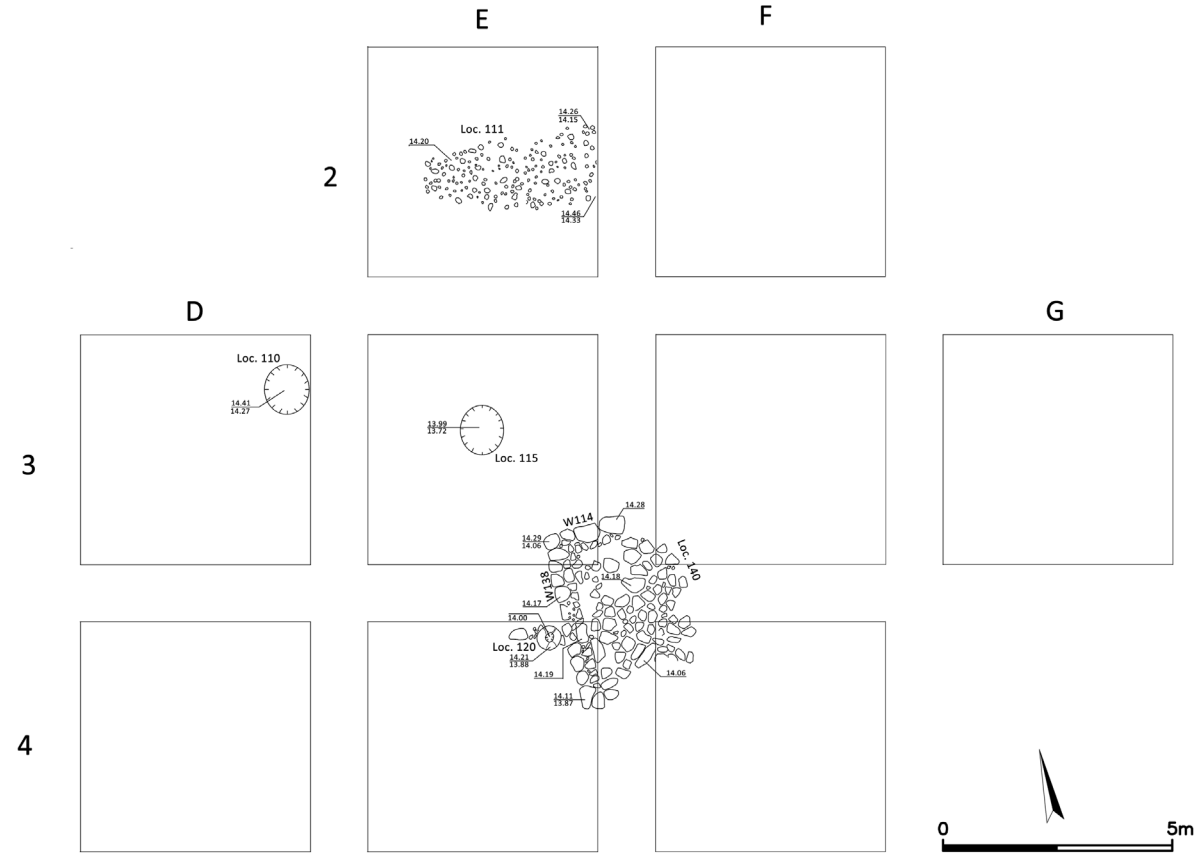

Figure 1.12: Plan of Stratum II, Area Z.

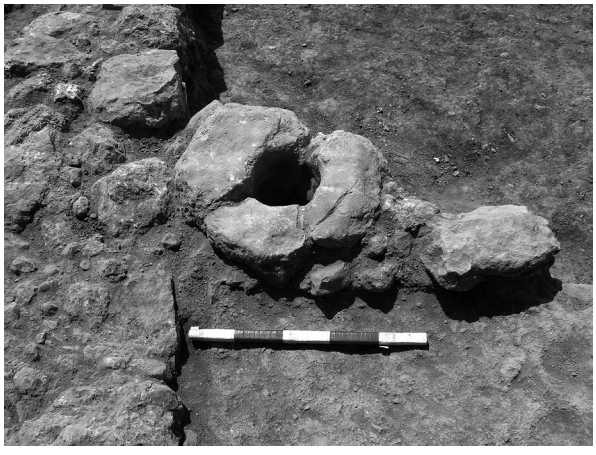

Figure 1.13: Mortar Locus 120, looking south.

with the Early Bronze Age pottery as one descends. This pattern is too consistent throughout the area for the incorporation of Intermediate Bronze Age pottery in Stratum III to be excused solely as a failure to isolate pits and other interferences originating in Strata I and II. At least some of it must have been deposited prior to the occupation of Stratum II, implying that an earlier Intermediate Bronze Age phase is present elsewhere on the site.

Moreover, the Early Bronze pottery is often eroded, indicating that it travelled some distance before it reached its final place of deposition. In view of the local topography this must have been from slopes stretching north of the present excavation. It also suggests that the sediment constituting the bulk of volume of Stratum III is mostly washed soil from the hill slopes. With this in mind, it is probable that most of the volume of Stratum III is best accounted for by the accumulation of sediment at the base of the slope between the Chalcolithic period and Intermediate Bronze Age.

This hypothesis is somewhat complicated however by several features that suggest the presence of active surfaces (Fig. 1.14). In the western part of the excavated area a flat stone slab was found in horizontal position (Locus 112). Stratigraphically, it was clearly situated below the base of Stratum II that was marked by the deposition of conglomerate (Fig. 1.5), yet relatively high in the accumulation of Stratum III. Slightly further to the east and closer to the base of the stratum a patch of small angular stones was recorded in the middle of Square E3 (Locus 125). Similar features have also been recorded in the southwestern part of Square F2 (Loci 124 and 141). Also three pits are assigned to this stratum: pit Locus 129 in Square F3, pit Locus 132 in Square G3 and pit Locus 142 in Square D3 (recognized only in section).

None of the above-mentioned features however is securely anchored in Stratum III. The pits may have been cut from the upper strata and the stone paved surfaces near the base of the stratum may in fact be residues of Stratum IV which were covered over by alluvium and the flat stone slab may have been washed down from further up the slope. Yet, taken together, these features point towards the probability of sporadic use of the area during the Early Bronze Age, when the greater part of settlement was located uphill. Some support for this is afforded by the observations that the two patches of stone paved floors in Square F2 are associated with distinct sedimentological events and that Locus 124 is apparently later than Locus 141 (Fig. 1.15). If this is indicative of a general pattern it is probable that the sporadic material remains encountered represent different activities conducted at different times at the periphery of the Early Bronze site.

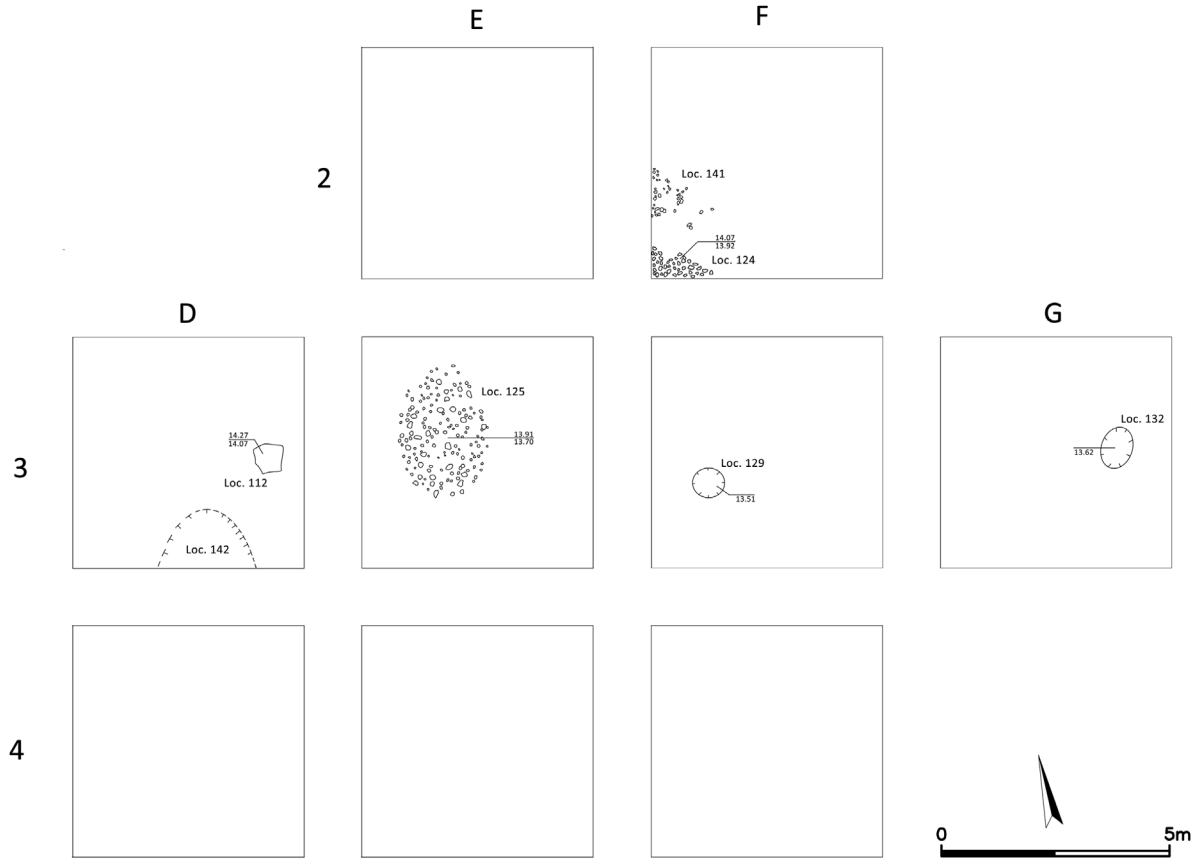

Figure 1.14: Plan of Area Z, Stratum III.

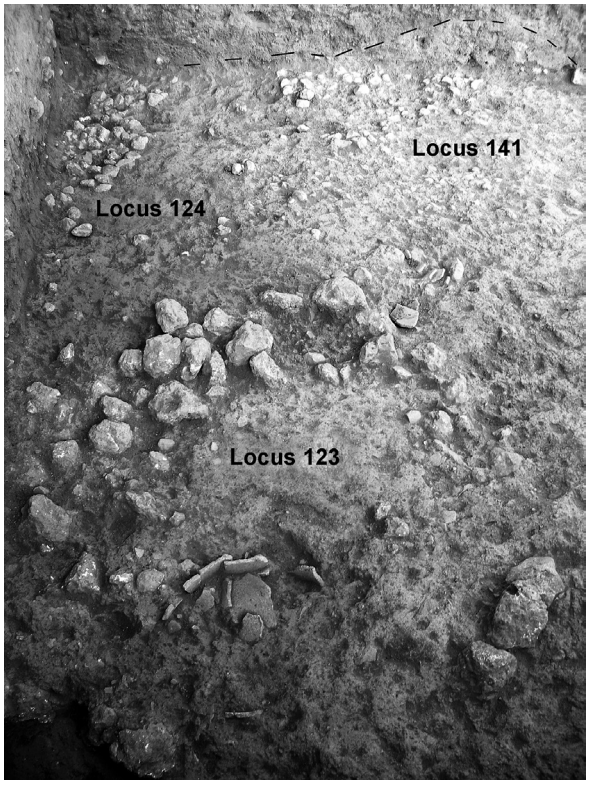

Figure 1.15: Square F2, Strata III and IV, looking west.

Stratum IV

Stratum IV represents a Chalcolithic occupation at the site. Its remains were recovered directly upon virgin soil or in pits dug into it (Fig. 1.16). In Square D3, near the southeastern corner, a pottery concentration was noted, deposited directly above dark sterile soil (Locus 121; Fig. 1.5). Less than 0.5 m to the west a pit was found (Locus 133). Although its southwestern part was cut by pit Locus 142 of Stratum III, it was readily observed that its base and at least part of its wall were lined with pottery sherds, suggesting that it was used as a stand or an installation of some sort (Fig. 1.17). It measured approximately 0.75 m in diameter and 0.5 m deep. Other than a few fieldstones and pottery fragments that are likely to have originated from its walls, the pit did not contain any particular finds.

Approximately 10 m northeast, in Square F2, two pits were recorded in very close proximity (Fig. 1.16). Near the center of the square was a small pit, approximately 0.6 m in diameter and 0.3 m deep (Locus 136). Its fill consisted of dark brown brittle soil, in which a relatively large amount of stones, pottery and bones were found. A cluster of sherds was found against its northern wall.

Immediately to the southeast, possibly cutting it, a large pit was uncovered (Locus 123). It measured approximately 2 m in diameter and 1 m deep and cut into sterile soil. The walls of the pit were lined with two rows of fieldstones that were preserved to a height of 4–5 courses, which were traced around the entire circumference of the pit, save its eastern side where a large storage vessel was found (Fig. 1.18). Two sediment layers were readily defined. Layer 2, at the base of the pit, consists of a 0.1–0.2 m thick layer of dark ash, in which several fractured/disintegrated stones were incorporated. Layer 1 above it consists of dark brown soft sediment that contained a considerable number of charcoal pieces.

The storage vessel inserted into the eastern part of the pit is clearly a later addition. It cut into the ash layer at the bottom of the pit and also seems to be responsible for the removal of the eastern part of the wall (Fig. 1.19). Indeed, a rather considerable density of stones against the northwestern side of the pit (Fig. 1.18) may very well have resulted from the insertion of the jar that pushed them aside. The dark brown soft sediment that constitutes the pit's Layer 1 superimposes both Layer 2 and the jar, thus indicating that the latter was at least partially free standing.

Only a few fragments were recovered inside the vessel proper, suggesting that it broke outwardly or otherwise that the broken pieces were removed. In this regard it is of note that the northeastern side of the jar was broken almost to its base, while its western side was preserved to a considerable height, possibly indicating that it suffered an impact from the northeast. A second episode of fragmentation is indicated by vessel fragments deposited horizontally above Layer 1 (see also Fig. 1.15). In this case they were distributed towards the northeast, suggesting that they originated from the western part of the vessel, which must still have been exposed above the Layer 1 deposits.

Based upon these observations a sequence of events can be suggested for Locus 123. It began as a stone lined pit. Given the two rows of stones used to line its sides, it should not be regarded as having a haphazard or *ad hoc* function. Rather it is more

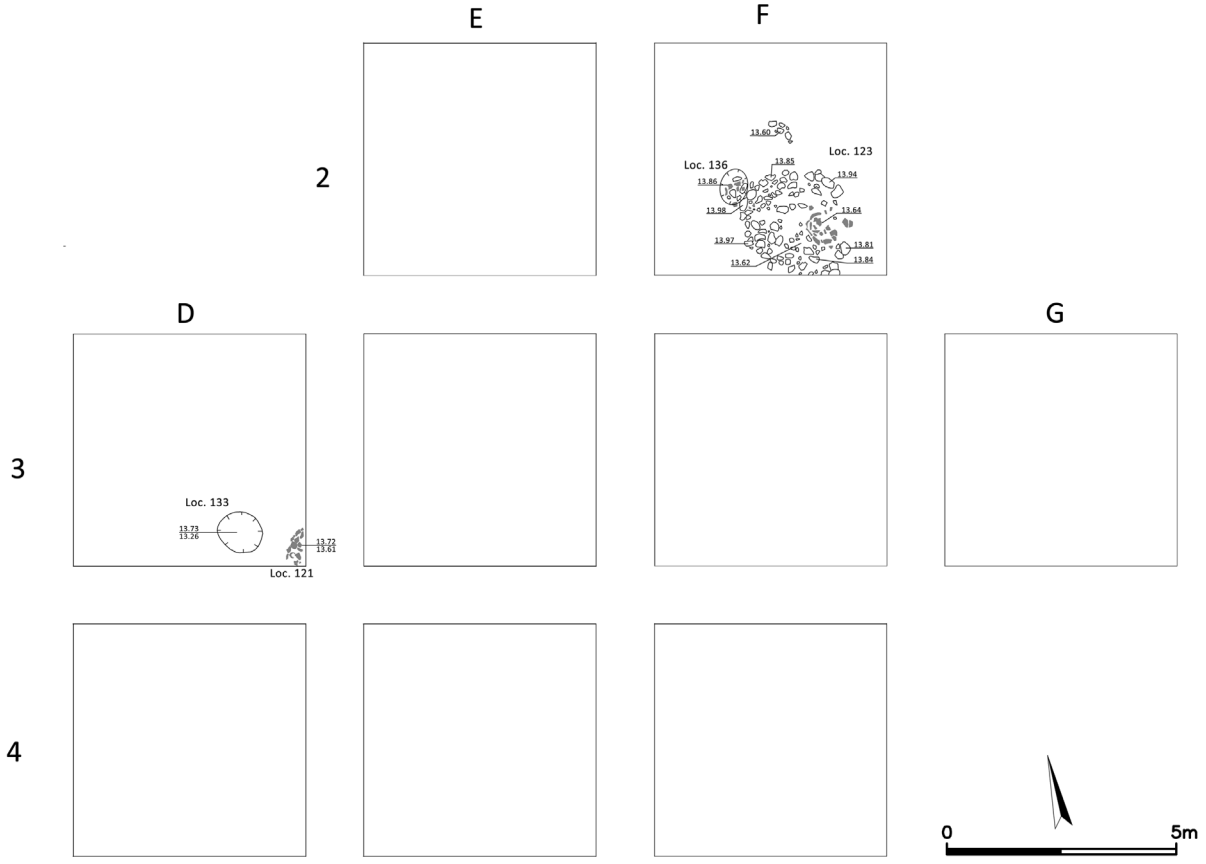

Figure 1.16: Plan of area Z, Stratum IV.

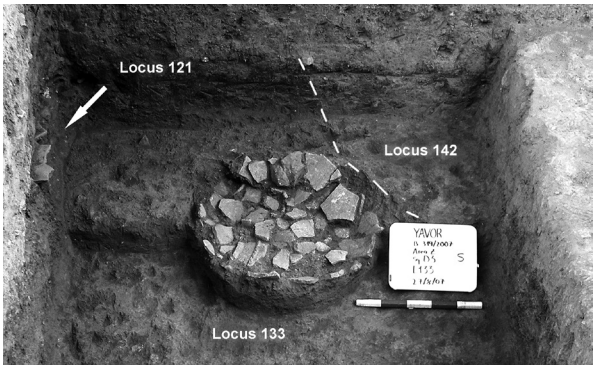

Figure 1.17: Pit Locus 133.

likely to have served some form of industrial or agricultural purpose. Whether the ash deposited at its base (Layer 2) was an integral part of its original function or a later deposit is difficult to determine with certainty. The latter however seems more probable, given the lack of evidence for the repeated use of fire in it: other than a couple of stones integrated into Layer 2, none of the stones showed signs of heat impact (disintegration, fractures), nor did the soil below the pit have any signs of firing as might be expected if a fire had been repeatedly lit there. It may thus be cautiously suggested that the deposit at the bottom of the pit already indicated it being put out of use.

In the next stage of the sequence, a storage vessel was inserted. This seems to have entailed the removal of the pit's eastern wall, the stones of which were pushed to the west, and the widening of the pit eastward. Most of the jar was thus left free standing inside a large depression, with only its base anchored in the soil. After an indeterminate period of time the side of the vessel, facing northeast, broke and the entire pit was backfilled with fine brown soil with numerous charcoal inclusions (Layer 1). This deposit is likely to have

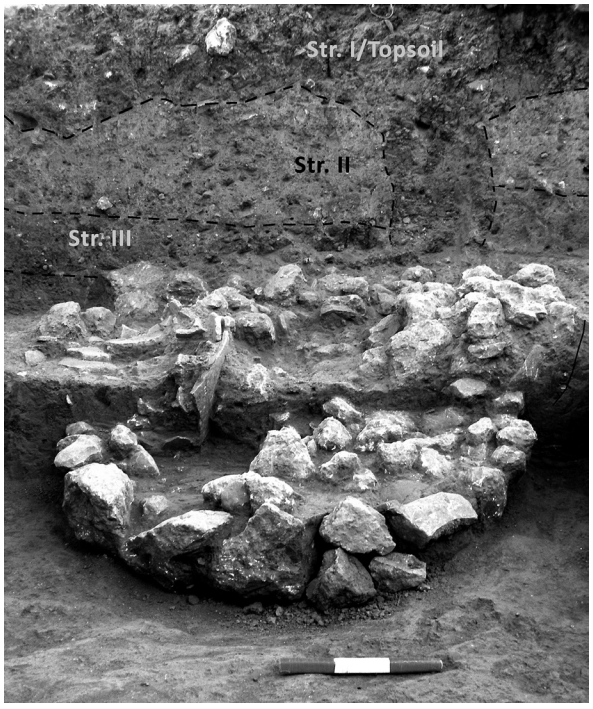

Figure 1.18: Section through Locus 123, looking south. Note concentration of stones in lower right side of the pit (northwest) and horizontal orientation of jar fragments on the left side.

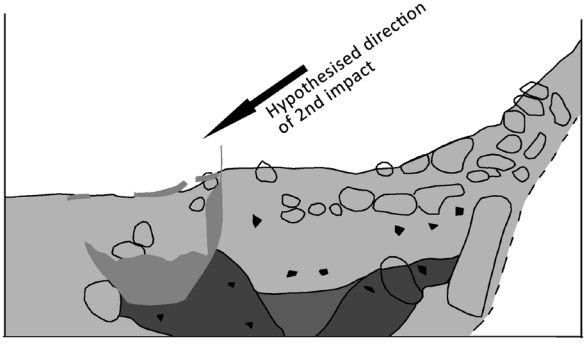

Figure 1.19: Section through Locus 123.

originated from the immediate vicinity, hinting at the use of fire nearby. Finally, the vessel's still exposed western wall broke as well, marking the end of the pit's stratigraphical sequence.

A Comment on the Stratigraphical Relationship between Strata IV and III

At first glance, the stratigraphic relationship between Strata IV and III is simple and straightforward: the latter superimposes the former. Yet there is clear physical contact between Chalcolithic features and the deposits of Stratum III, which raise some questions about the sedimentological sequence. In Square D3, pottery concentration Locus 121 was located in the contact zone between the valley's sterile soil and the washed deposits of Stratum III; and in Square F2, the upper portion of Locus 123 was still exposed when Stratum III was deposited. This in itself is not a problem, but given that the Early Bronze pottery within Stratum III provides a *terminus post quem* for these deposits, it implies that during a period of several hundred years, between the Chalcolithic period and deep into the EB I, there was no accumulation of sediment at the base of the slope at the site of the present excavation.

This may imply a hiatus in the processes of alluvial sedimentation at the bottom of the slope, thus leaving the Chalcolithic remains largely exposed on the surface for a considerable length of time. Another possibility, which does not exclude the first, is that sediments that accumulated above the Chalcolithic horizon have been removed by strong erosive processes. In the final analysis the result would have been similar. In both cases, it can be assumed, a considerable portion of the Chalcolithic material deposited above ground would have been removed: according to the first scenario by weathering and trampling, and according to the second by fluvial processes. According to both there is a gap in the stratigraphic sequence, but while in the case of the first it is a temporary pause, in the case of the second it is the absence of pre-existing volume of sediment and cultural deposits.

AREA K

Area K (labelled Area D by Getzov *et al*. 2009) is located approximately 80 m east of Area Z (Fig. 1.2). It is spread across 275 sq m and yielded remains dating only to the Intermediate Bronze Age. The archaeological deposits are thickest in the northwestern part of the area, reaching a maximum of 1.2 m and steadily decreasing toward the south and east (Fig. 1.20a, b). At

least three distinct sedimentological units were identified. The earliest of the three, encountered only in the northwest, consists of grayish fine sediment. The second sedimentological unit, which superimposed the first and was encountered throughout the entire area, consists of yellowish, comparatively coarse sediment, similar to that associated with Stratum II in Area Z. The area of contact of the two sedimentological units is often associated with a fine fluvially deposited conglomerate, representing erosive processes. The third sedimentological unit was identified primarily in the southern part of the area, clearly superimposing the second. It consists of grayish-brown soil and contained a considerable number of stones and pottery sherds.

It is of note that the upper layers were subjected to extensive disturbance and intrusions. These are of two primary types: ploughing and rodent bore holes. The often irregular patterns of the second sedimentological layer recorded in the section (Fig. 1.20) are attributed to these.

Architectural and other features were meager. Only several stone built installations and pits were uncovered. Most of these were clustered in the eastern part of the area; only two were uncovered in the west while none was found in between.

The Eastern Cluster

The eastern cluster consists of three working surfaces, a large pit and a small circular stone feature. While their mutual proximity suggests spatial association, their stratigraphic relationship seems to be more complex. Thus, for instance, each of the three stone platforms or working surfaces (Loci 501, 505 and 506) is located at distinct elevations, which exceed the inclination of the local topography. Stratigraphically, however, the situation is somewhat ambiguous. Only one of the three sedimentological units noted above was clearly observed—the second unit (i.e., the yellowish sediment). While it was noted across most of the excavated area it decreases and disappears among the features of the eastern cluster, and can no longer be seen in the southern and eastern parts of Square N4.

Consequently, the relationship of the different features to the sedimentological sequence is often unclear, complicating our ability to determine their chrono-stratigraphic relationship. The following discussion will consider these features one at a time, from west to east, with particular attention to their stratigraphic relationship. This will then be followed by a suggestion for their temporal order.

Locus 500 is a small circular feature composed of small angular fieldstones, situated near the southern section of Square M4 at the base of the second sedimentological unit.

Locus 501 is an oval stone platform located at the eastern edge of Square M4, partially penetrating the baulk. It is clearly situated above the yellowish layer of the second sedimentological unit. It also seems to have been built into the edge of a large pit (Locus 504).

Pit Locus 504 was most clearly observed at the western side of Square N4, although it clearly extended into the baulk and probably into Square M4, encompassing Locus 501. It was approximately 0.65 m deep and 2.5 m in diameter. Its northern face was more moderate than its southern one; and it was clearly seen to have cut through the yellowish deposits. Two phases of accumulation within it were noted. The bottom part of the pit contained reddish brown soil, while the upper part contained dark brown sediment.

Locus 505 is a stone platform composed of large fieldstones located in the northern part of Square N4. It was clearly associated with the second sedimentological unit, located near its base and largely superimposed by it (Fig. 1.22).

Locus 506 is a stone platform composed of medium sized fieldstones, located in the southeastern part of the square. It was set upon the valley's virgin soil. Its association with the yellowish layer unfortunately cannot be determined with certainty, given that it is absent from this part of the square (Fig. 1.22).

Of the five features listed, four have fairly clear stratigraphic relations with the second sedimentological unit: Pit 504 and stone platform 501 post-date it, while stone Platform 505 and feature Locus 500 are contemporary with it. Only stone Platform 506 remains ambiguous. Given its relatively low absolute elevation, however, and that it is founded on sterile soil, it is probable that it represents a yet earlier phase that antedates Platform 505 and the second sedimentological unit.

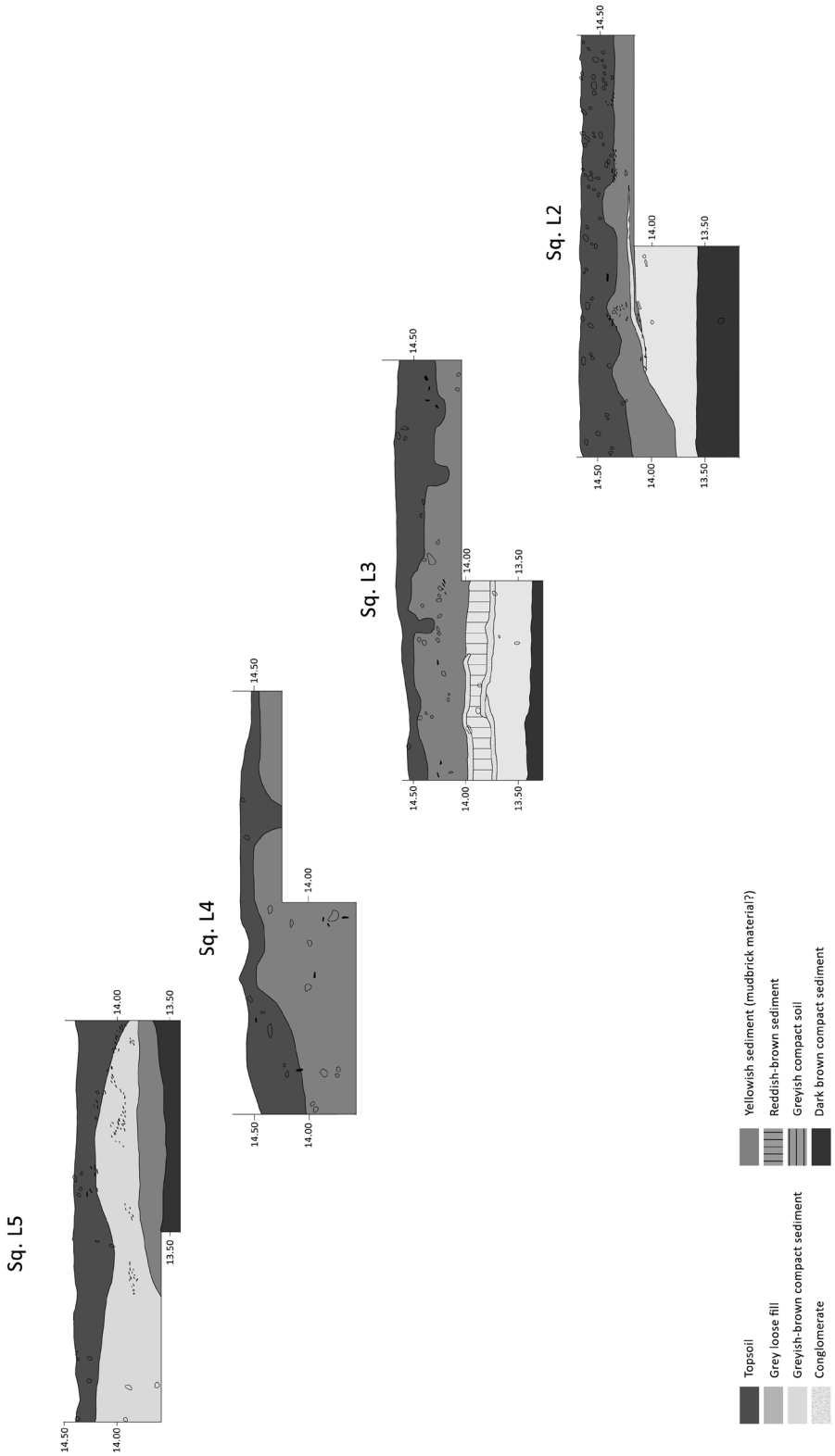

Figure 1.20a: North-south section across Area K, view to west.

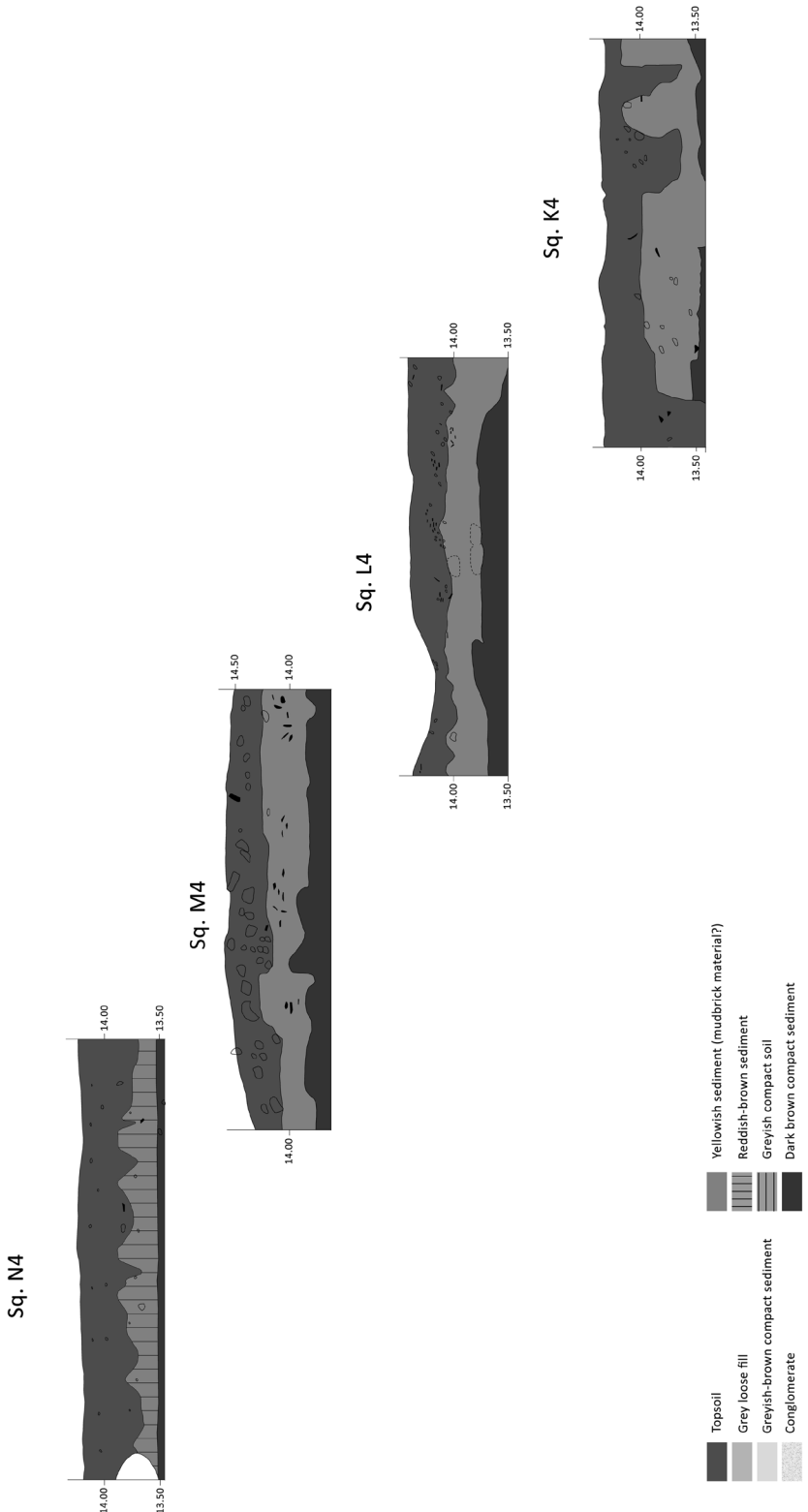

Figure 1.20b: East-west section across Area K, looking south.

Western Features

Features uncovered in the western part of Area K consist of pit Locus 503 and stone surface Locus 502. The latter was recorded in the northeastern corner of Square K3 and continued into the eastern baulk. It was composed of small, angular stones that produced a paved surface with roughly oval contours. Stratigraphically, this surface is located at the base of the second (yellowish) sedimentological unit and just above fine conglomerate deposits that often separate the former from the earlier grayish sedimentological unit (Fig. 1.23).

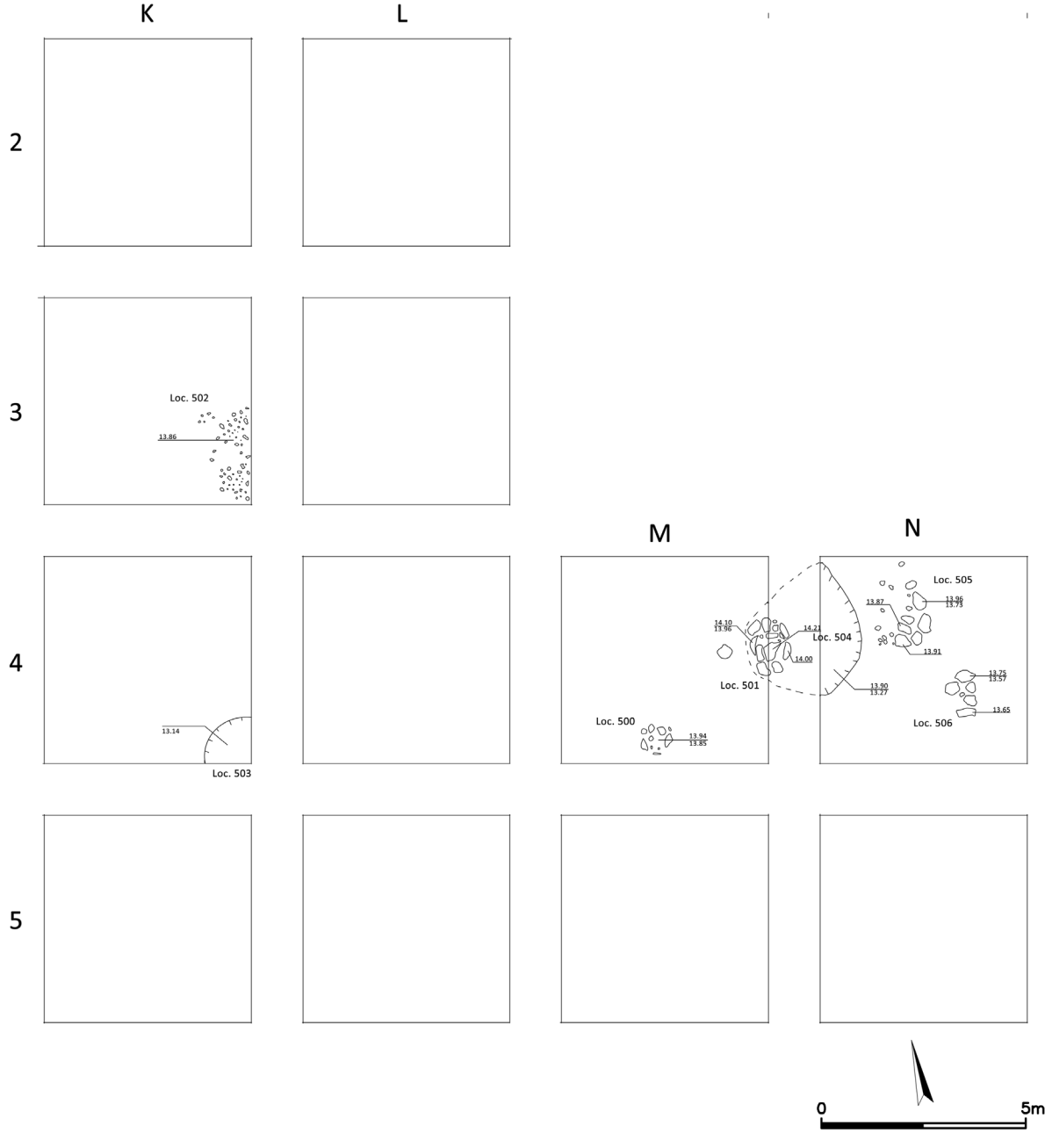

Figure 1.21: Plan of Area K.

Figure 1.22: Loci 505 and 506, looking southeast. Note differences in elevation and sedimentological contexts of the two features.

Figure 1.23: Surface 502, looking east. Note stratigraphic position at the base of the second sedimentological unit and above the first.

Pit Locus 503 was recorded in the southeastern corner of Square K4. Only a part of it was excavated while the rest of it remained in the baulk. It was dug from topsoil level and clearly cut through the second sedimentological unit. Its fill contained sediments roughly similar to those of its surroundings and seems to have been backfilled shortly after excavation.

Lastly, although not a distinct architectural feature, an interesting phenomenon recorded in the vicinity is worth mentioning: a large concentration of bones. Numerous bones have been noted primarily for the earliest sedimentological unit in the area of the southern half of Square K3 and a little more in Square K4. Although not as striking, a relatively high density of bones was recorded in the same area also in association with the second sedimentological unit, especially in Squares K3 and L3.

Summary and a Note on the Correlation With Area Z

Despite the meagerness of architectural remains upon which to reconstruct a solid stratigraphic sequence of occupation, it seems that the three sedimentological units can be correlated with distinct phases of occupation. Evidently, the second yellowish unit is most readily substantiated, primarily by token of stone surface Locus 502, stone platform Locus 505 and feature Locus 500, all of which are situated at the base of the layer. As a result, also the preceding sedimentological unit acquires a distinct position within the settlement sequence that predates that of the above-mentioned features. Lastly, the possibility of a third later phase that might be correlated with the third sedimentological unit is suggested by several features that clearly post-date the others. These are primarily pit Locus 504 and platform Locus 501.

There is a striking similarity between the second phase of occupation in Area K with Stratum II of Area Z. They are marked by the same yellowish sediment with fine conglomerate deposits often noted at the base of both. Also the later phase of occupation suggests a connection between the areas, primarily in the almost entire lack of recognizable sedimentological accumulations. Most importantly, however, the sequence in Area K confirms the suspicion already noted for Area Z, that there is an earlier Intermediate

Bronze phase at the site. We may now therefore speak of three Intermediate Bronze Age phases of occupation at Ard el-Samra, where Strata I and II are present throughout both excavation areas while the earlier third phase of occupation is hinted at in Area Z, but clearly represented only in Area K.

POTTERY ASSEMBLAGES

Mirroring the stratigraphic observations noted above, the overwhelming majority of the pottery derives from Intermediate Bronze Age contexts, with relatively minor contributions from the Early Bronze and Chalcolithic periods. In accordance with the above account of the stratigraphy and its relative weight in the excavation, the Intermediate Bronze Age pottery assemblage will be presented first, followed by short discussions of the Early Bronze Age and Chalcolithic assemblages.

Intermediate Bronze Age Pottery Assemblage

The Intermediate Bronze Age assemblage consists of a total of 16591 pottery sherds from all Intermediate Bronze Age contexts, of which 650 (3.9%) are rims and the remaining 15941 (96.1%) are typologically non-diagnostic. The assemblage includes 13000 sherds from Area Z (78.4%) and 3591 sherds from Area K (21.6%). The present report discusses the restorable vessels and rims only.

Jars constitute the largest component in the Intermediate Bronze Age pottery repertoire of Ard el-Samra (63.4%, n=412). They are followed by cooking-pots, which comprise just under a quarter of the assemblage (23.8%, n=155) and bowls (9.2%, n=60). The remainder encompasses a variety of vessel types that occur in very low frequencies: holemouths (2.15%, n=14), amphoriskoi (0.9%, n=6), pithoi (0.3%, n=2) and a spouted holemouth (0.15%, n=1). In addition, two jug bases were also identified.

The vessels were built with coils, often using a wheel or a simple rotational device for finishing. The clay of most of the assemblage is pinkish to yellowish-pink, while cooking-pots were fired to a reddish-brown or brown. The cooking-pots are also characterized by temper of crushed limestone sand and often carried soot marks on their exterior.

Bowls

Sixty rims assigned to bowls were found. Small bowls (0.8% of the typologically identified vessels, n=5) have a diameter of up to 20 cm and vary in form: shallow bowl with a thickened rim (Fig. 1.24: 1), hemispherical bowl with a thickened rim (Fig. 1.24: 2) and deep bowl with an in-turned rim (Fig. 1.24: 3). The walls are rounded and smoothing marks were observed.

Figure 1.24: IBA bowls, holemouths and small-necked vessels

No.	*Reg. No.*	*Type*	*Stratum*	*Description*
1	1124/3	Bowl	I/I	Yellowish-pink clay
2	1043/1	Bowl	I	Yellowish-pink clay, pink core
3	1183/6	Bowl	II	Pink clay
4	1124/2	Bowl	I/II	Yellowish-pink clay, pink core
5	1124/4	Bowl	I/II	Yellowish-pink clay
6	1155/1	Bowl	I/II	Yellowish-pink clay, pink core
7	1168/3	Bowl	II	Pink clay, white and brown inclusions
8	1083/1	Bowl	III	Yellowish-pink clay
9	1155/3	Bowl	I/II	Dark gray exterior, gray-red interior, gray clay
10	1097/16	Bowl	I/II	Yellowish-pink surface, pink clay, gray core
11	1064/5	Holemouth	I	Yellowish-pink clay, gray core
12	1183/5	Holemouth	II	Yellowish-pink clay
13	1124/20	Amphoriskos	I/II	Yellowish clay, pink clay
14	1183/7	Jug/juglet base	II	Pink clay, scraped exterior

Large bowls (8.4% of the typologically identified vessels, n=55) have a diameter of up to 36 cm and vary in form. Two sub-types are readily distinguished: shallow and deep. Shallow bowls (Fig. 1.24: 4, 5) are characterised by straight walls and grooved (Fig. 1.24: 4) or thickened (Fig. 1.24: 5) rims. Deep bowls (Fig. 1.24: 6–10) have simple (Fig 1.24: 6), thickened (Fig. 1.24: 8) or inverted (Fig. 1.24: 9) rims, some of them grooved (Fig. 1.24: 7, 10). The upper part of the bowls' profile was smoothed. Attached handled were rarely observed (Fig. 1.24: 9).

Storage Jars

This is the most common vessel type of the Intermediate Bronze Age assemblage (Fig. 1.25: 1–26). Only one nearly complete medium sized jar was found. The jar (approximately 55 cm height) has a flat-base, two loop handles, an upright neck and everted rim (Fig. 1.25: 1). Another restored jar is a small-sized (h=13 cm), flat-based, short-necked pot with a wide mouth and four ledge handles (Fig. 1.25: 26). Six main types of rims and necks were observed:

1. Short bevelled neck and simple rim. Applied rope decoration on the shoulder is common (Fig. 1.25: 2)
2. Short neck, everted rim and narrow aperture (Fig. 1.25: 3–8). Sometimes grooved rims were observed on this type (Fig. 1.25: 18)

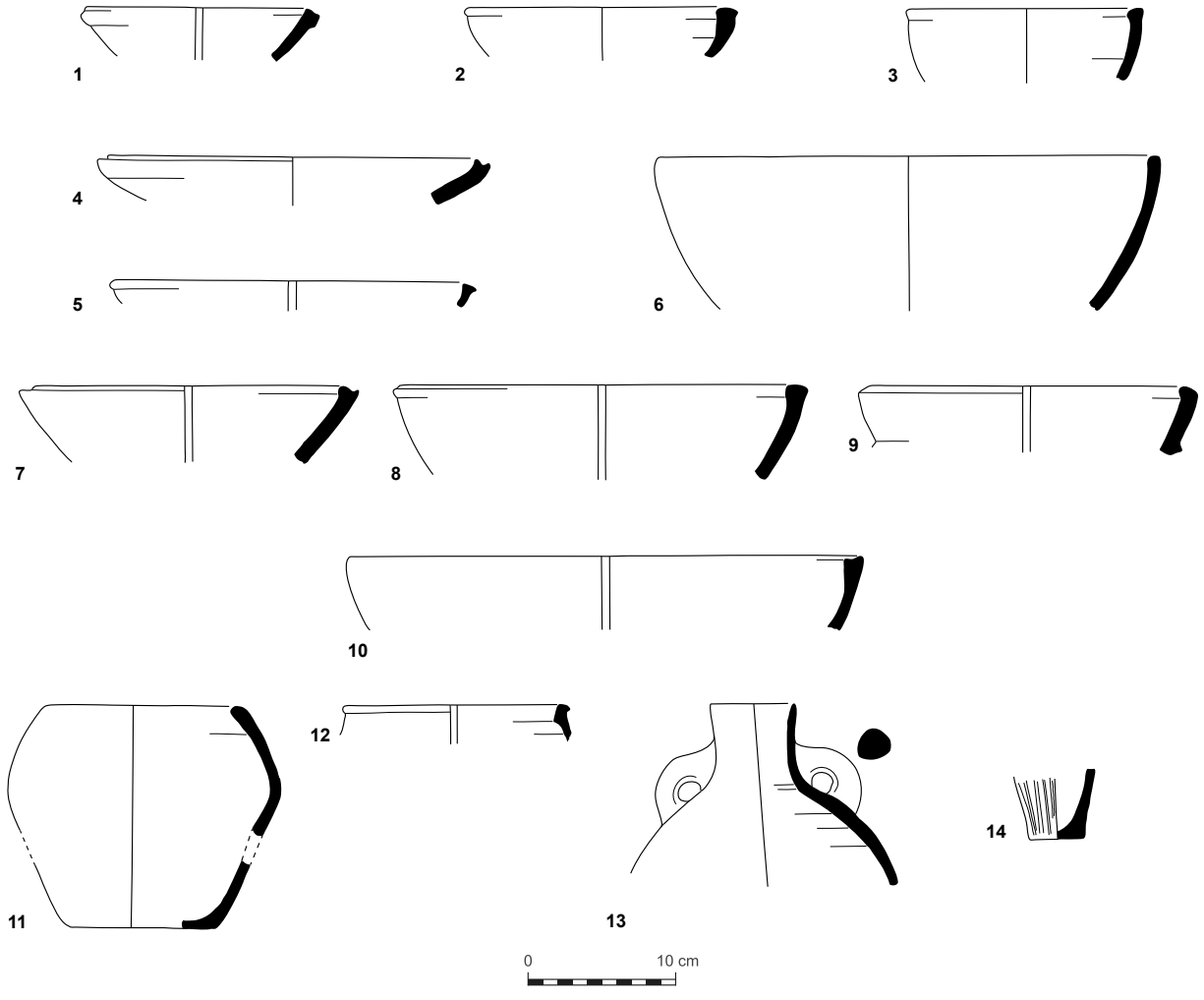

Figure 1.24: IBA bowls, holemouths and small-necked vessels.

3. Narrow-mouthed pots with short neck and everted rim. Incised decoration between neck and shoulder is common (Fig. 1.25: 9–13)
4. Very short neck, everted rim and a wide mouth (Fig. 1.25: 14)
5. Very short neck and everted rim (Fig. 1.25: 15, 16)
6. Straight neck and thickened grooved rim (Fig. 1.25: 17)

Holemouth

Only one nearly complete holemouth was found (Fig. 1.24: 11). This small vessel (height 15 cm) has a flat base, simple round rim and narrow mouth (ca. 11 cm in diameter). This type is fairly uncommon; most holemouths are characterized by a wide mouth (15–16 cm in diameter; Fig. 1.24: 12).

Amphoriskoi

Six amphoriskoi were found. They are narrow-necked and have pierced lug handles on the joint of neck and shoulder (Fig. 1.24: 13).

Jug/juglet

Two jug/juglet bases were found (Fig. 1.24: 14).

Figure 1.25: IBA storage jars and pithoi

No.	*Reg. no.*	*Type*	*Stratum*	*Description*
1	1178/1	Storage jar	I/II	Yellowish-pink clay, pink core
2	1143	Storage jar	II/III	Yellowish-pink clay, applies rope decoration
3	1178/3	Storage jar	I/II	Yellowish-pink clay
4	1034	Storage jar	I	Yellowish-pink surface, pink clay
5	1178/5	Storage jar	I/II	Yellowish-pink clay
6	1097/8	Storage jar	I/II	Pink clay
7	1097/3	Storage jar	II	Yellowish surface, pink core
8	1064/1	Storage jar	I	Yellowish-pink surface, pink clay
9	1178/2	Storage jar	I/II	Yellowish-pink, incised decoration
10	1178/11	Storage jar	I/II	Yellowish-pink surface, pink clay, incised decoration
11	1178/4	Storage jar	I/II	Yellowish-pink surface, pinkish clay, incised decoration
12	1178/13	Storage jar	I/II	Yellowish-pink, incised decoration
13	1124/6	Storage jar	I/II	Yellowish-pink surface, pink clay, incised decoration
14	1179/19	Storage jar	III	Yellowish-pink clay
15	1183/2	Storage jar	II	Yellowish-pink clay
16	1074/7	Storage jar	II	Yellowish-pink clay
17	1168/2	Storage jar	II	Pink clay, gray and black inclusions
18	1183/1	Storage jar	II	Yellowish-pink surface, pink clay
19	1080/1	Storage jar	I	Yellowish-pink clay
20	1097/4	Storage jar	I/II	Yellowish-pink surface, pink core
21	1183/4	Storage jar	II	Yellowish-pink clay
22	1097/5	Storage jar fragment	I/II	Yellowish-pink surface, pink core, applied rope decoration
23	1136/1	Storage jar fragment	I	Pink clay, applied rope decoration
24	1136/2	Storage jar/pithos fragment	I	Yellowish-pink surface, pink clay, applied rope decoration
25	1178/20	Ledge handle. storage jar	I/II	Yellowish-pink clay
26	1129	Storage jar	I	Yellowish-pink clay
27	1097/22	Pithos	I/II	Pink clay

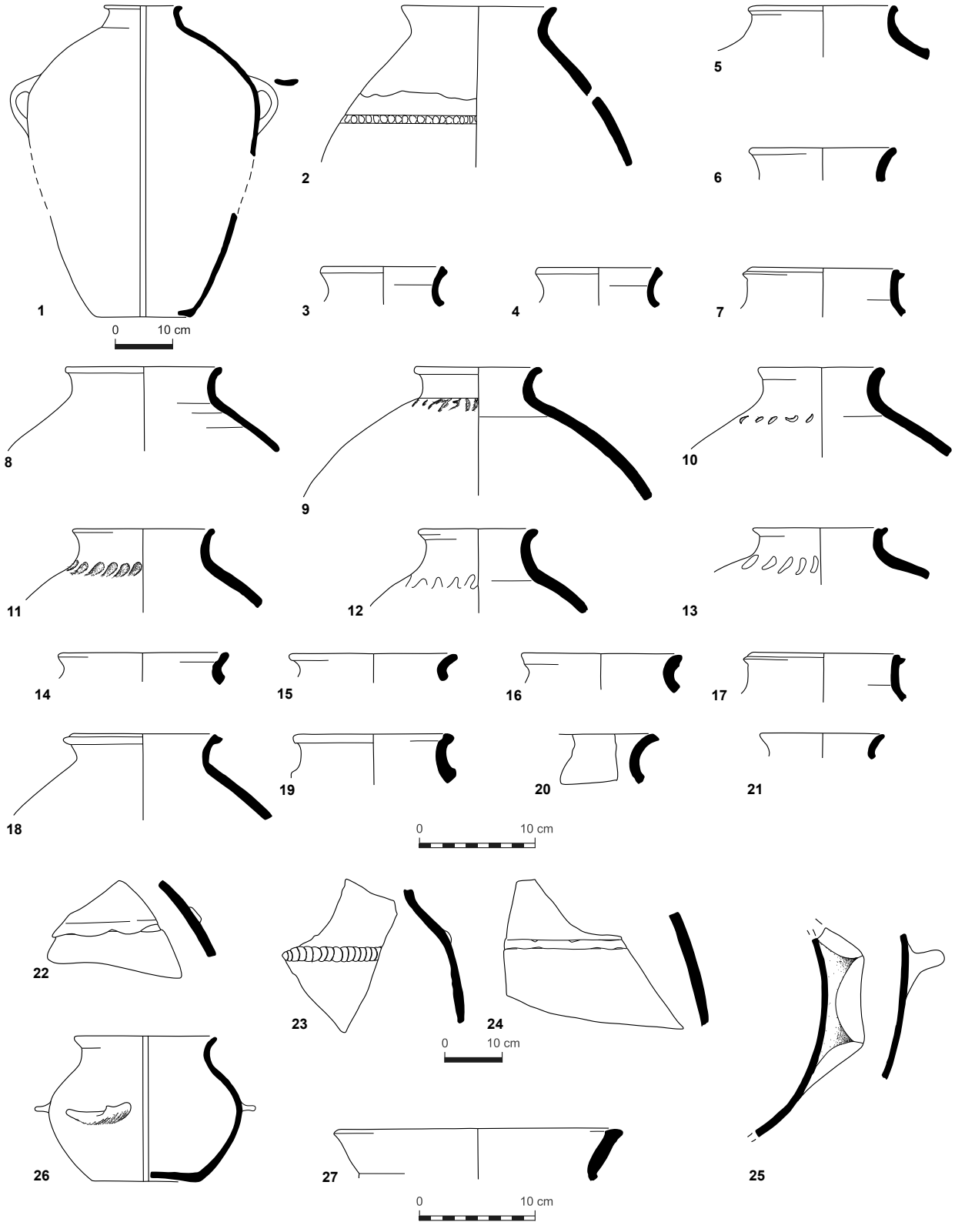

Figure 1.25: Intermediate Bronze Age storage jars and pithoi.

Pithoi

Fragments of two wide-mouthed (23–25 cm) pithoi were identified (Fig. 1.25: 27).

Cooking-pots

There are two basic types of cooking-pots: closed, with a short neck and a globular body (Fig. 1.26: 1–8), and wide-mouthed with sloping shoulders (Fig. 1.26: 9–11). One of the wide-mouthed cooking-pots had applied plastic rope decoration placed between the rim and body of the vessel (Fig. 1.26: 11).

Spout

Fragments of one spout were found: the pot is not restorable therefore the shape is unknown.

The typological analyses indicate a clear segregation in raw-material selection between non-cooking and cooking vessels:

1. Cooking-pots were regularly made of clays with crushed calcite and/or calcareous sand.
2. Non-cooking-pots were made of clays with mixed sand and never included crushed calcite or large amounts of calcareous sand.

Other than this, no clear relationship was observed between vessel type and raw material.

Typologically, the pottery assemblage is highly reminiscent of other northern Intermediate Bronze Age pottery assemblages in the Western and Lower Galilee, although these are known to vary. Close affinities are readily found with the assemblages of

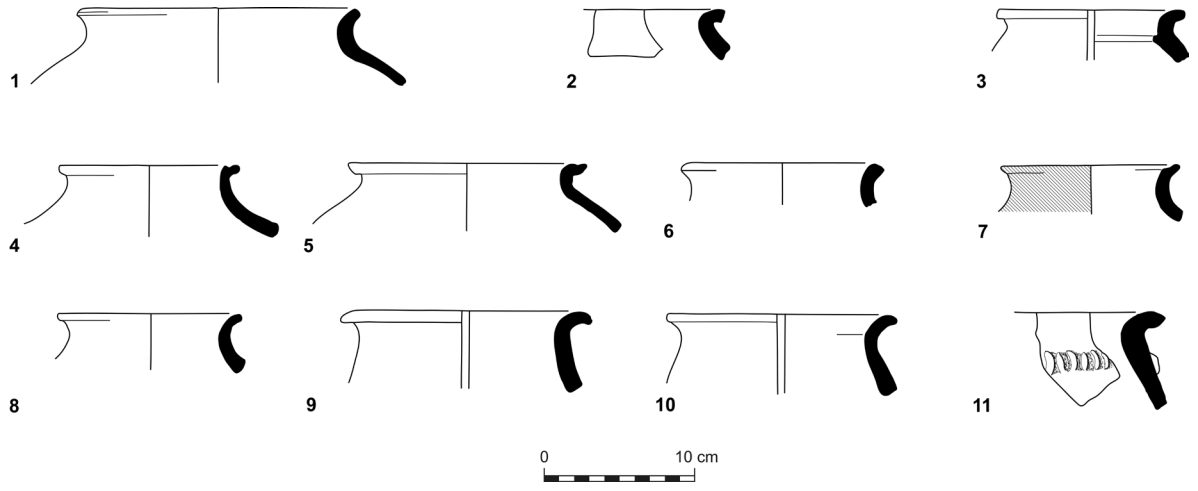

Figure 1.26: IBA cooking-pots.

No.	*Reg. no.*	*Type*	*Stratum*	*Description*
1	1097/9	Cooking-pot	I/II	Reddish-brown clay, white (limestone) inclusions, soot marks
2	1097/10	Cooking-pot	I/II	Reddish-brown clay, white (limestone) inclusions, soot marks
3	1168/2	Cooking-pot	II	Redd-brown clay, limestone and calcite inclusions, soot marks
4	1168/1	Cooking-pot	II	Grayish-brown clay, white (limestone) inclusions, soot marks
5	1183/1	Cooking-pot	II	Reddish-brown clay, calcite inclusions
6	1178/2	Cooking-pot	I/II	Red-brown clay, limestone and calcite inclusions, soot marks
7	1155/2	Cooking-pot	I/II	Grayish-red clay, calcite inclusions
8	1124/2	Cooking-pot	I/II	Reddish-brown clay, limestone inclusions
9	1124/1	Cooking-pot	I/II	Reddish-brown clay, limestone inclusions, soot marks
10	1043/2	Cooking-pot	I	Brown clay, limestone inclusions, soot marks
11	1097/7	Cooking-pot	I/II	Red-brown clay, limestone inclusions, rope decoration, soot marks

'En Hilu (Covello-Paran 1999), Tel Bira (Prausnitz 1963, 1980; Peilstöcker 2003) and Horbat Qishron (Smithline 2002).

Early Bronze Age Pottery Assemblage

The Early Bronze pottery assemblage consists of a total of 790 pottery sherds: 95.7% (n=756) non-diagnostic body fragments and 4.3% (n=34) rims. Among the body sherds, 7.84% (n=62) are Gray Burnished Ware and 81.65% (n=645) were covered with red or brownish slip. The vessels' ware is pink to light brown.

Bowls

One bowl was identified (Fig. 1.27: 1). The diameter is 21 cm and its walls had no traces of slip.

Jars

Six jars were found in this assemblage. These consist of one jar with a short, everted neck (Fig.

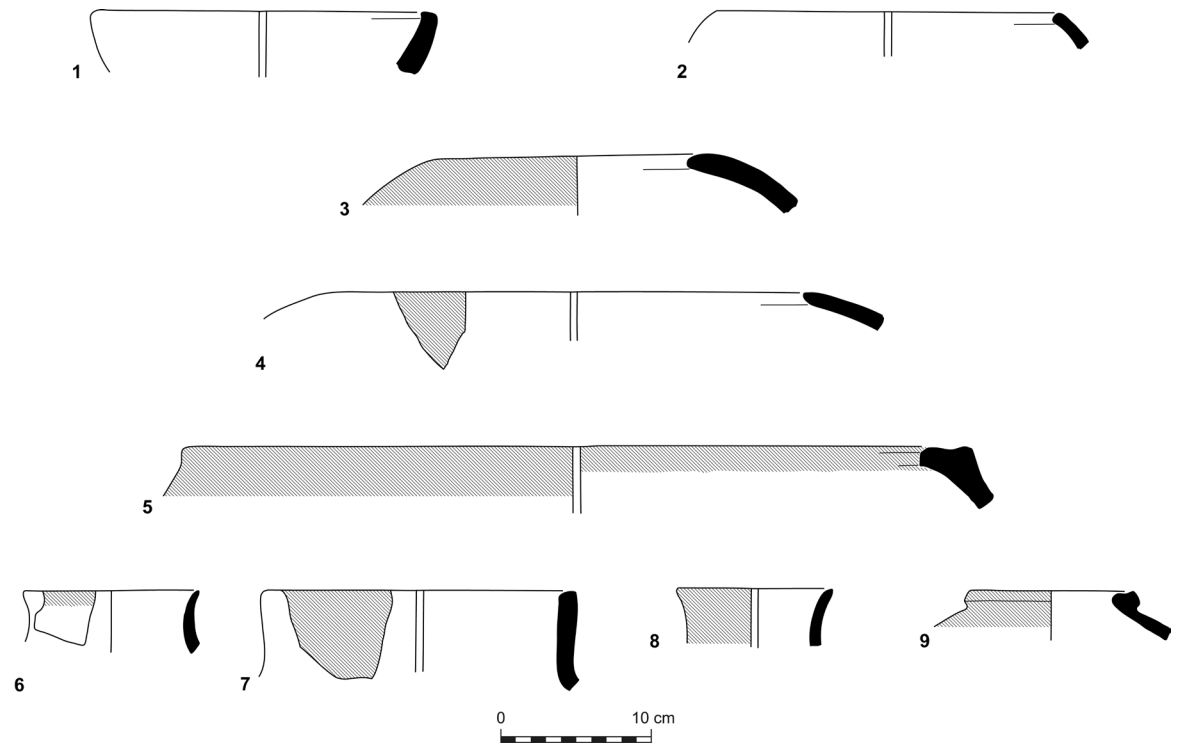

Figure 1.27: Early Bronze Age pottery.

No.	Reg. no.	Type	Stratum	Description
1	1173/10	Bowl	III	Pink clay, traces of red slip
2	1207/7	Holemouth	IV	Browinsh-gray clay, brown slip
3	1173/18	Holemouth	III	Dark gray clay, traces of red slip exterior
4	Locus 123	Holemouth	IV	Grayish-brown clay, red slip, calcite inclusions
5	1173/2	Holemouth	III	Pinkish-gray clay, red slip on vessel exterior and rim interior
6	1206/1	Jar	IV	Pink clay, red slip on rim exterior
7	1207/14	Jar	IV	Grayish pink clay, white and black inclusions
8	1207/15	Jar	IV	Pink clay, calcite inclusions
9	1173/1	Jar	III	Yellowish-pink clay, dark red slip

1.27: 9), two small jars with a high everted neck (Fig. 1.27: 6, 8) and one that is wide-mouthed (diameter 19 cm, Fig. 1.27: 7). All jars had traces of red slip.

Holemouths

Most of the typologically identifiable sherds represent holemouths (79.4%, n=27). Twenty-six holemouths have a simple rim (Fig. 1.27: 2–4) and one is characterized by a wide-mouth and ridged rim (Fig. 1.27: 5). These vessels are generally slipped. Sometimes crushed calcite has been added to the clay (Fig. 1.27: 4).

The assemblage may be attributed to the EB 1. One jar with a short everted neck (Fig. 1.27: 9) is the only vessel that can be clearly attributed to EB 1b (Rotem 2012).

Chalcolithic Assemblage

The sounding in Ard el-Samra retrieved a modest pottery assemblage that is readily attributed to the Ghassulian-Chalcolithic horizon. The great majority of the assemblage was associated with Loci 121 and 133, while only a small portion was recovered in relation to Locus 123, due to later Early Bronze intervention in this location.

The assemblage consists of a total of 396 pottery sherds, the overwhelming majority of which are morphologically non-diagnostic body sherds (n=331; 83.6%). Rims constitute a mere 6.3% of the assemblage (n=25); bases 8.3% (n=33); handles 1.3% (n=5); and sneck-shoulder joints only 0.7% (n=3). Among the body sherds, 15.4% bore one kind of surface treatment or another, while the remainder was plain.

The vessels' ware is remarkably consistent; with a single exception, all consist of an orange-brown matrix and calcareous sand. Only one holemouth was made from a lighter beige-cream matrix with calcareous and dark (flint?) inclusions. No evidence for the use of a potter's wheel was observed. On one bowl, however, horizontal striations were noted on the rim, but these are likely to have been produced with the aid of a simple rotational device for finishing purposes.

Only 28 vessel fragments could be typologically identified. Given the small size of the assemblage, there is little ground to speculate on various patterns. The following discussion is therefore concise and minimalistic.

Bowls

Less than half of the typologically identifiable sherds represent bowls (n=11; 39.2%). Most of them have straight walls and simple rims (Fig.

Figure 1.28: Pottery sherds from Locus 121 and from the vicinity of Loci 121 and 133

No.	*Reg. no.*	*Type*	*Stratum*	*Description*
1	1186/2	Bowl	IV	Light orange-brown with calcareous inclusions and thick gray core
2	1186/1	Necked jar	IV	Light orange to gray with calcareous inclusions; red paint on rim
3	1186/3	Pedestal	IV	Light orange-brown with calcareous inclusions and gray core; appears to have been intentionally chipped and reworked
4	1186/4	Pierced lug handle	IV	Light orange-brown with calcareous inclusions and gray core; incised decoration
5	1175/1	Holemouth	IV	Light orange-brown with calcareous inclusions and gray core; traces of red slip on exterior
6	1175/2	Holemouth	IV	Light orange clay with calcareous inclusions
7	1185/1	Pithos	IV	Light orange-brown with calcareous inclusions; plastic rope decoration and red slip
8	1175/3	Necked jar	IV	Light orange-brown with calcareous inclusions and gray core; red slip and incised decoration on shoulder
9	1175/4	Pierced lug handle	IV	Orange-brown clay with calcareous inclusions and gray core
10	1185/2	Pierced lug handle	IV	Orange to gray with calcareous inclusions; semi-triangular in cross section, incised decoration

1.29: 2–5; Fig. 1.30: 1), although moderately curved and sinuous profiles have been noted as well (Fig. 1.28: 1; Fig. 1.29: 1). Most bowls are plain and lack any discernible surface treatment, although slip, red lipstick on the rim and incisions on the rims' interior have been noted at times (Fig. 1.29: 3–5).

Kraters

Only two kraters were found in this small assemblage. One is a thick walled open vessel with slightly curved walls and a flat rim with a square profile; a careless incision and traces of red slip were noted on its exterior (Fig. 1.30: 2). The second krater is of a very different

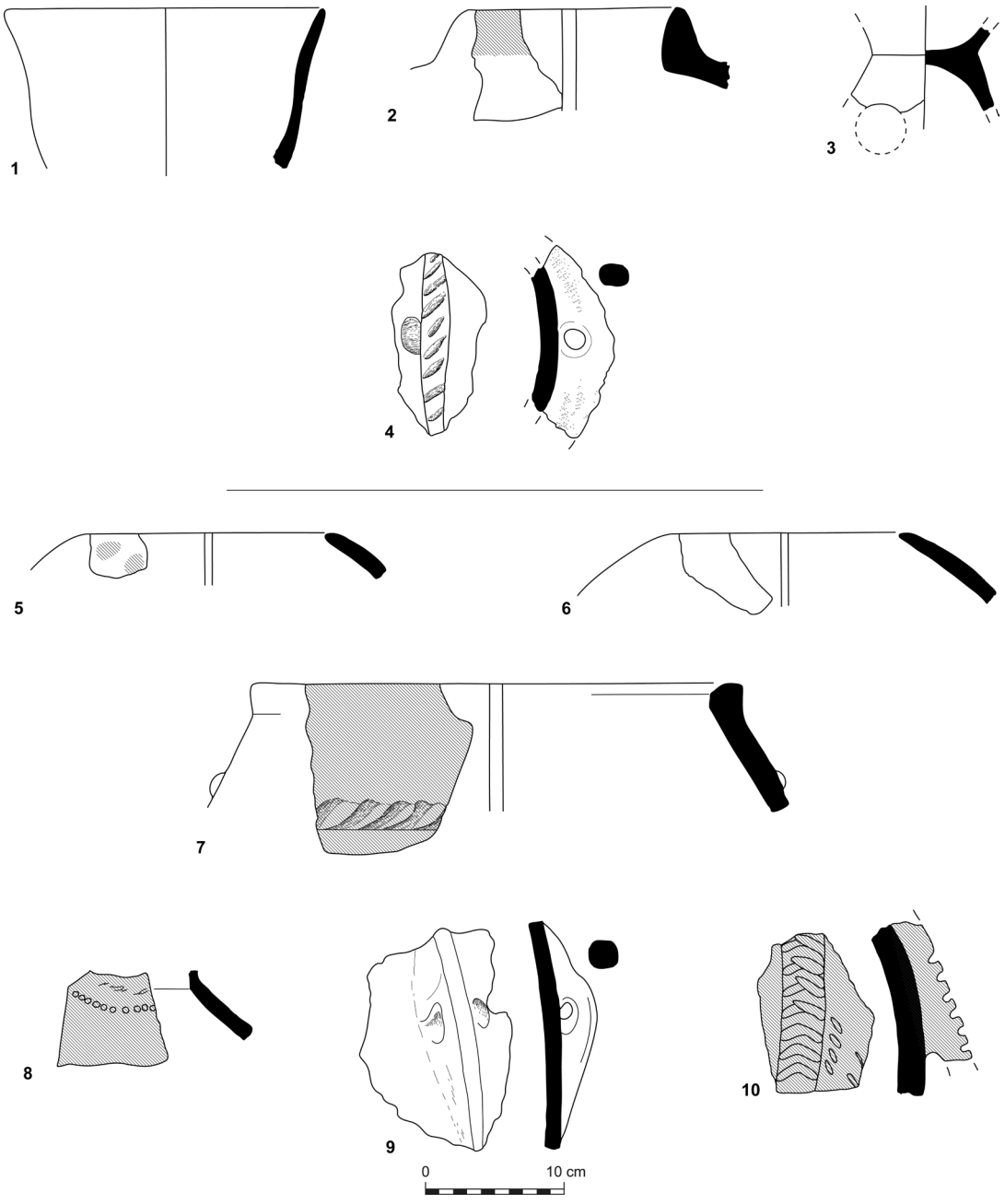

Figure 1.28: Pottery sherds from Locus 121 and from the vicinity of Loci 121 and 133.

form; it has a relatively closed profile, a thick outwardly folded rim and a rope decoration (Fig. 1.29: 8).

Holemouths

Only five holemouths were found, constituting 17.8% of the typologically identified vessels. They are globular in form and end with a pointed, rounded or flat rim (Figs. 1.28: 5–6; 1.29: 6–7). These vessels usually lack surface treatment, although they may sometimes be slipped.

Necked-Jars and Amphoriskoi

Seven necked-vessels were found (25% of typologically diagnostic sherds), including both rims (n=4) and neck-shoulder fragments (n=3). They vary considerably in size and form. The necks may be low or high, straight or flaring (Fig. 1.28: 2; Fig. 1.30: 3). Almost all jars are accompanied by one surface treatment or another. Slip is fairly common, but incised patterns are distinctive, usually observed on the shoulder (Figs. 1.28: 8; 1.29: 12; 1.30: 6–7).

Pithoi

Four pithoi were identified. These large, thick-walled vessels are characterized by an outwardly folded rim, accompanied with thick plastic rope decoration and at times with red slip as well (Figs. 1.28: 7; 1.29: 9–11).

Handles

Only five handles were found, all of them large pierced lug handles. Their cross-sections were oval or rectangular rather than triangular. Most had incised decorations (Fig. 1.28: 9, 10).

Figure 1.29: Pottery sherds from Locus 133

	Reg. no.	*Type*	*Stratum*	*Description*
1	1210/1	Bowl	IV	Orange-brown with calcareous inclusions
2	1210/3	Bowl	IV	Light orange-brown with calcareous inclusions and a gray core
3	1210/5	Bowl	IV	Light orange-brown with calcareous inclusions and a gray core; punctured incisions on interior of rim
4	1210/6	Bowl	IV	Light orange-brown with calcareous inclusions and a gray core; traces of red slip on rim and short diagonal incised line on rim interior
5	1210/2	Bowl	IV	Light orange-brown with calcareous inclusions; incised diagonal lines on interior and exterior; red slip
6	1218/1	Holemouth	IV	Light orange-brown with calcareous inclusions and a gray core
7	1210/7	Holemouth	IV	Beige-cream with dark (flint?) inclusions; red slip, more pronounced along rim
8	1210/4	Krater	IV	Light orange-brown with calcareous inclusions; plastic rope decoration below rim
9	1218/3	Pithos	IV	Very light orange-brown with calcareous inclusions and a gray core; plastic rope decoration along the rim and possibly a pierced lug handle below; reddish-brown slip on exterior
10	1218/2	Pithos	IV	Light orange-brown with calcareous inclusions and a gray core; plastic rope decoration below the rim
11	1221/2	Pithos	IV	Light orange-brown, calcareous inclusions and a thick gray core; plastic rope decoration below rim and a thin red slip on exterior; finger impressions on interior
12	1221/3	Necked jar	IV	Light orange-brown, calcareous inclusions and a gray core; incised decoration—diagonal lines—on shoulder
13	1221/1	Body sherd	IV	Light orange-brown, calcareous inclusions and a gray core; incised decoration—short lines and circles—and thin red paint on exterior

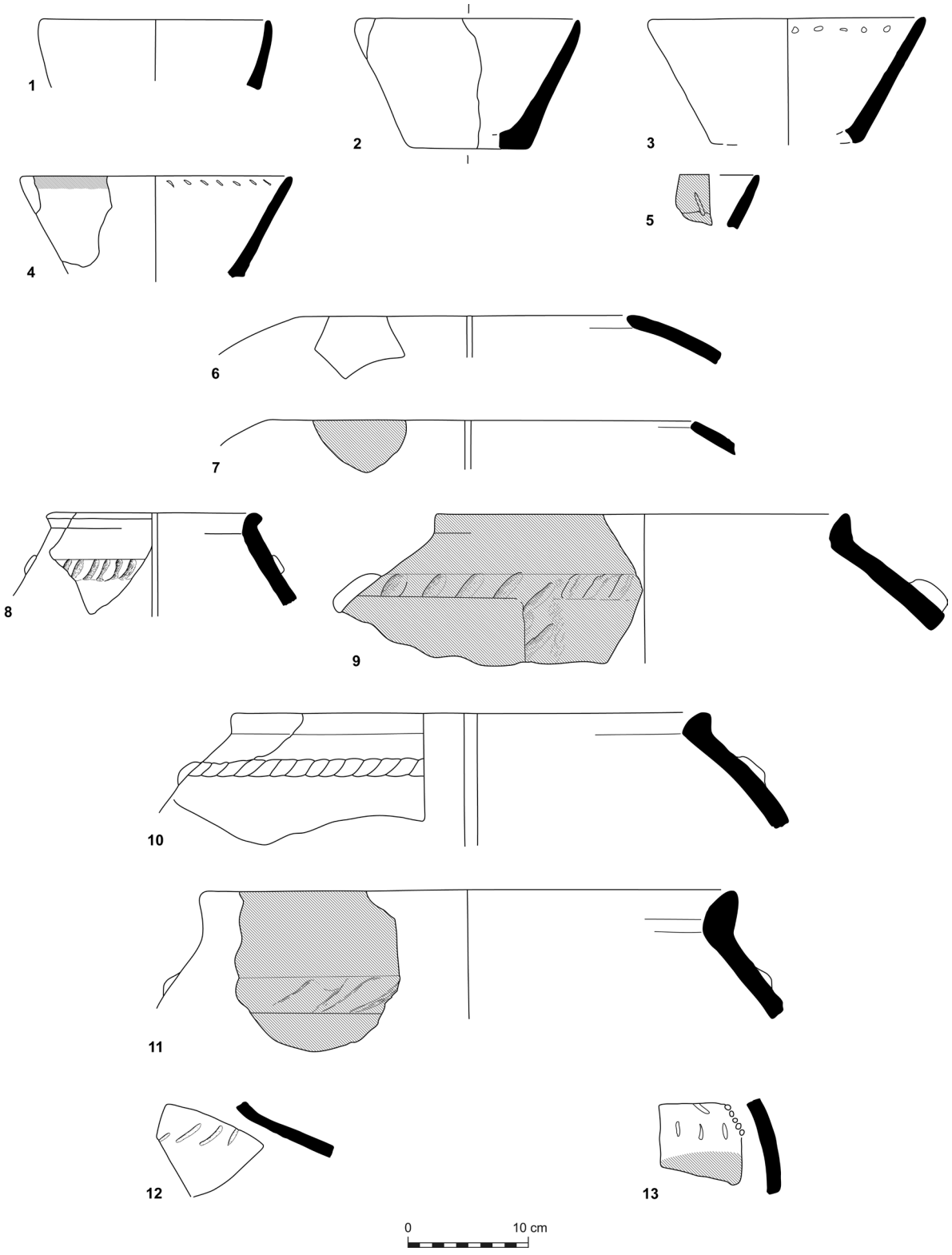

Figure 1.29: Pottery sherds from Locus 121 and 133.

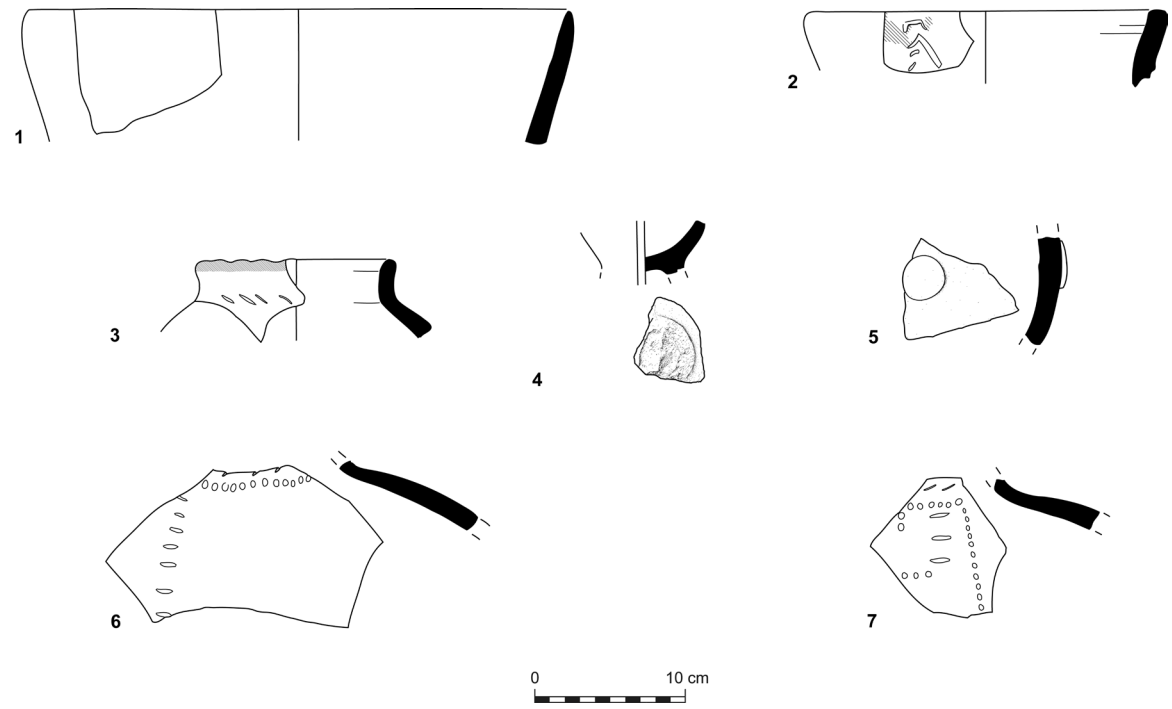

Figure 1.30: Chalcolithic pottery from Locus 123.

No.	*Reg. no.*	*Type*	*Stratum*	*Description*
1	1206/1	Bowl	IV	Light orange-brown with calcareous inclusions; horizontal wipe marks on rim
2	Locus 123	Krater	IV	Light orange-brown with calcareous inclusions; traces of red slip on exterior, crude incised pattern
3	Locus 123	Necked jar	IV	Orange-brown with calcareous inclusions; thumb impressed rim, lipstick and short diagonal incisions on shoulder
4	Locus 123	pedestal	IV	Orange-brown with calcareous inclusions; finger impressions on base
5	Locus 123	Body sherd	IV	Light orange-brown with calcareous inclusions; disc-like plastic decoration
6	Locus 123	Necked jar	IV	Light orange-brown with calcareous inclusions; incised decoration—circles and diagonal lines—on shoulder
7	1173/1	Necked jar	III	Orange-brown with calcareous inclusions and gray core; incised decoration—circles and diagonal lines—on shoulder

Bases

A total of 33 base fragments were found. With the exception of two pedestals, all bases were simple and flat. None bore signs of string detachment from a wheel; one bore a mat impression.

The Chalcolithic pottery assemblage of Ard el-Samra accords well with contemporaneous assemblages in the Upper Galilee and Golan, marked by the conspicuousness of pithoi, red slip, plastic rope decorations and incised patterns. However, to date, only a few assemblages of modest size have been reported from this region and it is difficult to differentiate ceramic traditions and their interrelationships (see Epstein 1998; Eisenberg *et al.* 2001; Smithline 2001). It seems that a small sounding in Peqi`in

offers the closest parallel to the Ard el-Samra assemblage (Getzov 2007).

CHIPPED STONE TOOLS ASSEMBLAGE

The majority of lithic finds from Ard el-Samra are from Intermediate Bronze Age contexts. There are considerably fewer from the Early Bronze Age and Chalcolithic period. Finds retrieved from ambiguous contexts were also studied and for the purpose of the present account are divided into four groups: (1) Chalcolithic-Early Bronze Age, (2) Early Bronze Age–IB, (3) Intermediate Bronze Age, and (4) other mixed contexts. While the entire corpus is presented in Tables 1.1 and 1.2, only the Intermediate Bronze Age will be discussed in detail. The remaining assemblages will be discussed in a more cursory fashion due to their small size.

The Lithic Assemblage from Intermediate Bronze Age Contexts

The lithic assemblage of the Intermediate Bronze Age consists of 749 items, 399 of which are debitage and tools, and the rest debris (n=350). The assemblage originated from Areas K and Z (n=319, 428; respectively).

Raw Material

The raw material includes a variety of flint types of fine to medium grain size. The cortex indicates the use of fresh nodules as well as rolled raw material and its occurrence on many small sized cores implies that the original nodules were usually of modest size. Furthermore, no large items were retrieved in the assemblage and all are only a few cm in size (rarely exceeding five cm).

The Debitage

The frequency of primary elements (constituting 9.8% of the debitage and tools) indicates that cores were generally processed on site and that no preliminary shaping occurred elsewhere. Flakes (n=132; 33.1% of the debitage and tools) are the most common form of debitage in the assemblage. Most flakes are small, only a few cm long, and their striking platforms include punctiform, plain thick or modified types.

Most simple blades (n=10; 2.5% of the debitage and tools) are broken. One blade is complete, five are proximal fragments and four are medial fragments. Seven of these are delicate and uniform, bearing scars of previous blades on the dorsal face, thus representing sequential blade production. Their width ranges are 13–17 mm and their thickness is 3–5 mm. The other three blades are less regular and are thicker (7 mm).

Only six segments of Canaanean blade blanks were found (one proximal; four medial; one distal), varying in length between 12–55 mm. Their width ranges are 18–28 mm and their thickness is 4–5 mm. A more detailed technological description of these items will be provided below, along with secondarily modified Canaanean blades.

Bladelets (n=9; 2.3% of the debitage and tools) occur in a variety of raw materials, none of which are of the semi-translucent type familiar from the Chalcolithic period (Gilead 1984; Shimelmitz 2007). Only two of these show fine bladelet scars on their dorsal face. The rest seem to be by-products of simple blade production. They include two complete items, five proximal fragments, one medial fragment and one distal fragment.

The core trimming elements (CTEs; n=23; 5.8% of the debitage and tools) are dominated by CTE-varia. Only one CTE is defined as a core tablet (it is broken). Another CTE is a distal fragment of an over shot, bearing remnants of base modification on it distal end. Three crested blades were found. Two are relatively small and irregular in their outline (size: 33 × 12 × 5 mm; 43 × 17 × 11 mm). The third item is a meticulously shaped bifacial ridge with a straight outline and profile. It probably originated from the PPNB occupation, known from other parts of the site (Getzov *et al*. 2009).

Cores are quite frequent in this assemblage (n=51; 12.8%) and include several types:

1. *Single striking platform flake cores*: The 20 flake cores with a single striking platform are mostly irregular in shape. The largest is 54 × 46 × 36 mm in size. With the exception of two, all cores bear remains of cortex. In some of them the striking platform was prepared by the removal of a flat flake or a core tablet and in others an earlier scar was utilized. No systematic preparation or maintenance of these cores was observed. Four cores are exceptionally small (22 × 8 × 15 mm; 19 × 22 × 16 mm; 16 × 14 × 13 mm; 26 × 22 × 12 mm), two of which bear no remains of cortex. The blanks removed from these cores are chips/micro-flakes by typological definition.

Table 1.1: The lithic assemblage

	Chalcolithic	*%*	*Chalcolithic/EB*	*%*	*EB*	*%*	*EB-IB*	*%*	*IB*	*%*	*IB/MB*	*%*	*Non-stratified*	*%*	*Total*
Primary element flake	1	12.5			1	3.10	11	15.7	38	9.5	1	7.7	21	9.3	73
Primary element balde	1	12.5			1	3.10			1	0.3			2	0.9	5
Flake	5	62.5	1	25.0	12	37.5	23	32.9	132	33.1	2	15.4	58	25.6	233
Simple blade			1	25.0	1	3.10	6	8.6	10	2.5					18
Canaanena blade					3	9.40	1	1.4	6	1.5			5	2.2	15
Bladelet					1	3.10	2	2.9	9	2.3			5	2.2	17
Core trimming element			1	25.0			1	1.4	23	5.8			7	3.1	32
Core			1	25.0	4	12.50	6	8.6	51	12.8	4	30.8	36	15.9	101
Burin spall									1	0.3					1
Polished spall									3	0.8			1	0.4	4
Tool	1	12.5			9	28.10	20	28.6	125	31.3	6	46.2	92	40.5	253
Sum	8	100	4	100	32	100	70	100	399	100	13	100	227	100	753
Chunk	8		2		8		36		240				58		352
Chip	3				1		26		110				29		169
Total	*19*		*6*		*41*		*132*		*749*		*13*		*314*		*1274*

Table 1..2: The lithic tool assemblage

	Chalcolithic	*%*	*Chalcolithic/EB*	*%*	*EB*	*%*	*EB-IB*	*%*	*IB*	*%*	*IB/MB*	*%*	*Non-stratified*	*%*	*Sum*
Retouched flake							1	5.0	10	8.0	1		13	14.1	25
Retouched blade					1		3	15.0	6	4.8			8	8.7	18
Truncated item					1			0.0	4	3.2			2	2.2	7
Backed blade							1	5.0		0.0			1	1.1	2
Sickle blade					1		2	10.0	36	28.8	1		9	9.8	49
Scraper							1	5.0	5	4.0			1	1.1	7
Denticulate/notch					4		4	20.0	35	28.0			40	43.5	83
Borer	1						2	10.0	10	8.0	2		3	3.3	18
Burin								0.0	5	4.0	1		2	2.2	8
Bifacial knife							1	5.0		0.0			1	1.1	2
Bifacial								0.0	1	0.8	1		2	2.2	4
Arrowhead					1			0.0	2	1.6			1	1.1	4
Microlith								0.0		0.0			1	1.1	1
Varia								0.0	3	2.4				0.0	3
Broken					1		5	25.0	8	6.4			8	8.7	22
Sum	*1*	*0*	*0*	*0*	*9*	*0*	*20*	*100*	*125*	*100*	*6*	*0*	*92*	*100*	*253*

2. *Multi-striking platforms flake cores*: The 26 flake cores with two or more striking platforms are mostly irregular in shape and lack a clear pattern regarding the relation between the striking platforms. Only six cores do not have cortex remains. The largest of these cores is 49 × 48 × 33 mm and the smallest is 17 × 10 × 12 mm. Eleven of these cores are less than 30 mm in maximal size; these cores represent the intentional and continual production of small flakes and chips (Fig. 1.31: 5–8).
3. *Discoidal flake cores*: Four cores are relatively flat and are characterized by a circumferential or a partially-circumferential reduction on both faces. The largest is 60 × 40 × 20 mm and the smallest is 32 × 26 × 11 mm.
4. *Bladelet core*: Only one bladelet core was found, 34 mm long, 14 mm wide and 29 mm thick (Fig. 1.31: 4). It was made on non-translucent flint and its striking platform was shaped by a core tablet removal. The core's shape follows the outline of the raw material with only minor adjustments. It was abandoned due to the formation of hinge scars on the debitage surface.

The debitage also includes one burin spall and three polished spalls (size: 15 × 17 × 2 mm; 20 × 20 × 5 mm). The presence of polished spalls in the Intermediate Bronze Age assemblage (Fig. 1.31: 1–3) might indicate that old bifacial tools were recycled as cores (Barkai 1999). Nevertheless, the possibility that they are intrusive cannot be overruled.

Tools

The Intermediate Bronze Age flint tool assemblage is comprised of 125 items (31.3% of the debitage and tools); the blanks on which they were formed are specified in Table 1.3. The tools consist of the following types:

Retouched Flakes

Ten retouched flakes were observed, made on medium size blanks, the smallest being 25 × 16 × 4 mm and the largest 40 × 21 × 13 mm. All are made on simple flakes and are retouched along their edges.

Retouched Blades

Three of the retouched blades were made on simple blades, two on Canaanean blades and one was made on a short crested blade. All are broken: two are proximal fragments and four are medial fragments.

Table 1.3: Blanks used for tool manufacture of the IBA assemblage

	PE Flake	*PE Blade*	*Flake*	*Blade*	*Can. Blade*	*Bladelet*	*Core Tool*	*Cte*	*Total*	*CTE Type*
Retouched flake			10						10	
Retouched blade				3	2			1	6	Crested blade
Truncated item				2	1			1	4	Crested blade
Sickle blade			1	6	29				36	
Scraper	1		4						5	
Denticulate/Notch	4		27					4	35	4 cte-varia
Borer	4		3	2				1	10	Crested blade
Burin	1		2					2	5	Overpass, crested blade
Bifacial							1		1	
Arrowhead				2					2	
Varia			3						3	
Broken	1		7						8	
Total	*11*	*0*	*57*	*15*	*32*	*0*	*1*	*9*	*125*	

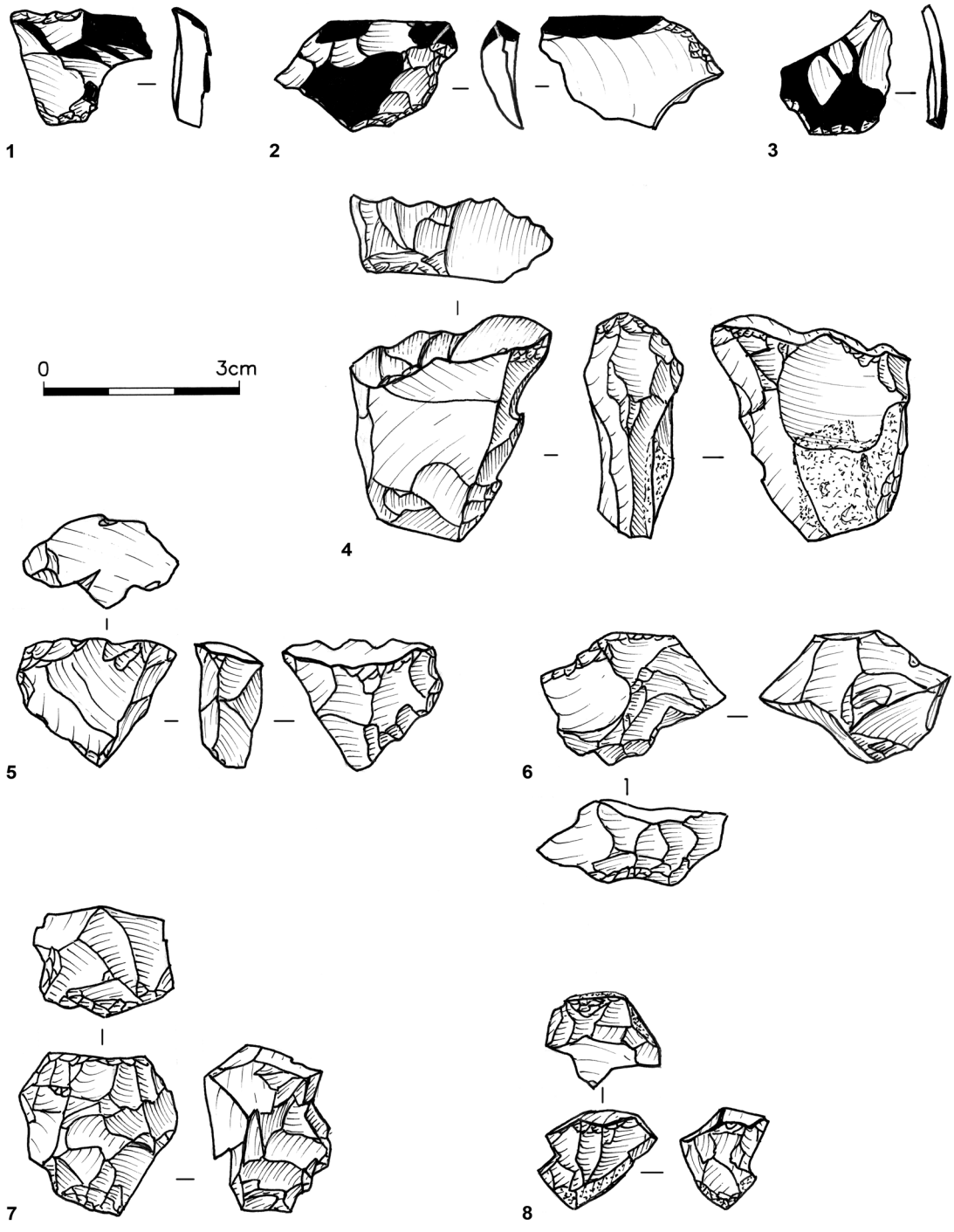

Figure 1.31: Polished spalls (1–3), bladelet core (4) and miniature cores (5–8).

Truncated Blades

Only one of the truncated blades is complete, shaped on a crested blade (31 × 17 × 6 mm). It is characterized by a concave truncation at the distal end. The other three truncations are straight: two were retouched from the dorsal face and one from the ventral face. They are possibly unused sickle blades (Fig. 1.32: 1–3).

Sickle Blades

Sickle blades consist of items bearing gloss on their sharp edges (n=36; 22.3%). They include items made on Cannaanean blades (n=29; Fig. 1.33: 1–5) and items made on simple blades and flakes.

Among the Canaanean sickle blades, medial segments are the most common (n=23) and only six items represent proximal segments. The length of these segments ranges between 16 mm and 99 mm with a mean of 41.5 mm (s.d. 20.0); their width is 15–36 mm with a mean 22.5 mm (s.d. 5.6); and their thickness is 3–8 mm with a mean 5.5 mm (s.d. 1.4). Only four bear truncations; two are double truncated and two have one truncated end and one segmented end. The Canaanean sickle blades bear a light retouch that either forms a relatively straight outline or a fine denticulated one. The retouch is often found on both lateral edges. Seventeen of the Canaanean sickle blades show a gloss on both edges. One of the Canaanean sickle blades bears intrusive crushing scars originating from both ends of the items (Fig. 1.33: 5).

The simple sickle blades include seven items: (1) a broken flake with a glossed sharp edge; (2) a backed and truncated sickle blade (length: 39 mm; width: 13 mm; thickness: 5 mm); (3) a broken backed blade with a truncated end (width: 12 mm; thickness: 3 mm), (the last two types resemble Chalcolithic sickle blades; e.g., Rosen 1997); (4) a

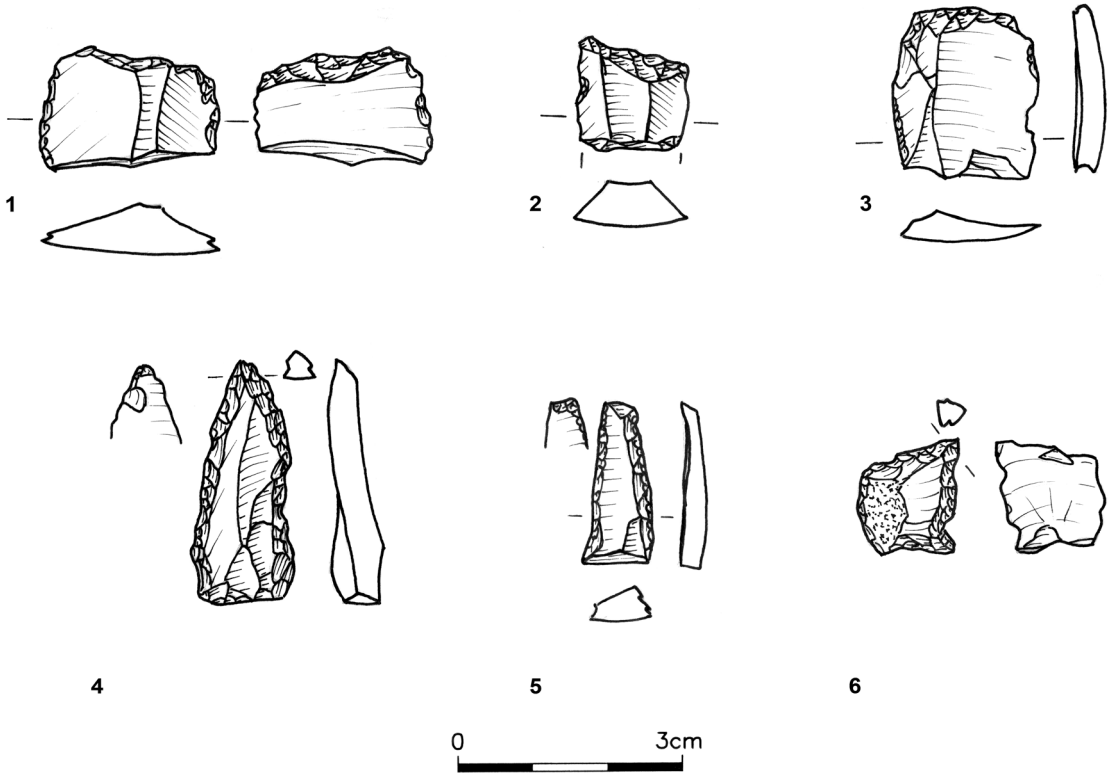

Figure 1.32: Truncated blades (1–3) and borers (4–6) from the Intermediate Bronze Age.

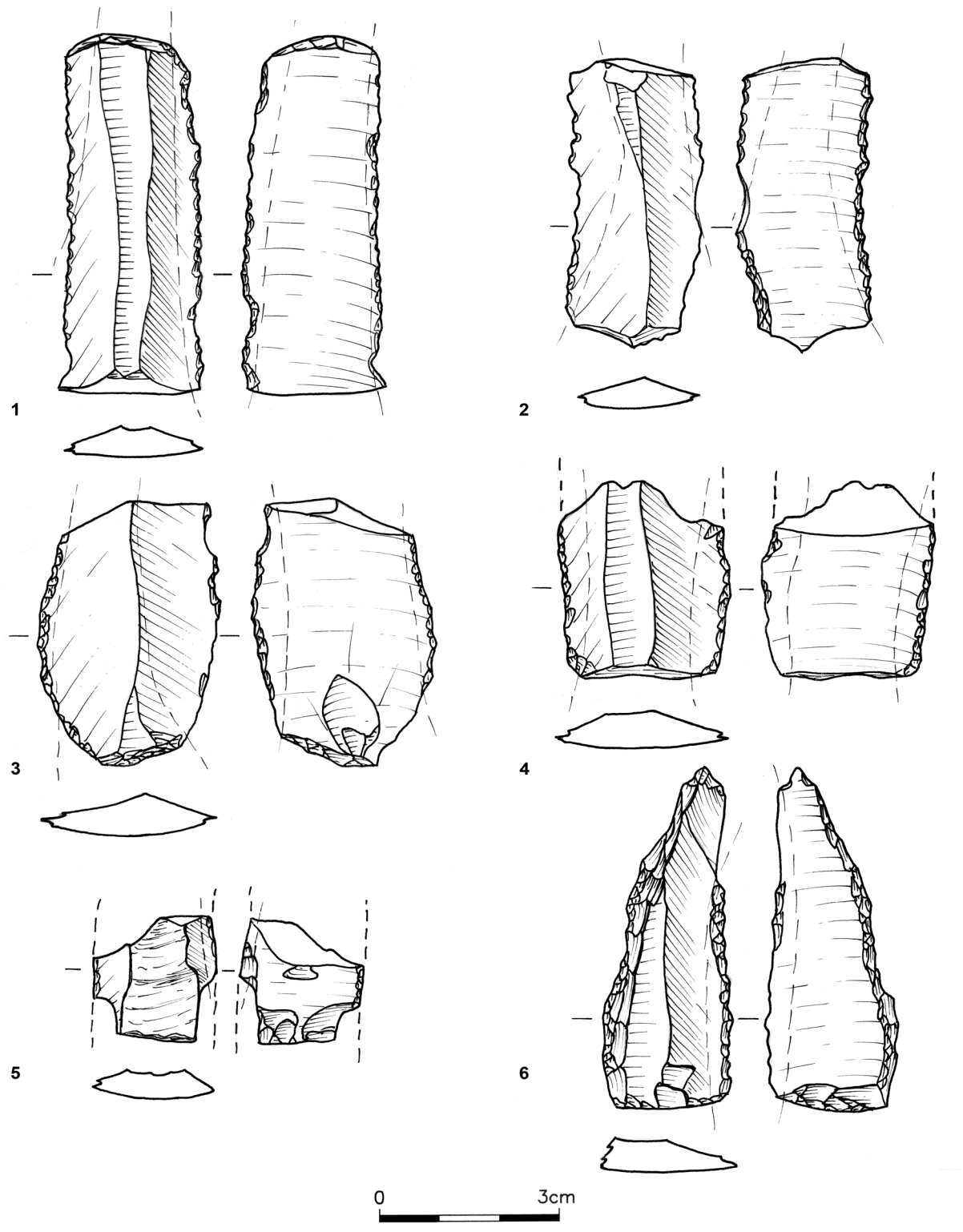

Figure 1.33: Canaanean sickle blades (1–5) and a triangular sickle blade (6) from the Intermediate Bronze Age.

broken blade with a steep back and one truncated end (width: 14 mm; thickness: 5 mm), in which the glossed edge was heavily retouched as well; (5) a broken primary element blade with a truncated end (width: 14 mm; thickness: 5 mm); (6) a broken blade with a bifacial pressure retouch (width: 17 mm; thickness: 5 mm), probably originating from a Pottery Neolithic context (e.g., Gopher 1989); and (7) a triangular shaped sickle blade (55 × 22 × 7 mm) with a dorsal truncation on the wide end (Fig. 1.33: 6). The back of the latter sickle blade is abruptly retouched and the sharp edge is finely denticulated. The item resembles the triangular shaped sickle blades that start to appear in the Middle Bronze Age (e.g., Crowfoot Payne 1983: 726, Fig. 351: 1; Mozel 2000: 261, Fig. 12: 3; Shimelmitz 2012).

Scrapers

Five scrapers were recorded for the Intermediate Bronze Age assemblage. All were made on flakes and can be specifically classified as end-scrapers. Four of these are complete and one is broken. Except for the latter, the retouch is not extensive and is restricted to the distal end. Their size ranges between 25 × 22 × 8 mm to 32 × 38 × 19 mm.

Denticulates and Notches

Denticulates and notches constitute the most common tool type in the Intermediate Bronze Age assemblage and testify to the general *ad hoc* character of the industry. A total of 35 tools of this type were recorded (28.0% of the tools). The smallest of these is 18 × 15 × 3 mm and the largest is 56 × 36 × 23 mm.

Borers

Ten borers were recorded (8.0% of the tools). In all of them the tip is retouched only on the dorsal face. Seven of the borers have a relatively short and wide tip (Fig. 1.32: 6) and three have an elongated tip (Fig. 1.32: 4–5).

Burins

Of the five burins recovered (4.0% of the tools) the following sub-types were observed: two "simple," two dihedral and one transversal.

Bifacials

A single item shaped by bifacial knapping was found. It is a medial fragment and it still bears some cortex along one of it faces.

Arrowheads

Two arrowheads were found. One is a broken segment of an Amuq point, shaped by intrusive flat pressure retouch (Fig. 1.34: 7). A second item is a medial segment of a large point, possibly a spear head, shaped by pressure retouch (Fig. 1.34: 6). There is no doubt that they do not belong to an Intermediate Bronze Age assemblage; a Pre-Pottery Neolithic B (PPNB) assignment is probable for both (e.g., Gopher 1994).

Varia

The three varia tools include one *piéce esquillé*, one burin-scraper, and one flake (53 × 45 × 18 mm) with a flat ventral retouch at the distal end forming a wide, pointed-rounded end.

Unidentified Broken Fragments

Eight broken fragments of tools that could not be assigned to a specific type were found.

The Character of the Canaanean Blades from the Intermediate Bronze Age

The following description of the Canaanean blades from the Intermediate Bronze Age of Ard el-Samra is based on the entire sample of Canaanean blades, including those found in the debitage and those found in the tools (n=38). Its primary concern is with the technological features of their blanks and does not consider their secondary modification.

All Canaanean blades are represented by broken pieces. However, whether these were broken or purposefully segmented is largely impossible to determine, since the intentional segmentation of Canaanean blades was commonly conducted by simple breakage (e.g., Rosen 1997). Of note is the fact that the majority are medial fragments (76.3%), while proximal fragments are fewer (21.1%) and distal fragments (2.6%) are especially rare.

The types of raw material used are highly varied —a point that may suggest that they originated from

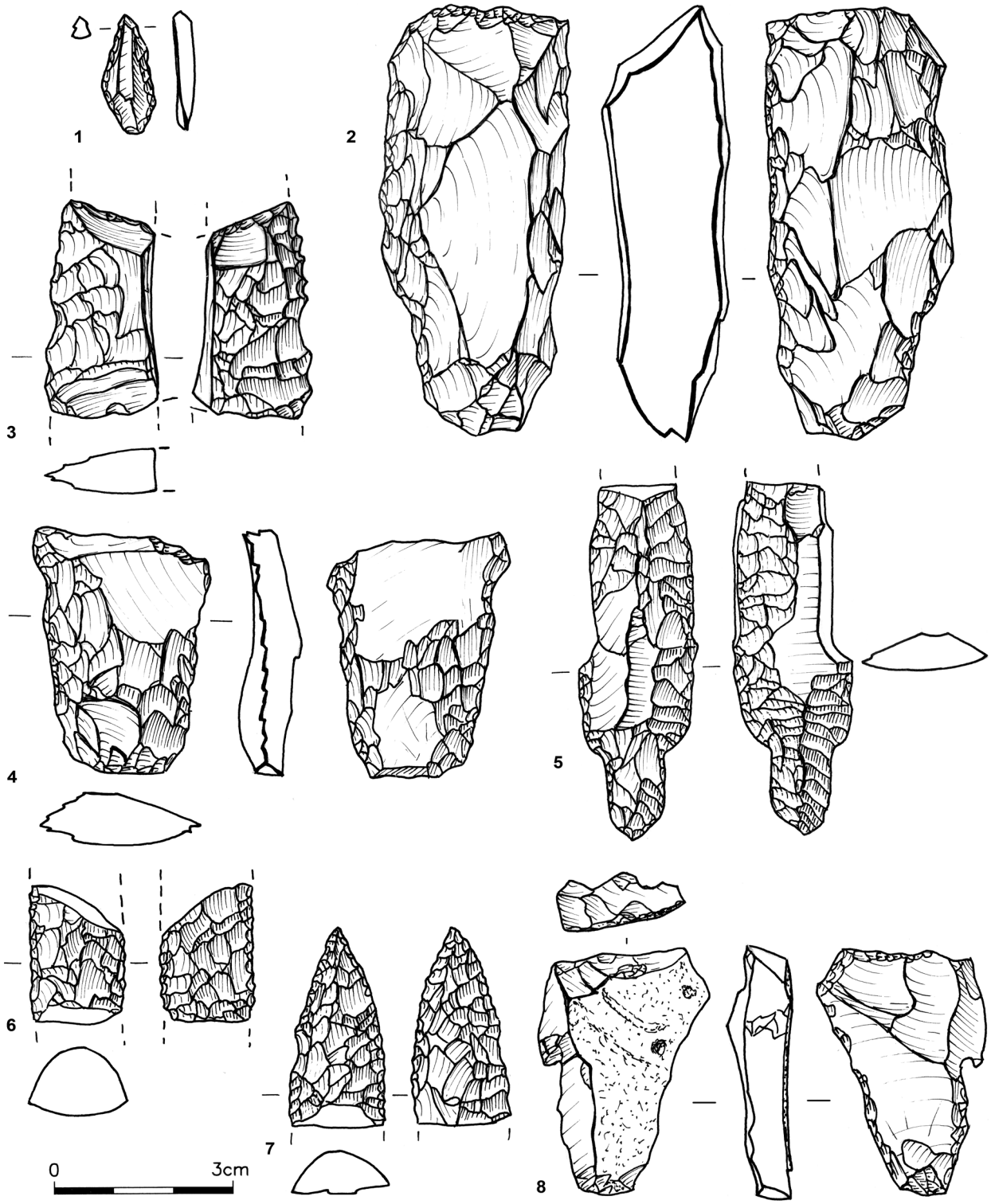

Figure 1.34: Flint items from the Chalcolithic (1–2) and Neolithic periods (3–7). Borer (1), adze (2), bifacial knives (3–4), arrowheads (5–7), "core on flake" (8). Retrieved from Intermediate Bronze Age (6–7), Chalcolithic (1), Early Bronze Age (5) and mixed (2–4, 8) contexts.

several workshops (Shimelmitz 2009; Shimelmitz and Rosen 2014). All are made of homogeneous raw material which is generally fine grained. Only two of the blades bear traces of cortex (5.3%); in these cases it covers one lateral edge and ca. 20% of the dorsal face. Only seven blades retain the striking platform, six are shaped by intensive faceting and one is dihedral. No indications of abrasion or blunting were recorded.

The longest segment is 99 mm long. The width of the Canaanean blades range is 15–36 mm and the thickness is 3–8 mm. The mean width is 23.0 mm (s.d. 4.7) and the mean thickness is 5.5 mm (s.d. 1.2). It is of note that the width values of these blades are similar to those of earlier Early Bronze Age Canaanean blades (Rosen 1983), somewhat contradicting other cases in which Intermediate Bronze Age Canaanean blades were reported to be wider (e.g., Betts 1992; Hanbury-Tenison 1986: 148; Waechter 1958). The present observations support Rosen's (1997: 60) argument that there is no pattern of increase in width along the Early Bronze–Intermediate Bronze periods and that the variation reflects different workshops from which the blades originated, regardless of the specific period.

Differences Between Excavated Areas

Although Areas K and Z seem to represent different components of Intermediate Bronze Age settlement at Ard el-Samra, no marked differences were observed in the distribution of the lithic finds (Figs. 1.35–1.36). A high degree of similarity is readily observed and only minor differences can be noted. Generally speaking, Area Z is characterized by a higher percentage of cores and CTEs, suggesting that knapping was more common in this area, while Area K is characterized by a higher percentage of flakes (the difference in the ratio flakes is statistically significant: $X^2=5.666$, df=1, p=0.0173). Concerning tool composition of the assemblage, the major difference is in a higher percentage of denticulates in Area K.

Chalcolithic and Early Bronze Age Assemblages

The Chalcolithic assemblage is meager and includes only 19 items (Tables 1.1–1.2). Worth noting is a small borer made on a bladelet or a small blade (Fig. 1.34: 1). A small, heavily knapped adze with no traces of polish was found within mixed sediments, probably originated from the Chalcolithic occupation (Fig. 1.34: 2).

The material from the Early Bronze Age is relatively scarce as well (n=41; Tables 1.1–1.2). Among the debitage the presence of three Canaanean blades is of note; there is no clear difference from the Canaanean blades of the Intermediate Bronze. The four cores were all used for flake production in which one has a single striking platform and three have multiple striking platforms. Two of the latter are exceptionally small (28 × 20 × 18 mm; 28 × 22 × 15 mm). The Early Bronze material includes only nine tools. Of note is the retouched blade that was made on a medial fragment of a fine crested blade probably originating from PPNB contexts (e.g., Wilke and Quintero 1994). Whether the item is intrusive or recycled is hard to estimate. A large Byblos arrowhead was found in the Early Bronze layers as well (Fig. 1.34: 5). The item bears several burination scars that might indicate recycling or impact fractures.

Traces of the Neolithic Occupation at the Site

Among the lithic finds are several items that are clearly of Neolithic origin, undoubtedly associated with early occupations of the site (Getzov *et al*. 2009; Barzilai 2010). The Neolithic indicative items include four arrowheads, all quite large and typical of the PPNB (e.g., Gopher 1994). Two of these arrowheads (Fig. 1.34: 6–7) were retrieved from Intermediate Bronze Age contexts, one from an Early Bronze Age context (Fig. 1.34: 5) and one from an unstratified context. Two perfectly straight crested blades that were meticulously shaped and are characteristic of the Naviform blade technology of the PPNB were found as well (Wilke and Quintero 1994). One of these was found in a mixed context; the second was found in the Early Bronze layers. The presence of two bifacial knives shaped by pressure retouch is of note as well (Fig. 1.34: 3–4). These items are especially typical of the Pottery Neolithic (e.g., Gopher 1989). Two additional bifacial tools

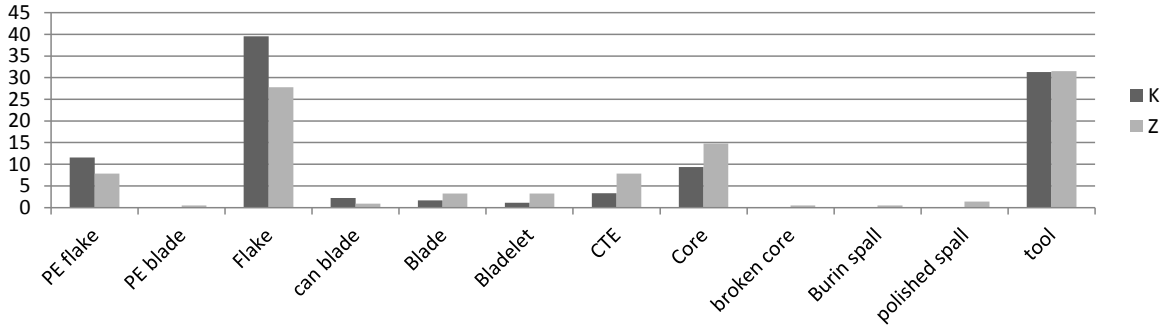

Figure 1.35: Composition of the assemblages of Areas K and Z.

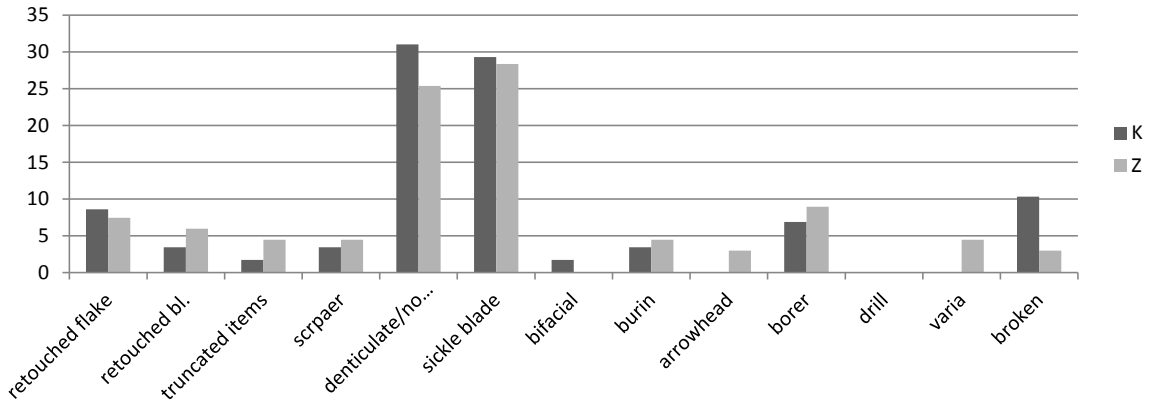

Figure 1.36: The tools of Areas K and Z.

from mixed contexts include a broken segment of an adze and a small chisel (size: 56 × 21 × 15 mm). These, however, might originate from the Chalcolithic occupation and are not necessarily Neolithic in origin.

STONE ASSEMBLAGE

A total of 42 stone artifacts were retrieved (Table 1.4). Of these, seven derived from topsoil contexts and are not discussed here. The assemblage thus consists of 35 items. Of these, 18 are of non-porous fine-grained basalt (51.4%), 12 are of porous basalt (34.3%), four are of limestone (11.4%) and one of beach rock (2.9%). Fourteen of the stone artifacts are of the groundstone variety, associated with grinding and pounding (40.0%), while seven derive from stone vessels such as bowls (20.0%). Two items are defined as discoids (5.7%) and the remainder are either too fragmentary to warrant identification (n=11; 31.4%) or are not readily ascribed to any of the primary categories, hence labelled as "varia" (n=1; 2.9%).

The Groundstone Assemblage

Eleven specimens are grinding stones. Most of them consist of small fragments that were identified by token of two worked surfaces, one of which is heavily abraded. Altogether five could be designated as lower grinding stones, three as upper grinding stones and three could not be differentiated. As a rule, the fragments are too small for the shape of the tools to be determined. On one occasion (5022/1) a slight concave profile of the working surface of a lower grinding stone was noted. The most complete specimen is a large fragment of a loaf-shaped upper grinding stone (Fig. 1.37).

The vast majority of grinding stones are made of porous basalt (n=9). Two notable exceptions

Table 1.4: The stone assemblage

Basket	Area	Str.	Loc.	Period	Material	Type
1017	Z	Unstratified			Fine-grained basalt	Bowl
1030/1	Z	I		IB	Porous basalt	Varia
1032/1	Z	I		IB	Fine-grained basalt	Pounder/hammer
1033/1	Z	II/III		EB/IB	Limestone	N/A
1068/1	Z	II		IB	Fine-grained basalt	N/A
1071/1	Z	II/III		EB/IB	Fine-grained basalt	N/A
1071/2	Z	II/III		EB/IB	Fine-grained basalt	Bowl
1071/3	Z	II/III		EB/IB	Limestone	Discoid
1079/1	Z	I/III	103	EB/IB	Porous basalt	Lower GS
1079/2	Z	I/III	103	IB	Fine-grained basalt	Vessel
1087/1	Z	III		EB/IB	Limestone	Discoid
1123/1	Z	I	116	IB	Porous basalt	GS
1125/1	Z	II		IB	Fine-grained basalt	Vessel
1136/1	Z	I	118	IB	Fine-grained basalt	Upper GS
1142/1	Z	I		IB	Porous basalt	N/A
1142/2	Z	I		IB	Fine-grained basalt	N/A
1147/1	Z	I/II		IB	Fine-grained basalt	Vessel
1149/1	Z	I/II		IB	Fine-grained basalt	Bowl
1166/1	Z	II/III		EB/IB	Fine-grained basalt	N/A
1169/3	Z	III		EB	Fine-grained basalt	N/A
1169/1	Z	III		EB	Porous basalt	Lower GS
1169/2	Z	III		EB	Beachrock	GS
1173/1	Z	III		EB	Porous basalt	GS
1182/1	Z	II/III		EB/IB	Fine-grained basalt	N/A
1186/1	Z	IV	121	Chal	Fine-grained basalt	Deep bowl
1187/1	Z	II/III		IB	Fine-grained basalt	Bowl
1200/1	Z	II/III	129	IB	Fine-grained basalt	Mortar
1208/1	Z	II/III		IB	Fine-grained basalt	N/A
1216/1	Z	IV	123	Chal/EB	Porous basalt	Lower GS
1223/1	Z	II	120	IB	Limestone	Mortar
5005	K	Unstratified			Basalt	GS
5009	K	Unstratified			Basalt	GS
5009	K	Unstratified			Basalt	Bowl
5014	K	Unstratified			Fine-grained basalt	Bowlet
5015/1	K	I		IB	Porous basalt	Upper GS
5015/2	K	I		IB	Porous basalt	Upper GS
5015/3	K	I		IB	Fine-grained basalt	N/A
5019/1	K	I/II		IB	Porous basalt	N/A
5022/1	K	I/II		IB	Porous basalt	Lower GS
5022/2	K	I/II		IB	Porous basalt	Lower GS
5028	K	Unstratified				Lower GS
5058	K	Unstratified				Shallow bowl

are of note: the upper loaf-shaped grinding stone mentioned above was produced of fine-grained, non-porous basalt; and an indiscriminate grinding stone made of beach rock (1169/2).

Other groundstone tools include two mortars and one hammer or pounding stone. The latter is made of fine grain basalt and is worked on all sides. It is elongated and narrow, with an oval end (Fig. 1.38).

The two mortars could not be more different. Mortar 1200/1 is likely to have been portable and it was found inside pit Locus 129. It was made of fine-grained, non-porous basalt. Its base was shaped into a low pedestal at the bottom of which a small depression is observed, perhaps related to its mode of manufacture. The upper part is shaped as a bowl and its form is somewhat oval, with the interior bearing clear signs of abrasion (Fig. 1.39).

Mortar 1223/1 appears to have been a stationary mortar, set against a wall (W138) and probably sunk into the floor (Fig. 1.13). It is massive and made of limestone. Its outer face is roughly shaped and irregular, while its broad rim is flat and smooth, possibly the rock's natural surface from which the mortar was produced. A narrow and deep shaft with a slightly pointed bottom was hollowed out. It is approximately 16 cm deep and 10 cm in diameter. It was found cracked vertically in three places and had a geode inserted into it.

Ten of the groundstones were found in Intermediate Bronze Age contexts, while only four were retrieved from Early Bronze Age contexts. With the exception of Mortar 1223/1, none of the implements were found in their context of use. Some, nevertheless, were associated with specifiable deposits. Thus two grinding stones were found on the well-preserved surface in Square E4, Stratum I; another was found incorporated in stone Surface 103; Mortar 1200/1 was deposited in pit Locus 129; and a fragment of lower grinding stone 1216/1 was found in pit Locus 123 (Stratum IV), possibly incorporated into its stone lining.

Figure 1.37: Loaf-shaped upper grinding stone 1136/1.

Figure 1.38: Hammer(?) 1032/1.

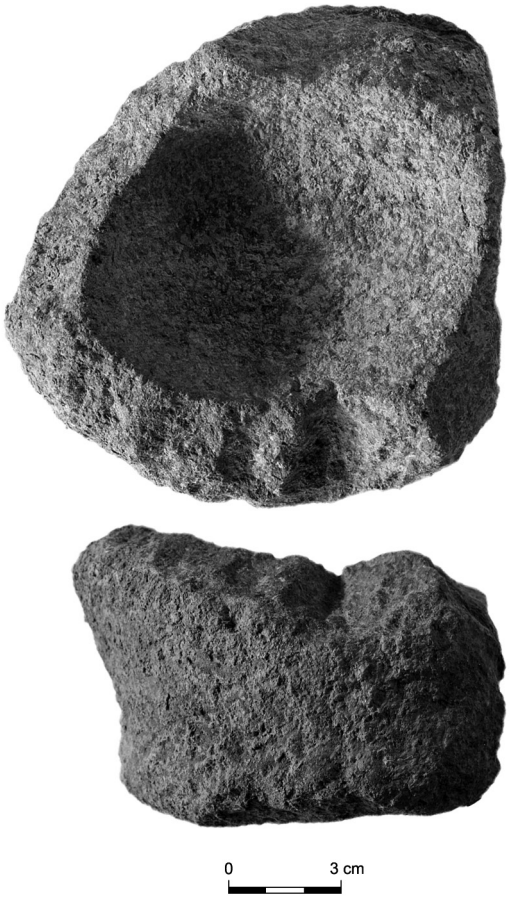

Figure 1.39: Mortar 1200/1.

Stone Vessels

Seven items can be categorized as stone vessels, all of which could be further classified as bowls. They were all made of fine-grain, non-porous basalt. Four had a carefully polished exterior surface, while the remaining three had both faces polished. Insofar as their form could be determined, they all seem to have had moderately curved profiles (Fig. 1.40). One particular specimen, however, was of a relatively deep variety, characterized by comparatively vertical walls (1186/1). Another notable exception is a vessel fragment with a sinuous profile (1125/1). The rims, when observed, were simple, characterized by a round profile. A single artifact with a flat rim is of note.

All stone vessels derive from Area Z, and with a single exception all are associated with Intermediate Bronze Age contexts. The exception is the deep bowl, which was found in a distinctly Ghassulian context—find concentration Locus 121.

Discoids

Two discoidal items were found in Ard el-Samra (Fig. 1.41). Unlike all other stone artifacts they were both complete. They consist of limestone nodules that were flaked along their circumference to produce a relatively flat disc. While, the function of these items is not clear, Eisenberg (2012: 50–52) suggests that they may have served as lids for pottery vessels.

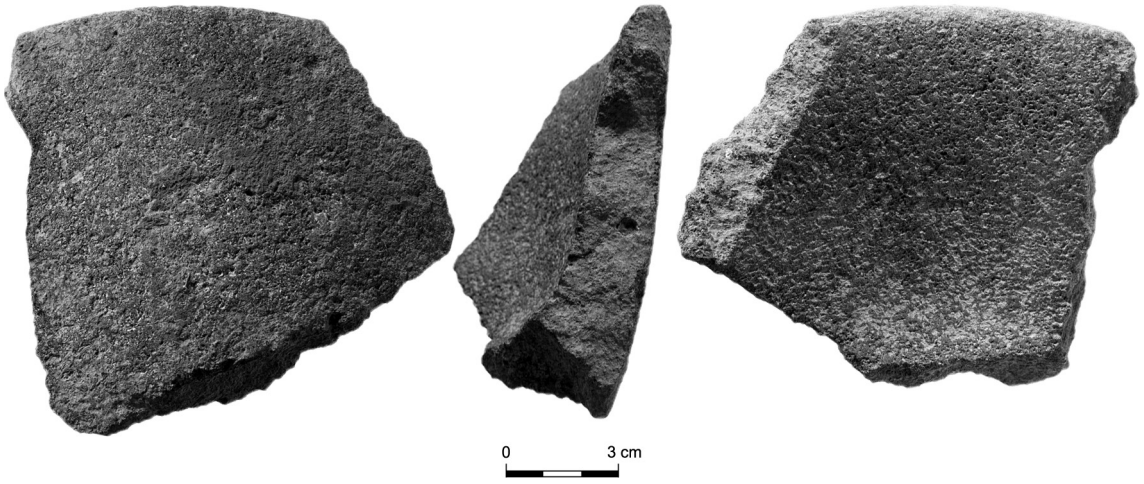

Figure 1.40: Stone bowl 1187/1.

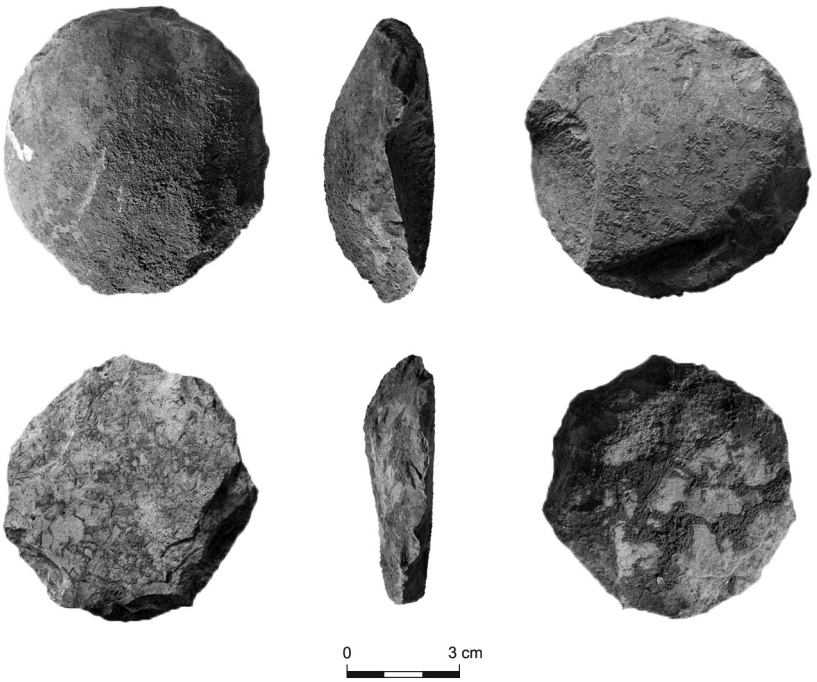

Figure 1.41: Discoidal items.

Varia

Twelve items, primarily due to their fragmentary state, could not be assigned to any of the above-mentioned groups. One specimen, however, seems to represent a disc (1030/1): it is 3 cm thick and it has worked surfaces and an oval outline. It is more heavily abraded on one side.

Of the 12 unidentified stone fragments in this category, eight are made of fine-grained, non-porous basalt, three of porous basalt and one of limestone.

ANIMAL REMAINS

The majority of the bones are derived from the Intermediate Bronze Age strata. Smaller assemblages, dated to the Chalcolithic period and Early Bronze Age, are reported only briefly. The two excavated areas, Area Z, of a domestic nature, and Area K, an open area, were compared in terms of species' relative frequency, age of exploited animals and body parts distribution. These characteristics of the assemblage can testify to the nature of the ancient animal economy: whether site's inhabitants were producing their own food (Zeder 1991), focusing on different herding goals (Redding 1984), the reliance on animals for meat or other products (Payne 1973; Grigson 1995) and more. The analysis also sheds light on the settlement type, considering the level of sedentism (Horwitz 1989a), the level of independence (Zeder 1996) and the involvement in pastoral activities.

Methods

The faunal assemblage was retrieved by hand—picking and sieving. Defined features were dry sieved, using a 5 mm mesh. All other material was hand-picked. All animal bones were cleaned with a tooth brush in fresh water and dried slowly. This procedure enables the detection of a range of taphonomic modifications on the surface of the bones, including butchery marks, burning and signs of animal activities.

Epiphyses as well as diaphysis (shaft fragments) were studied and recorded. Completeness of identified fragments was coded

according to five element zones in the case of long bones (proximal epiphysis, proximal shaft, shaft, distal shaft, and distal epiphysis) and completeness percentages for others (e.g., 50% of a complete astragali).

Bones were assigned to bone element and the lowest possible taxonomic level using the comparative collection stored at the Steinhardt National Natural History Museum and Research Center and at the Zooarchaeology Lab of the Institute of Archaeology, Tel Aviv University. Separation of sheep (*Ovis aries*) from goats (*Capra hircus*) was based on morphological criteria of selected bones (following Zeder and Lapham 2010). Sheep and goat skeletal elements that could not be differentiated were grouped into a sheep/goat (caprines) category. Bone fragments that could not be identified to species, such as vertebrae, ribs and foetus bones were assigned to one of two body size groups: Large (cattle size), and Medium (caprines size).

The relative abundance of different taxa was quantified using NISP (number of identified specimens) (Grayson 1984; Lyman 2008). The relative abundance of skeletal elements was quantified using MNE (minimum number of elements), calculated using the assumptions described in Klein and Cruz-Uribe (1984) and Lyman (1994, 2008).

Recorded elements were inspected for various macroscopic bone surface modifications that are related to the processes the bones went through from the time of preparation for consumption to discard. These included butchery marks that were classified according to three stages in the preparation for consumption: removal of the skin, dismemberment of the carcass, and filleting of meat from the bones (based on Binford's [1981] cut marks typology). Signs of animal activity (i.e., rodent gnawing, carnivore punctures, scoring, and digestion; Lyman 1994) and stage of weathering (Behrensmeyer 1978) that could indicate whether the bones were buried quickly or left exposed on the ground were also recorded. Burning signs were noted when a visible change in bone color was evident.

Age at death of the major culled species was analyzed in order to study the management strategy of the main livestock, on the basis of epiphyseal closure (Silver 1969; Zeder 2006). Teeth eruption was not recorded due to the lack of recordable teeth.

Results

Animal remains were analyzed by area and period. They were not analyzed by strata due to the significantly smaller assemblage sizes resulting from further subdivision.

One hundred seventy-seven bones were identified (NISP) in the Intermediate Bronze Age assemblage of Area K and assigned to body parts and size groups (Table 1.5). One hundred and thirty-four bones were identified (NISP) in area Z of which 110 are attributed to the Intermediate Bronze Age, 21 to the Early Bronze and three to the Chalcolithic period (Table 1.5). The current analysis will focus on the Intermediate Bronze Age faunal assemblage, for, unlike the Chalcolithic and Early Bronze assemblages, it is sufficiently large to discuss patterns of animal economy. The livestock husbandry is the main component of animal economy in Intermediate Bronze Age Ard el-Samra (Table 1.5), dominated by cattle (*Bos taurus*) and followed by caprines and pigs. Cattle occurs in similar frequencies in both areas (~38% of livestock), whereas the frequencies of other livestock vary: In area K the cattle is followed by lower, and relatively equal, frequencies of caprines (sheep [*Ovis aries*] or goat [*Capra hircus*]) and pigs (*Sus scrofa*) (~28% each), while in area Z cattle and caprines are present in similar frequencies (36–39%) and pigs are exploited to a lesser extent (20%). Scarce remains of gazelle (*Gazella gazella*) were also found in area Z. Too few of the caprines could be differentiated into sheep or goat to provide any conclusive pattern.

Bones with human modifications were recorded on a few elements from both areas. They are evident on the remains of cattle, pigs and caprines (Table 1.6). There are no signs of animal activity such as carnivore gnawing or rodent scratching, and there is a very low effect of weathering, suggesting bones were covered quickly after discard.

The breakdown of skeletal elements in Area Z is similar for cattle and caprines, including all body parts, while pigs are represented mainly by the anterior part of the body (skull and forelimbs; Table 1.7a), but the sample is too small to be conclusive.

In area K the breakdown of skeletal elements frequencies of cattle includes all body parts (Table 1.7b). The skeletal element frequencies of caprines and pigs are also represented by various body parts, excluding feet. It is interesting to note that they are represented by exactly the same body parts (Table 1.7b).

Age-at-death was estimated on the basis of stages of epiphyseal fusion, for the combined assemblages of Areas Z and K, due to the sample size. The cattle (Table 1.8) are kept to an old age, with 88% of the herd surviving to age 2.5 years. For pigs (Table 1.9) and caprines (Table 1.10), it seems that most of the herd is culled at younger ages; but the sample is too small to be conclusive.

Table 1.5: Species frequencies in areas K and Z

		Area K		*Area Z*	
Period	*Species*	*NISP*	*%NISP*	*NISP*	*%NISP*
IBA	*Bos taurus*	68	38.42	42	38.18
	Caprines	49	27.68	37	33.64
	Capra hircus	3	1.69	1	0.91
	Ovis aries	1	0.56	1	0.91
	Sus scrofa	49	27.68	22	20.00
	Medium mammal	6	3.39	4	3.64
	Gazella gazella	0	0.00	3	2.73
	Canis sp.	1	0.56	0	0.00
	Total	*177*		*110*	
EBI	*Bos taurus*	0		8	38.10
	Caprines	0		6	28.57
	Sus scrofa	0		6	28.57
	Medium mammal	0		1	4.76
	Total	*0*		*21*	
Chal	*Bos taurus*	0		2	
	Caprines	0		1	
	Total	*0*		*3*	

Table 1.6: Butchery marks, following the typology of Binford (1981)

Area	*Period*	*Species*	*Skeletal Element*	*Typology*
Z	IBA	*Bos taurus*	Femur	Dismembering (Fd-3)
Z	EBI	*Bos taurus*	Rib	Cut mark
Z	IBA	*Bos taurus*	Astragal	Polished
Z	IBA	*Caprines*	Rib	Cut mark
K	IBA	*Caprines*	Tibia	Skinning (Mcd-1)
K	IBA	*Sus scrofa*	4th metacarpal	Cut mark
K	IBA	*Sus scrofa*	Femur	Dismembering (Fp-1)

Table 1.7a: Frequencies of skeletal elements in Area Z, based on MNE

Body part	*Skeletal elements*	*Cattle*	*Caprines*	*Pigs*
Head	Horn	1	1	
	Mandible	1	3	2
Neck	Axis		1	
Upper forelimb	Humerus	1	3	1
	Scapula	2	1	1
Lower forelimb	Radius	1	4	2
	Ulna	1		1
Lower forelimb	Metacarpal	1	1	2
Trunk	Pelvis	1	3	1
	Rib	2	1	
	Tho vertebra	1	1	2
	Lum vertebra	1	2	
Upper hindlimb	Femur	1		
Lower hindlimb	Tibia	1	2	
	Metatarsal	3		
	Astragal	3		
	Calcaneus	1	3	
Feet	1st phalanx	3	1	
	2nd phalanx	1	1	
	3rd phalanx	1		

Table 1.7b: Frequencies of skeletal elements in Area K, based on MNE

Body part	*Skeletal elements*	*Cattle*	*Caprines*	*Pigs*
Head	Horn	2	3	
	Mandible	3	1	2
Neck	Axis			
Upper forelimb	Humerus	2	3	1
	Scapula	1	2	1
Lower forelimb	Radius	2	2	4
	Ulna	3		
Lower forelimb	Metacarpal	2	3	3
Trunk	Pelvis	1	3	1
	Rib	1	1	2
	Tho vertebra	7	1	1
	Lum vertebra			
Upper hindlimb	Femur	2	1	3
Lower hindlimb	Tibia	4	2	1
	Metatarsal	1	1	1
	Astragal	2		
	Calcaneus	5	1	
Feet	1st phalanx	3		
	2nd phalanx	1		
	3rd phalanx	2		

Table 1.8: Frequencies of fused cattle bones; aging based on Silver (1969)

		Area K			*Area Z*			*Total*
Age	*Elements*	*Fused*	*Total*	*%F*	*Fused*	*Total*	*%F*	
Before birth	Prox metapod	3	3		4	4		100%
7–10m	Dist scapula	0	0		1	1		
12–18m	Dist humerus	2	2		0	0		
12–18m	Prox radius	1	2		1	1		
	Total	*3*	*4*	*75*	*2*	*2*	*100*	*83.33%*
18m	Phalanx 1	1	2		1	2		
18m	Phalanx 2	1	1		1	1		
2–2.5y	Dist tibia	7	7		1	1		
2–2.5y	Dist metapod	2	2		1	1		
	Total	*11*	*12*	*91.66*	*4*	*5*	*80*	*88.23%*
3.5–4y	Prox humerus	0	0		0	1		
3.5–4y	Prox ulna	0	1		0	0		
3.5y	Prox femur	0	0		0	0		
3.5–4y	Dist radius	1	2		0	0		
3.5–4y	Dist femur	0	0		1	1		
3.5–4y	Prox tibia	0	0		1	1		
3–3.5y	Calcaneum	3	5		0	0		
	Total	*4*	*8*	*50*	*2*	*3*	*66.66*	*54.54%*

Table 1.9: Frequencies of fused pig bones; aging based on Silver (1969)

		Area K			Area Z			Total
Age	Elements	F	Total	%F	F	Total	%F	
Before birth	Prox metacarpal	5	5		2	2		100%
1	Scapula	1	1					
1	Dist humerus	1	1					
1	Prox radius	1	2		0	2		
1	2nd phalanx							
	Total	*3*	*4*	*75*	*0*	*2*	*0*	*50%*
2	Dist metacarpal	4	4		1	1		
2	1st phalanx							
2	Dist tibia	1	1					
	Total	*5*	*5*	*100*	*1*	*1*	*100*	*100%*
3.5	Prox tibia							
3.5	Prox humerus	1	1		0	1		
3.5	Dist radius	0	4					
3.5	Prox ulna	0	1					
3.5	Prox femur							
3.5	Dist femur	0	3					
3.5	Prox fibula							
Total		*1*	*9*	*11.11*	*0*	*1*	*0*	*10%*

In order to examine spatial activity in Area Z Strata I–II, the number of bone fragments (identified and unidentified) was quantified per square. It seems that most of the fragments are concentrated in Squares D3 and E3 (Table 1.11). In Area K Strata II–III, most of the fragments are concentrated in Square K3, followed by K2, K4, L3 (Table 1.12). Studying the frequency of pig and caprine skeletal elements from these squares (Table 1.13) shows that they are concentrated in Square K3, where they are represented by various body parts, rich and poor in meat, and the representation is similar for these two species. The finds in other squares from these strata are too scarce to merit a proper comparison, but they include body parts that are both rich and poor in meat as well. The cattle body part frequency in Square K3 is similar to that of the other species (Table 1.13). However, it is also dominant in Square

Table 1.10: Frequencies of fused caprine bones; aging based on Zeder (2006)

				K			*Z*		*Total*
Stage	*Age*	*Element*	*F*	*Total*	*%F*	*F*	*Total*	*%F*	
a	0–6m	Prox radius	1	2	50	2	2	100	75%
b	6–12m	Dist humerus	1	2		0	2		
b	6–12m	Pelvis	2	2		1	2		
b	6–12m	Scapula	1	1		1	1		
		Total	*4*	*5*	*80*	*2*	*5*	*40*	*60%*
c	12–18m	1st phalanx	0	0		1	1		
c	12–18m	2nd phalanx	0	0		1	1		
		Total	*0*	*0*	*0*	*2*	*2*	*100*	*100%*
d	18–30m	Dist tibia	2	2		0	0		
d	18–30m	Dist metacarpal	3	3		0	0		
d	18–30m	Dist metatarsal	0	1		0	0		
		Total	*5*	*6*	*83.3*	*0*	*0*	*0*	*83.30%*
e	30–48m	Calcaneus	0	1		0	0		
e	30–48m	Prox femur	0	0		0	0		
e	30–48m	Dist femur	0	1		0	0		
e	30–48m	Dist radius	0	0		0	0		
e	30–48m	Prox tibia	0	0		0	1		
e	30–48m	Prox ulna	0	0		0	0		
		Total	*0*	*2*	*0*	*0*	*1*	*0*	*0*
f	48+	Prox humerus	0	0	0	0	0	0	

Table 1.11: Spatial distribution of animal remains (identified and unidentified) in Area Z, Strata I-II.

Square	*ID*	*UID*	*Total*
C3	2	0	2
D3	22	41	63
D4	5	13	18
E2	2	4	6
E3	31	31	62
E4	10	12	22
F3	18	16	34
F4	20	15	35
G3	6	10	16

Table 1.12: Spatial distribution of animal remains (identified and unidentified) in Area K, Strata II-III

Square	*ID*	*UID*	*Total*
K2	31	11	42
K3	80	42	122
K4	28	8	36
L2	5	3	8
L3	22	8	30
L4	5	1	6
L5	1	4	5
M4	3	5	8
M5	1	0	1
N4	1	0	1
N5	0	2	2

K2, where mostly meat-poor parts are found, such as skull, lower hind-limb and feet parts. It might imply that different stages of processing cattle for consumption took place in these two squares.

MOLLUSKS

Seventeen malacological remains were recovered at the excavation of Ard el-Samra. The shells were retrieved by manual collection and selective sieving. Table 1.14, below, provides a concise description of the shells according to their stratigraphic assignment as determined by the excavators.

All marine shells were collected dead from the Mediterranean Sea shore. With the exception of the worked specimens, the use made of these shells is indeterminate. Land snails most likely occur naturally on site, whereas local fresh water bivalves were brought from the coastal river system. One worked shell was imported to the site from the Nile River.

Two worked shells were found in Early Bronze Age contexts. It is important to note, however, that Early Bronze material seems to have originated from an erosive process from slopes stretching north of the present excavation and was not found *in situ*. One shell is a broken *Cerithium vulgatum* with an artificial hole in the spiral whorl (Fig. 1.42). The hole was probably produced by gouging or hammering (Francis 1989: 27), and the shell was used as a bead. The other shell is *Chambardia rubens arcuata*, a large freshwater mussel distributed in East Africa (the Nile River), Central and West Africa. The shell is solid and ovate. The interior is pink mother-of-pearl that changes to white when exposed to sunlight (Mandle-Barth 1988: 73; Pain and Woodward 1962: 75). A part of the valve was shaped into the form of a round disk and the rims were polished and smoothed (Fig. 1.43). Due to the whitish color of the shell and its round shape, the disk might represent the moon and perhaps

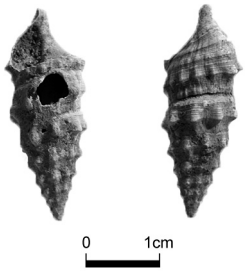

Figure 1.42: Spiral whorl bead with artificial hole.

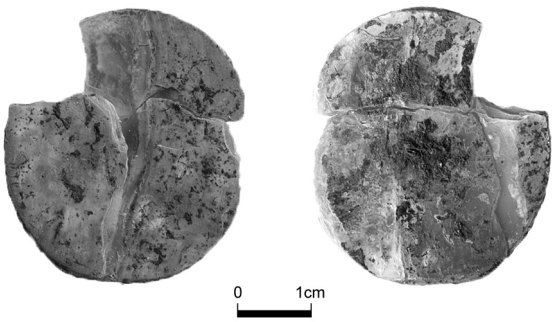

Figure 1.43: Worked round disc with polished rim.

Table 1.13: Skeletal element frequencies of cattle, caprines and pigs in Sqs. K2, K3, K4 and L3(Area K), strata II-III, based on MNE

		K2			*K3*			*K4*			*L3*		
Body Part	*Skeletal Elements*	*Cattle*	*Caprines*	*Pigs*	*Cattle*	*Caprines*	*Pigs*	*Cattle*	*Caprines*	*Pigs*	*Cattle*	*Caprines*	*Pigs*
Head	Horn	2	1			1							
	Mandible	2		1	3	2	2		1		1		
	Maxila									1			
Neck	Axis									1			
Upper forelimb	Humerus			1	2	3	1						
	Scapula				1	2	1			1		1	
Lower forelimb	Radius				2	2	2			1			1
	Ulna			1	1		1	1					
	Metacarpal				1	2				1			2
Trunk	Tho vertebra				2		1	2			1	1	
	Lum vertebra					1						1	
	Rib	1	1			1	1		1	1		1	
	Pelvis		1	1		2	1	1	1				1
Upper hindlimb	Femur			1		1	2	1			1		
Lower hindlimb	Tibia	4	1		1	1		1			1	1	
	Metatarsal				1	1	1				1		
	Astragal												
	Calcaneus	3			1	1					1		
Feet	1st phalanx	1											
	2nd phalanx										1		
	3rd phalanx	3											
Total		*16*	*4*	*5*	*15*	*20*	*13*	*6*	*3*	*6*	*7*	*5*	*4*

Table 1.14: Description of Mollusks According to Period

Period	*Area*	*Square*	*Basket*	*Species*	*Conservation*	*Origin*	*Comment*	*Fig.*
Chal.	Z	F2	1216	*Tonna galea*	Fragment	Mediterranean	Stone lined pit	
EB I?	Z	D3w	1109	*Cerithium vulgatum*	Broken	Mediterranean	Artificial hole in spiral whorl, bead.	Fig. 1.42
EB I	Z	D4s	1187	*Chambardia rubens*	Broken	Nile	Round disk, worked, with polished rim. Moon? Cult?	Fig. 1.43
EB?	Z	E2nw	1122	*Glycymeris bimaculata*	Complete	Mediterranean		
EB?	Z	E2nw	1122	*Potomida littoralis delesserti*	Broken	Coastal river system (local)		
IBA	K	K2	5053	*Potomida littoralis delesserti*	Fragment	Coastal river system (local)		
IBA	K	K2	5053	*Hexaplex trunculus*	Complete	Mediterranean		
IBA	K	K2	5056	*Helix engaddensis*	Complete	land snail		
IBA	K	K2	5095	*Levantina caesarena*	Broken	land snail		
IBA	Z	E2	1026	*Glycymeris bimaculata*	Broken	Mediterranean		
IBA	Z	F4	1181	*Glycymeris insubrica*	Broken	Mediterranean		
IBA	Z	E3-E4	1183	*Glycymeris Bimaculata*	Complete	Mediterranean		
IBA	Z	F3-4	1217	*Potomida littoralis delesserti*	Broken	Coastal river system (local)		
Topsoil	Z	F4	1046	*Glycymeris glycymeris*	Complete	Mediterranean		
Topsoil	Z	F4	1046	*Glycymeris bimaculata*	Broken	Mediterranean		
Topsoil	Z	E2	1005	*Glycymeris insubrica*	Broken	Mediterranean		
Topsoil	Z	E3	1006	*Phallium undulatum*	fragment	Mediterranean	Cassid lip.	Fig. 1.44

has a cultic meaning. Elide (1961) illustrates the connection between the sacred powers in water (represented by bivalves), the moon and woman.

The Cassid lip found in the topsoil is much worn, but it appears that one side was ground and straightened and around the middle of the lip there is a faint slit (Fig. 1.44). "Cassid lips" appear in the Near East since the Early Kebaran, found in graves, sanctuaries but also in undefined context. They might be used as ornaments and could have been tied to strings since many are not holed (Reese 1989). The "Cassid lips" may represent a crescent moon, symbolizing the new moon, birth or a new beginning. However, whether these worked shells were used as ornaments or expressed deep symbolic meaning is mere conjecture.

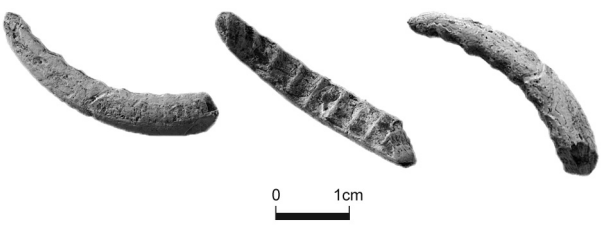

Figure 1.44: Cassid lip.

DISCUSSION

Ard el-Samra is one of those sites that are marked by shifting boundaries, as their settlement moved back and forth across the landscape. To date, five excavations have been conducted at the site, each revealing a distinct stratigraphic sequence (cf. Getzov *et al*. 2009; Barzilai 2010; Getzov 2011), with remains dating from the Pre-Pottery Neolithic B, Pottery Neolithic, Chalcolithic, Early Bronze I and Intermediate Bronze periods. Generally speaking, these excavations, including the present report, suggest that the center of occupation gradually moved from west to east.

The excavation reported here illustrates this pattern on a miniature scale. It is located on the southeastern part of the site and, accordingly, contains remains associated primarily with the later part of the cultural sequence. Chalcolithic and Early Bronze Age remains were found only in Area Z, while Intermediate Bronze Age remains were found in both areas of excavation. Moreover, the Chalcolithic and Early Bronze Age horizons were relatively meager and insubstantial, apparently representing the settlement's outskirts, which, during the Intermediate Bronze Age, moved eastwards to the location of Area K.

Due to the fragmentary and quantitatively scant finds attributed to the Chalcolithic and Early Bronze periods, the present discussion will be limited to the Intermediate Bronze Age remains. It will begin with a consideration of the settlement's sequence of development, and will then consider its economy and spatial organization. Finally, some points regarding Ard el-Samra's position with the Intermediate Bronze Age of the southern Levant will be offered.

STRATIGRAPHY AND SETTLEMENT SEQUENCE

In both excavation areas three stratigraphic layers were associated with the Intermediate Bronze Age, suggesting a lengthy, albeit somewhat discontinuous, occupation of the site during this period. Judging by the sequence observed in Area Z, the overall pattern seems to be one of condensation. It started as an open area, represented by scattered finds in the upper horizon of Stratum III. Subsequently, a relatively isolated and well-built structure occupied this area in Stratum II, in the vicinity of which a couple of pits were found and a stone surface. In Stratum I, the area was densely built, with a number of architectural units, distinct activity areas and a range of installations.

There appears to be an utter disjuncture between Strata II and I. Although the physical proximity of the strata is considerable, Stratum I shows complete disregard for what was there before. It is probable that building 140 of Stratum II was abandoned long before the subsequent stratum was established. This suspicion is somewhat supported by the relatively thick accumulation of yellowish sediment associated with Stratum II, which must have demanded some time to accumulate; and as suggested by the section illustrated in Fig. 1.4, it may very well be attributed to a disintegrated mudbrick superstructure that dissolved *in situ*.

ECONOMY

Ard el-Samra of the Intermediate Bronze Age appears to have been economically self-sufficient. There is reasonably direct evidence of livestock management. Faunal remains indicate that the cattle, sheep, goats and pigs were its main constituents, a pattern that was typical for the Bronze Age as a whole, and which continued into later periods (see Sasson 2008). Moreover, cattle, which constitute the greater part of the animal remains in Intermediate Bronze Age Ard el-Samra, are represented by old individuals, implying they were used for burden and traction. High frequencies of cattle are characteristic of the Middle Bronze Age, and it is correlated to intensive agriculture during that period (Horwitz 1989b; Horwitz 1989a). Also the age profiles and skeletal frequencies of caprines suggests an emphasis on secondary as well as primary products.

Pigs are a somewhat different matter, as they were raised primarily for meat consumption; they do however draw attention to a number of interesting features. Pigs provide strong reference for sedentariness, since they require proximity to water, which cannot be provided by nomadic populations (Horwitz 1989a; Hesse and Wapnish 1997). Most interestingly, pigs are best raised by individual consumers, at the household level (Zeder 1996). It seems, therefore, that households may have been economically autonomous, at least insofar as pigs are concerned.

The available data regarding floral aspects of the Intermediate Bronze Age economy is severely lacking. Yet, there is sufficient indirect evidence to conclude that field and grain cultivation were practiced. These include sickle blades, cattle management oriented to their use for traction and apparently the remains of a free-standing storage facility.

In addition, the chipped stone assemblage points towards a considerable degree of self-sufficiency. As a whole, it includes both debitage and tools, indicating that the knapping of flint was consistently performed at the site. And indeed, *ad hoc* tools are the most common tool types in the assemblage,

followed by sickle blades and borers. These are likely to have answered a variety of needs, most of which the inhabitants were able to meet on their own.

However, other components of the site's material culture were undoubtedly produced by specialized agencies. This is clearly the case for the groundstone assemblage that was produced from basalt—a non-local material. The absence of production waste related to the manufacture of Canaanean blades and their attribution to specialized workshops strongly suggests that they were purchased elsewhere. Also the pottery assemblage is unlikely to have been produced on the household level. It consists of a well-defined and consistent morphological corpus with a clearly articulated range of forms and fabrics, implying a systematic and well-organized mode of production that characterizes established workshops.

Thus, while self-sufficient in many respects the households of Ard el-Samra were tied together with other agencies, on whose services they relied for the ongoing maintenance of their daily routine. Canannean blades for harvesting, groundstone tools for food processing, and pottery vessels for cooking, storage, transport and serving, are the most evident in the archaeological assemblages uncovered at the site. While the Intermediate Bronze Age of the southern Levant is often thought of as a deteriorated aftermath of the collapse of the Early Bronze Age urban system, it is evident that a great deal of economic complexity remained in place. Even if the accumulations of wealth and public buildings are no longer evident, the villages of the Intermediate Bronze Age were still integrated into an economic system involving exchange and commerce; and their simplicity is by no means as straightforward as it seems at first (cf. Greenberg 2002).

ACTIVITY AREAS AND ARTIFACT DISTRIBUTION

Any attempt to trace particular modes of practice and their unfolding in space is curtailed by the overall poor preservation of architectural features and the lack of any distinctive variations in artifact distribution. All attempts to better understand the difference between the two excavation areas – K and Z – were largely unsuccessful. Although the immovable features suggest that they served different purposes, the distribution and composition of the pottery, flint and faunal assemblages all demonstrated minor and altogether insubstantial differences that cannot serve as a suitable foundation for more ambitious inferences.[2]

One may posit that there was no real spatial sanctioning of practices and that most aspects of daily activity took place across the site. However, it is probable that the finds uncovered in both areas represent secondary deposits that are removed from the primary sites of practice. Numerous agencies are likely to have contributed to the dispersal of artifacts (including trampling, scavenging, gravitation, children's play, ploughing, etc.), continuously mixing assemblages and producing an averaged pattern throughout the site (see Schiffer 1987).

The well-defined activity area in Square E4, Stratum I (Figs. 1.3, 1.7, 1.9, 1.10) serves to underscore this process. It contained a hearth (Locus 116), a circular platform beside it (Locus 109) and the remains of a free-standing mud-plastered facility, perhaps a silo. Together these suggest a range of household quotidian activities including food processing, storage and perhaps also consumption. While, within the confines of the present excavation, these features are singular and serve to distinguish this context from others, the pottery and chipped stone assemblages hardly differ from the patterns noted for the site as a whole. The flint assemblage is marked by cores and flakes; *ad hoc* tools are common, accompanied by smaller numbers of sickle blades, borers and scrapers. The pottery assemblage is dominated by jars and cooking-pots, while serving vessels such as bowls and jugs are uncommon.

The distinctiveness of this context regarding its immovable features, coupled with the indistinguishable character of its movable assemblages, is quite striking. Although different categories of the material record need not correspond in any particular manner, this condition suggests that the movable artifacts do not account for the specific activities that characterized this area, anymore than the excavated assemblage as a whole.

2 The sole possible exception here concerns the size of the assemblages that is considerably smaller in Area K. This, however, can at least partially be attributed to the difference in excavated volume of sediment.

The aforementioned agencies that promote mixing of assemblages may be partially accountable for this. But it is likely that the assemblage composition is also the result of an orderly abandonment process that removed all that were still functional, leaving behind an indistinguishable assortment of artifacts.

This having been said, it should be noted that the Intermediate Bronze Age assemblages in Ard el-Samra do not show signs of prolonged exposure on the surface. This is readily observed for the faunal remains and most of the pottery assemblage that show little signs of weathering or bleaching. This observation works against many of the processes that are likely to move artifacts across the site, for the effectiveness of most of these is significantly curtailed once artifacts get buried. It seems therefore that there is a high degree of likelihood that the site was regularly littered with refuse of all sorts, randomly scattered within and around it. It is probable that there was little effort made to manage the settlement's "waste stream"; and that the overall policy was simply to hurl it out of the way in no particular order.

ARD EL-SAMRA AND THE INTERMEDIATE BRONZE AGE IN THE SOUTHERN LEVANT

The site of Ard el-Samra joins a growing number of Intermediate Bronze Age rural settlements discovered throughout the southern Levant, consistently tempering the pastoral model of subsistence suggested for this period (for a discussion, see Dever 1995; Palumbo 2001). Among others one may note Nahal Refa'im (Eisenberg 1993), `Ein Hilu (Covello-Paran 1999), Sha'ar Ha-Golan (Eisenberg 2012), Horbat Qishron (Smithline 2002), Nahal Rimmonim (Covello-Paran 2008) and Er-Rujum (Milevski *et al*. 2012).

Against the background of continuous emphasis on regionalism during this period, one cannot escape the remarkable consistency in many key features among Intermediate Bronze Age rural settlements. These are often located on the valley floor in close proximity to hill slopes and running water, providing easy access to seasonal pasture for herds and to fertile land for agricultural purposes, thus being particularly well-suited for communities that practice a mixed economy.

Whenever exposed at sufficient breadth, these sites are marked by rectilinear architecture. The inhabited area is often densely built with multiple-room units and enclosed courtyards. The different units demonstrate little regularity in layout and seem to reflect an organic mode of expansion, answering immediate needs.

Faunal assemblages are dominated by caprines, cattle and pigs with herd management oriented towards the exploitation of secondary products (see also Cope forthcoming; Sapir-Hen *et al*. in press). Also the pottery and flint assemblages are highly consistent. Storage jars and cooking-pots comprise the vast majority of ceramic vessels, implying an emphasis on storage, transport and food processing; the flint assemblage is marked by a flake industry and *ad hoc* tools, alongside Canaanean blades (Baird 1987; Bankirer 2002; Betts 1992; Crowfoot-Payne 1983; Dever 1970: 147; Gilead 1973; Palumbo 2001: 257–258; Rosen 1997: 111; 1998; Waechter 1958).

Most sites appear to have been largely self-sufficient but still closely integrated into short-range commercial networks, for which the pottery assemblage, groundstone tools and Canaanean blades are by far the most conspicuous examples, originating from specialized workshops.

The material patterns brought forth in the present report agree well with these overall patterns of Intermediate Bronze Age rural settlement in the southern Levant. Nevertheless, several oddities and idiosyncrasies are notable. Although demonstrating similar dominance of storage jars and cooking-pots, the pottery assemblage of Ard el-Samra appears to take this pattern to an extreme, with a strikingly low percentage of bowls, jugs and amphoriskoi, coupled with the absence of cups and teapots. Although the absence of specialized drinking vessels (especially cups and teapots) is in agreement with patterns recorded at other sites in the Lower and Western Galilee (Bunimovitz and Greenberg 2004: 25), the seeming lack of concern with serving and drinking at Ard el-Samra appears to be greater than at most (compare for example Covello-Paran 1999: 78). While the implications are difficult to clarify, they do seem to suggest a considerable degree of simplicity regarding their functions and purposes, perhaps a form of minimalism or practicality.

Another peculiarity of the Ard el-Samra archaeological record is the complete lack of perforated items, whether ceramic or stone. The absence of perforated ceramic discs, presumably spindle whorls, and perforated stones that may have functioned as loom weights is particularly striking given the faunal evidence for concern with secondary products, among which wool is a primary component. Perhaps the herds of Ard el-Samra did not include sheep; perhaps while producing wool, they did not engage in its processing, but passed it on to others in an exchange system that provided them with other necessary products.

Lastly, the number of basalt bowls in the assemblage is quite large. Intermediate Bronze Age stone assemblages are commonly dominated by groundstone tools, including pestles, mortars and grinding stones. Bowls and other more finely shaped vessels are usually not to be found (e.g., Eisenberg 2012: 50–53; Covello-Paran 1999: 84–91; Covello-Paran 2009), although two such items were reported from Er-Rujum (Milevski *et al*. 2012: 123). While one may hypothesize that Ard el-Samra was an exception in this regard, it is important to keep in mind that it was located in a multi-period site and that many of the earlier settlements are known to have had fine stone artifacts. It is more likely, therefore, that the basalt bowls in question derive from earlier occupations.

But this is not to say that their presence in Intermediate Bronze Age contexts represents sedimentological mixtures. Such interferences are likely to have left a more substantial signature also in the pottery assemblage; and while Chalcolithic or Early Bronze Age pottery was recorded in Intermediate Bronze Age strata as well, it seems too meager to account for the relative abundance of basalt bowls. It is more probable that it is related to practices of reclamation, where remains of earlier deposits are purposefully and selectively scavenged and reincorporated into those of the living settlement (Schiffer 1987). Surface Locus 103, the material for which is likely to have derived from Early Bronze Age deposits (see above), clearly illustrates that such processes were not foreign to the Intermediate Bronze Age occupants of Ard el-Samra. It is probable that the basalt bowls were recovered in a similar manner.

There is no evidence, however, for any practical use these items would have been put to. It is not improbable that they were collected as curiosities with attention to their aesthetic value. The basalt mortar deposited in pit Locus 129 (Fig. 1.39) is a case in point. Although it is likely to have originated from earlier occupational horizons, as its morphological properties seem to suggest, it nevertheless received close attention, purposefully deposited (buried?) in a small pit.

In sum, Ard el-Samra joins a modest but expanding corpus of Intermediate Bronze Age rural sites, reinforcing in the process some standing observations and refining others. There is a great deal that still needs to be elucidated, and the ambiguity of the Intermediate Bronze Age is difficult to deny.

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APPENDIX 1

BASKET LIST, AREA Z

Basket No.	*Sq.*	*Loc.*	*Top Level*	*Bottom Level*	*Str.*	*Provenance*	*Description*
1000	D3		15.18	14.94	0		Topsoil
1001	D4		15.03	14.85	0		Topsoil
1002	D4	100	14.85	14.79	0		Pale grey loose soil in trench
1003	D3	100	14.94	14.78	0		Pale fill in trench
1004	D4	100	14.79	14.68	0		Pale fill in trench
1005	E2		15.05	14.91	0		Topsoil
1006	E3		14.88	14.84	0		Topsoil
1007	E4		14.72	14.69	0		Topsoil
1008	D4		14.85	14.69	0/I		Reddish-brown soil, very compact dark soil in SE corner
1009	D3		14.94	14.86	I	E of trench L100	Reddish-brown soil
1010	D3		14.86	14.79	I		Reddish-brown soil, mixed contexts
1011	D3	100	14.78	14.74	0		Pale grey loose soil in trench
1012	D4		14.69	14.63	I	S part of sq.	Dark brown hard soil
1013	E2		14.91	14.85	0		Topsoil
1014	E3		14.84	14.72	0		Topsoil
1015	E4		14.69	14.65	0		Pale brown very compact soil; topsoil
1016	F2		14.91	14.74	0		Topsoil
1017	F3		14.8	14.73	0		Topsoil
1018	D4	100	14.68	14.53	0		Pale grey loose soil in trench
1019	D3		14.86	14.72	I	S part of sq.	Greyish brown soil with some mudbrick material
1020	D3		14.79	14.78	I/II	N part of sq.	Brown soil around wall
1021	D4		14.69	14.56	I	Middle of square; only NE part	Stone concentration, associated with W106
1022	F3		14.72	14.67	0	N half of sq.	Topsoil
1023	D3		14.91	14.76	I	Along wall W101	Dark brown hard soil
1024	D3		14.72	14.63	II	E of trench L100	Yellowish mudbrick material
1025	D4		14.69	14.55	I		Stone concentration; associated with W106
1026	E2		14.85	14.64	0/I		Reddish brown soft soil
1027	E3		14.72	14.64	0/I		Reddish brown brittle soil, a lot of pottery
1028	E4		14.65	14.47	I		Brown hard soil
1029	F2		14.74	14.65	II/III		Reddish brown soil
1030	F3		14.62	14.53	I	N half of sq.	Brown brittle soil, abundance of pottery
1031	D4		14.63	14.51	I	Along E and S sections	Hard brown soil
1032	F3		14.53	14.45	I	N half of sq.	Brittle brown soil, abundance of pottery

Basket No.	*Sq.*	*Loc.*	*Top Level*	*Bottom Level*	*Str.*	*Provenance*	*Description*
1033	F2		14.65	14.56	II/III		Brittle brown soil
1034	E4		14.47	14.43	I		Hard yellowish mudbrick material
1035	E2		14.64	14.61	I		Yellowish mudbrick material
1036	E3		14.64	14.54	I		Brittle brown soil, abundance of pottery
1038	E4		14.47	14.41	I	N half of sq.	Hard yellowish mudbrick material
1039	D3		14.63	14.47	II	E of trench L100	Yellowish mudbrick material
1040	D4		14.51	14.37	I/III	E half of sq.	Yellowish mudbrick material
1041	E2		14.61	14.56	I/II		Reddish-brown soil, abundance of pottery
1042	E3		14.54	14.44	I		Reddish-brown soil, abundance of pottery
1043	E4		14.41	14.33	I	N half of sq.	Hard brown soil
1044	F2		14.56	14.42	II/III		Reddish-brown brittle soil
1045	F3		14.58	14.53	I	S half of sq.	Brown brittle soil
1046	F4		14.81	14.51	0		Topsoil
1047	D4	100	14.53	14.25	0		Modern trench
1048	E2	104	14.78	14.78	I		Articulation of stone surface
1049	G3		14.78	14.59	0		Topsoil
1050	E3		14.48	14.28	I	NE of sq.	Yellowish mudbrick material, abundance of pottery
1051	D3	100	14.74	14.33	0		Modern trench
1052	F3		14.53	14.37	I/II	S half of sq.	Dark brown brittle soil
1053	G3		14.59	14.4	0	N half of sq.	Topsoil
1054	F4		14.51	14.49	0		Topsoil, very hard soil
1055	F3		14.37	14.33	II	S half of sq.	Brown brittle soil
1056	F2		14.42	14.33	II/III	E half of sq.	Greyish brown soil with some mudbrick material
1057	E2		14.56	14.37	II/III	beyond L104	Reddish-brown soft soil
1058	E3		14.48	14.15	I/II	E half of sq.	Mudbrick material
1059	E4		14.33	14.19	I/II	NW half of sq.	Mudbrick material
1060	D4		14.37	14.3	I/III	E half of sq.	Yellowish mudbrick material
1061	D4	100	14.25	14.24	0		Modern trench
1063	D3		14.47	14.41	II	E of trench L100	Yellowish mudbrick material
1064	E4		14.33	14.31	I	NE of sq.	Pottery concentration in yellowish mudbrick mateial
1065	D3		14.76	14.61	I/II		Yellowish mudbrick material below wall 101
1066	F3		14.45	14.39	I/II	N half of sq.	Mudbrick material
1067	D4		14.55	14.52	I	S of W105	Brown brittle soil
1068	F3		14.33	14.21	II	Abutting s section	Concentration of stones and pottery
1069	D3		14.61	14.51	I/II	Under W 101	Dark yellowish mudbrick material
1070	D4		14.52	14.43	I	S of W 105	Yellowish mudbrick material
1071	E2		14.37	14.22	II/III		Yellowish mudbrick material

Basket No.	*Sq.*	*Loc.*	*Top Level*	*Bottom Level*	*Str.*	*Provenance*	*Description*
1072	E3		14.15	14.09	II	E half of sq.	Yellowish mudbrick material
1073	E4		14.31	14.2	I	NE corner	Yellowish mudbrick material
1074	E4		14.19		II		Yellowish mudbrick material
1075	F2		14.33	14.12	II/III	E half of sq.	Reddish-brown soft soil
1076	F3		14.39	14.27	II	N half of sq.	Yellowish mudbrick material
1077	F4		14.49	14.18	I	E half of sq.	Hard dark brown soil with white dots
1078	G3		14.59	14.51	0/I		Topsoil
1079	D4	103	14.55	14.44	I/III		Concentration of small stones in crisp brown soil
1080	E4		14.43	14.35	I	S half of sq.	Hard yellowish mudbrick material
1081	D3		14.41	14.27	II	E of L 100	Yellowish mudbrick material
1082	E3		14.09	14.03	III	E half of sq.	Brown soft soil under yellowish mudbrick material
1083	D4		14.55	14.43	III	under L 103	Yellowish mudbrick material
1084	E3		14.03	13.95	I/III	NE quarter	Soft reddish-brown soil
1085	F3		14.33	14.2	II	S half of sq.	Technical seperation
1086	D4		14.3	14.23	III	E of L 103	Yellowish mudbrick material in SE corner
1087	E3		14.03	13.95	III		Soft brown soil, S bulk of E quarter
1088	E3		13.95	13.58	III	A pit in the center of the square	Soft brown soil
1089	E3		14.27	14.26	II	SE corner	Articulation of stone surface with yellowish mudbrick material
1090	F2		14.12	13.95	II/III	E half of sq.	Soft, dark brown soil
1091	F3		14.2	14.04	II	S half of sq.	Yellowish mudbrick material
1093	G3		14.51	14.2	0/I		Yellowish mudbrick material
1094	D3		14.39	14.27	II	A pit in Southern bulk	Soft reddish-brown soil
1095	E3		13.95	13.58	III	NE quarter	Soft brown soil
1096	E2		14.22	14.12	II/III		Soft reddish-brown soil
1097	F4		14.18	14.08	I/II	E half of sq.	Brittle dark brown soil
1098	E4		14.35	14.33	I		Yellowish mudbrick material
1099	D3		14.27	14.12	III	E of L 100	Soft reddish-brown soil
1100	E2		14.22	14.12	III	Around vessel 1071/1	Soft reddish-brown soil
1101	D4		14.43	14.25	II	Central strip	Under stone surface, yellowish mudbrick material
1102	D3		14.12	14.07	III		Yellowish mudbrick material
1103	E2	104	14.77	14.65	I		Removal of L 104, in yellowish mudbrick material
1104	F4		14.49	14.4	0	W half of sq.	Topsoil

Basket No.	*Sq.*	*Loc.*	*Top Level*	*Bottom Level*	*Str.*	*Provenance*	*Description*
1105	D4		14.43	14.44	I/III	Next to S bulk	Yellowish mudbrick material
1106	E2		14.78	14.61	II	Under L 104	Yellowish mudbrick material
1107	E3		13.58	13.49	III	NE corner	Soft reddish-brown soil
1108	D4		14.44	14.26	III	Next to S bulk	Yellowish mudbrick material
1109	D3		14.51	14.36	I/II/III	W to L100	Yellowish mudbrick material
1110	E2		14.61	14.53	I/II		Removal of L 104, in yellowish mudbrick material
1111	F2		13.95	13.76	II/III	E half of sq.	Soft reddish-brown soil
1112	F3		14.04	13.88	II/III	S half of sq.	Yellowish mudbrick material
1113	F4		14.4	14.29	I	W half of sq.	Topsoil
1114	G3		14.2	14.16	I		Yellowish mudbrick material?
1115	E4		14.36	14.33	I		Yellowish mudbrick material, surface
1116	E3		14.26	14.08	II	SE corner	Levelling of yellowish mudbrick material
1117	E2		14.53	14.49	II	NW corner	Yellowish mudbrick material
1119	E3		14.53	14.49	I	W half of sq.	Yellowish mudbrick material
1120	G3		14.16	14.02	I/II		Yellowish mudbrick material
1121	D3		14.51	14	I		Removal of pit L. 113. dark mudbrick material
1122	E2		14.49	14.31	II/III	NW corner of sq.	Yellowish mudbrick material
1123	E4	116	14.36	14.17	I		Inside - brittle brown soil, around - yellowish mudbrick material
1124	E4		14.32	14.05	I/II		Yellowish mudbrick material.
1125	E3		14.38	14.05	II	W half of sq.	Brittle reddish-brown soil, a large amount of large bones.
1126	F4		14.29	14	I/II	W half of sq.	Yellowish mudbrick material
1127	F3		13.88	13.73	III	S half of sq.	Brittle brown soil
1128	F2		14.42	14.34	II/III	W half of sq.	Soft reddish-brown soil
1129	E4	109	14.36	14.17	I		Yellowish mudbrick material
1130	D4		14.43	14.21	II	Central strip	Brittle yellowish mudbrick material + conglomerate
1131	D3		14.32	14.36	I/III		Dark mudbrick material
1132	E4	116	14.3	14.17	I		A single vessel from locus - b 1123
1133	D4	117	14.31	14.17	I/II/III		Dark mudbrick material
1134	D3	100	14.33	14	0		Modern trench
1135	D4		14.25	14.17	II/III		Yellowish mudbrick material
1136	E4	118	14.33	14.31	I		A single vessel from locus - 1136/1 and grinding stone
1138	F3	108	14.6	14.18	I		Removal of L. 108. Brittle dark brown soil
1139	F3		14.27	14.18	II	N half of sq.	Yellowish mudbrick material

Basket No.	*Sq.*	*Loc.*	*Top Level*	*Bottom Level*	*Str.*	*Provenance*	*Description*
1140	F2		13.76	13.79	III		Soft reddish-brown soil
1141	D3	119	14	13.82	I/III		Soft reddish-brown soil
1142	D4		14.56	14.48	I/III		Removal of L. 105+106. A small stones surface, brittle dark brown soil
1143	E2		14.12	14.16	II/III		Yellowish mudbrick material
1144	E3		14.05	13.91	III		Dark reddish-brown soil
1145	E4	118	14.31	14.18	I/II		Dark brown soil
1146	F2		14.34	14.18	II/III	W half of sq.	Brittle reddish-brown soil
1147	G3		14.02	14.04	I/II		Brittle brown soil
1148	E4		14.2	14.13	I/II	NE corner	Dark mudbrick material
1149	F4		14	13.97	I/II	W half of sq.	Removal of stone surface. Brittle dark brown soil
1150	D3	121	14.07	13.8	III		Soft reddish-brown soil
1151	D3		14.07	13.92	III		Soft reddish-brown soil
1152	F3		14.27	14.14	I/II	N half of sq.	Soft reddish-brown soil
1153	E3	115	13.99	13.72	III		Soft reddish-brown soil
1154	D4		14.48	14.04	I/III		Continuation of removal L. 105+106.
1155	E4		14.36	14.18	I/II	S half of sq.	Yellowish mudbrick material
1156	E2	111	14.2	14.15	II/III		Removal of locus. Dark mudbrick material
1157	E4		14.18	14.18	I/II	NE corner	Yellowish mudbrick material
1158	F2		14.18	14.15	III	W half of sq.	Yellowish mudbrick material
1159	F2		13.77	13.69	IV	SE corner	Working around in situ vessel. Soft reddish-brown soil
1160	D4	100	14.24	14.04	0		Modern trench
1161	E2		14.2	14.15	II/III	N half of sq.	Soft reddish-brown soil
1162	G3		14.04	14.03	I/II		Yellowish mudbrick material
1163	D4		14.23	14.2	II/III	S half of sq.	Yellowish mudbrick material
1164	D3		13.92	13.78	III	E half of sq.	Soft reddish-brown soil
1165	D4		14.2	13.91	II/III	S half of sq.	Yellowish mudbrick material
1166	E2		14.15	13.95	II/III	N half of sq.	Brittle light brown soil
1167	E3		13.91	13.84	III		Soft dark reddish-brown soil
1168	E4		14.18	14.05	II		Brittle dark brown soil under mudbrick material
1169	F2		14.15	13.92, 14.03	III		Soft reddish-brown soil
1170	F3		14.14	13.98	II/III	S half of sq.	Brittle dark brown soil
1171	F4		13.97	13.52	II/III		Brittle yellowish-brown soil, different from mudbrick material
1172	G3		14.03	13.63	II/III		Brittle brown soil, a large amount of bones
1173	F2		14.03	13.95	III	W half of sq.	Soft reddish-brown soil

Basket No.	*Sq.*	*Loc.*	*Top Level*	*Bottom Level*	*Str.*	*Provenance*	*Description*
1174	F3		13.98	13.82	III		Soft reddish-brown soil
1175	D3		13.78	13.53	IV		Brittle dark brown soil
1176	D4		13.91	13.64	II/III	S half of sq.	Brittle brown soil
1177	E2		13.95	13.64	II/III		Brittle light brown soil
1178	E4		14.05	13.74	I/II	E half of sq.	Half of pit 131 (1178/1)+deposits around
1179	F2		14.03	13.79	III	W half of sq.	Soft reddish-brown soil
1180	F3		13.82	13.32	III	SW corner	Soft reddish-brown soil (probably pit L129)
1181	F4		13.52	13.51	II/III	Between walls	Yellowish mudbrick material? A large amount of small stones and a lot of bones
1182	G3		13.63	13.5	II/III	E half of sq.	Brittle dark brown soil
1183	E3-4		14.88	14.23	II?	E side of bulk	Topsoil
1184	F4		13.79	13.51	II/III	Between walls	Continuation of b 1181, under surface
1185	D3		13.53	13.26	IV	E half of sq.	Dark brown soft soil, possibly sterile
1186	D3	121	13.61	13.26	IV		Pit containing pottery vessel with olive pit (1186/1)
1187	D4		13.64	13.46	II/III	S half of sq.	Soft dark brown soil
1188	E2		13.64	13.5	II/III	N half of sq.	Brown brittle soil
1189	E3-4		14.23	14.12	II?	Baulk	Topsoil
1190	E4	131			I		Pit containing in situ vessels, mudbrick material?
1191	F2		13.79	13.77	III	N half of sq.	Reddish brown soil, large bones
1192	F2	123	13.79	13.62	IV		Reddish brown brittle soil
1193	F3		13.32	13.2	Sterile	SW corner	Reddish brown soil - sterile
1194	F4		13.97	13.51	II	between walls	Pale reddish brown soft soil
1196	F4		14.08	13.51	I/II	SE corner	Mudbrick material
1197	E4		13.74	13.57	II/III	E half of sq.	Reddish brown brittle soil
1198	E-F4		14.88	13.57		Baulk	Below topsoil
1199	F4		13.65	13.51	II/III	Wall	Removal of wall and below
1200	F3	129	13.62	13.2	II/III		Removal of pit contents, dark brown soil and stones
1201	D3-4		14.94	14.57	0	Baulk	Topsoil
1202	F4	130	13.9	13.51	I/II		Removal of pit contents, dark brown soil and stones
1203	D4		13.46	13.2	II/III	S half of sq.	Dark brown brittle soil
1204	F4		13.51	13.07	III	SE corner	Pale brown brittle soil
1205	F3		14.14	13.8	III?	N half of sq.	
1206	F2		13.77	13.53	IV	NE corner	
1207	F2	123	13.62	13.62	IV		Articulation
1208	E2		13.5	13.41	II/III	N half of sq.	Gray soft soil
1209	E-F4		14.57	14.14		N part of baulk	Mudbrick material

Basket No.	*Sq.*	*Loc.*	*Top Level*	*Bottom Level*	*Str.*	*Provenance*	*Description*
1210	D3	133	13.53	13.38	IV		Cleaning of pit
1211	D3		13.23	13.24	Sterile	E half of sq.	Red soft soil
1212	E-F3		14.57	14.14	II		Mudbrick material
1214	E3		13.8	13.45	III	N	Dark brown brittle soil
1215	F2		13.53	13.37	IV	NE corner	
1216	F2	123	13.62	13.41	IV		Removing northern half of L123
1217	F3-4			14.06		Baulk	Above surface
1218	D3	133	13.38	13.15	IV		
1219	F2	123	13.41	13.01	IV		Dark brown brittle soil
1220	E3	125	13.91	13.87	III		Dismantling
1221	D3	133	13.53	13.38	IV		In situ vessel
1222	F2	136	13.94	13.61	IV		Reddish brown dark soft soil
1223	E4	120	14.21	13.88	II		Stone krater
1224	F2		13.79	13.75	III/IV	W half of sq.	Removal of stone surface
1225	F2	123	13.41	13.1	IV		Removal of vessel 1216/1

APPENDIX 2

BASKET LIST, AREA K

Basket No.	*Sq.*	*Loc.*	*Top Level*	*Bottom Level*	*Str.*	*Provenance*	*Description*
5000	K4		14.47	14.3	0		Topsoil
5001	L4		14.48	14.28	0		Topsoil
5002	M4		14.36	14.21	0		Topsoil
5003	K4		14.3	14.03	0/I	W half of sq.	Topsoil and pale brown sediment, large amount of pottery mostly IB
5004	L4		14.28	14.14	I	N half of sq.	Topsoil, pale brown sediment and stone concentration in NE part of square
5005	M4		14.21	14.1	0/I/II	S half of sq.	Topsoil
5006	K3		14.56	14.32	0	N half of sq.	Topsoil
5007	K4		14.03	14.02	I	W half of sq.	
5008	L4		14.14	14.09	I/II	N half of sq.	Brittle pale brown soil, mudbrick material?
5009	M4		14.1	14.1	0/I/II	S half of sq.	Topsoil
5010	K3		14.32	14.29	0/II	N half of sq.	Topsoil
5011	L3		14.6	14.36	0	E half of sq.	Topsoil
5012	M5		14.32	14.12	0	W half of sq.	Topsoil
5013	N5		14.36	14.06	0/I	N half of sq.	Topsoil
5014	K4		14.44	14.25	0	E half of sq.	Topsoil
5015	L4		14.25	14.13	I	SE corner of sq.	Stone concentration
5016	K4		14.25	14.02	0/I	E half of sq.	Dark brown soil above yellowish mudbrick material
5017	K3		14.29	14.17	II	N half of sq.	Dark brown soil above yellowish mudbrick material
5018	L4		14.09	13.91	II	N half of sq.	Yellowish mudbrick material
5019	M4		14.1	13.89	I/II	S half of sq.	Dark brown soil above yellowish mudbrick material
5020	M5		14.12	14	0	W half of sq.	Dark brown soil
5021	N5		14.06	13.87	I	N half of sq.	Brown soil near large stones
5022	K4		14.02	13.85	I/II		Brown soil, a lot of pottery
5023	K3		14.17	13.91	II	N half of sq.	Yellowish mudbrick material
5024	M4		13.89	13.76	II	S half of sq.	Yellowish mudbrick material and brown soil
5025	M5		14	13.79	I	W half of sq.	Brown soil + small fieldstones
5026	N5		13.87	13.24	I/II	E half of sq.	Dark brown sterile soil
5027	M4		14.07	14.07	0/I	N half of sq.	Dark brown soil
5028	K2		14.57	14.57	0		Topsoil
5029	K3		13.99	13.82	II	S half of sq.	Yellowish mudbrick material, bones
5030	L3		14.36	14.14	I/II		Dark brown soil
5031	K4		13.85	13.76	II		Yellowish mudbrick material

Basket No.	*Sq.*	*Loc.*	*Top Level*	*Bottom Level*	*Str.*	*Provenance*	*Description*
5032	L4		13.91	13.81	II	S half of sq.	Yelowish mudbrick material
5033	M4		14.07	13.85	I/II	N half of sq.	Brown soil and large stones
5034	M5		13.69	13.61	I/II	W half of sq.	Brown soil with small stones
5035	N5		13.24	13.24	0	E half of sq.	Pottery from the section
5036	N5		14.21	13.8	I	W half of sq.	Stone consentration
5037	K2		14.57	14.53	0		Brown topsoil
5038	K3		13.82	13.61	II	S half of sq.	Yellowish mudbrick material
5039	K4		13.76	13.62	II		Yellowish mudbrick material with dark brown inclusions
5040	L3		14.14	13.78	II	S half of sq.	Yellowish mudbrick material
5041	L4		13.81	13.6	II	S half of sq.	Yellowish mudbrick material
5042	M4		13.85	13.77	II		Yellowish mudbrick material
5043	M5		13.61	13.51	I/II	W half of sq.	Dark brown soil with small fieldstones
5044	N5		13.8	13.79	I	W half of sq.	Stone consentration
5045	K3		13.61	13.61	II	SW part of sq.	Yellowish W to 502
5046	K3		13.61	13.61	II/III	S half of sq.	Light conglomerate, concentration of large bones
5047	K4		13.62	13.55	II	S half of sq.	Yellowish mudbrick, concentration of large bones. Mudbrick sample 5047/1
5048	L3		13.78	13.7	III	S half of sq.	Yellowish mudbrick material
5049	L4		13.6	13.5	II	S half of sq.	Yellowish mudbrick material
5050	M5		13.51	13.39	I/II	W half of sq.	Reddish-brown soil under lighter filling
5051	K4	503	13.59	13.14	0/I		Brown soil cutting into mudbrick material in south-eastern corner.
5052	K4		13.62	13.55	II		Basket was joined with b 5047. Yellowish mudbrick material that is located under the pit in eastern bulk
5053	K2		14.45	14.33	0/I		Layer between topsoil and yellowish mudbrick material. A large amount of pottery
5054	N4		14.1	13.65	0/I		Brown soil with large stones
5055	L5		13.92	13.85	I		Brown soil with small stones
5056	K3		13.61	13.47	III	SW part of sq.	Section in SW section of square. Light conglomerate with bones reaching under the section of 502
5057	L3		13.61	13.49	III	SW part of sq.	Light yellowish mudbrick material under a thin white conglomerate seen in SW section
5058	L2		14.42	14.23	0/I		Topsoil. Brown soil with small stones
5059	K2		14.33	14.32	0/I		Layer between topsoil and yellowish mudbrick material. A large amount of bones and pottery.
5060	K3		13.47	13.31	III	SW part of sq.	Light brittle conglomerate. A large amount of bones

Basket No.	*Sq.*	*Loc.*	*Top Level*	*Bottom Level*	*Str.*	*Provenance*	*Description*
5061	K4		13.55	13.46	II/III		Yellowish mudrick material. A large amount of bones from NW corner. A large amount of pottery
5062	L2		14.23	14.16	I		Layer between topsoil and yellowish mudbrick material, a large amount of pottery
5063	L3		13.49	13.28	III	SW corner	End of mudbrick material, beginning of hard dark brown soil
5064	L4		13.5	13.44	II	S half of sq.	Yellowish mudbrick material
5065	N5		13.85	13.67	I/II		Brown soil with small stones
5066	M4		13.77	13.58	II	S quarter of sq.	Yellowish mudbrick material
5067	M5		13.39	13.38	I/II	W half of sq.	Sterile soil
5068	N4		13.65	13.62	I		Dark brownsoil with large stones
5069	K3		13.31	13.2	III	SW part of sq.	Dark muddy soil mixed with a lighter, greyish material. End of conglomerate?
5070	K2		14.32	14.15	II		Layer between topsoil and yellowish mudbrick material, a large amount of pottery and stones
5071	K4		13.46	13.26	II/III		Yellowish mudbrick material above brown soil
5072	L2		14.16	14.14	I/II		Yellowish mudbrick material
5074	L4		13.44	13.42	II	S half of sq.	End of mudbrick material, above brown soil
5075	M4		13.58	13.47	II	S quarter of sq.	Dark yellowish mudbrick material
5076	L5		13.67	13.63	I/II		Light brown soil with small stones
5077	N4		13.62	13.62	I/II		Brown soil around large stones
5078	K3		13.47	13.31	III	SW section cleaning	A large amount of bones
5079	K2		14.15	14.02	II		Beginning of yellowish mudbrick material with large stones
5080	K3		14	13.87	II	N half of sq.	Yellowish mudbrick material, large amount of bones until L502
5081	K4		13.26	13.33	II/III		Yellowish mudbrick material
5082	L2		14.14	14.06	II/III		Yellowish mudbrick material
5083	L3		14.24	14.03	II	N half of sq.	Yellowish mudbrick material large amount of bones
5084	N4		13.62	13.62	I/II		Yellowish mudbrick material among large fieldstones.
5085	L5		13.63	13.51	I/II		Light brown soil together with yellowish mudbrick material
5086	K2		14.02	13.98	II/III	E half of sq.	Yellowish mudbrick material with a large amount of small stones
5087	K4		13.33	13.22	II/III		Yellowish mudbrick material with beginning of brown soil

Basket No.	*Sq.*	*Loc.*	*Top Level*	*Bottom Level*	*Str.*	*Provenance*	*Description*
5088	L2		14.06	13.9	II/III	S half of sq.	Yellowish mudbrick material
5089	L3		14.03	13.62	III	E half of sq.	Yellowish mudbrick material
5090	L5		13.51	13.49	II		Yellowish mudbrick material mixed with light brown soil, a large amount of small stones
5092	N4	504	13.62	13.56	I		Brown soil cutting into mudbrick material
5093	N4	504	13.56	13.27	I		Reddish-brown soil with a very small amount of pottery
5094	N4		13.62	13.5	I/II	S half of sq.	Yellowish mudbrick material under large fieldstones
5095	K2		13.98	13.59	II/III	E half of sq.	Yellowish mudbrick material with small stones
5096	L2		13.9	13.56	III	S half of sq.	Yellowish mudbrick material
5097	L5		13.49	13.35	II		Yellowish mudbrick material
5098	M4-N4		14.29	14.1	0		Removal of baulk to the height of stone surface (L501). Topsoil, brown soil
5099	K3		13.54	13.28	III	S half of sq.	Light conglomerate, above sterile soil. A large amount of bones
5100	K2		13.59	13.28	III	E half of sq.	Yellowish mudbrick material
5101	K3		13.31	13.18	III	SW part of sq.	Conglomerate and yellowish mudbrick material above sterile soil. Related baskets: 5046, 5056, 5069 - all with concentrations of bones
5102	L2		13.56	13.34	III	S half of sq.	Yellowish mudbrick material
5104	M4-N4		14.1	13.81	0		Topsoil (no findings) to the continuation of work surface of L. 501

APPENDIX 3

LIST OF LOCI AND FEATURES, AREA Z

Loc.	*Sq.*	*Top Level*	*Bottom Level*	*Str.*	*Type*	*Desc.*
100	D3-D4	14.85	14.68	0	Trench	Trench, oriented E-W, 7.98 m long, 0.67 m, greyinsh loose sediment; cuts walls W101 and W106
101	D3	14.97-93	14.80-68	I	Wall	A wall composed of a single row of medium sized fieldstones preserved to a height of one course; base of a clearly sloping to the south.
102	E2	15.08	14.71	I		A large stone in NE part of square.
103	D4	16.69-14.55	14.61-14.44	I	Surface	A small patch of small stones paved floor, slanting gently to the south; it is thinner to the north; abuts W106 and is superimposed by W105; contains weathered EB pottery.
104	E2	14.79	14.65	I	Surface	A surface of small and medium sized field stones located in NW part of square; below surface a row of three stones was reocrded; possibly belonging to a pit that was covered over by the paved surface
105	D4	14.67	14.56-45	I	Wall	A single row of small and medium sized fieldstones, preserved to a height of one course; oriented roughly E-W; abuts W106 and superimposes L103
106	D4	14.70-61	14.45-35	I	Wall	A wall oriented roughly N-S, consists of a single course of stones arranged in two rows; cut in the north by modern trench L100; abuted from the west by a floor paved with small stones L103 and W105.
107	D4	14.72	14.55	I	Wall	A corner of a wall located in NW corner of square; the N-S portion is built of one course of semi-rectangular stones; E-W portion two rows of smaller stones noted.
108	F3	14.6	14.37	I	Installation	A stone platform against E section
109	E4	14.44	14.17	I	Installation	Semi-circular installation in northern part of square, associated with vessels in situ
110	D3	14.41	14.27	II?	Pit	Pit adjacent to E section; sealed with small stones; very little pottery
111	E2	14.46-26	14.36-16	II	Surface	A surface composed of small angular stones; it produces an elongated area, roughly oriented E-W; the western section clearly shows that it is located on a slope; it is possible that the stones are an accumulation rather than a surface proper
112	D3	14.26	14.07	III	Surface	Large flat stone in eastern part of square; measures 0.45 × 0.5 m
113	D3	14.82	14.40-00	I	Pit	Two intersecting pits in western part of square; the earlier pit is the more northern of the two and is relatively narrow and deep, the later one is more shallow and wide; both contain a large number of stones at their base; possibly pre-date W101.
114	E3-F3	14.29	14.06	II	Wall	A roughly E-W oriented wall; creats a corner with W138; external face composed of large stones while internal face is built of smaller ones; abutted from the south by paved floor L140
115	E3	13.99	13.72	II	Pit?	A pit in the middle of the square; a large amount of stone and pottery; oval in shape; E-W diameter: 0.75 m; N-S diameter: 0.82 m

Loc.	*Sq.*	*Top Level*	*Bottom Level*	*Str.*	*Type*	*Desc.*
116	E4	14.46	14.2	I	Installation	Probably a hearth; circular stone installation; 0.98 m in diameter; larger stones to the north
117	D4	14.26	14/17	I	Pit	A shallow pit in SE corner of square; measures 0.7 × 1.7 m oriented E-W; a round stone was found over its N edge
118	E4	14.33	13.97	I	Surface	A concentration of pottery and other finds (including basalt grinding stone) on surface; SW corner of square.
120	E4	14.21	13.88	II	Installation	Mortar leaning against W138; fractured in three places; blocked with an eliahu ball
121	D3	13.72	13.61	IV	Surface	Pottery concerntration on surface at SE corner of square
122	G3	14.43	15.16	I	Installation	Three large stones in the middle of the square.
123	F2	13.93	13.1	IV	Pit	Stone lined pit 1.6-1.7 m in diameter dug into sterile soil; a large pottery vessel was inserted into its southern side cutting into the stone lining.
124	F2	13.93		III	Surface	Stone surface at SW corner of square near L123; extends over an area of 1.6 m (E-W) and 2.25 (N-S)
125	E3	13.91	13.7	II/ III	Surface?	A surface of small angular stone in middle of square; 2.2 m N-S; 1.5 m E-W
126	F4	14.41-20	14.22-05	I	Wall	N-S oriented wall, abutted from the west by L127; northern part consists of relatively large stones arranged in a row, while the southern portion is composed of two rows of small stones.
127	F4	14.38-20	14.06	I	Surface	Stone paved floor abutting w126 from the west
128	F4	14.22	13.99	I/II	Wall	A row of four large stones in SE corner of square
129	F3	13.62	13.51	II/ III	Pit	Small pit (0.48-0.55 m in diameter) in SW part of square.
130	F4	13.9	13.63	I/II	Pit	Pit, 0.5 m in diameter in northern part of square; contained stones.
131	E4	14.05	13.84	I	Pit	Small pit (0.45 × 0.4 m) located in southern part of square containing several vessels
132	G3	13.97-82	13.62	II/ III	Pit?	Pit with five large stones at its base; sherds were found above; superimposes sterile soil
133	D3	13.73	13.26	IV	Pit	Pit lined with pottery near SE corner of square.
136	F2	13.94	13.61	IV	Pit	Small pit (0.6 m in diameter) in centre of square, containing numerous stones, sherds and bones.
138	E3-4, F4	14.29-11	14.06-13.87	II	Wall	A well built wall, consisting of two rows of stone filled in between with small ones; roughly oriented N-S; produces a corner with W114; Mortar L120 leans on it from the west; abutted from the east by stone paved surface L140;
139	E2	14.79	14.53	I	Installation	Three large stones in the middle of the square; in its southern part smaller stones were noted.
140	E-F3-4	14.29	14.06	II	Surface	Stone paved floor abutting W114 to the north and w138 to the west
141	F2	14.07		III	Surface	Sporadic distribution of small angular stones in reddish sediment. Same elevation as L124 but earlier.
142	D3	13.77		III	Pit	Pit recognised only in section; only quarter of pit was excavated; dug into sterile soil; contained pale brown sediment with dark brown lenses; possibly cut pit L133.

APPENDIX 4

LIST OF LOCI AND FEATURES, AREA K

Loc.	*Sq.*	*Top Level*	*Bottom Level*	*Str.*	*Type*	*Description*
500	M4	13.94	13.85	II	Installation	A circle of small angular stones; 0.45 m in diameter
501	M4-N4	14.19	13.96	I	Installation	A stone platform built of large and medium sized fieldstones; the stones are arranged in a semi-circle; a large stone deposited on top; seems to have been inserted into yellowish sediment
502	K3(L3)	13.86		II	Surface	A surface of small angular stones in SE part of square; situated above conglomerate
503	K4		13.14	0/I	Pit	Apparently cut from topsoil level and quickly backfilled - rough sediment layers equivalent to those outside the pit could still be identified; only quarter of the pit was excavated; estimated diameter: 0.8 m
504	N4	13.9	13.27	0/I	Pit	Large pit located in western part of square; cuts yellowish sediment; its southern face slopes down more sharply that northern face; upper part of pit contains dark brown sediment, while lower part (from elevation 13.56) reddish brown; very few finds
505	N4	13.95	13.73	I/II	Installation	Stone platform composed of six large fieldstones, producing a semi-circular surface, diameter 1.3 m; platform situated above and partially inserted into yellowish sediment
506	N4	13.75	13.57	II/III	Installation	Stone platform composed of medium sized fieldstones, producing a roughly rectangular form; deposited above sterile soil

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