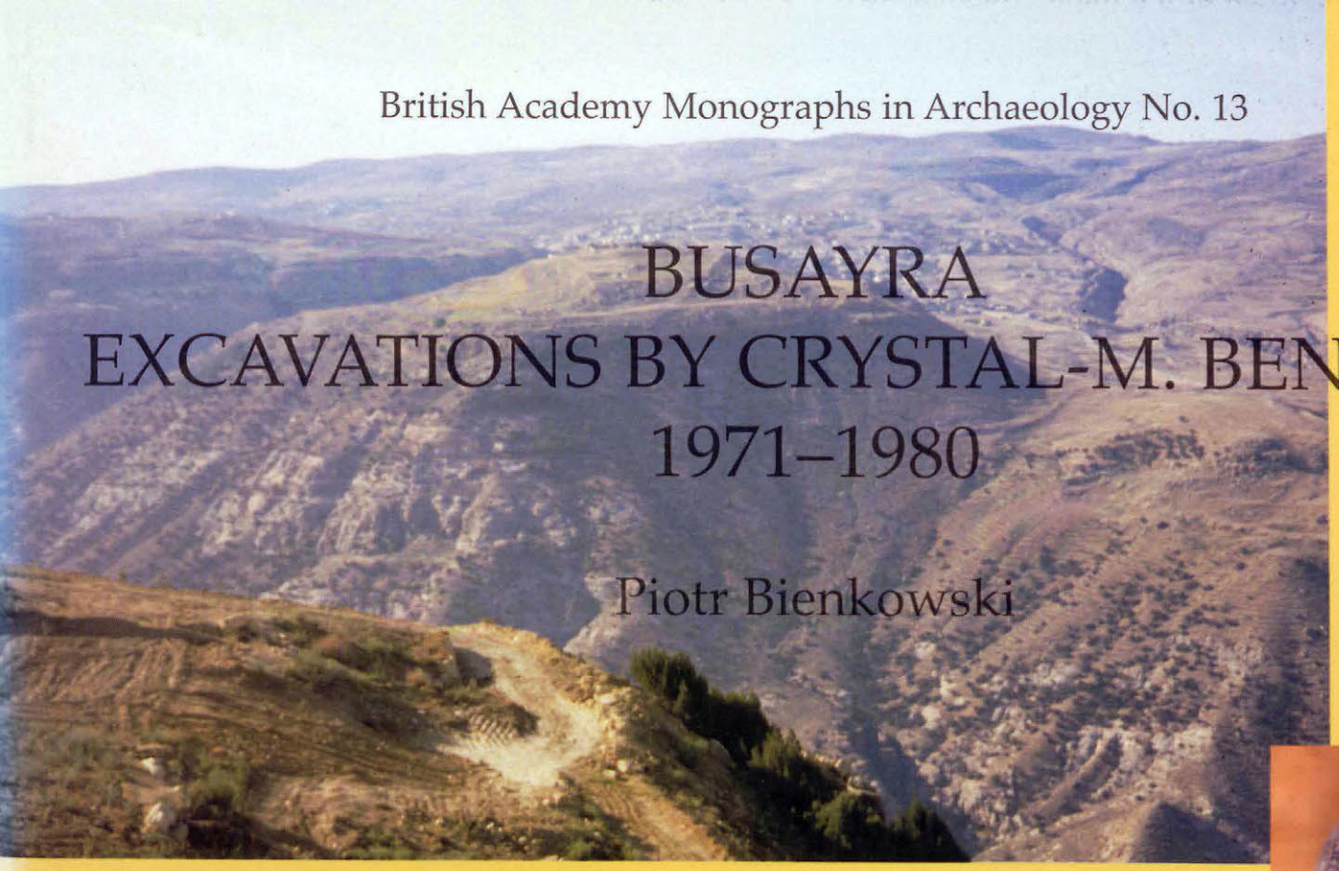
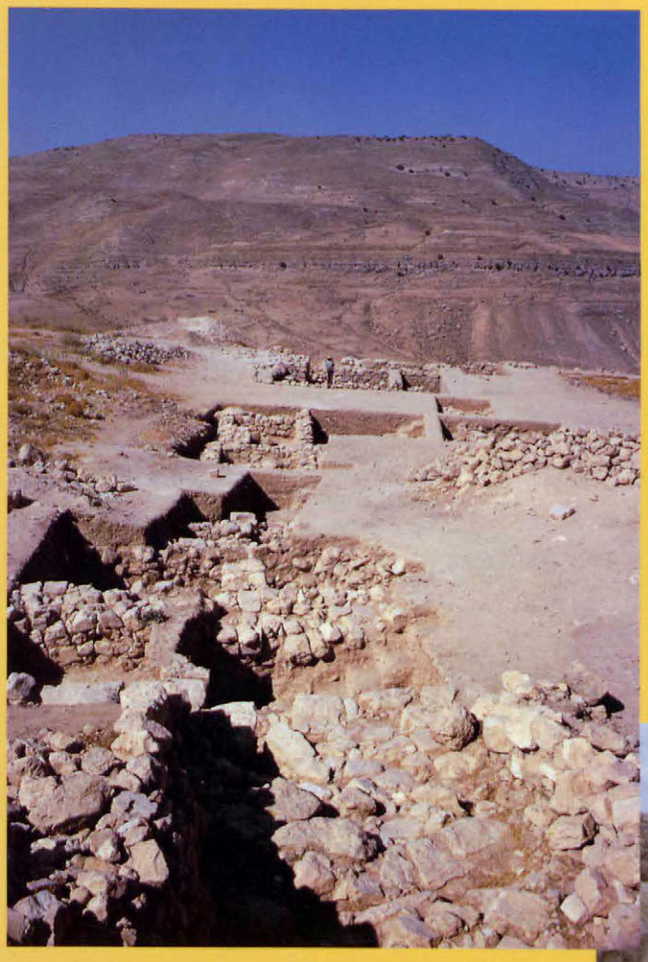
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BUSAYRA
EXCAVATIONS BY CRYSTAL-M. BENNETT
1971–1980

Piotr Bienkowski









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with contributions by
Márta Balla, John R. Bartlett, Andrea M. Berlin, Jan Gunneweg, Burton MacDonald, Kenneth J. McNamara, Alan Millard, Marion F. Oakeshott, David S. Rease, Catherine Sease, Leonie Sedman and R.F. Tylecote



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4.28 Wall 5, looking south-west, cut by the later Phase 5 Wall 4.

4.29 Room formed by Walls 79 (left), 81 (bottom), 82 (top) and 83 (right), looking north-west.

4.30 Doorway in Wall 83, with Wall 86 on right, looking south-west.

4.31 Doorway in Wall 83, with Wall 86 on left, looking north.

4.32 The doorway in Wall 77 (top right), looking east, with Walls 83 (centre) and 84 (left).

4.33 Entrance in Wall 8, looking south, showing stone paving and marks of burning.

4.34 Entrance in Wall 8, looking west, showing stone paving.

4.35 Entrance in Wall 8, looking south-west, showing stone paving.

4.36 Possible door-post socket on north-east side of the entrance in Wall 8, with the quoin of Wall 8 beyond.

4.37 Possible door-post socket on north-west side of the entrance in Wall 8, with the quoin of Wall 8 beyond.

4.38 Plaster floor 1.23.12, looking east, running up to Walls 12 (bottom left) and 8 (top left), with threshold 'Wall' 9 just visible (top right). During excavation this room was tentatively interpreted as a bath or pond.

4.39 Wall 6, looking south-west, with doorway at left with stone threshold ('Wall' 7).

4.40 Room between Walls 6 (left) and 5 (right), looking north-west. The quoin of Wall 6, forming a doorway with Wall 10, is just visible on bottom left.

4.41 Cylindrical jar (Jar E) found in topsoil in trench A1.1, looking south-east.

4.42 Smashed cylindrical jar (Jar E) on Phase 4 surface 5.13.3 in the north-east courtyard.

4.43 Square A60, with stone paving (centre) and Wall 25 (top), looking north-west.

4.44 The plaster on Wall 23 (right) curving around the side of the wall into the doorway; on the left is the later Phase 4 blocking. Looking south-east.

4.45 Wall 28, looking north-east, with doorway on the left.

4.46 Final plastering of the north-east courtyard (4.1.6) seen in the south-east facing section of trench A4.1 (cf. Figure 4.18).

4.47 Drain 60.4.F13 running across plastered courtyard in trench A5.13, looking south-east.

4.48 Drain 60.4.F13 running through the doorway in Wall 23, later blocked. Looking south.

4.49 Drain 60.4.F13 in trench A60.4, looking south-east.

4.50 Silo 60.6.F9, looking north-east.

4.51 Silo 60.6.F9, looking north-west.

4.52 Plastered room in trench A5.1, tentatively identified as a 'purification room', looking west, with Wall 43 in foreground.

4.53 Steps 5.9.F18 flanked by two circular bases, leading to long narrow room with plastered floor, with Wall 33 behind, looking west. Drain 5.11.F27 is in the foreground.

4.54 Top of steps 5.9.F18, flanked by two circular bases (left), with Wall 33 on the right, looking south.

4.55 Steps 5.9.F18 showing spalling from intense heat. The imprint of an object of circular section can be seen on the column base on the right. Looking north.

4.56 Detail of steps 5.9.F18.

4.57 Steps 5.9.F18 between column bases (left), Wall 33 (right), and in between two podia (P1 and P2); podium P1 was overlain by plaster floor 25.3.8 which was contemporary with the Phase 3 use of the steps.

4.58 Plaster floor 26.1.8 running up to Wall 33 (Phase 3), looking south-west.

4.59 Wall 51 (bottom), perhaps a platform or bench rather than a wall, with Walls 33 (left) and 52 (right), looking east. Wall 51 was built in Phase 3 and abuts Phase 3 Wall 33 (the measuring rod is standing on the top course of Wall 33 Phase 3, with the Phase 4 rebuild above). Wall 52 was built in Phase 4.

4.60 Walls 1 (left), 3 (mudbrick, middle) and 2 (right) in the south-west facing section of trench A1.11 (cf. Figure 4.13).

4.61 Pottery stands, perhaps for the cylindrical jars (Jars E) so common in Area A, were found in the mudbrick collapse (5.13.4a–d) in the north-eastern courtyard at the end of Phase 3.

4.62 Wall 79, the south-western external wall of the Phase 3/4 building, looking north-west.

4.63 Wall 79, the south-western external wall of the Phase 3/4 building, looking north-west.

4.64 Walls 76 (foreground), 74 (back), with Wall 75 (left) linking them, looking north-east.

4.65 Buttress at the corner of Walls 33 and 46 (Phase 4 rebuild), looking south.

4.66 Buttress at the corner of Walls 33 and 46 (Phase 4 rebuild), looking south-west.

4.67 Buttress at the corner of Walls 33 and 46 (Phase 4 rebuild), looking east.

4.68 Phase 4 rooms in trenches A27.2 and 3, looking west. At the back is Wall 38.

4.69 Phase 4 room in trench A27.3, looking west. Partition wall 49 is at the bottom, with Wall 47 on the right. Note the plaster of the floor running up to Wall 38 at the back.

4.70 Phase 4 room in trench A27.1, looking north-east. The upright scale stands on the Phase 3 plaster floor which runs up to Wall 33. On the right is the doorway into the room formed by Phase 4 Wall 48. Note the 'bench' on Wall 46 (left): this was not properly recorded, and was probably either a bench or the original width of Wall 46 in Phase 3.

4.71 Blocking in doorway between Walls 47 and 48, looking west.

4.72 Wall 52, built over Phase 3 Wall 59, created a new doorway. Looking south.

4.73 New doorway formed by Wall 52 in Phase 4, looking north-west from room in trench A7.4 to trench A25.6.

4.74 Room in trench A7.4, bounded by Walls 53 (left), 38 (top), 59 (right, with Phase 4 'rebuild' Wall 52 on top) and 51 (middle), looking south-west.

4.75 Rooms in trenches A7.4 (bottom) and A7.3 (top), divided by Phase 4 Wall 53, looking east.

4.76 The Phase 4 blocking of the doorway in Wall 23 lying on the Phase 3 plaster floor 60.1.8, looking south-east.

4.77 Wall 23, showing Phase 3 plastering (right) and Phase 4 blocking (left), looking south-east.

4.78 Trenches A9.4, 5 and 11, looking east, showing association of Phase 4 plaster floor with Walls 42 (bottom left) and 62 (middle). The plaster floor overlay Wall 66 (right).

4.79 Trench A20.2, with Phase 4 fill 20.2.11 consisting of mud-bricks, clearly delineated, against Wall 86 (right), looking south-west.

4.80 Wall 85 (foreground), looking north-west, overlying Wall 71 at top right.

4.81a, b Wall 58 (top left) overlying the earlier Wall 42 (right).

4.82 Horseshoe-shaped Wall 4, looking north-east, with stones 1.18.F87 to the right.

4.83 Stones 1.18.F87, looking south-east, with upright stone and stone with a worked hole (1.18.F88).

4.84 Basalt quern (Reg. 893) *in situ* south-west of stones 1.18.F87, looking south-east.

4.85 Burial 20.4.4 against Wall 83, with bones removed.

5.1 General view of Area B from Area A, looking south-west.

5.2 Wall 1 (centre), overlain by Walls 4 (top right) and 5 (left), looking east. Note mud plaster on Walls 4 and 5.

5.3 Wall 1 (centre) overlain by Walls 5 (left) and 4 (top), with Wall 11 on right. Note mud plaster on Wall 4.

5.4 Trenches B3.1–3 looking south-west, showing Walls 16 (foreground), 17, 5 (across centre) and 4.

5.5 Junction of Walls 5 and 4, looking south-west.

5.6 Wall 6, looking south-west, with Phase 7 blocking 2.2.F8 visible at top right.

5.7 Walls 8 (foreground), 7 (top left) and 12 (top right), looking south-west, showing rise in bedrock between Walls 7 and 8.

5.8 Wall 11 (right) built against Wall 4 (left), with Wall 1 below, looking south.

5.9 Walls 11 (right), 4 (left) and 6 beyond, looking south.

5.10 Stone paving 2.2.F12 (centre), looking south-west, with Wall 6 (left) and later blocking 2.2.F8 (just visible at top).

5.11 Tabun 3.4.F15 surrounded by ash layer 3.4.13, overlain by earth floor 3.4.9 with storage jar, by Wall 5, looking south.

5.12 Broken pottery in ashy earth 3.2.12 (Phase 5), looking south-west, below later Wall 11 (Phase 6).

5.13 Wall 16 on surface 3.8.2, with Wall 14 in foreground, looking north-east.

5.14 Wall 15 (foreground) abutting Wall 14, with Wall 16 at top, looking north-east.

5.15 Walls 16 (left) and 17 (right), looking east.

5.16 Wall 18 (front) abutting the earlier Wall 6, looking south-west.

5.17 Wall 11, with Walls 1 (bottom centre) and 5 (bottom left), looking west.

5.18 Walls 11 (left) and 12 (right) built on stone paving 2.2.F12, looking east (photo taken in 1999).

5.19 Wall 11 (left), batter, and Wall 19 (right), looking east.

5.20 Blocking 2.2.F8 with Walls 6 and 12 on the left, looking south-west.

5.21 Blocking B2.2.F8 on clay fill B2.6.8, 9, between Walls 6 (left) and 4 (right), looking south-west.

5.22 Blocking B2.2.F8 on clay fill B2.6.8, 9, between Walls 11 (left) and 12 (right), looking north-east.

5.23 Plaster floor 4.2.10, 15, 16 running up to the batter on Wall 11 (left), with Wall 19 at top, looking east.

5.24 Wall 11 (left), with surface 4.2.4 sloping up to Wall 19 (right), looking east.

5.25 Wall 11, with collapse 4.2.2 lying on surface 4.2.4, looking east.

5.26 'Destruction' layer 1.2.2, looking north-east.

5.27 Broken pottery from Phase 8 loci in trench B1.1, looking north.

5.28 Pottery cache in B2.4.2, looking east.

5.29 Burnt pottery in 4.2.7a against Wall 19, looking south-east.

5.30 Entrance to cave complex in trench B2.7.

5.31 Room I in the Area B cave complex.

5.32a, b Interior of tunnel in Area B cave complex, showing plaster floor.

5.33 Walls 21 (bottom) and 20 (middle), looking south-west.

5.34 Walls 22 (left) and 24 (right), looking east.

5.35 Tridacna squamosa shell, in centre of photo, lying on plaster floor 7.5.11, with later platform Wall 29 on the right against Wall 25, looking north-east.

5.36 Wall 25, looking west, showing shelf or bench on left.

5.37 Stone quern and grinder lying on Wall 28 (top), with Walls 22 (right), 24, 25 and 29 (left), looking south-west.

5.38 Stone quern and grinder lying on Wall 28 (bottom), with Walls 24 and 25 (top), showing doorway in Wall 25, looking south-east.

5.39 Storage space for large pottery jars, between Walls 37 (left) and 38 (top), looking west.

5.40 Walls 43, 46 and 47, looking east.

5.41 Walls 43 and 44 (top), 46 (middle) and 47 (bottom), looking north-east.

5.42 Walls 43 (left) and 44 (middle), with rubble 10.1.14 (bottom), looking east.

5.43 Wall 46 (bottom), with Wall 43 visible at top, looking north-east.

5.44 Walls 46 (left) and 47 (right), looking north-east, with plaster facing on both.

5.45 Walls 46 (middle) and 47 (bottom), with Wall 43 just visible at top, looking north-east.

5.46 Plaster floor 10.2.12 joining with plaster on Walls 46 (left) and 47 (right), looking east.

5.47 Collapse deposits 10.3.4–6, looking east, with Wall 47 at bottom left.

6.1 General view of Area C during excavation in 1974, looking south.

6.2 General view of Area C, showing the mound of the main complex, looking south-east (photo taken in 1999).

6.3 General view of Square C20 during excavation in 1974, looking east, with Walls 27 (right) and 26 (left), and the modern village beyond.

6.4 View of four phases from trench C11.1, looking north-west. Wall 42 of Phase 1 is bottom middle, with Wall 41 to its right. Wall 22 of Phase 3 is on the left. Paving 11.1.13 of Phase 4 is in the foreground. Walls 8, 7, 6 and 1 of Phase 5 are at the top.

6.5 1.1.F1 on the left, with Walls 2 (top) and 3 (bottom), looking south-west.

6.6 Stone platform 1.1.F1 looking east (photo taken in 1999).

6.7 Paving 11.1.13 lying on stone platform in trench C11.1, looking south (photo taken in 1999).

6.8 Wall 22, looking south-east.

6.9 Walls 23 (left), 24 (bottom) and 22 (right), looking north-west.

6.10 Wall 4 below Wall 5, looking east (photo taken in 1999).

6.11 Wall 19 running across the middle of the picture, with Walls 7 (bottom) and 5 (top), looking north-east.

6.12 Walls 20 (left), 5 (top) and 15 (right). The deposit in front of Wall 20 is the pottery 'cache' of 14.1.9a.

6.13 Wall 20 (left), with Walls 15 and 16 on the right, looking north-east.

6.14 Walls 15 and 16, looking north-east, with Wall 5 at top.

6.15 Walls 15 and 16, looking north-west, with Wall 21 on the left.

6.16 Wall 9, showing the niche on its north-eastern face, looking south.

6.17 Walls 9 (left) and 11, looking east, showing plaster on walls joining up with plaster steps 12.3.F23.

6.18 Wall 9, showing plastered 'shelf' joining with plaster floor 12.1.7, looking north.

6.19 Wall 10, on right, bonded with the 'shelf' of Wall 9, on left, looking east.

6.20 Walls 13 (left) and 9 (right), with 'threshold stone' 10.1.F33 in between, looking north. The surface in the foreground is plaster floor 12.1.7, which originally curled up against the stone.

6.21 Walls 13 (left) and 9 (right), with 'threshold stone' 10.1.F33 in between, looking north. The surface in the foreground is plaster floor 12.1.7, running up to the stone at the same absolute height.

6.22 Wall 11 (left) forming a doorway with Wall 5 (right), with possible blocking in between, looking south. Bath 12.3.F25 and plastered steps 12.3.F23 are in foreground.

6.23 Wall 12 resting on 12.2.13 above bedrock, looking north-east.

6.24 Walls 34 and 35, looking south-east.

6.25 Wall 26, looking west.

6.26 Wall 32 in Square C23, looking north-east.

6.27 Plaster floor 12.2.6 running up to Wall 9, looking south. A patch of burning can be seen on the floor.

6.28 Plaster floor 12.2.6 joining with plastering on Wall 9, looking south-west.

6.29 Plaster floor 12.2.6 breaking off before it reaches Wall 12, looking north-east.

6.30 Plaster floor 12.2.6, looking south-west towards Wall 9, showing the break in the floor.

6.31 Stone paving 11.1.13, to the left of Wall 5, looking north-west.

6.32 Stone paving 11.1.13, with stone feature or wall across trench C11.1, showing tall stone with 'crucible' immediately in front of it, looking south.

6.33 Stone paving 11.1.13, with stone feature or wall across trench C11.1, showing tall stone on left, and Wall 5 on right, looking north.

6.34 Pottery on earth floor 14.1.11, looking east.

6.35 Paving 10.5.F2, looking west, showing relationship with Walls 1, 7 and 8.

6.36 Paving 10.5.F2, detail.

6.37 Wall 1 and 1.1.F1, looking north.

6.38 Wall 1 and 1.1.F1, looking west.

6.39 Wall 1 and 1.1.F1, with paving 1.2.F4 on the right, looking north-east.

6.40 Pit 11.1.F21, looking west, with Wall 8 on the top right.

6.41 Paving 11.1.13 with heavy concentration of pottery on plaster floor 11.1.5, looking west.

6.42 Possible hearth in trench C10.3, in corner formed by Walls 5 and 18, looking east.

6.43 Stone toilet 12.3.F22, looking north-east.

6.44 Stone toilet 12.3.F22, looking north.

6.45a, b Bathroom in trench 12.3, looking west (a) and north-west (b), with toilet (12.3.F22), plaster steps (12.3.F23) and bath (12.3.F25).

6.46 Bathroom in trench C12.3, looking south-east, with toilet (12.3.F22), plaster steps (12.3.F23) and bath (12.3.F25).

6.47 Bath 12.3.F25 looking south-east.

6.48 Pit 21.3.F27, looking south-east, with two pottery juglets.

6.49 Pit 21.3.F27, looking north-west, showing pebble base.

6.50 Pit 21.3.F27, looking north, showing pebble base.

6.51 Wall 12 with deposit 12.2.9, looking north.

6.52 Deposit 20.2.10 (earth floor?), looking south-east, with Walls 26 (left) and 27 (right).

6.53 Plaster floor 20.1.8, looking south-west, running nearly up to Wall 26 (top) and under Wall 25 (left).

6.54 Corroded plaster floor 20.1.15 running up to Wall 26 (top), looking south-west.

6.55 Wall 5, looking south.

6.56 Walls 5 (left) and 6 (top), looking south-east.

6.57 Wall 6 (left) and possible blocking (right), looking south-east.

6.58 Walls 7 and 8 with threshold step 10.3.F11, looking south-west.

6.59a, b Wall 1 with doorway, looking south-west (a) and north (b).

6.60 Wall 17 (right) bonded to Wall 8 (left), looking east (photo taken in 1999).

6.61 Wall 2 (right) overlying deposit 1.3.4, looking south, with 1.1.F1 on the left.

6.62 Wall 21, with trench 14.3 on the left, looking north-west.

6.63 Walls 30, 32 and 36 during excavation, looking north-west. Wall 32 is in the foreground. Wall 36 runs across the picture, with Wall 30 turning at a right angle to the top. Walls 30 and 36 belong to the Phase 5 structure built over the Phase 3 Wall 32.

6.64 Wall 32 (left), pit 21.3.F27 (right), and Wall 36 (top), looking north-west.

6.65 Fill in gateway in Square C22.

6.66a–d Gateway between Walls 29 and 36 in Square C22, looking south-west, with Wall 30 beyond.

6.67 Tabun 11.4.F3.

6.68 Stones beneath tabun 11.4.F3, cracked and burnt from fire.

6.69 Ash deposit 21.1.18, overlying plaster floor 21.1.29.

6.70 Phase 7 collapse in trench C11.1 (11.1.4), with Wall 5 behind, looking north-east.

6.71 Soil and rubble being deposited on Area C by a bulldozer in 1971, in preparation for the intended construction of a reservoir.

6.72 Square C3, looking south-east, towards the modern village, with the crest of the slope to the right.

6.73 Square C3 showing Wall 43, looking south-west.

6.74 Trench C3.20, looking south-west, surface 3.20.7 and Walls 45 and 46 (right).

6.75 Square C3, showing Wall 44 in foreground, looking north-east.

6.76 Trench C3.20, looking south-west, Walls 45 and 46 (right) and Wall 43 (left).

6.77 Trench C3.20, foundation trench 3.20.8, 10, with Wall 43 (right) and Walls 45 and 46 (left), looking north-east.

6.78 The mound of the Area C complex viewed from Square C3, looking north-east, showing the sudden 2.50 m. rise resulting from the stone platform (photo taken in 1999).

7.1 Area D, on the right, situated on the eastern terrace of Busayra, looking north-west. Area A is off the picture to the right.

7.2 General view of Area D in 1973, looking south, with 1972 excavation dump.

7.3 Square D2 (bottom right), looking south-west, showing its relationship with Area A beyond, where the partly excavated entrance through Wall 8 is visible.

7.4 Laying out Square D2, looking north.

7.5 Square D2, Walls 1 and 2, looking south.

7.6 Square D2, Wall 13, looking south-west.

7.7 Square D3, looking north.

8.1 General view of Area H, looking north-east, along north-west perimeter wall.

8.2 View from Square H1, looking north-west.

8.3 H1 Wall 1 looking east, with offset on right.

8.4 H1 Wall 1, looking south.

8.5 H1 Wall 1, looking north.

8.6 H2 perimeter wall looking south-east.

8.7 H2 Wall 2, north corner, looking south.

8.8 H2 Wall 2, looking north.

8.9a, b H2 Wall 2, looking south-east towards Area A.

10.1 Reg. 503, impressed sherd.

10.2:a, b Reg. 570, impressed sherd.

10.3 Reg. 630, sherd with incised lines.

10.4 Reg. 1205, lamp handle with painted decoration.

10.5 Shell and ivory discs.

10.6: Shaped sherds.

10.7 Pottery and stone discs.

10.8 Reg. 399, wood disc.

10.9:a Reg. 18, ivory spindle?

10.9:b Reg. 127, worked bone point.

10.9:c Reg. 26, fragment of a bone pin/bobbin?

10.10 Reg. 85, curved strip of elephant ivory.

10.11 Reg. 529, ivory counter with 'daisy' pattern.

10.12 Reg. 828, ivory wedge.

10.13 Reg. 1085, ivory object.

10.14:a Reg. 270, bone spatula.

10.14:b Reg. 317, bone spatula.

10.14:c Reg. 295, two pieces of worked bone.

10.15 Reg. 1070, pierced astragalus.

10.16 Reg. 1251, section of ivory or bone bobbin?

10.17 Reg. 631, bone inlay with guilloche design.

10.18 Reg. 676, bone inlay with lotus design.

10.19:a Reg. 1051, bone spatula.

10.19:b Reg. 1049, bone spatula with pointed end.

10.20 Reg. 125, fragment of a glass bracelet.

10.21:a–c Reg. 126, fragments of glass bracelets.

10.22 Photographs of Regs 125 and 126.

10.23 Reg. 173, fragment of a glass bottle.

10.24 Reg. 851, fragment of a faience chalice.

10.25 Reg. 688, faience sherd.

10.26 Reg. 998, faience fragment with incised decoration.

10.27 Reg. 2, perforated stone beads.

10.28 Reg. 28, coral bead.

10.29 Reg. 36, barrel-shaped bead.

10.30 Reg. 170, glass bead.

10.31 Reg. 283, stone bead.

10.32 Reg. 632, stone bead.

10.33 Reg. 734, agate bead.

10.34 Reg. 943, amber bead.

10.35 Reg. 1258, glass bead.

10.36 Composite photograph, Regs 298, 299, 285 and 190.

10.37 Reg. 285, female figurine head.

10.38 Reg. 298, female figurine head.

10.39 Reg. 457, female figurine head.

10.40 Reg. 656, female figurine head.

10.41 Reg. 747, female figurine head.

10.42:a–e Reg. 969, top half of female figurine.

10.43:a–c Reg. 1003, female figurine head.

10.44 Reg. 190, female figurine head.

10.45 Reg. 637, top half of female figurine.

10.46 Reg. 776, top half of female figurine.

10.47:a–c Reg. 98, figurine head.

10.48:a–c Reg. 110, female figurine fragment.

10.49 Reg. 627, female figurine fragment.

10.50 Reg. 648, female figurine, legs only.

10.51 Reg. 749, torso of female figurine.

10.52 Reg. 765, female figurine fragment.

10.53 Reg. 928, female figurine torso.

10.54 Reg. 965, female figurine fragment.

10.55:a–e Reg. 1125, lower half of female figurine.

10.56:a–f Reg. 33, head of bearded figurine.

10.57 Reg. 299, head of male figurine.

10.58:a–f Reg. 109, grotesque style figurine head.

10.59 Reg. 156, damaged lamp.

10.60:a, b Reg. 262, fragments from hollow figurine.

10.61 Reg. 365, fragment of plastic decoration.

10.62 Reg. 491, fragment of plastic decoration.

10.63:a, b Reg. 527, fragment of plastic decoration.

10.64:a–d Reg. 1195, decorative rim fragment.

10.65 Reg. 1206, large pottery fragment with relief decoration?

10.66:a–d Reg. 6, possible zoomorphic head.

10.67:a–d Reg. 14, horse's head with applied decoration.

10.68:a Reg. 107, horse's head fragment with applied decoration.

10.68:b Reg. 14, horse's head with applied decoration.

10.69 Reg. 107, horse's head fragment with applied decoration.

10.70 Reg. 118, fragment of hollow zoomorphic figurine.

10.71:a–f Reg. 149, horse's head fragment with incised decoration.

10.72:a Reg. 365, fragment of plastic decoration.

10.72:b Reg. 300, nose from zoomorphic figurine, with plastic decoration.

10.72:c Reg. 320, horse's head with plastic decoration.

10.73 Reg. 300, nose from zoomorphic figurine, with plastic decoration.

10.74:a–e Reg. 320, horse's head with plastic decoration.

10.75 Reg. 363, fragment of horse's head/spouted vessel.

10.76 Reg. 469, fragment of horse's head/spouted vessel.

10.77 Reg. 515, horse's head fragment.

10.78 Reg. 809, spouted zoomorphic head with plastic decoration.

10.79 Reg. 908, zoomorphic figurine head.

10.80 Reg. 920, fragment of zoomorphic figurine.

10.81:a–e Reg. 938, spouted zoomorphic head with plastic decoration.

10.82:a–d Reg. 952, horse's head fragment with plastic decoration.

10.83 Reg. 1009, zoomorphic figurine fragment.

10.84:a–d Reg. 1047, horse's head fragment, with applied bridle.

10.85 Reg. 1063, fragment of spouted vessel/horse's head.

10.86:a–d Reg. 1178, fragment of spouted zoomorphic vessel.

10.87 Reg. 249, fragment of hollow figurine.

10.88:a Reg. 263, leg from an ox/bull figurine.

10.88:b Reg. 269, two legs from an ox/bull figurine.

10.89 Reg. 269, two legs from an ox/bull figurine.

10.90 Reg. 669, leg from a zoomorphic figurine.

10.91:a–d Reg. 678, fragment from an unidentifiable figurine.

10.92 Reg. 748, figurine fragment, unidentified.

10.93 Reg. 791, fragment from an ox/bull figurine.

10.94 Reg. 890, fragment of a solid figurine.

10.95 Reg. 911, figurine fragment.

10.96:a–d Reg. 937, rear end of horse figurine, with possible saddle.

10.97 Reg. 973, figurine fragment.

10.98 Reg. 1014, figurine fragment.

10.99 Reg. 1022, fragment of a zoomorphic figurine.

10.100 Reg. 1027, rear end of a large zoomorphic figurine.

10.101 Reg. 1040, possible fragment of horse and rider figurine.

10.102 Reg. 1087, fragment of a zoomorphic figurine.

10.103 Reg. 1088, fragment of a zoomorphic figurine.

10.104 Reg. 38, fragment of a baked clay model?

10.105 Reg. 340, fragment of a pottery object.

10.106 Reg. 1000, fragments of a pottery object.

10.107 Reg. 120, possible ceramic coffin fragment.

10.108 Reg. 244, possible ceramic coffin fragment.

10.109 Reg. 916, possible ceramic coffin fragment.

10.110 Reg. 916:a and b, possible ceramic coffin fragments.

10.111:a Reg. 719, fragment of a palette.

10.111:b, d, e Unidentified.

10.111:c Reg. 20, corner of a pottery palette.

10.111:f Possibly Reg. 1045.

10.111:g Reg. 120, possible fragment of a ceramic coffin.

10.112 Reg. S.63, possible fragment of a ceramic coffin.

10.113 Reg. 936, fragment of stone bowl or palette.

10.114 Reg. 148, alabaster palette or dish fragment.

10.115 Reg. 369, palette fragment with incised geometric design.

10.116 Reg. 807, pottery palette.

10.117 Reg. 936, fragment of stone bowl or palette.

10.118 Reg. 1007, pottery fragment, used as palette.

10.119 Reg. 1080, fragment of a stone bowl or palette.

10.120 Reg. 1187, fragment of a stone bowl or palette.

10.121:a Reg. 140, corner of a limestone object.

10.121:b Not identified.

10.121:c Reg. 2, three stone beads.

10.121:d Reg. 148, fragment of alabaster palette or dish.
10.122:a–d Reg. 185, fragment of a stone lion.
10.123:a, b Reg. 675, fragment of a tubular object.
10.124 Reg. 779, small limestone altar.
10.125 Reg. 275, bottle stopper?
10.126 Reg. 301, limestone bottle stopper.
10.127:a–c Reg. 1194, sandstone bottle stopper.
10.128 Reg. 324, fragment of a stone bowl or dish.
10.129 Reg. 439, fragment from the rim of a basalt bowl.
10.130 Reg. 681, fragment from a pierced stone bowl.
10.131:a Reg. 681, rim sherd from a pierced stone bowl.
10.131:b Reg. 978, fragment of a pierced stone bowl.
10.132:a, b Reg. 919, fragment of a large stone jar.
10.133 Reg. 970, fragment of an alabaster loop handle.
10.134 Reg. 1036, part of a marble pedestal base.
10.135 Reg. 1053, fragment of a stone bowl.
10.136 Reg. 1279, fragment of a stone bowl.
10.137:a Reg. S.38, fragment of a stone vessel.
10.137:b Reg. 369, palette fragment with incised geometric design.
10.138 Reg. 913, architectural fragment.
10.139:a, b Reg. 1116, limestone with painting of bull.
10.140 Reg. 1184, fragment of painted limestone.
10.141 Reg. 1292, door socle.
10.142 Reg. 152, stone ring?
10.143 Stone ring fragments, possibly including Reg. 154.
10.144 Reg. 292, limestone gaming piece?
10.145 Reg. 445, stone weight or gaming piece.
10.146 Reg. 1001, limestone object, possible game.
10.147 Reg. 369a, basalt mortar fragment.
10.148:a Reg. 467, small volcanic stone mortar.
10.148:b Reg. 912, limestone mortar fragment.
10.149 Reg. 953, stone mortar fragment.
10.150 Reg. 1289, limestone mortar.
10.151 Reg. 893, basalt quern.
10.152 Reg. 1235, fragment of a limestone roller.
10.153:a–c Reg. 140, corner of a limestone object.
10.154 Reg. 872, complete rubber, volcanic rock.
10.155 Reg. 1048, possible rubber, volcanic rock.
10.156 Reg. 1118, sandstone hone.
10.157 Reg. 1285, fragment of a limestone grinder.
10.158:a Reg. 16, bilaterally retouched blade fragment.
10.158:b Reg. 687, sickle blade.
10.159 Reg. 32, basalt pounder.
10.160 Reg. 633, Middle Palaeolithic flake.

10.161 Reg. 636, retouched flake.
10.162 Reg. 663, two flints.
10.163 Reg. 1132, ground stone axe.
10.164 Reg. 1155, single platform pyramidal core.
10.165:a Reg. 1153, spindle whorl with incised design.
10.165:b Reg. 35, spindle whorl with incised design.
10.165:c Reg. 23, spindle whorl with incised design.
10.165:d Reg. 694, spindle whorl with incised design.
10.165:e Reg. 37, spindle whorl with incised design.
10.165:f Reg. 348, spindle whorl fragment.
10.166 Reg. 23, spindle whorl with incised design.
10.167 Reg. 34, spindle whorl with incised design.
10.168 Reg. 35, spindle whorl with incised design.
10.169 Reg. 37, spindle whorl with incised design.
10.170 Reg. 121, spindle whorl with incised design.
10.171 Reg. 392, fragment of whorl with incised decoration.
10.172 Reg. 584, half of a whorl with incised design.
10.173 Reg. 694, spindle whorl with incised design.
10.174 Reg. 700, half of a whorl with incised design.
10.175 Reg. 751, half of a whorl with incised design.
10.176:a–e Reg. 1153, spindle whorl with incised design.
10.177 Reg. 1245, spindle whorl with incised design.
10.178:a Reg. 751, half of a whorl with incised design.
10.178:b Reg. 547, smooth stone spindle whorl.
10.178:c Reg. 931, half of a cylindrical stone object.
10.179 Reg. 348, spindle whorl fragment.
10.180 Reg. 391, spindle whorl fragment.
10.181 Reg. 463, spindle whorl made from fossil sea urchin.
10.182 Reg. 547, smooth stone spindle whorl.
10.183 Reg. 5, limestone whorl/loom weight.
10.184 Reg. 108, large stone spindle whorl.
10.185 Reg. 670, stone core, possible unfinished whorl.
10.186 Reg. 895, large whorl or loom weight.
10.187 Reg. 397, fragmentary loom weight.
10.188 Reg. 568, clay loom weight.
10.189 Reg. 576, two pieces of a loom weight.
10.190 Reg. 607, stone loom weight.
10.191 Reg. 826, stone loom weight.
10.192 Reg. 129, circular weight, possibly lead.
10.193:a–g Reg. 621, weight with inscription.
10.194 Reg. 1154, black stone weight.
10.195:a–c Reg. 153, copper alloy jewellery.
10.196 Reg. 437, copper alloy hook.
10.197 Reg. 21, bronze earring.

10.198 Reg. 297, copper alloy fibula.

10.199 Reg. 318, small earring, silver or silver alloy.

10.200 Reg. 438, copper alloy fibula.

10.201:a Unidentified.

10.201:b, c Reg. 484, two copper alloy fibulae.

10.201:d Reg. 474, part of a copper alloy ring.

10.201:e Reg. 827, bronze ring or earring.

10.201:f Reg. 690, curved iron nail.

10.202 Reg. 546, bronze kohl stick.

10.203 Reg. 939, sheet copper alloy, two fragments.

10.204 Reg. 322, copper alloy object.

10.205 Reg. 526, copper alloy, nine pieces, one rivet visible.

10.206 Reg. 658, copper alloy chair fittings.

10.207:a, b Reg. 780, copper alloy fitting.

10.208 Reg. 944a, piece of decorative copper alloy.

10.209:a Reg. 21, bronze earring.

10.209:b Reg. 128, bronze loop.

10.209:c Reg. 132, two earring fragments, possibly silver.

10.209:d Possibly Reg. 465, copper alloy object.

10.209:e Reg. 25, copper alloy nail.

10.209:f Reg. 133, bronze arrowhead.

10.209:g Reg. 135, iron point.

10.209:h Reg. 1264, lead needle.

10.210 Reg. 1129, copper alloy chair fitting.

10.211 Reg. 133, bronze arrowhead.

10.212 Reg. 279, bronze, leaf-shaped arrowhead.

10.213:a Reg. 372, bronze socketed trefoil arrowhead.

10.213:b Reg. 271, incomplete socketed trefoil arrowhead.

10.214 Reg. 661, socketed bronze arrowhead.

10.215 Reg. 818, broken arrowhead socket.

10.216 Reg. 992, iron arrowhead.

10.217 Reg. 1083, iron spear/arrowhead.

10.218 Reg. 25, copper alloy nail.

10.219 Reg. 321, two fragments of corroded copper alloy.

10.220 Reg. 465, twisted copper alloy.

10.221 Reg. 819, copper alloy object.

10.222 Reg. 832, copper alloy nail.

10.223 Reg. 941, small copper alloy nail.

10.224 Reg. 942, three pieces of copper alloy.

10.225 Reg. 948, fragment of sheet copper alloy.

10.226 Reg. 971, piece of copper wire.

10.227 Reg. 1119, heavy copper alloy nail.

10.228 Reg. 15, three fragments of corroded iron.

10.229 Reg. 425, two pieces of corroded iron.

10.230 Reg. 950, strip of flat metal, possibly iron.
10.231 Reg. 1271, large iron nail or rivet.
10.232 Reg. 3, Byzantine coin.
10.233 Reg. 999, Byzantine coin.
10.234 Reg. 182, pedestal bowl fragment, stone/pot?
10.235 Reg. 291, stone and metal object.
10.236 Reg. 968, sherd with green glaze.
10.237 Reg. 1075, burnt clay fragment.
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11.6 Inscribed sherd. Reg. 816.
11.7 Inscribed sherd. Reg. 889.
11.8 Inscribed sherd. Reg. 766.
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11.18 Carnelian scaraboid. Reg. 290.
11.19 Stone scaraboid. Reg. 293.
11.20 Limestone scaraboid. Reg. 316.
11.21 Scaraboid. Reg. 586.
11.22 Scaraboid fragment. Reg. 923.
11.23 Triangular seal. Reg. 951.
11.24a, b Clay sealing. Reg. 29.
11.25 Clay sealing. Reg. 99.
11.26 Seal impression on cooking pot handle. Reg. 1150.
11.27 Seal impression on storage jar handle. Reg. 702.
11.28 Incised handle. Reg. 27.
11.29 Incised handle. Reg. 785.
11.30 Incised handle. Reg. 1139.
11.31 Incised handle. Reg. 1217.
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FOREWORD

Simon Bennett

It gives me real pleasure to contribute the foreword to this, the second of Piotr Bienkowski's thoroughly worked publications of my late mother's excavations. More than anyone, Crystal Bennett opened up Edom. More than anyone, Dr John Bartlett was the scholar to whom she turned for clarification, advice and interpretation, and it is a delight that he is one of the contributors to this important publication. Busayra is a magnificent site. It covers a substantial area on an escarpment that falls away on three sides. It will be open in the course of time to further interpretation. Dr Bienkowski's reinterpretation of the site and the excavations that opened it up reflects most painstaking and careful work, which complements the pioneering and joyful spirit of the original excavations and the quality of the original work undertaken by my mother, her site supervisors, of whom Dr Bienkowski was one, and the backroom team. On my own brief foray in 1973, the atmosphere in the pottery room was vivid and full of laughter. The dig teams worked hard from early morning to the heat of the day, and revisited frequently in the late afternoon before sharing good meals and much conversation late into the night.

The site was regularly visited by snakes, which enjoyed the warmth of the rest tents and the moisture of the temporary latrines. Relations with the local villagers were good and there was much hospitality on their part. There was also great interest in the excavating potential of Maro, my mother's dachshund, who was strongly, if erroneously, suspected of a particular skill in unearthing precious metal. Dr Bienkowski has alluded to the support of the Jordanian authorities. There was one man in particular who assisted in the early phases of the dig and that was the local Governor of the area, Otallah Moheddin, a man of immense energy and warmth, who took a keen interest in the excavations and was aware of the benefits brought to the locality by the excavations. He went out of his way to help. One of my daughters is showing an increasing interest in archaeology and history. Perhaps within another quarter of a century her thoughts on this site may see the light of day and furnish us, as Dr Bienkowski has so assiduously done, with a further stimulating perspective on Busayra.

October 2001

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1971: Crystal-M. Bennett (Director), Sami Rabadeh (Department of Antiquities representative), Naomi Assinder, Ann Balfour-Paul, Ben Ballance, Simon Bennett, Jean Black, Peter Chenery, Peter Farries, Gerald Lankester Harding, Svend Helms, Colin Hope, Michael Macdonald, Nigel Mills, Marion Oakeshott, Rafik Saraf, Angela Southey, and Archibald Walls.

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Abbreviations

D = diameter
ext = exterior
H = height
L = length
pres = preserved
Rec. = Record number
Reg. = Registration number
T = thickness
W = width

The following abbreviations are used to refer to the museums with Busayra small finds and fossil or marine invertebrates in their collections:

Amm	Amman Museum, Jordan
Ash	Ashmolean Museum, Oxford
BIAAH	British Institute at Amman for Archaeology and History (shells and fossils studied in 1983)
BM	British Museum
Brussels	Musées Royaux d'Art et d'Histoire, Brussels
DoA	Department of Antiquities, Jordan
Dub	Weingreen Museum of Biblical Antiquities, Trinity College, Dublin
Edin	Royal Museum of Scotland, Edinburgh
Emory	Michael C. Carlos Museum, Emory University, Atlanta, Georgia, USA
Kar	Karak Museum, Jordan
L NMGM	Liverpool Museum (National Museums and Galleries on Merseyside)
Man	Manchester Museum
ROM	Royal Ontario Museum, Toronto, Canada

1. THE SITE AND ITS EXPLORATION

Piotr Bienkowski

Geographical setting

Busayra (alternative spelling Buseirah, 30° 45′ N, 35° 40′ E, Palestine Grid Reference 208018) is a modern village situated about 10 km. south of Tafila and 45 km. north of Petra in Jordan (Figure 1.1). The ancient site as excavated lies at the north end of the village, on a spur running north-west along the 1100 m. contour line (Plates 1.1–3). The spur is connected to the main land mass only to the south, from where the modern King's Highway leads to Tafila and south to Petra. Topographically, this appears to be the only possible main route south from Busayra. The copper-production area of Faynan lies 15 km. to the south-west of Busayra, and it is likely that the most direct route between the two was south-west via the Wadi Dana. On the north-east side of the site is the deep, rugged and steeply terraced Wadi Janin (Plate 1.3), largely free of any ancient sites and in places impassable, usable only for goat pasture and possibly very limited farming. Wadi Janin originates in the spring of Ain Janin, where until the late 1960s the villagers of Busayra travelled several kilometres to fetch water (Bennett 1973: 6). This spring was also used in antiquity, and Iron II figurines and lamps found within it may have been 'part of an offering to the deity of the spring' and possibly originated in Busayra, as suggested by Harding (1937: 253). On the south-west side of Busayra are the gentler agricultural terraces of the Wadi Qarqur, which descend in a series of flat ridges rather than a steep drop (Plate 1.4). A modern road and several tracks run north-west along the sides of this wadi. Many sites of different periods, including Iron II, were discovered by the Tafila-Busayra Archaeological Survey (TBAS, cf. Chapter 2) along the Wadi Qarqur, suggesting that it was also an ancient route. Wadis Janin and Qarqur converge to the north-west of Busayra to form the Wadi Hamayidah (alternative Wadi

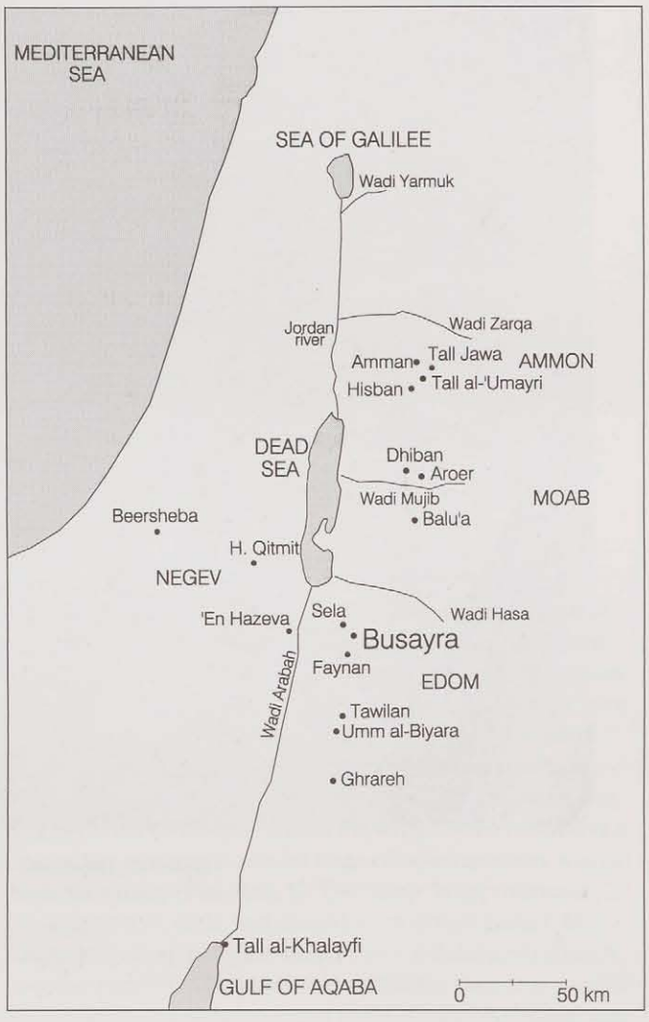


Figure 1.1: Map showing location of Busayra and other key sites

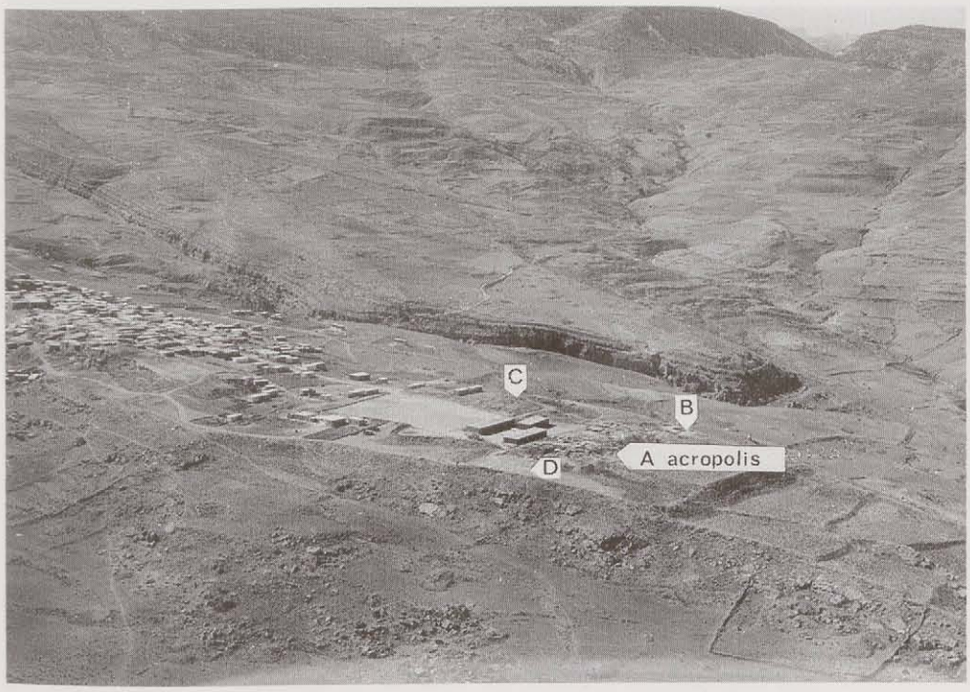


Plate 1.1: Aerial view of Busayra in 1974, looking south (photo Fawzi Zayadine)



Plate 1.2: Aerial view of Busayra. Top = north-east



Plate 1.3: Busayra in 1971, looking south. Wadi Janin is to the left



Plate 1.4: Wadi Qarqur, looking south, with the spur of Busayra appearing on the left

Busayra). Overlooking their confluence is the site of Ramsis (TBAS Site 36), possibly an Iron II/Roman/Byzantine watchtower, with a good view south-east towards Busayra (MacDonald et al. 2000). To the north of Ramsis is Sela, an Iron II/Nabataean site where a relief attributed to the Neo-Babylonian king Nabonidus was carved into the cliff face (Lindner 1992: 143–4; Dalley and Goguel 1997). The Wadi Hamayidah runs north-west and eventually joins the Wadi Khuneizir which leads into the Southern Ghors. West of Busayra the Wadi Dahal leads towards a short and level crossing of the Wadi Arabah directly opposite the fortified Iron Age–Roman site of 'En Hazeva on the west side (MacDonald 1992: 78–9; Finkelstein 1979: 31; Bienkowski and van der Steen 2001: note 16; cf. Chapter 2).

The total area covered by the plan of the ancient site of Busayra as excavated is approximately 81,602 square metres (Figure 1.2), but it is likely that the site continued to the south-east in the area now occupied by the modern village. At the centre of the spur is a mound of about 3,200 square metres, marking the high point of the site (Area A, or the 'acropolis'). Another high point is to the south (Area C). To the north-west of the 'acropolis' there is a series of drops of several metres each to terraces, all apparently bounded by walls visible as ridges in the ground and which have been indicated by dotted lines on the plan. The lower terrace between Areas A and H may have been the quarry area for the site. Partial remains of a fallen quarry face can be seen to the north-east, the face perhaps having fallen during an earthquake (Plate 1.5). An interesting feature in the south-west area of the terrace is the remains of a 'ramp' left standing in natural bedrock when masonry was cut from the quarry (Plate 1.6a, b). The 'ramp' is approximately 20 m. long by 6 m. wide, and shaped to an almost perfect 30o angle. It leads up from the terrace eastwards towards Area A, running parallel to the perimeter wall to the west. It is possible that, since the lower terrace area was a quarry, the 'ramp' was cut to facilitate the easy transportation of the large blocks of masonry used for the construction of the buildings on the ancient site. Since the perimeter wall surrounding the site continued along the descending terraces as far as Area H, where its corner was excavated, it appears that the quarry and 'ramp' were enclosed within the perimeter wall.



Plate 1.5: Remains of a fallen quarry face on the lower terrace between Areas A and H, possibly used for transporting masonry

Identification and survey

The modern site of Busayra was first identified with biblical Bozrah by Ulrich Jasper Seetzen during his trip to the southern end of the Dead Sea in 1806. Seetzen did not actually visit Busayra and indeed did not travel in Edom, but made careful enquiries about ruined sites and inhabited villages. On 28 March 1806, while at Karak, he wrote in his journal a list of inhabited villages in northern Edom, including el Bzéra, suggesting that this was Old Testament Bozrah (Seetzen 1854–59: I.418).

Busayra was visited by Johann Ludwig Burckhardt on 11 August 1812:

> Beszeyra is a village of about fifty houses. It stands upon an elevation, on the summit of which a small castle has been built, where the peasants place their provisions in times of hostile invasion. It is a square building of stone, with strong walls. The villages of Beszeyra, Szolfehe, and Dhana are inhabited by descendants of the Beni Hamyde, a part of whom have thus become Fellahein, or cultivators, while the greater number still remain in a nomadic state. Those of Beszeyra lived formerly at Omteda, now a ruined village three or four hours to the north of it. At that time the Arabs Howeytat were at war with the Djowabere, whose Sheikh was an ally of the Hamyde. The Howeytat defeated the Djowabere, and took Tafyle, where they constructed a castle, and established a Sheikh of their own election; they also built, at the same time, the tower of Beszeyra. The Hamyde of Omteda then emigrated to this place, which appears to have been, in ancient times, a considerable city, if we may judge from the ruins which surround the village. It was probably the ancient *Psora*, a bishopric of *Palaestina tertia* (Burckhardt 1822: 407).

One of the Beni Hamyde of Busayra became Burckhardt's guide on his famous journey to Wadi Musa and Petra, taking his wife, two daughters and servant girl on the trip (Burckhardt 1822: 407–8). Commanders C.L. Irby and J. Mangles, who visited Busayra on 17 and 27 May 1818, encountered the same man six years later. Their account mentions the modern village but not the ancient site ('Bsaida/Ipseyra', Irby and Mangles 1823: 376, 443; note that the spelling on the map accompanying their book is 'Beszeyra/Psora', but the map was prepared from the maps published in Burckhardt 1822; cf. Irby and Mangles 1823: iv–v).

Robinson and Smith (1841, vol. II: 570–1) identified Bozrah with el-Busaireh 'two hours and three-quarters south of Tufileh', noting that 'both Eusebius and Jerome mention a Bozrah [Gk. Bosor] as existing in their day in the mountains of Idumaea, distinct from the northern [i.e., Syrian] Bozrah' (see Eusebius, Onomasticon [Klostermann 1904, 46–7]). Other nineteenth-century travellers added little useful information about the site. Busayra was briefly mentioned by Charles Doughty after his journey in 1876:

> Beside Maan, the road station, the land is now desolate, saving four or five good villages, which yet remain from antiquity in the high and watered western coast,

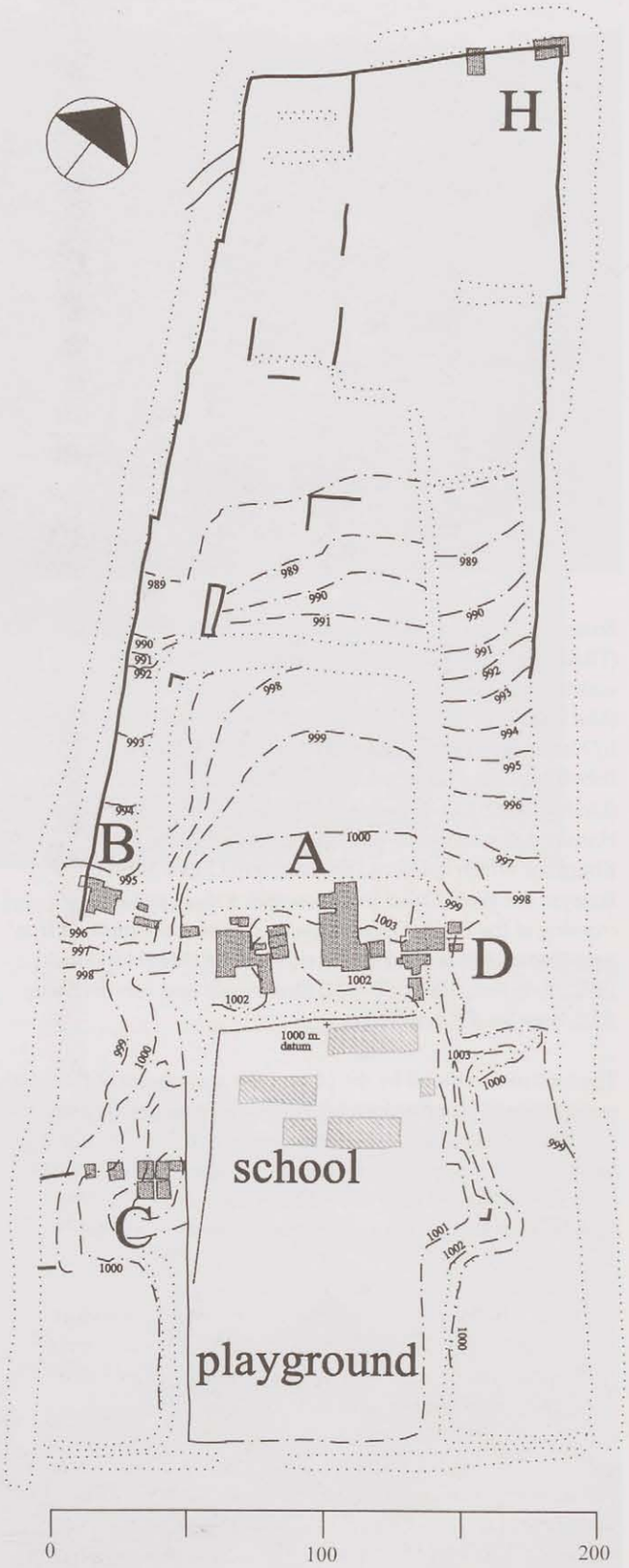
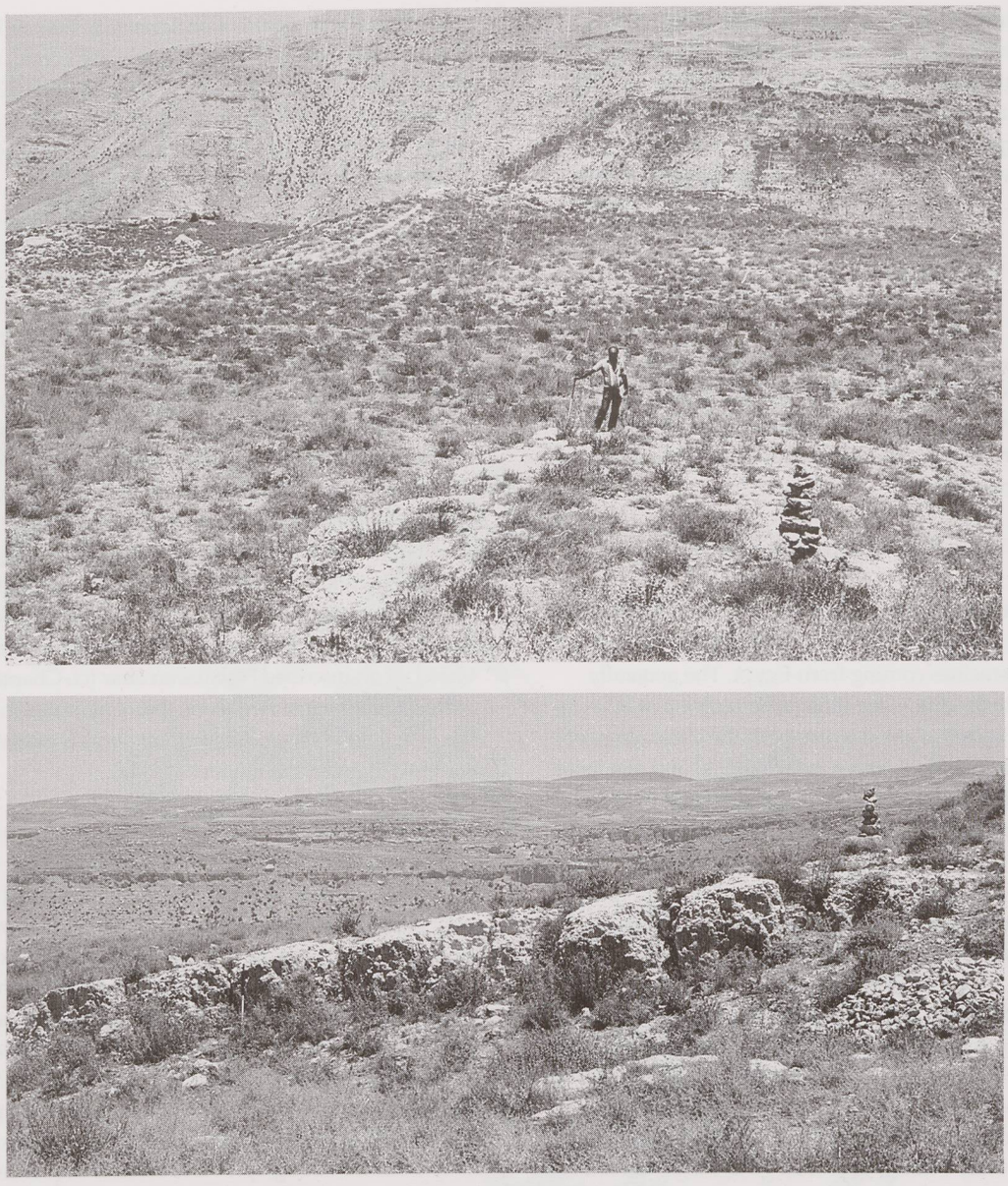


Figure 1.2: Position of excavated trenches



Plates 1.6a, b: Remains of a 'ramp' on the lower terrace between Areas A and H, possibly used for transporting masonry

> overlooking the Ghror and Valley of Salt. Of these is Bosra (Buseira), Amos threatens her palaces; there, say the Arabs, are tall standing (Roman) ruins (Doughty 1888: 31).

Doughty also recounted the story of a sheikh from Hebron who criticised the men of Busayra for their lack of religion and was burned alive by them. He described Busayra's fields as 'even now fruitful vineyards' (Doughty 1888: 38).

Busayra was only briefly noted by Rudolf Ernst Brünnow and Alfred von Domaszewski, who visited on 34 March 1898 (Brünnow and von Domaszewski 1904: 110–1). Alois Musil published a sketch plan of the visible walls, a photograph of the tower and a brief description of the ruins after his visit on 11 August 1900 (Musil 1907: 320–1, and figs. 167–8 on pp. 318–9).

The first archaeological survey of Busayra was undertaken in 1933 by Nelson Glueck (Glueck 1934b: 78–9). At first he thought that the site was small and that the major occupation dated to the Nabataean period. South of the modern village of Busayra, he found a small mound covered with ruined buildings. At the east end of the mound were the ruins of a church. North of the village was a large walled enclosure oriented east-west and measuring 65 by 110 m., surrounded on all sides except the south by terraces. This is the location of the site later excavated by Crystal-M. Bennett. Glueck found a number of cisterns on the hill and one on the terraces. South of the walled enclosure were three pillar bases. South-east of the village was a section of wall and the ruins of a tower — perhaps the tower mentioned by Burckhardt. Glueck identified the pottery associated with all these ruins as Nabataean, Byzantine and 'medieval Arabic'. Since he found only a few Iron Age sherds, he felt that the identification of Busayra with biblical Bozrah was problematic, and instead identified Tawilan, near Petra, with Bozrah (Glueck 1934a: 14). Later, though, he changed his mind and accepted the equation of Busayra with Bozrah (Glueck 1935: 83); on re-examining the site in 1934, and having since recognised 'Edomite' Iron Age pottery, he realised that Busayra was occupied during the Iron Age and indeed was 'evidently the strongest Edomite city in northern Edom, its natural position making it practically impregnable'

(1935: 7–8). The size of the site and the nature of the remains, more impressive than any other Iron Age site in Edom, together with the apparent preservation of the ancient name, make the identification with biblical Bozrah reasonably safe. Although there is no inscriptional evidence to confirm or deny this equation, no convincing alternative can be proposed.

The Bennett excavations

Objectives

Crystal-M. Bennett undertook excavations at Busayra for a total of 44 weeks from 1971–4 and in 1980. She cited four main reasons for excavating the site (see Bennett 1973; 1974; 1975; 1977; 1983 for preliminary reports; Bienkowski 1990: 101–5; 1992: 101–4 for overview):

1. Its probable identification with biblical Bozrah.

2. Passages in the Old Testament Book of Numbers 20: 14–21 recount that the king of Edom refused passage through his land to the Israelites coming from Egypt. The generally accepted date for this — for those who accept it at all — is c. 1230 BC. Bennett wanted to establish the chronology of Busayra to determine if, as a possible capital and residence of a king of Edom, it might have been occupied in the thirteenth century BC, as partial verification of the biblical story.

3. Busayra seemed the most likely site to provide a good chronological sequence for the archaeology of Edom.

4. Busayra's proximity to the important mining district of Faynan, the main copper production centre of the southern Levant.

Bennett's areas of excavation were chosen to investigate visible wall lines apparently belonging to major buildings and to the probable perimeter wall. She excavated four main areas on the upper part of the site. Area A was the central and highest point (the so-called 'acropolis'), with walls built of huge stones suggest-ing the presence of an important structure. Area B was a cut from the perimeter wall on the west side of the site towards Area A. The original purpose of Area C, on another high point to the south, was to investigate any defences on the approach to Area A from that direction, but the excavations uncovered another major building. The original aim of Area D, where structures were visible on a lower terrace east of Area A, was to link it up with Area A; indeed, the intention was to have a continuous cut linking Areas D, A and B, but this was not achieved (Figure 1.3). Area H, on a lower terrace, consisted of two small squares cut across the north-west corner of the perimeter wall.

Three other small areas were started but were either abandoned or insufficiently recorded to enable their publication. Square E1 was laid to the north-west of Area A Wall 46 to investigate if there was a staircase up to the 'acropolis'; this turned out not to be the case, and the only result was the clearance of Wall 92 which abutted Wall 46 (see Figure 4.2). Nevertheless, there is considerable confusion regarding Square E1. Bennett's personal excavation diary refers to a burial cave in Square E1, some objects were registered as coming from 'E1 cave', and there are photographs showing bones in a cave, labelled 'E1'. However, the site notebook for Square E1 does not mention a burial cave, nor is there any formal written or drawn record of its location and nature in the excavation archives.

An Area F was apparently planned or begun in the vicinity of Square A4.1, but there is no written or drawn record; one small bag of pottery is labelled 'Area F'. Three small squares were excavated in 1973 in Area M, east of the wall of the mosque within the village, south-east of the main excavations (Bennett 1975: 1–2). The area was never related to the main plan. The mosque contains the tomb of a Muslim holy man, Nabi Sheed, and is a minor pilgrimage site. One of the squares encountered the disused village cemetery, and was abandoned. The other squares revealed some plastered stone walls and surfaces associated with Roman pottery, but no meaningful plan, but also deposits containing Iron II, Byzantine and Islamic pottery. The area was initially chosen for excavation because of the discovery, among building rubble adjacent to the tomb of Nabi Sheed, of an inscribed Nabataean altar (cf. Chapter 11). The main significance of Area M is that it indicates that settlement in the Iron II and Nabataean/Roman periods extended to the south-east, under the modern village.

In summary, Bennett's excavations at Busayra uncovered part of a substantial administrative centre dominated by two large buildings and fortified by a town wall. Her initial objectives were only partially fulfilled. Nothing was found to prove or discount Busayra's identification with biblical Bozrah. No occupation was found dating to the thirteenth century BC. Evidence for a chronological sequence was limited: the earliest and major use of the site was in the late Iron II/Persian period, possibly extending into the Early Hellenistic period (c. late eighth to ?third centuries BC), with some re-use in the Nabataean/Roman period (c. first century BC to fourth century AD). The excavations produced only a limited stratigraphic and ceramic sequence for the late Iron II/Persian period. The importance of Faynan in the Iron II period has only recently been investigated by independent fieldwork (cf. Barker *et al.* 1997; 1998; 1999; 2000; Fritz 1994; 1996; Levy, Adams and Shafiq 1999), and its relationship with Busayra has not yet been established.

Terminology

The major unit descriptions used by Bennett at Busayra were Area, Trench, Locus, Layer/Level, Feature and Wall (cf. Hart 1995: 241–2). In this final report, some of the terminology has been adjusted, according to accepted current usage (as in the final report on Bennett's excavations at Tawilan, cf. Bennett and Bienkowski 1995: 17), in particular since Bennett's use of 'locus' is quite different from its meaning in today's methodology and might lead to confusion.

Area was the largest horizontal excavation division. Five major areas were excavated at Busayra, designated by a capital letter: Areas A, B, C, D and H. These areas were not aligned on a grid, but positioned arbitrarily around surface features.

Trench was a horizontal subdivision of an area. A trench was an arbitrary excavation unit, usually square or rectangular, or

Figure 1.3: Composite plan of Areas B, A and D

occasionally two square or rectangular units separated by a baulk. Trenches were recorded as subdivisions of Areas using Roman numerals, e.g. Trench A I, A II, A III. In this final report, Trenches have been amended to *Squares*, numbered with Arabic numerals, e.g. Square A1, A2, A3.

Locus was the main horizontal subdivision of a Trench, usually designated by architectural features such as walls, or the area inside a room. The horizontal area covered by a locus was constantly changing since, when a new wall was discovered within the locus, normally a new locus was created on one side of the wall. Loci were recorded as subdivisions of Bennett's Trenches using Arabic numerals, e.g. A.I.1, A.I.2, A.I.3. Excavation and recording methodology and terminology have changed since Bennett's excavations, and today 'locus' invariably refers to a vertical subdivision such as a deposit or feature and not to a horizontal area. In this final report, Locus has been amended to *Trench*, numbered with Arabic numerals, e.g. A1.1, A1.2, A2.1.

Layer/Level was the major vertical subdivision of Bennett's Locus, referring to a soil or earth deposit distinguished on the basis of texture, colour or composition, irrespective of its origin, function or contents. Layer/Level numbers were also given to Features and Walls. Layers/Levels were numbered in Arabic numerals, e.g. A.I.1.1, A.I.1.2, A.I.1.3. In this final report, Layer/Level has been amended to *Locus*; since the term 'Locus' also includes Features and Walls, a soil or earth locus can be referred to as a deposit. Loci are numbered sequentially within trenches, e.g. A1.1.1, A1.1.2.

Feature was an architectural feature or permanent installation. Features included pits, floors, steps, hearths, benches and walls. Features were recorded as Roman numerals, numbered separately within each of Bennett's Trenches, e.g. A I Feature I, A I Feature II. Features were also given Bennett's Layer/Level numbers, but were normally referred to by their Feature numbers. In this final report, Features have been retained, but are published as Arabic numerals, e.g. A1.1.F1, A1.1.F2.

Wall was a structure of stone or mudbrick or both. Walls were recorded in alphabetical order, numbered separately within each of Bennett's Trenches, e.g. A I Wall A, A I Wall B, A II Wall A, A II Wall B. Walls invariably were also given Bennett's Layer/Level and Feature numbers, but were normally referred to by their wall numbers. In this final report, Walls have been retained, but are published as Arabic numerals, e.g. Wall 1, Wall 2, sequentially for each Area.

To summarise the terminological amendments that have been made for this final report, the unit descriptions in descending hierarchical order are: Area (A), Square (A1), Trench (A1.1), Locus (= Deposit, Feature or Wall, A1.1.1, A1.1.F1, or Wall 1).

Problems of excavation, recording and publication

An excavation report encapsulates the dilemma of writing history: it is not a presentation of the past itself, but a presentation of a particular subjective description of one small part of the past. An excavation report can never be an objective description of how a site appeared and developed in antiquity. It is, inevitably, a biased and partial record of a small part of a site which archaeologists chose to dig, how they dug it, what they noticed, how they understood and interpreted what they noticed, what they recorded, and how much of that they chose to publish and in what form.

With this excavation report, the distance from what actually happened in antiquity is compounded by the quality of the excavation technique and the records, and the inexperience of the site supervisors. Crystal Bennett died in 1987 without having begun work on the final report on her excavations at Busayra. The present writer and editor of this final report was a senior site supervisor during the final season of excavations in 1980. In that role, he was responsible for a particular area of the site, but did not have a wide overview of the excavations. His analysis of the stratigraphy of the whole site has therefore been based almost entirely on study of the excavation archive, comprising site notebooks, photographs, section drawings and plans, as well as periods spent at Busayra checking details on site. In many cases, analysis of the records has led to different conclusions than those published by Bennett in her preliminary reports. Compiling this final report has been largely an exercise in the evaluation of uncertain and conflicting information. In many ways, the excavations were unfinished. Most trenches were not excavated to bedrock and it has often proved impossible to determine the exact stratigraphic sequence. In Area A, in particular, large parts were only dug to the first surface below topsoil. Basic questions of phasing and plan were not answered.

Crystal Bennett's excavation technique did not systematically separate surfaces from occupation deposits on surfaces: the material was often collected and recorded as one locus. So when there is a wall resting on or cut into a 'floor', it is impossible to separate the finds from the use of the floor prior to the construction of the wall, from those associated with the occupation deposit post-dating the construction of the wall. Often it is not even clear what the wall was built on — whether on the floor itself, or in a foundation trench, or on an occupation deposit overlying a floor, and the lack of competent section drawings for key loci compounds this difficulty. In this report, for most areas, it has been possible to separate structural phases from occupation phases, but this could not be managed for Area A, which was particularly problematic.

Much information was not recorded during the excavations. Crystal Bennett's personal notebooks of the excavations, essentially a sort of diary, clearly admit that she simplified things that she did not understand — for example, ignoring walls which did not 'fit'. The site notebooks compiled by the site supervisors were continued on a daily basis, and so are more a chronicle of the progress of excavation each day than an objective record and interpretation. Description and interpre-tation of loci was often inadequate. If one is faced with a deposit for which the sole description in the site notebook is 'not as pretty as the previous level', then it is clear that opportunity for plausible interpretation is limited. Often, crucial information was omitted, such as the extent of loci and their relationship to other loci. Understanding of the written record was made more difficult by the changing orientation of the site north point between seasons.

In some notebooks, the orientation is confused and simply wrong, and occasionally it is impossible to determine where a locus or feature was located.

The relationship of loci to each other really only becomes clear in section drawings. It is virtually impossible to make sense of the sequence by relying on the notebooks. The stratigraphic analysis was therefore based initially and largely on interpre-tation of section drawings, production of a matrix from them, and then checking this against the written record of the notebooks. Production of a matrix was not possible for Area A, because the sequence was too confused — what was essentially a single building was excavated as separate units with no attempt at an overall view.

Nevertheless, there are huge contradictions between the section drawings and the site notebooks. The same loci can be described completely differently and are occasionally placed in different stratigraphic positions. Extra loci appear unnumbered in the section drawings, or occasionally many loci have the same number and were obviously not distinguished during excavation. Some drawings appear to be impossible, with unexplained vertical lines. Other section drawings were never finished: some parts were not drawn, or locus numbers were not added.

A frustrating aspect is that often the site supervisors gave no indication of the evidence for the phasing of walls, or occasionally the evidence for phasing for a particular wall is contradictory. Sometimes foundation trenches are mentioned, but often they appear to have been unexcavated, with no indication of where they were cut from. In some section drawings foundation trenches appear to 'float' in the middle of deposits, and quite clearly the inexperienced site supervisors had no concept of the function of a foundation trench. Occasionally, it seems that the excavators must have missed a foundation trench. In most cases, the notebooks do not specify whether surfaces or other deposits ran up to particular walls.

A major difficulty is that we simply cannot trust the observations, the accuracy of the excavating and recording, and particularly the identifications (if any) of deposits. Occasionally, the site supervisor or Bennett suggested an interpretation based on the nature of the deposit — e.g. a surface, occupation, destruction, fill, or wash — and in this report, unless there is overwhelming evidence to the contrary, these interpretations have been accepted. Where there is a contradiction between drawings and written notes, the guideline has been to follow the interpretation which is supported by other drawings or notes unless there seems good reason not to do so, in which case the choice has been explained or more than one possible interpretation has been suggested.

The surviving photographic record is incomplete. Whole sheets of negatives are missing from the excavation archive, removed by a student for his doctoral dissertation and neither published there nor returned. In particular, nearly all the photographs of Area D were removed and so this area is virtually unrepresented by photographs in this report.

Datums recording absolute height appear to be measured from zero = 1000 m., i.e. a datum of 99.98 m. records an absolute height above sea level of 1099.98 m. Datums were recorded on tops of walls, and in addition, on the original plans, datums are often marked in the areas between walls; unfortunately, in those cases, there is no indication of which locus the datum was taken on, whether topsoil, bedrock or a particular deposit, which renders them useless. For this reason, in the plans published here, only datums on walls have been included.

The excavated pottery was distributed at the end of each season to supporting institutions all over the world, and contexts were not kept together. Bennett's objective in studying and recording the pottery was solely to publish a 'type series', as with her excavations at Tawilan (see Bennett and Bienkowski 1995: 17). She did not intend to produce a record of phased pottery assemblages from stratified loci, which has now become standard practice. As at Tawilan, no record was kept of the total amount of pottery excavated in each locus, or of the total amount of pottery representing particular types. No attempt was made to reconstruct whole vessels, and the type series was based largely on rim types. Since the pottery is now scattered all over the world, it has been impossible to reconstruct all the ceramic contexts. The publication of the pottery in this report in Chapter 9 is therefore a presentation of the Busayra type series, as Bennett originally intended. However, it has been possible to reconstruct a plausible ceramic sequence from Area C, which has the best, most defensible sequence related to a stratigraphic understanding of a single large building. This proved to be impossible for the other major areas: Area A was incomplete, while Areas B and D were excavated in separate parts which could not be correlated. The Area C pottery sequences are published here as part of the presentation of the Area C stratigraphy in Chapter 6. Inevitably, these assemblages are incomplete, since they are based only on the pottery which Bennett retained after each season as the excavation director's share of the division of finds, and which is now stored at Liverpool Museum — it was not possible to track down all the pottery from the excavations which had been sent to institutions all over the world. Furthermore, the contexts marked on the pottery do not always tally with those in the excavation notebooks, rendering such pottery effectively useless for stratigraphic analysis. In the writer's opinion, the only way to obtain reliable assemblages of stratified pottery from Busayra is to undertake new excavations at the site.

While it is essential to be objective and to point out how the difficulties of the excavation archive affect the nature of the conclusions we can reach, nevertheless it would be negligent to underestimate the scale of Crystal Bennett's achievement in excavating the site. When she commenced excavations in 1971, access to the site was extremely difficult, and she cajoled many institutions, including the Jordanian army, into providing and transporting equipment and other resources. Although she was Director of the British School of Archaeology in Jerusalem, she was working virtually unaided in Jordan, renting a flat in Amman at her own expense which acted as an office and base for British excavations. It is quite clear that without her organisational skills, network of contacts and determination, Busayra would not have been excavated at all. The writer hopes that this final report, although critical in parts and occasionally with variant conclusions, will stand as a testimony to the achievement of a remarkable woman.

Chronology

The chronological system used in this report is:

Iron II: c. 1000–539 BC

Persian period: 539–332 BC

(Iron II/Persian period: c. 732–332 BC, refers to late Iron II/Persian pottery which cannot be further divided)

Hellenistic period: 332–63 BC

(Early Hellenistic: 332–200 BC)

(Late Hellenistic: 200–63 BC)

Roman period: 63 BC–AD 324

(Nabataean period: c. 100 BC–AD 106; the starting point of 100 BC is based on the fact that diagnostic Nabataean pottery and coins start at about that date, and it is currently impossible to identify earlier material as distinctively 'Nabataean')

(Early Roman period: 63 BC–AD 135)

(Late Roman period: AD 135–324)

Late Islamic (Ottoman) period: AD 1516–1918

2. THE HINTERLAND OF BUSAYRA

Burton MacDonald

Introduction

No archaeological site exists in isolation. It is only part of a whole, and thus can only be understood in relation to the other parts of that whole. It must be seen in context and in relation to its environment and other contemporary sites. It is influenced by its topography, climate, vegetation, and natural resources. The former inhabitants of the site depended to a large extent on these resources for their existence. The people who once lived at or communicated with the site employed a network of 'roads' by which they exploited its resources and by which they communicated with others. The Iron Age/Persian site of Busayra is no different. Thus, this chapter will look at Busayra in context, that is, its relation to neighbouring sites that were possibly contemporary. In addition, it will treat the geology, climate, water, vegetation and roads of the area.

The Tafila-Busayra Archaeological Survey and the Busayra citadel

One of the objectives of the Tafila-Busayra Archaeological Survey (TBAS)[1] was to serve as a 'hinterlands' investigation of the area of Busayra that Crystal-M. Bennett excavated (MacDonald *et al.* 2000). Towards this end, TBAS team members designated a 3-km. radius around the excavated area — hereafter referred to as the Busayra citadel (749600/3404000) — as Zone Busayra (Figure 2.1). This zone incorporates features of two other topographical zones of the TBAS project (Figure 2.2). These two zones are Zone 1, the gorges or area of steep wadis that generally flow in a north-westerly direction towards the Dead Sea Rift, and Zone 2, an area of the so-called Transjordanian Plateau. In Zone Busayra, 33 randomly chosen squares (200 x 200 m.), representing 4.90 percent of the zone, were chosen on the basis of a Geographic Information System (GIS) database. TBAS team members transected 29 of the randomly chosen squares in Zone Busayra. (Random squares 9, 10, 11, and 14 were inaccessible to TBAS team members because of the ruggedness of the terrain.) The results of these pedestrian transects are given in Table 2.1.

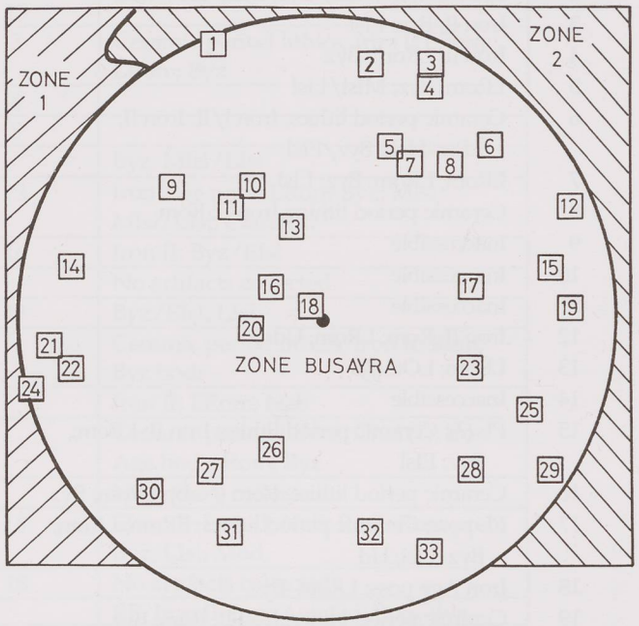


Figure 2.1: Zone Busayra (the Busayra citadel is in the centre of the zone)

The main period of occupation at the Busayra citadel is the Iron Age. The emphasis here will, therefore, be on the Iron Age materials collected in Zone Busayra.

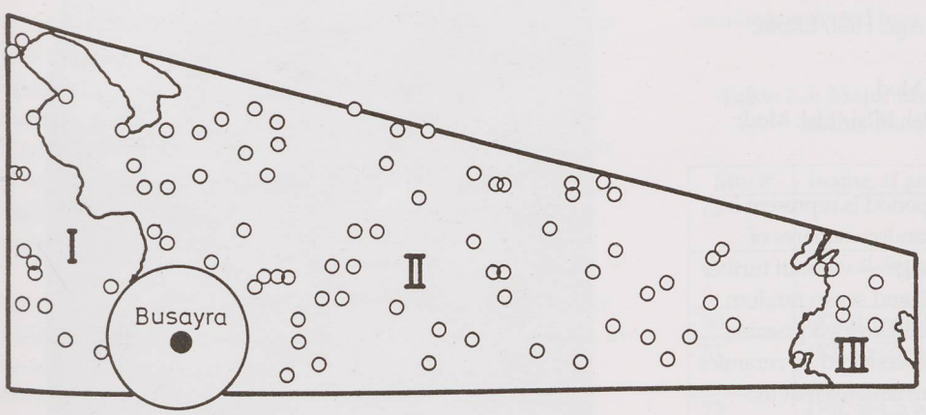


Figure 2.2: TBAS survey zones (reproduced from GIS database design and cartographic composition by Peter S. Johnson, Center for Applied Spatial Analysis, The University of Arizona, Tucson)

[1] The Tafila-Busayra Archaeological Survey (TBAS) was in the field for three seasons (1999, 2000, 2001). It investigated an area of c. 480 km.^{2} in the region from just west of At-Tafila and Busayra to just north of Jurf ad-Darawish in the east. For survey purposes, TBAS team members divided the area into three topographical zones, namely, the gorges, the plateau, and the desert, based on the 1:50,000 scale maps. For each of these zone, random squares (500 x 500 m.) were chosen on the basis of a Geographic Information System (GIS) database design and cartographic composition by Peter S. Johnson, Center for Applied Spatial Analysis, The University of Arizona, Tucson (coordinates in metres, UTM projection, Zone 36). TBAS team members surveyed these random squares by means of pedestrian transects. In addition to these three topographical zones, an area 3-km. in radius around the Busayra citadel was designated Zone Busayra. P. Bienkowski joined TBAS team members in 1999 for the investigation of Zone Busayra.

Table 2.1: Random Squares (200 x 200 m.) of Zone Busayra

RS #	Periods Represented
1	Iron Age; Rom; Byz; LIsl prob
2	ERom; Rom (Nab); Byz; MIsl–LIsl; Mod
3	Iron II; Byz; LIsl
4	Iron II; LRom; Byz
5	LRom; Byz; MIsl/LIsl
6	Ceramic period lithics; Iron I/II; Iron II; LPer–Hell; Byz/EIsl
7	ERom; LRom; Byz; LIsl
8	Ceramic period lithics; Iron II; Rom
9	Inaccessible
10	Inaccessible
11	Inaccessible
12	Iron II; Rom; LRom; Ud
13	LRom; LOtt (?)
14	Inaccessible
15	PL (?); Ceramic period lithics; Iron II; LRom; Byz; EIsl
16	Ceramic period lithics; Rom (Nab); LRom; Byz
17	PL poss; Ceramic period lithics; ERom; LRom; Byz; LIsl; Ud
18	Iron Age poss; LRom–Byz
19	Ceramic period lithics; Iron II; Rom; Byz
20	Iron II; ERom; LRom; Byz/EIsl
21	Ceramic period lithics; Iron II; ERom; Byz; MIsl/LIsl
22	Ceramic period lithics; Iron II; Rom
23	Ceramic period lithics; Iron II; ERom; LRom; Byz
24	EPL; PL poss; Ceramic period lithics; Iron Age; Byz
25	Iron Age; Rom; Byz
26	Iron II; Rom; LIsl
27	Ceramic period lithics; Iron Age; ERom dominant-few Nab
28	Ceramic period lithics; Iron II; LRom; Byz
29	Iron II; ERom; LRom; Byz
30	Iron II; Byz
31	Ceramic period lithics; Iron Age; Hell/ERom; Byz
32	Iron Age; LRom; Rom; Byz; Mod
33	Iron Age; Rom; Byz dom; EIsl; MIsl/LIsl; Mod; Ud

As Table 2.1 indicates, the Iron I/Iron II period is represent in the form of pottery sherds in one of the random squares of Zone Busayra while the Iron II and Iron Age — without further precision — periods are represented in 15 and seven random squares respectively. (In addition, RS No. 18 yielded possible Iron Age sherds.) Thus, the Iron Age is represented by ceramics in at least 22 of the 29 (76 percent) random squares that the TBAS team members investigated in Zone Busayra.

TBAS team members did not investigate only 4.90 percent of Zone Busayra. While in the zone they carried out a purposive survey of all sites within or adjacent to the random squares. In essence, TBAS team members carried out a comprehensive investigation of the entire territory of Zone Busayra that was accessible to them. The results of this purposive survey are given in Table 2.2.

Table 2.2 indicates that the 14 sites that the TBAS team members investigated in the territory of Zone Busayra represent several chronological periods. Among these periods, the Iron Age is represented at two sites, Iron I at one site, Iron II at five sites, and possible Iron Age at one site. These findings are in keeping with the findings of the excavated materials from the Busayra citadel as well as from the material collected in the random squares of Zone Busayra. Several of these TBAS sites, that is, the ones that yielded Iron Age ceramics, are of particular importance for the present purposes. These sites are 4 (Kh. al-Fraydays), 10 (Kh. al-Janin), 21, 42, 43, 44, and 132 (Tall Busayra).

Khirbat al-Fraydays (750424/3406468), Site 4, presently measures c. 100 (N–S) x 65 (E–W) m., and appears to have been an agricultural village site. It overlooks extensive fields to the SW, W, N, and NE. There are wall lines throughout the site and what appears to be a perimeter but non-defensive wall. One structure, in the southern extremity of the site, measures c. 6 x 8 m. There are structures of similar character throughout the site. Large stones, used as weights for olive-pressing activity, were noted at the site. There is a large cistern cut into bedrock to the immediate N of the main area of the site, with plaster on its walls. In this same area, there is the remnant of an olive press cut into the bedrock. Another cave or cistern was noted in the N side of the site.

Kh. al-Janin (751300/3404082), Site 10, is an extensive but mostly destroyed site. Remnants of many wall lines are visible spread over a gradual slope leading down to a spring, Ain Janin, located at the south-west corner of the site. Modern agricultural activity has resulted in the re-use of many of the stones from ancient structures for fences and corrals. Moreover, many of the ancient structures have been destroyed as a result of land clearance.



Plate 2.1: 6.25 m. wall associated with Tall Busayra

Table 2.2: Sites within or near random squares of Zone Busayra

Site #	(name, if any)	In RS #	Near RS #	Periods Represented
1	(Kh. al-Harith)		15	LRom-Byz; Byz; MIsl/LIsl
1	"		17	"
1	"		19	"
4	(Kh. al-Fraydays)		3	Ceramic period lithics; Iron I; ERom; LRom; Byz
4	"		4	"
4	"		5	"
5	(Kh. 'Ayn al-Baida')	13		Byz; MIsl/LIsl
10	(Kh. al-Janin)		23	Iron Age poss; LRom-Byz; MIsl; MIsl/LIsl; Classical
21			16	Iron II; Byz/EIsl
22		20		No artifacts collected
34			13	Byz/EIsl; LIsl
42		27		Ceramic period lithics; Iron II; Rom; Byz bods
43	(Kh. al-Brij)	31		Iron II; ERom; Nab
44	(Kh. al-Mabrak)	30		Ceramic period lithics; Chal (?); Iron Age bods; Rom; Byz
45		27		No pottery collected
132	(Tall Busayra)		18	EIron II; Iron II; Nab; Rom; Rom prob; Byz; LIsl; Mod
133	(Greek Inscription)		18	No artifacts collected
135	(Busayra citadel)	18		EB; Iron II; Iron Age Ud; Rom-Byz

Site 21 (748548/3404560) was possibly a farm or farm building in antiquity. The foundation of one building measures c. 6.00 (N–S) x 8.40 (E–W) m. There are smaller structures at the south-east and south-west corners of this structure and a number of stone piles are located to its north. The site has been used as a cemetery.

Site 42 (748143/3402909) consists of a series of stone walls just off a tilled area. It is difficult, because of field clearance, to determine its nature. Moreover, because of terrace walls in the area, it is difficult to distinguish these from the walls that constituted the ancient structures. However, the site may have been a farm in antiquity.

Kh. al-Brij (748372/3402478), Site 43, could have been a farm or farm building in antiquity. It presently consists of three separate mounds of stone. The site looks north towards the Busayra citadel. It presently consists of many wall lines, some of which have been bulldozed. A modern road cuts the site on its west side and there are at least two courses of wall lines visible across this road. TBAS team members noted four ancient and two modern cisterns within or close to the site.

Tall Busayra (749628/3403378), Site 132, is of special significance relative to the present study. It is located a distance of c. 900 m. to the south and down the slope from the Busayra citadel, TBAS Site 135. It is partially visible in the form of a wall that is c. 6.25 m. high (Plate 2.1). However, this wall continues below ground level and is exposed for a distance of c. 4.25 m. between two recently constructed apartment buildings. It now serves as a retaining wall for the two buildings and continues, at least to the south of one of them, for a total length of 24 m. Farther to the south-east, remnants of other walls are visible. One of these walls measures c. 1.25 m. wide and runs north–south. These walls form part of Tall Busayra but they need not all be contemporary. The tell is exposed in road cuts to the south and the east.

TBAS team members collected lithics and ceramics representing several chronological periods at the above-described sites (see Table 2.2). Only excavations will determine which ones were occupied during the Iron Age and specifically at the time of the occupation of the Busayra citadel. However, it is not unrealistic to conclude that some of them would have been contemporary.

A number of major architectural sites just outside the 3-km. radius encompassed by Zone Busayra were possibly related to the major site of Busayra during the Iron Age. These sites include 47, 49 (Kh. al-Fatat), 50 (Kh. Umm Za'urureh), 51 (Kh. az-Zanatayeh), and 72 (Kh. al-Qa'ayr) (MacDonald *et al.* 2000). They are worthy of special consideration since TBAS team members collected Iron Age ceramics at all of them (Table 2.3).

Table 2.3: Major architectural sites just outside 3-km. radius encompassed by Zone Busayra

Site #	(name, if any)	Periods Represented
47		Ceramic period lithics; Iron II; Byz
49	(Kh. al-Fatat)	Iron II; ERom; LRom; Byz; LIsl
50	(Kh. Umm Za'urureh)	Iron II; ERom; Byz; LIsl
51	(Kh. az-Zanatayeh)	Iron Age; Byz; MIsl/LIsl
72	(Kh. al-Qa'ayr)	Ceramic period lithics; Late Iron I; Iron II; Byz; Ud

Site 47 (747356/3403571), possibly a farming village in antiquity, is located in a wheat-growing area to the south-west of the Busayra citadel. The site is badly disturbed by field clearance and/or bulldozing, especially on its west and south-west sides. The foundation walls of one structure, which

measures c. 12 x 12 m., have walls that are c. 0.50 m. thick. There is a heavy concentration of sherds, many of them Iron II jar handles, in the vicinity of this structure. TBAS team members noted several wall lines running down the slope to the east for a distance of c. 30 m. A robber trench at the site revealed two courses of stones below the present ground level.

Kh. al-Fatat (748528/3401279), Site 49, is a very impressive site. It is also located to the south-west of the Busayra citadel and is visible from it. It is yet another major village site covering an area of c. 150 (N–S) x 125 (E–W) m. Literally dozens of structures comprise the site.

Kh. Umm Za'urureh (749995/3401406), Site 50, is another impressive site. It could have been a village and/or watchtower in antiquity. It is located to the south of the Busayra citadel and is clearly visible from it. The foundation walls of many structures are visible. Some walls still stand several courses above the present ground level.

Kh. az-Zanatayeh (750322/3401426), Site 51, is yet another village site. It is located on a small wadi to the south-east of the Busayra citadel. Here again, as for previously described sites, the structures at the site are numerous and in several cases their foundation walls can be easily traced.

Kh. al-Qa'ayr (746247/3401661), Site 72, is another village site at which TBAS team members collected Iron Age pottery. It is located in the hills to the south-west of the Busayra citadel but is not visible from it. It is, nonetheless, another example of a possible Iron Age site that could have been in existence at the same time as the Busayra citadel.

As for the sites listed in Table 2.2 that yielded Iron Age pottery, only excavations will determine which were occupied in the Iron Age period and were possibly related to the occupation at the Busayra citadel.

Table 2.4: Iron Age pottery in TBAS random squares of Zones 1 and 2

Period Represented	Frequency
Iron I	1
Iron I/II	1
Iron II	22
Iron II poss	4
Iron II prob	1
Iron Age	2
Iron Age prob	1

More generally, some aspect of Iron Age pottery is common in the 76 random squares of Zones 1 and 2 (Figure 2.2) that TBAS team members accessed (Table 2.4).[2] Additionally, TBAS team members identified some aspect of Iron Age pottery at 108 of the 276 sites surveyed outside Zone Busayra (Table 2.5).[3]

Table 2.5: Iron Age pottery at TBAS sites outside Zone Busayra

Period Represented	Frequency
Iron I	6
Iron I poss	2
Iron I prob	1
Iron I/II	1
Iron II	58
Iron II poss	8
Iron II prob	5
Iron Age	20
Iron Age poss	4
Iron Age prob	4

From Table 2.4 it is clear that TBAS team members collected Iron Age material from at least 26 and possibly/probably 32 of the 76 random squares of Zones 1 and 2 that they accessed (i.e. 32 and possibly/probably 39 percent.) Moreover, from Table 2.5 it is evident that TBAS team members collected some aspect of Iron Age pottery from 85 and possibly/probably 105 of the 276 sites outside Zone Busayra (i.e. 31 and possibly/probably 38 percent.) There is thus a very close correlation between the occurrence of Iron Age ceramic materials in both the random squares and sites, and those occurrences are high.

What is clear from all of the above is that there were many regions and sites of the area in the neighbourhood of the Busayra citadel that were probably inhabited and/or exploited during the Iron II period. Many of these would have influenced and/or been influenced by settlement at Busayra.

What is extremely interesting about the investigation of the random squares and sites associated with Zone Busayra as well as other random squares and sites of the TBAS that yielded Iron Age pottery is the absence of the so-called 'Edomite painted pottery', dated to the Iron II/Persian period. While this type of pottery is abundant at the Busayra citadel, it is not found, with the exception of two or three sherds, at other sites or random squares within Zone Busayra or within the entire TBAS territory. This is in keeping with the findings of both the Wadi al-Hasa Archaeological Survey (MacDonald *et al.* 1988) and the Southern Ghors and Northeast 'Arabah Archaeological Survey (MacDonald *et al.* 1992). Thus, what we probably have in the so-called 'Edomite painted pottery' is pottery that is associated with the late Iron II/Persian occupation of the Busayra citadel rather than ware that is characteristic of Edomite occupation in general. Thus, this pottery ought to be labelled 'Busayra painted ware' rather than 'Edomite painted pottery' (Bienkowski and Sedman 2001: 319–20).

It should not be thought that all peoples of the Iron II period lived in villages or on farms or were housed in some architectural complex. This is not the case presently and it was probably not the case three millennia ago. Many people of present-day south-western Jordan still live the traditional life of

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[2] TBAS team members collected no Iron Age ceramics in Zone 3. Thus, this area probably offered little in the way of natural resources to the Iron Age inhabitants settled farther to the west.

[3] All 276 sites are not within Zones 1, 2, and 3. A number of them are associated with the Pleistocene lakes in the area of Jurf ad-Darawish immediately to the south of the survey territory (MacDonald *et al.* 2000).

tent dwellers and are justifiably called beduin. Their livestock is mainly sheep and goats and their main crops are barley and wheat, which they generally harvest by hand. It is not inconceivable that many of the inhabitants of first-millennium BC southern Jordan also lived as tent dwellers. Thus, they would not have left any architectural remains. Pottery sherds are probably all that remains of their presence in a particular place.

The area to the south-west and east of Busayra is an important barley and wheat growing area today, inhabited by beduin. It could also have served the same function during the Iron II/Persian period and, thus, could have been the source of cereal crops for the inhabitants of the site.

Topography and geology of the Busayra region

Busayra, like the major population centre of at-Tafila located 11 km. to the north (15 km. by road), is located in the Highlands at the Eastern Rim of the Wadi Arabah-Jordan Graben or on the western edge of the Transjordanian Plateau (Bender 1974, 1975). The excavated area of the Busayra citadel, at an elevation of c. 1140 m., is at the north-eastern edge of a ridge that is surrounded by deeply cut wadis to the east, north and west. The easiest approach to the site is from the south or through what is now the modern town/village of Busayra. The wadis in the region are oriented towards the north-west and the west. These deep valleys are separated by rugged hills. In the words of Tarawneh, 'the topography reflects a degraded Wadi Arabah facing escarpment in the west, with deeply incised wadis fingering eastwards into a high plateau' (1988: 1). This is true, especially for the region to the west and north-west of Busayra.

When approaching the Busayra citadel from the wadis to its east, north and west, one is struck by how lofty is its location. It appears to be 'perched' above one in a very secure and defensible position. However, if one ascends Jabal al-Kula (elevation 1258 m. [746932/3403163]) or Jabal Ras al-Hala (elevation 1539 m. [752959/3407269]) to the west and north-east of the site respectively, then one looks down on it. From these vantage points, the site appears much more vulnerable.

The major geographical unit to the west of both Busayra and at-Tafila is the east part of the major north-south structure generally known as the Wadi Arabah-Dead Sea-Jordan Depression (Bender 1974: 6–11). This area has significantly lower elevations than the highlands to the east.

The region in which Busayra is located is underlain by Proterozoic (Upper Pre-Cambrian [c. 800–600 million BP] through Upper Cretaceous [c. 70 million BP]) rocks. Overlying this bedrock sequence are unconsolidated Pleistocene and Holocene (c. 2 million BP to the present) lacustrine, fluvial and aeolian sediments as well as Pleistocene (c. 2 million–10,000 BP) basalt flows (Donahue and Beynon 1988: 26; see also Tarawneh 1988: 2). A good example of that basalt flow is Jabal Ras al-Hala, clearly visible to the north-east of Busayra.

Tertiary (c. 65–2 million BP) regional uplift affected the at-Tafila and Busayra region. In the same geological period, eastward tilting occurred along the eastern flank of the Wadi Arabah-Dead Sea-Jordan Depression. The resulting landscape is now preserved in the area as the Transjordanian Plateau upon which the basalts erupted. In the words of Tarawneh, 'renewed regional uplift, accompanied by remobilization and generation of faults, caused further relative lowering of the western base level, and deep Quaternary incision of drainage took place into the plateau and its superimposed basalt' (1988: 2).

Downcutting of Wadi al-Hasa probably began 50 million years ago and because of the repeated downcutting and fault movement of the Wadi Arabah-Dead Sea-Jordan Depression has continued up to the present (Donahue and Beynon 1988: 29). This would indicate that the present topography of the Busayra region has not changed substantially since the Iron Age period. Of course, the wadis would be now deeper due to continued downcutting over millennia.

Busayra is to the east of the ancient mining district of Faynan, a site of copper smelting during the Chalcolithic, Early Bronze, Iron, Roman, and Islamic periods (Hauptmann 1990; Hauptmann and Weisgerber 1992). This fact probably influenced its location (Abel 1967: 287).

Limestone, chert, and basalt are the main construction materials of archaeological sites in the Busayra region. All these materials are locally and readily available.

Climate

Rainfall in the area of Busayra is between 200–300 mm. annually. The majority of the precipitation falls in December–March. There is virtually no precipitation from June to September. Although the weather is cold in winter, snow is rare. The summers are hot. Temperatures range from below zero to a maximum of 40 degrees. At the beginning and end of summer, Jordan is influenced by strong, hot, dry easterly winds (*khamasin*). During these periods, temperatures can range to over 40 degrees.

There are no present indications that the climate in Jordan during the Iron Age was particularly conducive to an increased population, which seems to be the case as evidenced by the increased number of sites from the Iron I through the Iron II periods (MacDonald *et al.* 1988: 172–89, 291). According to Stiebing (1989), there is evidence for a series of narrow tree rings between around 1300 and 1000 BC. Stiebing also finds indications for a change from Mediterranean to Saharan vegetation at the end of the Late Bronze Age (1989: 186). Such would indicate a change from a relatively moist to a much drier climate. This period was succeeded by even lower Dead Sea levels, reaching approximately 395–400 m. below sea level between the tenth and seventh centuries BC. Lower Dead Sea levels indicate a decrease in water flowing into the Dead Sea. This is attributable to a large extent to a decrease in precipitation. Thus, there are indications of a slightly drier climate during the Iron Age compared with preceding centuries (Frumkin *et al.* 1991: 198). Thus, the 'filling up' that took place during the latter part of the Iron Age may be explained not by an improvement in climate but, in Harlan's words: '... the Wadi el Hasa region was marginal for farming from the Prepottery Neolithic on. It filled up only when other

areas filled up first, and it emptied out whenever more favoured lands were available' (1988: 47).

Water

Water is a primary resource of any region. Without it, settlement is not possible. The primary source of water is rainfall and secondary sources are springs, wells, flowing streams and moisture stored in the soil (Harlan 1988). But these secondary sources are all ultimately dependent on rainfall.

The households in the town of Busayra presently receive their water from ash-Shawbak in the south. During the infield years (1999–2001) of the TBAS project, a water pipeline was being built from al-Hasa on the Desert Highway to supply the village of 'Ayn al-Baida', immediately to the north-east of Busayra, with a permanent water supply. There are springs in both areas. For example, there is a spring on the north-facing slope immediately to the north of Busayra citadel, while there is a spring that is still used, at least for the watering of animals, at the southern extremity of the town of 'Ayn al-Baida'. However, the water that these springs produce is not adequate to supply the increasing population of the area. In the Iron Age period, there must have been more and stronger springs. In addition, the inhabitants of the area would have employed wells and cisterns as sources of water.

Vegetation

Vegetation is distributed according to the climate, especially the amount of rainfall, type of soil, accessibility to water, and human influence. In average or better years of rainfall there is enough precipitation for dry-farming of a limited number of crops. Only short season, drought resistant, cool-season crops can be grown under rainfed conditions with traditional methods. The main crops are thus barley, lentil and chickpea. Some wheat is grown but it needs a longer season and demands more moisture than barley and is, therefore, less reliable (Harlan 1988: 41).

The natural vegetation of the highland plateau is a mixed grassland. This can be lush and productive in the spring in the best rainfed areas. With the summer drought the grasses turn brown and lose their nutritive value. In populated areas, crop trees such as olives, grapes, apples and citrus are cultivated. The areas surrounding Busayra that have soil, with an elevation ranging from 700–1000 m., are planted with olive trees. Flat areas are planted with barley and wheat. Vegetable crops are grown in areas where there is sufficient water for irrigation. The indigenous vegetation is locally preserved as oak (*Quercus calliprinos*) and juniper (*Juniperus phonicea*).

Roads

A major north–south highway, commonly known as the King's Highway (Num 20.17; 21.22), passes immediately east of Busayra (cf. Bienkowski 2001d for alternative view on the existence of this road). There are, farther east, three more north–south highways, namely, the Roman road (*Via Nova Traiana*), built between AD 111 and 114, the Ottoman *Darb al-Hajj*, and the modern Desert Highway (MacDonald *et al.* 1988). Only the latter of these three is commonly used today. Presently, there are major east–west highways going from both at-Tafila and Busayra and connecting with all of these roadways. It is reasonable to assume that in antiquity there would have been similar roadways. To the west of at-Tafila, there is a main asphalt highway that runs from just south of the town along Wadi Umruq to Feifa, south of the Dead Sea. Farther south, there is a track, accessible via four-wheel drive vehicle, that runs in a north-westerly direction from the area of Busayra to Wadi Dahal in the North-east Arabah (MacDonald *et al.* 2000: 510–11). Still farther south, there is a track, also accessible by means of a four-wheel drive vehicle, that goes from the village of Dana to the copper-smelting area of Wadi Faynan. It was probably these two latter routes that were used in the Iron II period to go from the plateau region around Busayra to the mining and smelting sites in Wadis Faynan, Fidan, and Ghuweib (MacDonald *et al.* 1992: 73–76). Presently, the Wadi Arabah road runs north–south. From it, roads lead to Wadis Fidan, Faynan, and Ghuweib. Until quite recently, a parallel road was farther east, along the edge of the Arabah (MacDonald *et al.* 1992: 2, fig. 1). This resulted in shorter distance to the wadis in question. In addition to the above-described roads, there would have been in the past, as today, numerous tracks that were accessible to pedestrians, donkeys and camels.

3. BOZRAH IN THE HEBREW SCRIPTURES

John R. Bartlett

The biblical references to Edomite Bozrah are few, and it is worth examining them closely. It is hard to know for certain which is the earliest reference, and we will begin by examining them in the order in which they occur in the Hebrew Bible. The translation here used is that of the RSV.

1. **Gen. 36.33 (cf. 1 Chr.1.44).**
   Bela died, and Jobab the son of Zerah of Bozrah reigned in his stead.

2. **Isa. 34.6.**
   for the Lord has a sacrifice in Bozrah,
   a great slaughter in the land of Edom.

3. **Isa. 63.1**
   Who is this that comes from Edom,
   in crimsoned garments from Bozrah?

4. **Jer. 49.13 (cf. LXX Jer. 29.13)**
   'For I have sworn by myself', says the Lord, 'that Bozrah shall become a horror, a taunt, a waste, and a curse; and all her cities shall become perpetual wastes'.

5. **Jer. 49.22 (cf. LXX Jer. 30.16)**
   Behold, one shall mount up and fly swiftly like an eagle, and spread his wings against Bozrah, and the heart of the warriors of Edom shall be in that day like the heart of a woman in her pangs.

6. **Amos 1.12**
   So I will send fire upon Teman,
   and it shall devour the strongholds of Bozrah.

7. **Micah 2.12**

The earlier English translations, e.g., the Revised Version, gave

> I will surely gather the remnant of Israel; I will put them together as the sheep of Bozrah: as a flock in the midst of their pasture…,

but, by re-pointing the Hebrew name Bozrah as bisērâ, modern English translations (RSV, NRSV, NEB, REB; cf., e.g., Simons 1959: 473 # 1539) give

> I will set them together like sheep in a fold,
> like a flock in its pasture.

Thus the reference to Bozrah, which had no point in this context, disappears.

We should note also the following verses in the Psalms, although they do not explicitly name Bozrah:

8. **Psalm 60.9 (MT Ps. 60.11)**
   Who will bring me to the fortified city? [Heb. *ʿîr māṣōr*]
   Who will lead me to Edom?

9. **Psalm 108.10 (MT Ps. 108.11)**
   Who will bring me into the fortified city? [Heb. *ʿîr miḇṣār*]
   Who will lead me to Edom?

The RSV translations here conceal the fact that the Hebrew text of Ps. 60.9 and Ps. 108.10 are slightly different; for discussion, see below.

Perhaps the first and most obvious thing to note is that in the passages from Isaiah Bozrah appears in poetic parallelism with Edom, and comparison with similar prophetic references to Judah and Jerusalem, Ephraim and Samaria, Syria and Damascus (cf. Amos 2.5; Isa. 7.8–9) suggests that Edom is the country of which Bozrah was the first and principal city. In Jer. 49.22 an attack on Bozrah will bring dismay to the warriors of Edom, which suggests a similar importance for Bozrah. In Psalms 60 and 108, the parallelism and word play (cf. Kraus 1961: 430) both suggest that 'the strong city' (*ʿîr māṣōr*) and 'the fenced city' (*ʿîr miḇṣār*) refer to Bozrah, and if so the close association of Bozrah and Edom are again portrayed. The phrase *ʿîr māṣōr* is translated by Tate (1990: 103; cf. Briggs 1909, vol. II: 64) as 'siege-proof city', 'entrenched city' (cf. Ps. 31.22; cf. NRSV, 'a city under siege'), and *ʿîr miḇṣār* as 'fortified city' (although Tate, mistakenly in my view, identifies it as Petra, not Bozrah). The noun *miḇṣār* appears frequently with the general meaning of 'fortified place' (cf. Ps. 89.41; Num. 32.17,36; Josh. 10.20; 19.29, 35; Jer. 4.5; 5.17; 8.14 etc.; see Briggs 1909, vol. II: 64). Bozrah, on a hilltop with steep valleys all around, approachable only by a narrow neck of land from the road to the west, certainly fits these descriptions. Dahood, however, takes the Hebrew of Ps. 60.9 differently: 'I read *ʿîr -m* (mem enclitic) *ṣōr* for MT *ʿîr māṣōr* (Dahood 1968: 81), translating (p. 76) as 'Who will bring me to the Rock City?', which he identifies as Petra. This seems unnecessary, the MT yielding perfectly good sense. One notes that Dahood himself sees no need to emend *ʿîr miḇṣār*, 'The Fortress City', in Ps. 108 (Dahood 1970: 94). If Psalms 60 and 108, then, allude to Bozrah, the important feature of the city is its strength against siege, and this is indeed what one might expect of the leading city of the region, the royal city of the country of Edom.

There seems little doubt that Bozrah was known to the authors of Isaiah 34, of Isaiah 63, Jer. 49, and probably Psalms 60 and 108, as the chief city of Edom. In Isaiah and Jeremiah it is a place associated with future, apocalyptic bloodshed; in Psalms 60 and 108 the city and country are similarly to be the object of attack, apparently by a Davidic king or his divine Lord. The picture given in Amos 1.11 is much the same, although the imagery differs: here God threatens to send fire upon Teman, and it will devour the strongholds of Bozrah. The word 'strongholds' (Heb. *ʾarmĕnôt*) (used in Amos 1–2 of Damascus, Gaza, Tyre, Bozrah, Rabbah [of the Ammonites], Kerioth [of Moab] and Jerusalem) probably refers to the royal citadel or palace at the highest point of Bozrah, the complex of buildings which housed the king and the treasury and probably also the main temple and the military headquarters. The future

dereliction of the 'strongholds of Edom' is described in Isa. 34.13, where presumably Bozrah's citadels and perhaps other citadels are in mind.

The parallelism of Bozrah with Teman in Amos 1.12 needs a little consideration. In Jer. 49.20, Edom is paralleled with 'the inhabitants of Teman':

> 'Therefore hear the plan which the Lord has made against Edom and the purposes which he has formed against the inhabitants of Teman'.

Teman can thus appear closely associated with, if not almost synonymous with, Edom. Similarly in Obadiah 9, Teman appears in parallelism with Mount Esau (understood as the territory of the Edomites). Among the kings that reigned over Edom (Gen. 36.31–39) was Husham 'of the land of the Temanites'. One of Job's friends was a man called Eliphaz the Temanite (Job 2.11), and the Edomite genealogies of Gen. 36 give Eliphaz a son called Teman (Gen. 36.11,15,42). In Jer. 49.7–8 the oracle about Edom begins with the question, 'Is wisdom no more in Teman?' In Ezek. 25.12–14, in an oracle against Edom, God threatens 'I will make it desolate from Teman; even unto Dedan they shall fall by the sword'. Dedan is identified with the oasis of al-'Ula in the Hijaz region of northern Arabia; Teman is presumably in Edom to the north. It is clear that various biblical authors firmly associated Teman with the country of Edom. Nelson Glueck (1935: 82–3) identified Teman with the Iron Age site of Tawilan, 'the largest Edomite centre in the entire Petra area', and Lagrange identified it with Shawbak a little further north (1897: 217; cf. Simons 1959: 90 # 253). Andersen and Freedman (1989: 274) think that in Amos 1.12 Teman 'is clearly a town; and, to judge from the other oracles, a leading city if not the capital of Edom'. However, de Vaux (1969; cf. Buhl 1893: 30–1), noting (p. 384) that the Hebrew *tēmān* is often used in the Bible as a noun signifying the south, argued that Teman was not to be identified with any city but was the name of a region. We may note here that Eusebius' *Onomasticon* calls Teman a *chōra*, which Jerome translated as *regio* (Klostermann 1904: 96–7). Teman, then, may have been a region of Edom; but given the parallelism of Bozrah with Edom in Amos 1.12, and the parallelism of Teman with Mount Esau in Obad. 9, and the parallelism of Edom with the inhabitants of Teman in Jer. 49.20, it seems most likely that Teman ('the south') was used by these Hebrew writers of the exilic or post-exilic period as virtually a synonym for Edom (so de Vaux 1969: 385). In this case, the parallelism of Bozrah and Teman in Amos 1.12 makes excellent sense. It makes less sense to put Bozrah in parallel with Teman if Teman was understood as a region of southern Edom, for Bozrah was in the northern part of Edom rather than the southern. However, it may be that originally Teman was the name of the southern region of Edom or even the region immediately south of the mountainous centre of Edom; this is perhaps suggested by the association of Teman with Dedan, the oasis of al-'Ula in Arabia, in several prophetic passages (Jer. 25.23; 49.7–8; Ezek. 25.12–14; Isa. 21.13–14) (cf. de Vaux 1969: 385).

This brings us to consider the evidence of Gen. 36.33. This verse comes from the 'Edomite king-list' of Gen. 36.31–39. I have argued elsewhere (Bartlett 1965; 1989: 94–102), following Desnoyers (1922: 71 n.2), that this list is composed of two earlier groups of names, each using a different formula to denote the place of rule or origin of the named person. For the first group (Bela, Hadad, Hadar) the formula is 'and the name of his city was…'; for the second group, the formula is '… from …'. These two groups of names have been brought together into one list with the use of another formula, strongly reminiscent of the Deuteronomistic Historian: '*x* died, and *y* reigned in his stead'. No principle of succession is given, whether hereditary or other. This 'Edomite king-list' as it stands is almost certainly the composition of an Israelite editor, probably from the sixth or fifth century BC or perhaps even later, who combined archival material, gave it the heading found in Gen. 36.31 ('these are the kings who reigned in the land of Edom, before any king reigned over the Israelites'), and set it in a wider collection of material relating to Edom.

The place-name Bozrah appears in the second group of names mentioned above. Jobab the son of Zerah of Bozrah is given second place in the list of kings 'who reigned in the land of Edom, before any king reigned over the Israelites'. Neither Jobab nor his father Zerah are said to have been kings of Bozrah, and Bozrah is not named as a royal or capital city; Bozrah here is apparently given only as the residence or birth-place of Jobab. It is interesting, in view of the parallelism of Bozrah and Teman in Amos 1.12 noted above, that the third king in the list is Husham of the land of the Temanites. This group of names begins by using the two place-names most regularly associated with ancient Edom — Bozrah and Teman. (For the other two place-names in this group — Masrekah [Gen. 36.36] and Rehoboth on the Euphrates [so RSV: Gen. 36.37] — see Bartlett 1989: 50–1, 99.) The editor or compiler has nothing specific to say about these places; they appear to be simply names to him. The editor presumably intended to provide information about the early history of Edom, but he was almost certainly unaware that Edomite Bozrah did not exist as a city before the eighth century BC, and his composition provides no sure evidence for the reconstruction of the history of Edom in the years and centuries before the appearance of Saul and David and their successors.

A review of the biblical references to Bozrah makes clear that the city is not mentioned in literature from ancient Israel until the book of Amos at the earliest. This statement in itself is not very helpful, first, because some scholars date this oracle to the exilic period on form-critical grounds (cf. Wolff 1977: 139–40) and on the assumption that the un-brotherly behaviour of Edom here described belonged to 587 BC (on this see Bartlett 1989: 180), and secondly, because of the wider difficulty of dating the editing and issuing of the original book of Amos. However, if (as in my view is likely) the oracle against Edom is an authentic utterance of the prophet Amos, then a prophet working in Judah and Samaria in the second half of the eighth century BC knew of Bozrah and its palace or citadel, and knew also of the region of Teman, which perhaps for him could denote the land of Edom. The reference to Bozrah and the land of the Temanites in Gen. 36.33 may derive from archival sources in the monarchic period. The other, apocalyptic references to Bozrah in Isa. 34.6 and 63.1, Jer. 49.13, 22 can hardly be earlier than the exilic period and are more likely to be later (see the commentaries; e.g., Kaiser 1974: 351–60; Watts 1987, vol. I: xxxii–xxxiv, 10; vol. II: 306; Jones 1992: 512–16; McKane 1996, II: clxviii; Jones comments that Jer. 49.7–22 is 'a poem composed largely by quotation, partly Obadiah and

partly from passages in the Jeremiah tradition'; cf. McKane, 'a rag-bag which is largely scavenged'). Bozrah is probably in mind in Ps. 60.9 and the related Ps. 110.10, but it is hard to date these psalms with any certainty, except to say that the background to Ps. 60 is probably the monarchic period, for the psalm appears to express the prayer of a king in Jerusalem for divine assistance in the conquest of Edom, based on a divine promise conveyed in the oracle of Ps. 60.6–8. Recently Knauf (2000) has dated this psalm to 599/598 BC, and has related it to the events of 2 Kings 24.1–2 preceding the Babylonian attack on Jerusalem described in 2 Kings 24.10–17. (The editorial introduction to the psalm refers the psalm back to the historical situation described in 2 Sam. 8.13 and 1 Chr. 18.12, and attributes the psalm to David himself; the author of this introduction, as in other cases [cf. Pss. 3, 7, 18, 34, 51, 52, 54, 56, 57, 59, 63, and 142], was trying to link the psalm with an appropriate situation in the life of David. These introductions are probably to be understood as examples of post-exilic Jewish interpretation of the psalms.)

It is interesting that although Bozrah features in Gen. 36, Amos 1, in exilic or post-exilic prophecy in Isaiah 34, 63, and Jer. 49, and in Pss 60 and 108, it receives no mention at all in the Deuteronomistic History. The historian had plenty to say of Edom. He tells, among other things, of David's conquest of the country (2 Sam. 8.13–14), of the opposition of Hadad the Edomite (1 Kings 11.14–22), of the revolt of Edom in the days of Jehoshaphat's son Jehoram (2 Kings 8.20–22), and of the king of Edom's capture of Elath from Judah (2 Kings 16.6). However, the Edomite revolt from Judah was successful, and the historian says nothing of any retaliatory Judahite campaign within the territory of Edom or of any attack on the city of Bozrah (the campaign of king Jehoram of Israel against king Mesha of Moab may have marched 'by the way of the wilderness of Edom' (2 Kings 3.8) but there is no suggestion that any of Edom's towns or cities were affected; on this campaign see Bartlett 1983). The historian knew of Rabbath-Ammon, the chief city of the Ammonites (2 Sam. 11.1), and of Kir-hareseth (2 Kings 3.25), presumably the chief city of the Moabites, and it seems likely that he knew also of Bozrah, especially as it was known to Amos of Tekoa, and probably to the Jerusalem authors of Psalms 60 and 108. Presumably he simply ignored Bozrah; no king of Judah had won fame by attacking it, and the historian saw no reason to underline the Edomites' success by mentioning it.

One final point of interest may be noted. When the Hebrew Bible was translated into Greek in the third and second centuries BC, there was a tendency for the name Bozrah to be lost in the Greek version. Thus in Amos 1.12, where in the MT fire 'shall devour the strongholds of Bozrah', the LXX reads 'and it shall consume the foundations of her walls' (*themelia teicheōn autēs*), where 'her' appears to refer to Teman in the first half of the couplet. In Jer. 49.13 (MT) the Lord swears that Bozrah shall become a horror, a taunt, a waste, a curse, and all her cities perpetual wastes; in the LXX version of this passage (LXX Jer. 29.13) the Lord swears that 'thou shalt be in the midst of her as an untrodden land, and a reproach and a curse, and all her cities shall be desert for ever'. The reference to Bozrah has disappeared. Similarly in Jer. 49.22 (MT) = Jer. 30.16 (LXX), where the MT gives 'one shall mount up and fly swiftly as an eagle, and spread his wings against Bozrah', the LXX gives 'behold as an eagle he will see and stretch his wings against her defences' (*ep' ochurōmata autēs*). 'Her' appears to refer to Edom in general, or perhaps Teman, mentioned in verse 14. Bozrah has again disappeared. Perhaps in the third and second centuries BC, the Greek translators of Amos and Jeremiah could find no point in referring their readers to an obscure city whose memory and political significance had long since faded.

There was a time, however, when Bozrah was known at least to some in Israel and Judah. Amos threatened her palaces or citadel, the Psalmist prayed against her defences and fortifications, and the prophet Jeremiah wrote vividly of her mountainous location. 'Behold, one shall mount up and fly swiftly as an eagle, and spread his wings against Bozrah' (Jer. 49.22). 'Though you soar aloft like an eagle', said Obadiah concerning Edom, ' though your nest is set among the stars, thence I will bring you down, says the Lord' (Obad. 4). An abiding memory of Busayra is of an eagle in the early sun, wheeling high above the modern town, ready to drop on the prey below.

4. AREA A

Piotr Bienkowski

Location

Area A was located on the central and highest point of the site, on a terrace often referred to in the preliminary reports as the 'Acropolis' (e.g. Bennett 1973: 6) (Plates 4.1–7). It was initially chosen for excavation because of the lines of walls visible on the surface, some constructed of huge stones 1.50 m. in length standing in places 2 m. above ground level (Plate 4.8). The identification of a possible doorway in the standing walls suggested that this might be a major building. The area was excavated in every season, eventually covering c. 2,325 square metres. Already by the end of the first (1971) season it was being proposed that Area A was the site of a palace and/or temple (Bennett 1973: 11). Bennett's final hypothesis, following the last (1980) season, was that there were two distinct building periods on Area A, which she termed 'Building B' (earlier) and 'Building A' (later), possibly with an intermediate period, the whole constructed on a deep earth fill (Bennett 1983: 13).

Area A was excavated in 21 squares: A1–13, 20, 21, 25–27, 30, 50, and 60 (Figures 4.1–2). There was no apparent reason, and no explanation, for the missing numbers in the sequence. The tops of many walls which were visible on the surface were cleared and they appear on the plan: however, these were not properly



Plate 4.3: General view of Squares A50 and A1, looking south-east, with Wall 5 running along the left side

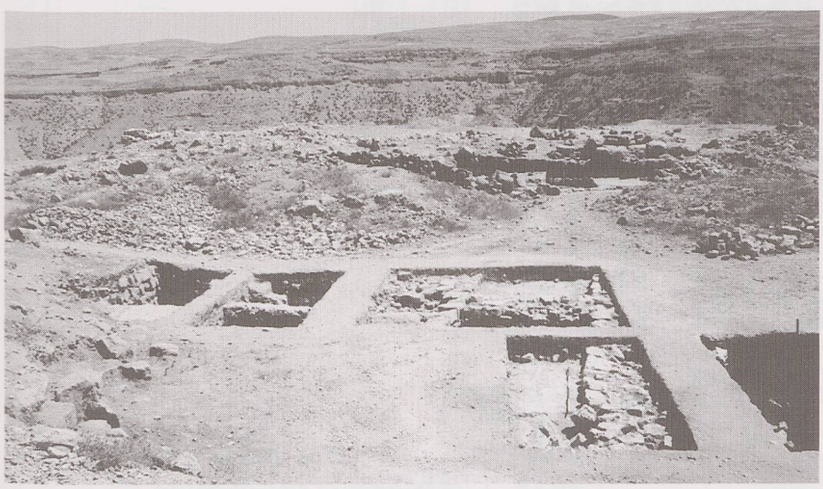


Plate 4.1: General view across Area A in 1971, looking north-east towards Wadi Janin



Plate 4.2: General view of Area A during 1974 season, looking west across Square A12 towards stone steps, column bases and Wall 33

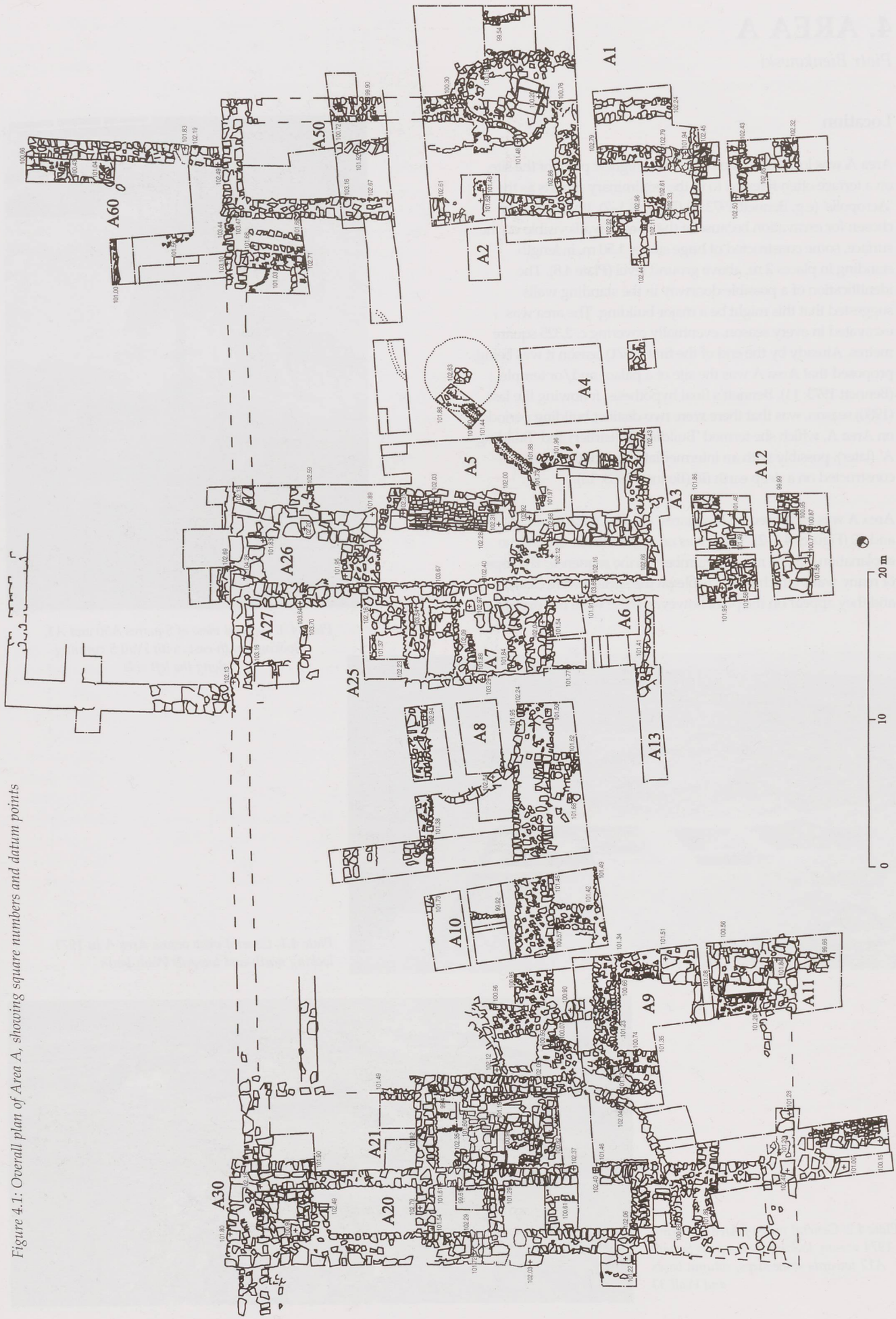
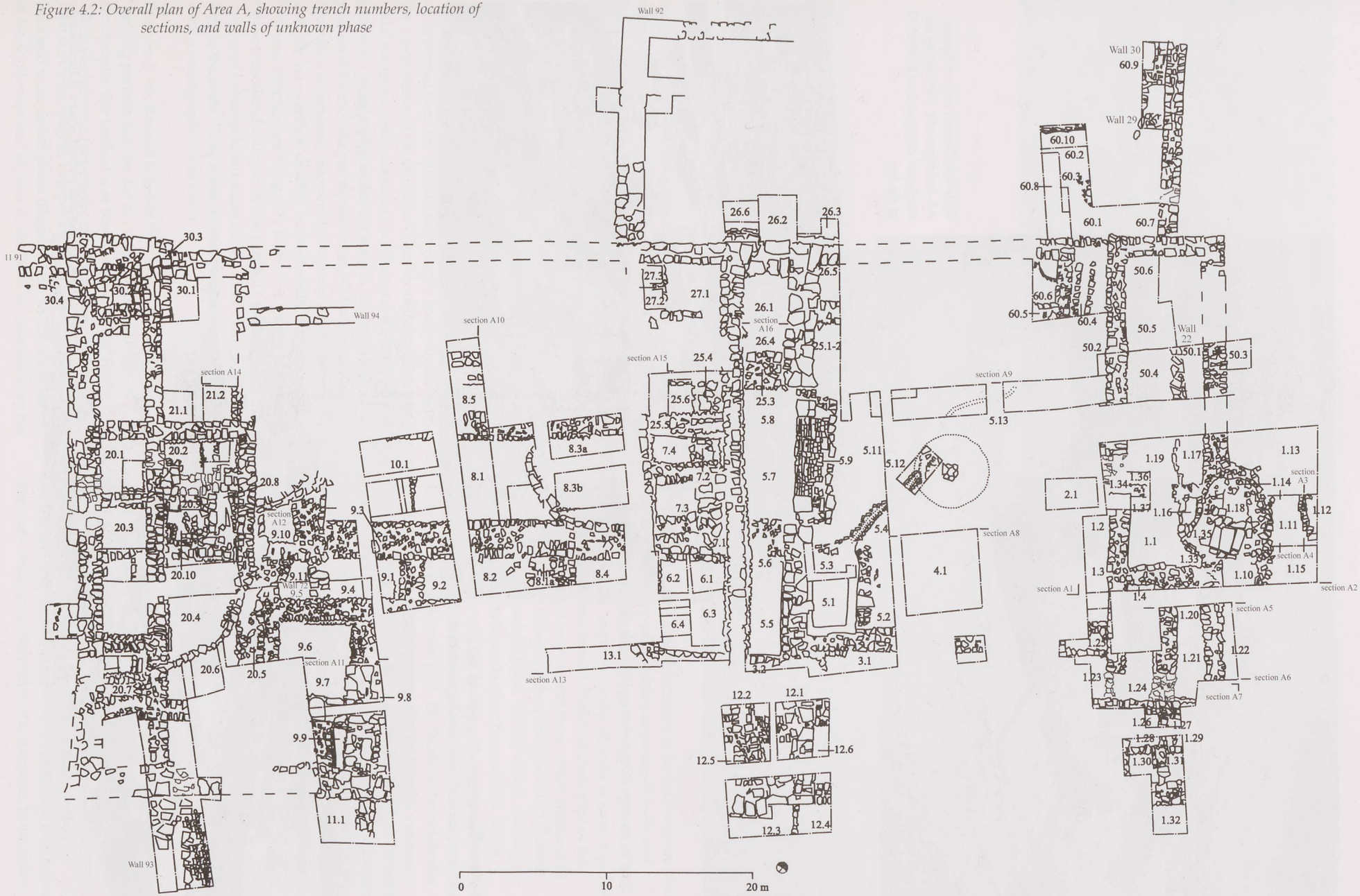


Figure 4.1: Overall plan of Area A, showing square numbers and datum points

Figure 4.2: Overall plan of Area A, showing trench numbers, location of sections, and walls of unknown phase



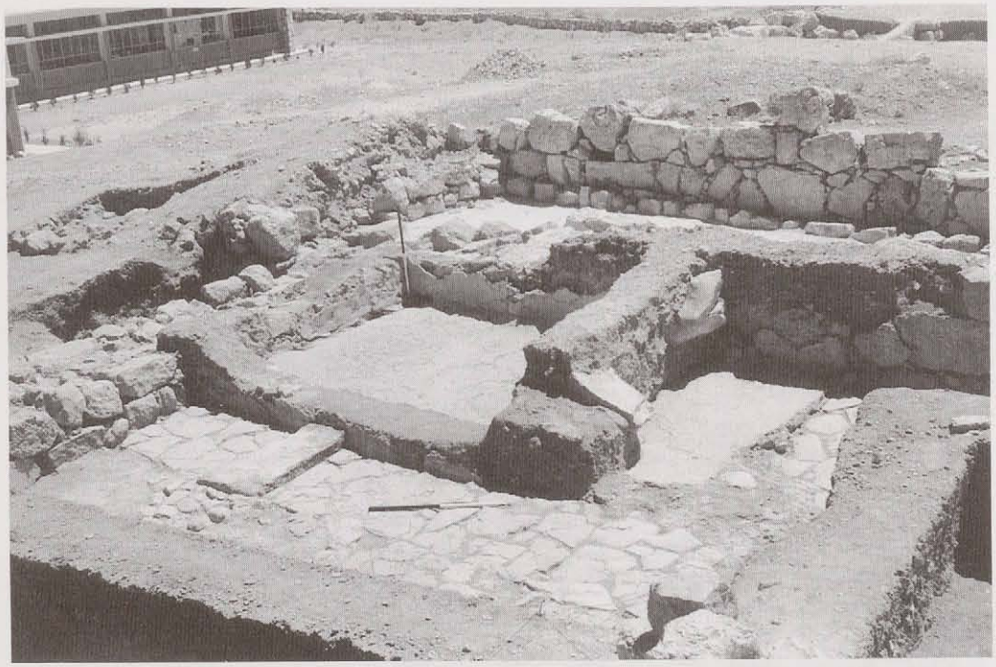


Plate 4.4: General view of Square A5, looking south, overlooking the north-east courtyard, with Wall 33 at the top



Plate 4.5: General view of Squares A5 and A3, looking north-west



Plate 4.6: General view of Square A20, looking north-west



Plate 4.7: View across Square A20, looking west, with Wall 77 in foreground, showing the commanding location of the Area A building



Plate 4.8: Wall 79, the south-western boundary wall of the Area A building, before excavation in 1971, looking north-east

excavated, they were not within formal trenches, and there is no indication of their relative date (cf. Figure 4.2). 'Wall 92' has been assigned to the wall abutting Wall 46 to the north-west; this wall was cleared in the 1972 season as part of 'Square E1' (see Chapter 1) but its stratigraphy was never related to that of Area A and its relative date cannot be established.

In many ways a final report on Area A is premature, since by any estimation the excavation was unfinished and basic problems of plan, stratigraphy and chronology remained unresolved. It is unfortunate that the early work was concentrated here: the difficult stratigraphy compounded with the inexperience of the site supervisors created more than the usual confusion and inconsistency. It has proved impossible to produce a stratigraphic matrix for Area A, as has been produced for the other excavated areas. Not only was Area A excavated as separate, unconnected squares and trenches with virtually no overview of what was essentially a single building, but most trenches were dug only to the first 'plaster floor' level below topsoil and collapse. A few isolated trenches were excavated to bedrock, but many did no more than clear the tops of the walls. Thus, it has been impossible to establish the relative stratigraphy confidently.

From early on, Bennett believed that Area A had two main building periods, but she did not establish this through stratigraphy: her method was based on 'peeling off' walls which she believed subjectively to be later (largely owing to their surviving height), to leave the walls which she felt belonged to an earlier phase (Bennett 1983: 13–15). Particularly at the south-west end of Area A, the bases of the walls were not reached, and since excavation ceased at the latest surface, there is no clear indication of the earlier sequence of walls and occupation. Certainly there was a substantial amount of wall rebuilding, but the 'complex jungle' of walls in some trenches was not resolved, and indeed the preliminary plan of the buildings was based only around those which appeared to make sense, while the remainder were ignored (cf. Bennett 1977: 3). Bennett was convinced that the earlier, and larger, 'Building B' was destroyed by fire, the mudbrick debris flattened out, and a smaller 'Building A' constructed over the south-western part of 'Building B'; this later building was also destroyed by fire (Bennett 1983: 15). Study of the notebooks and section drawings has not confirmed Bennett's picture; there is no clear indication that a larger building was confined to an earlier phase and was replaced by a smaller building, or that there was more than one widespread destruction by fire. Her hypothesis cannot be totally discounted, given the disorganised nature of the records, but the evidence suggests rather an embryonic development of the whole building, including rebuilding of walls which she had assigned exclusively to her earlier 'Building B', some localised fire at the end of her 'Building B' phase (i.e. Phase 3 here), but perhaps only a single widespread fire preceding final collapse.

It has been very difficult to decide how to present the evidence from Area A, since so much remains unknown about the relative stratigraphy and phasing, especially concerning the earliest phases. The evidence is very messy and partial, and in many ways cannot be presented objectively since so much is assumption and, frankly, guesswork. What follows is an attempt to present and explain the evidence as it appears to the writer.

Figure 4.3: Plan of Phases 1 and 2

Interpretation is inevitably mixed in with description, but it is hoped that gaps and assumptions have been honestly confronted and highlighted.

All the stratified pottery from Area A loci has been dated to the Iron II/Persian period, with Nabataean and Roman sherds occurring in topsoil layers. There is some indication, however, that part or all of the deposits assigned to Phase 5 might have dated to the Roman period.

Phase 0

Bedrock and/or sterile soil was reached at various points in Square A1 and in trenches A4.1, 5.13, 8.1a, 13.1, 21.2, 26.1 and 50.1. Except for trench A21.2, bedrock was not reached in the whole south-west part of the area, consequently little can be said for certain about the earliest deposits there.

The evidence of trench A1.11 (cf. Figure 4.14) shows that here at least bedrock shelved dramatically, with a difference of up to 2 m. in depth. At its shallowest, bedrock here was only 1 m. below the modern surface. In trench A8.1a, bedrock was reached at a depth of 3.20 m. It is clear from the difference in depth between bedrock in Areas A and D that Area A was located on a natural terrace; however, it seems that this terrace was not level and there were considerable rises and dips. The difference in depth and nature of what have been identified as fill deposits in Phase 2 is probably to be explained by the differing height of bedrock at various points in Area A.

Phase 1

The earliest loci directly overlying bedrock were rubble and earth deposits, walls apparently unrelated to occupation deposits, and in Square A13 two plaster floors associated with at least one wall (Figure 4.3). All of these structures and deposits were clearly earlier than the construction and use of the main building which eventually covered Area A (which Bennett called 'Building B': see below, Phase 3). It has been impossible to correlate these early deposits to demonstrate conclusively whether they are contemporary or of different phases. The rubble and earth deposits, and walls underlying the later building, are interpreted as fill and an associated stone structure to level off bedrock and to raise the later building on a stone and earth platform (as in Area C), and have been assigned to Phase 2. The plaster floors and wall in Square A13 are here interpreted as the remains of a structure with associated occupation which predated the fill and construction of the later building, and which was integrated into the stone and earth platform. They are thus assigned to Phase 1, and interpreted as the earliest deposits on bedrock.

In trench A13.1, Wall 41 was constructed in a foundation trench (13.1.31), probably although not certainly cut into sterile soil over bedrock. Wall 41 ran north-east/south-west, and was traced for 4.50 m. between the later Walls 33 and 38 (in fact it ran under both walls). Only one course of it was excavated. Running up to Wall 41 was a deposit of light brown soil mixed with plaster and rubble (13.1.23), perhaps bedding for the overlying plaster floor (13.1.22). The plaster floor was sealed by dark brown soil (13.1.17, 21). This soil deposit and Wall 41 were overlain by a second plaster floor (13.1.10). No wall was found directly associated with plaster floor 13.1.10. Both Wall 41 and the plaster floor were overlain by Wall 38 of Phase 3 (Plate 4.9). Very little pottery was found in the Phase 1 deposits in trench A13.1, and the only rim sherd worth drawing (Figure 4.4) is scarcely diagnostic, but is probably Iron II/Persian.



Plate 4.9: Wall 41 (bottom), overlain by plaster floor 13.1.10, both assigned to Phase 1. Both were overlain by Wall 38 (top) of Phase 3. Looking south-west

It is possible that Wall 42 was originally contemporary with Phase 1, although the stratigraphic evidence is complex. Evidence from trenches A9.1–2 implies that Wall 42 was re-used in Phase 3, while in Square A6 Wall 54 of Phase 3 was built over part of Wall 42 and bonded with Wall 33. Wall 42 was 2.50 m.

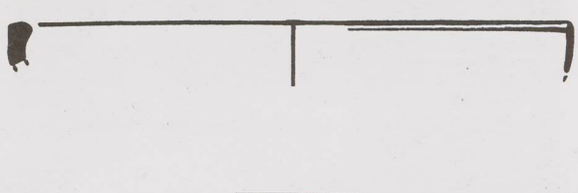


Figure 4.4: Pottery from Area A Phase 1

Type	Locus	Description
Bowl D?	A13.1.17	Fired buff outside; inside and core red. Temper up to 3 mm.: profuse lime; grog, basalt.



Plate 4.10: Wall 42, possibly originally from Phase 1, seen in a deep section in trench A9.2, looking north-west, showing the different construction technique of the Phase 3 rebuild (top)

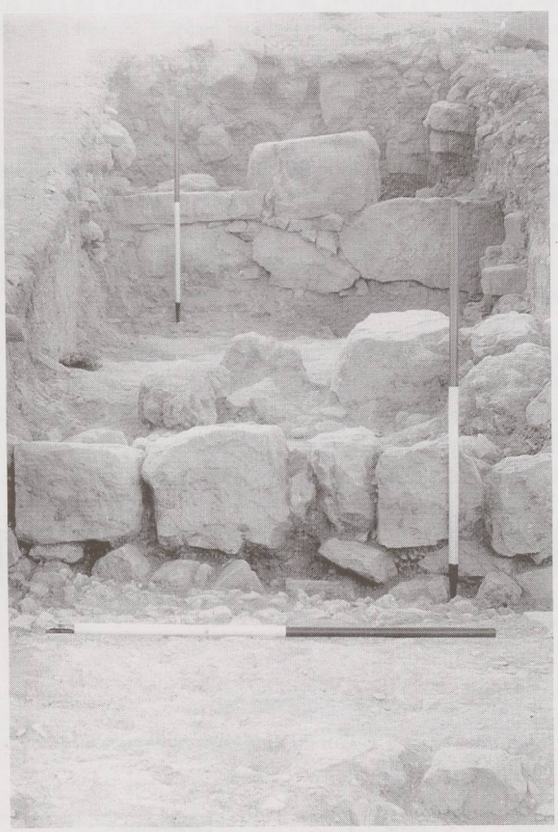


Plate 4.11: Walls 59 (front) and 60 (back), looking north-west

wide, with a rubble core, and was traced for 26.25 m. running north-east/south-west between later Walls 33 and 67 (Plate 4.10).

Not enough evidence was excaved to properly characterise Phase 1, but some walls with one or two plaster floors seem to predate the Phase 2 fill deposits and the Phase 3 building. Since so little was excavated to bedrock, it is possible that Phase 1 was more extensive than the excavated evidence suggests. In trench A1.33, a plaster floor (1.33.7) with associated ashy occupation (1.33.6) appears to predate Wall 19 of Phase 3, and may belong to Phase 1, although in the absence of a section drawing the stratigraphy here is uncertain.

Phase 2

This was a phase of fill deposits and associated stone walls whose function appears to have been to level off bedrock and raise the Phase 3 building on a platform (Figure 4.3). The evidence is ambiguous, and it seems that the 'platform' consisted of dedicated fill deposits (Phase 2), Phase 1 structures integrated into the fill, and Phase 3 constructions functioning both as fill and as walls contemporary with the Phase 3 occupation.

The evidence for a stone platform consists of a series of stone walls predating the Phase 3 building (i.e. running below Phase 3 walls), usually unrelated to any occupation deposits. The walls which have been tentatively identified as probably belonging to this stone platform are Walls 20, 55, 56, 57, 60 (+ Wall 50), 61, 62, 63, 64, 66, 67, 69, 70, 72, 81, 87, 88 and 95. For many of the walls there is no certain stratigraphic evidence that they should be assigned to the platform, although in most cases they clearly run below Phase 3 walls or surfaces and their surviving absolute height is consistent with their proposed function. There is evidence that, as well as functioning as a stone platform and as retaining walls for earth fill (see below), some of the walls were also used and even rebuilt in Phases 3 and 4. Wall 62 was used throughout the history of the building and was rebuilt at a very late stage. Wall 66 too was in use in Phase 3.

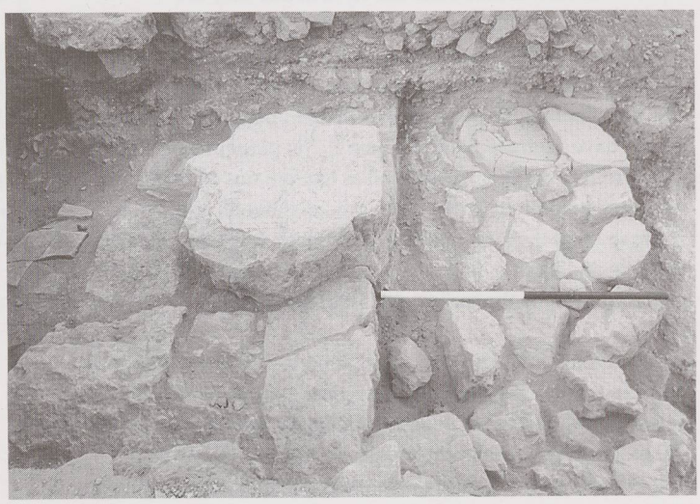


Plate 4.12: Walls 60 (left) and 50 (right), looking north-east. Wall 50 was originally interpreted as either a bench or paving associated with Wall 60, but both appear to be part of the Phase 2 stone platform

Some of the Phase 2 walls were directly associated with a mixed earth fill, suggesting that one of their functions was to act as retaining walls. This can be seen in trench A8.5 (cf. Figure 4.20), where Walls 60 and 50 clearly predated Wall 59 of Phase 3, and were associated with a clay and plaster fill (8.5.13–15) (Plates 4.11–12). In trench A10.1, Wall 61, a narrow wall only two courses high, supported and was covered by a mixture of hard and soft fine soil (10.1.10, 12–16) prior to the construction of Wall 59.

In other parts of Area A, a mixed earth, stone and plaster fill of varying depth on bedrock was laid directly against Phase 3 walls (also built directly on bedrock), indicating that the construction of the Phase 2 platform and fill and the Phase 3 building were part of an integrated building operation. In nearly all cases, this fill was sealed by the earliest occupation surface, a plaster floor, associated with the Phase 3 building. In trench A1.11, the fill was clearly levelling off the uneven bedrock (cf. Figure 4.14). In trench A4.1, the fill lay on bedrock directly below the plaster of the Phase 3 courtyard (cf. Figure 4.18).

Since so little description and interpretation was provided in the excavation notebooks, it must be admitted that identification of deposits as fill is not always certain. In cases of doubt, the identification has been made according to the overall context, but a degree of subjectivity is inevitable.

Table 4.1: Phase 2 earth, stone and plaster fill deposits related to Phase 3 walls

LOCI	SECTION DRAWING
1.3.8-17	A1: Figure 4.11
1.10.16-18	A2: Figure 4.12
1.11.7-11, 13-18	A3-4: Figures 4.13-14
1.20.20-22, 24	A5: Figure 4.15
1.21.15-16	A6: Figure 4.16
1.22.17-19	A7: Figure 4.17
4.1.15-18	A8: Figure 4.18
5.13.17	A9: Figure 4.19
13.1.16, 18, 25, 27-30	A13: Figure 4.23
21.2.11-16	A14: Figure 4.24
26.1.21-23	A16: Figure 4.26

Since a large part of Area A was not excavated to any appreciable depth, other Phase 2 walls may well have been missed. However, the beginnings of a pattern do emerge from the plan of the excavated walls (Figure 4.3). Walls 42 and 62 run in parallel, with Walls 55, 56, 63, 66 and 70 dividing the area between them into smaller spaces. There is clear evidence that these spaces contained a hard fill, in some cases sterile. Thus, the walls created a sort of lattice framework, a retaining structure to contain the earth fill. It is quite clear that the depth of these walls varied with the changing height of bedrock, the deepest recorded being 3.20 m. in trench A8.1a, where Walls



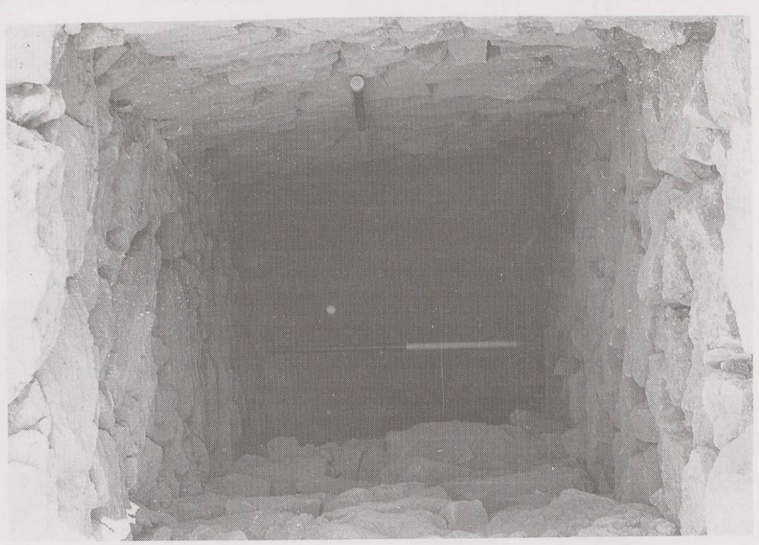


Plate 4.13a, b: Junction of Walls 42, 55, 56 and 57, part of the Phase 2 stone plaform, in trench A8.1a, creating the impression of a cistern



Plate 4.14: Group of walls numbered together as Wall 95, in trench A30.2, looking north-west. The complex jungle of walls is probably a result of Phase 2 stone platform walls overlain by Phase 3 and 4 walls. The wall at top left may have been a door blocking, but this is not certain



Plate 4.15: Group of walls numbered together as Wall 95, in trench A30.2, looking south-east

42, 55, 56 and 57 met, leaving a rectangular 'cavity' between them which reached bedrock (Plate 4.13a, b). During excavation, it was considered that this 'cavity' was created purposefully, perhaps as a cistern or pit, although no plaster lining was found within it. The 'cavity' was filled with earth, rubble and lumps of plaster. Re-examination of the excavation records and of the construction on site has led to the alternative proposal that what is visible here is the junction of four deep walls which were part of the Phase 2 stone platform; the contents of the 'cavity' is similar to that of the Phase 2 fill elsewhere. It is likely that the complex 'jungle' of walls in several trenches referred to by Bennett (1977: 3) is the result of a confusing mixture of Phase 2 stone platform walls underlying the walls of the Phase 3 building (Plates 4.14–15).

Phase 3

This phase is represented by the construction of a major single building covering the whole of Area A (Figures 4.5–6; Plate 4.16). The building was rectangular in plan, aligned on a north-east/south-west axis. It measured 76.50 by 38 m., almost exactly twice as long as it was wide. Against its outer walls were traces of other structures (Walls 28, 78, 91–93, 96); of these, only Wall 28 certainly dates to Phase 3, the rest being either later (Walls 78, 96) or of unknown phase (Walls 91–93) (cf. Figure 4.2). The line of Wall 28 was traced for c. 94 m. to the north-west to the edge of the highest terrace (Plate 4.17). Wall 25, only a small part of which was excavated running north-east/south-west to the north-west of the main building, was very poorly constructed in random rubble, and may have been an enclosure wall rather than the structural wall of an adjacent building (Plate 4.18).

In the south-west part of the building, beyond Wall 33, assigned by Bennett to her 'Building A', only the upper layers were excavated; however, sufficient detail was recorded to imply that the plan as recovered consisted of Phase 3 walls later rebuilt in Phase 4 (Plates 4.19–20). Walls 22, 29, 30 and 94, of uncertain phase (cf. Figure 4.2), might date to Phase 3, but no evidence was recorded concerning their stratigraphic position. Wall 30 seemed to be similar to Wall 25, and may have been an enclosure wall (Plate 4.21).



Plate 4.16: Walls 86 (top) and 71 (right), and the doorway through the stone threshold of Wall 36, looking north-west

Figure 4.5: Plan of initial Phase 3 walls

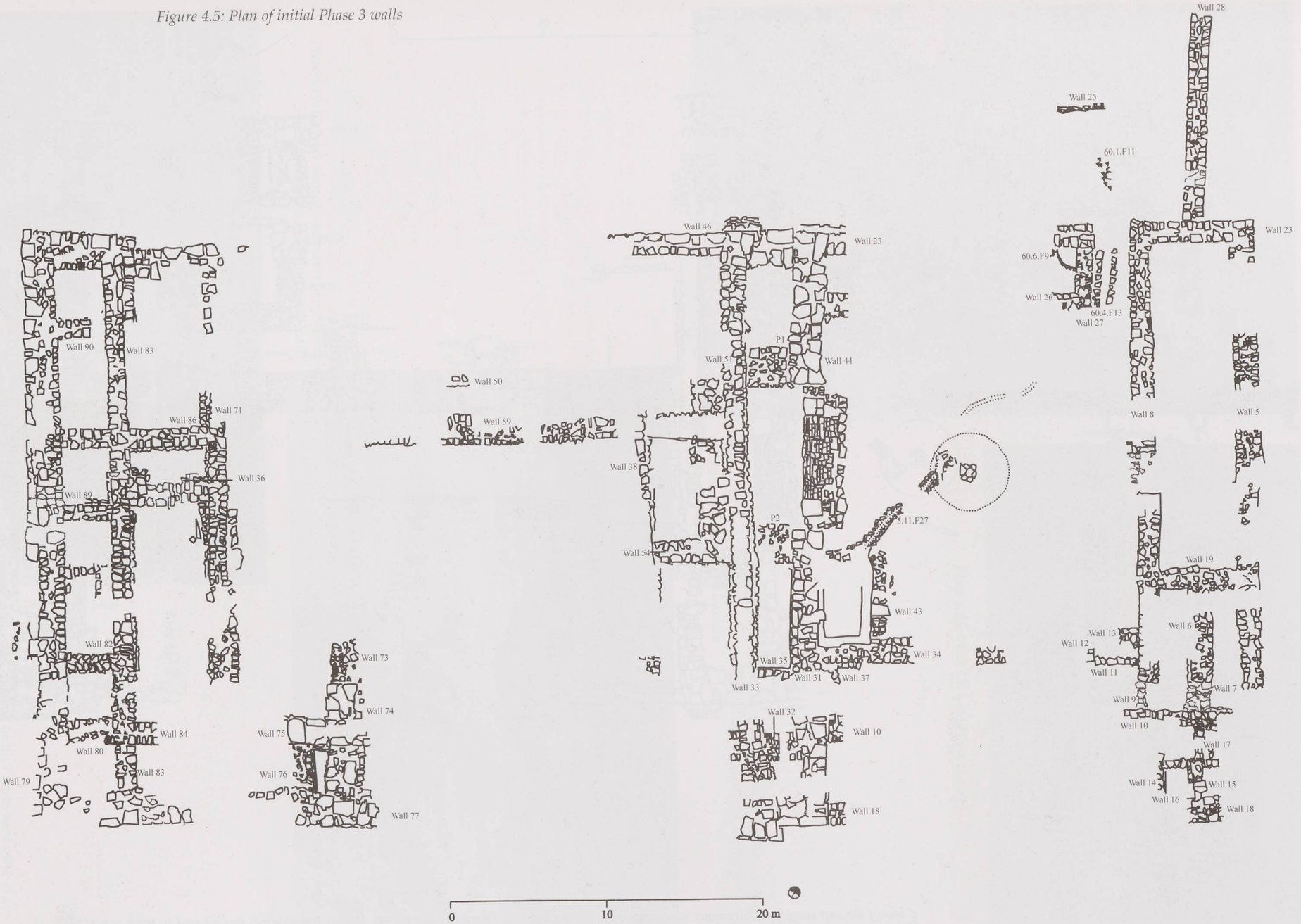
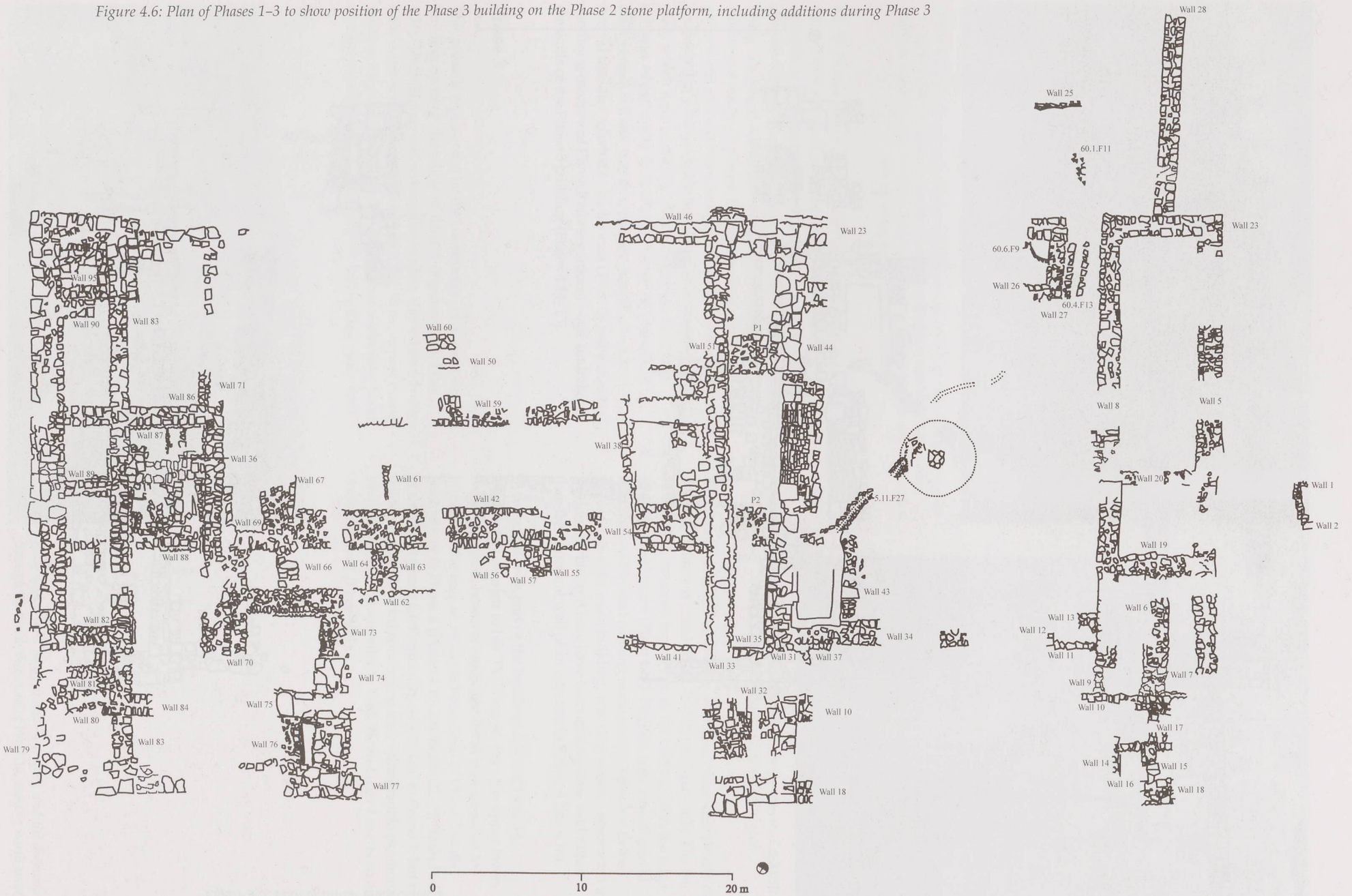


Figure 4.6: Plan of Phases 1–3 to show position of the Phase 3 building on the Phase 2 stone platform, including additions during Phase 3



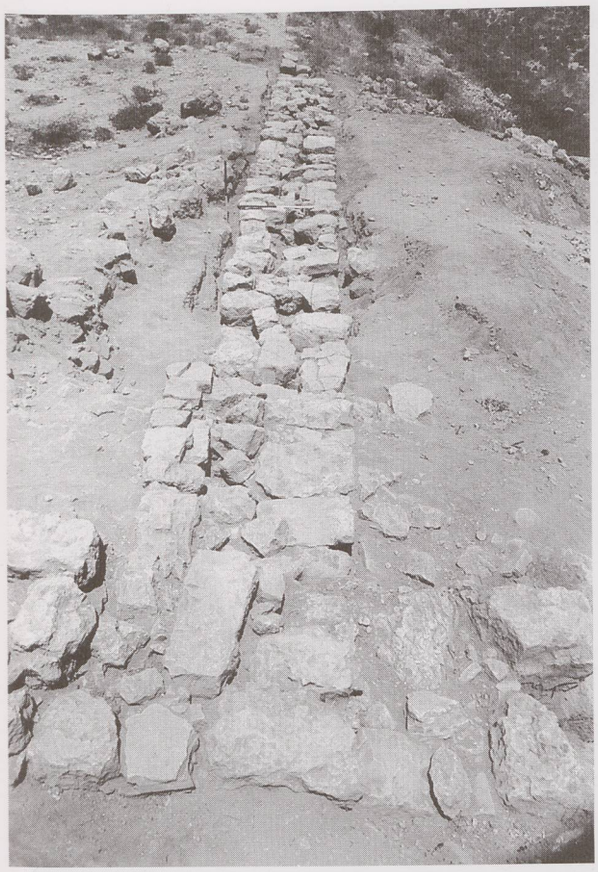


Plate 4.17: Wall 28 looking north-west. This wall was traced running north-west for c. 94 m. from its junction with Wall 23 to the edge of the highest terrace on the summit of Busayra

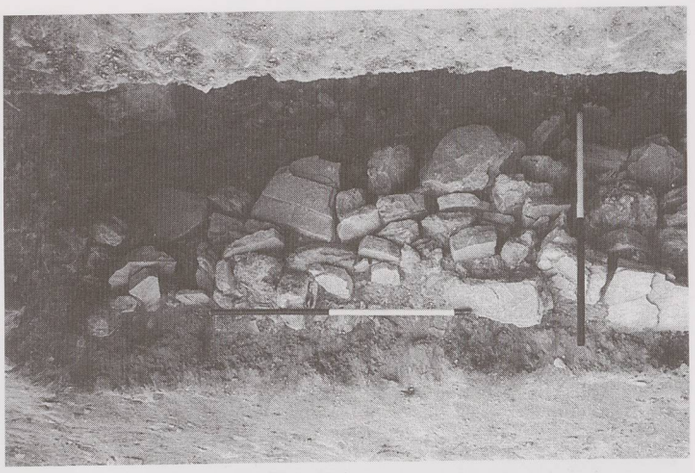


Plate 4.18: Wall 25, looking north-west



Plate 4.19: General view of south-west wing of the Phase 3 building, looking north-west



Plate 4.20: General view of south-west wing of the Phase 3 building, loking south-west along Wall 42, with the Phase 5 Wall 58 on bottom right



Plate 4.21: Wall 30, looking north-west



Plate 4.22: Wall 18, built on bedrock in trench A1.32, looking north-west

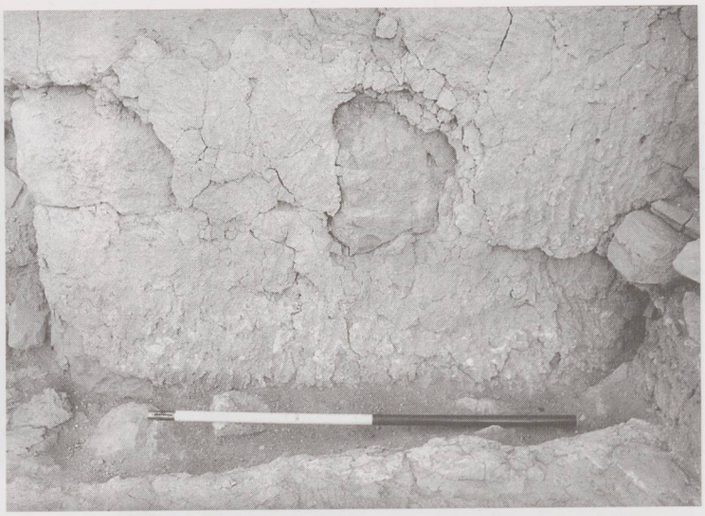


Plate 4.23: Plaster face on Wall 23 in trench A60.1, looking south-east



Plate 4.24: Plaster face on Wall 23 in trench A26.2, looking south-east. Against the plaster, just visible on the right, is the buttress for the Phase 4 rebuild of Wall 33

Some of the walls were built directly on bedrock, others on the Phase 2 stone walls or earth fill (cf. Figure 4.6). The external walls were 2 m. wide, with the individual blocks of masonry up to 1.80 m. long, 0.90 m. wide and 0.70 m. high. The walls were built in coursed, bonded masonry, with individual header stones running two-thirds and in some places completely through the width of the wall. Voids left between the internal and external faces were filled with smaller pieces of masonry and rubble set in a lime mortar. Where facing stones were not of the correct height, they were brought up to course level by the use of snecking. The masonry was made up of hard, local limestone blocks, roughly squared and shaped (Plate 4.22). The walls were



Plate 4.25: Wall 5 in trench A1.10, looking south-west, showing unplastered Phase 4 rebuild on top of the Phase 3 plastered face



Plate 4.27: Deep section in trench A5.13, looking north-east, with Wall 8, plastered on the lower courses, but unplastered above (cf. Figure 4.19)

covered with a thick lime plaster (Plates 4.23–24) which continued all the way to the bases of the walls — that is, even the foundation courses were plastered in many cases (the Phase 4 rebuilds of the Phase 3 walls were not plastered: cf. Figure 4.12, where the plastered face of Phase 3 Wall 5 is quite distinct from the unplastered face of its later rebuild) (Plates 4.25–27).

The overall plan of the building was based on two wings, each with a series of rooms around an inner courtyard. The precise details of the plan were not recovered, since large parts of the building were not excavated, individual rooms were inadequately defined, and interconnections between them not properly established. Four major entrance doorways were discovered: in Wall 8 on the north-east side; in Wall 23 in the northern corner; in Wall 77 near the southern corner by Wall 83; and in Wall 79 on the south-west side. The doorways in Walls 8 and 79 were both nearly central, in the short walls, and almost directly opposite each other at either end of the building. The doorways in Walls 77 and 23 were both off-centre, in the long walls, and diagonally opposite each other. The arrangement of



Plate 4.26: Wall 8 in trench A50.5, looking south-west, showing mud-plaster facing with marks of burning



Plate 4.28: Wall 5, looking south-west, cut by the later Phase 5 Wall 4

these four doorways is thus symmetrical. Bennett suggested that the entrances into the building were approached by ramps (1983: 15), but there is no clear evidence for this (similarly, her claim that there was a ramp in Area C has not been confirmed, cf. Chapter 6). Nevertheless, on the north-east side, the external Wall 5 is at a considerably lower absolute height than the entrance in Wall 8 (Plate 4.28); if there was direct access between the two walls — which was not established — it would perhaps imply the existence originally of some form of steps or ramp which were not found. The doorway in Wall 79 is precisely at the point between Areas A and B where Bennett had suggested a paved entrance (1977: 7), but it is uncertain whether the stones there should be identified as paving, possibly ramped, or merely collapse from Area A. Nevertheless, here too the difference in absolute height between the doorway in Wall 79 and Square B10 might imply the original existence of an access ramp which was not excavated.

The doorway in Wall 79 was 3 m. wide but appears to have been divided by a pillar of stones. It had a stone threshold and led into a series of small rooms (Plate 4.29). In Phase 4 these rooms had plastered floors, and earlier loci were not excavated, but we can perhaps assume that in Phase 3 too these rooms had plastered floors. Connections between these rooms were by means of doorways in Walls 83 and 36. Wall 83 had two doorways



Plate 4.29: Room formed by Wall 79 (left), 81 (bottom), 82 (top) and 83 (right), looking north-west



Plate 4.30: Doorway in Wall 83, with Wall 86 on right, looking south-west



Plate 4.31: Doorway in Wall 83, with Wall 86 on left, looking north

through it, one apparently without a stone threshold in trench A20.4 (1.50 m. wide), the other in trench A20.2 (3 m. wide) with a stone threshold acting as a step (Plates 4.30–31). The wide doorway in Wall 36, a complex of walls which was difficult to untangle, seems to have had a stone threshold (see Plate 4.16).

The off-centre doorway in Wall 77 was 1.90 m. wide and appeared to lead through one end of the external wall into the south-western inner courtyard (Plate 4.32). The piers were built in small random-sized stones, some of which show signs of being squared at the quoins. Course heights were maintained by the use of snecking, the actual depth of the courses varying either side of the doorway. The piers and flanking walls were built in two skins with a rubble fill set in mortar. Running south-



Plate 4.32: The doorway in Wall 77 (top right), looking east, with Walls 83 (centre) and 84 (left)



Plate 4.33: Entrance in Wall 8, looking south, showing stone paving and marks of burning



Plate 4.34: Entrance in Wall 8, looking west, showing stone paving

east from the doorway was Wall 93, perhaps a retaining wall, built in small random rubble with a rubble fill.

The doorway in Wall 8 was 2.50 m. wide and led into the plastered courtyard. The doorway was stone paved, and surrounded by a plaster floor (1.34.3, 1.19.2, 1.36.1) on both sides of Wall 8, which joined with the plaster in the courtyard (Plates 4.33–35). This plaster floor sealed Wall 20, identified as part of the Phase 2 stone platform. Above the doorway floor was an accumulation of burnt mudbrick fill (1.19.1, 1.34.1), perhaps evidence of a mudbrick superstructure over the doorway, later burned by fire; alternatively, the mudbrick fill may have come from roofing material, since the site supervisor proposed that the bricks were lighter and less dense than wall bricks and the fill was mixed with white material, possibly plaster. On either side of the doorway to the north-east were roughly circular holes in the plaster, 35 cm. in diameter, filled with small stone rubble, 28 cm. and 46 cm. respectively from Wall 8 (Plates 4.36–37). Under



Plate 4.35: Entrance in Wall 8, looking south-west, showing stone paving



Plate 4.36: Possible door-post socket on north-east side of the entrance in Wall 8, with the quoin of Wall 8 beyond



Plate 4.37: Possible door-post socket on north-west side of the entrance in Wall 8, with the quoin of Wall 8 beyond

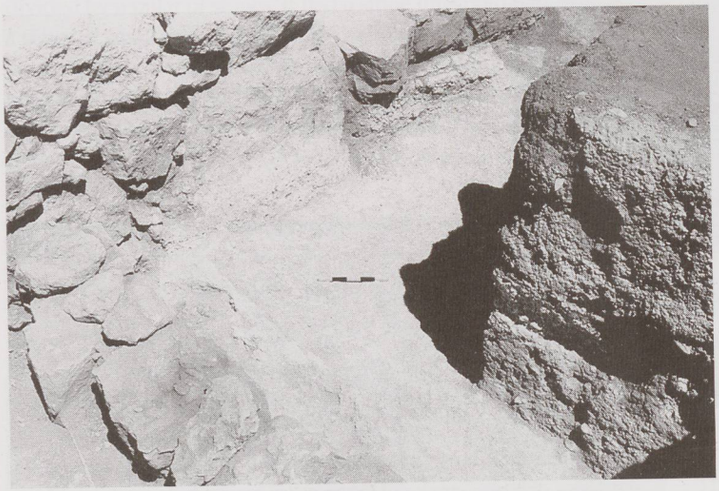


Plate 4.38: Plaster floor 1.23.12, looking east, running up to Walls 12 (bottom left) and 8 (top left), with threshold 'Wall' 9 just visible (top right). During excavation this room was tentatively interpreted as a bath or pond

the rubble in the holes was found ash, charcoal and lumps of plaster. It is possible that these holes were originally for door-posts or for the insertion of some (?organic) objects which flanked and marked the entrance into the courtyard.

Wall 8 was an inner wall, but because of the insertion of later Phase 5 structures into Wall 5, the external wall of the building, it cannot be determined if there was a doorway in Wall 5 giving external access to the doorway in Wall 8. A second doorway between Walls 8 and 10, 2 m. wide, with a stone threshold ('Wall' 9), led into the room to the south-east of the courtyard, bordered by Wall 34. This room had a very thick plaster floor (1.23.12), which ran up the bases of the walls (Plate 4.38). During excavation, Crystal Bennett speculated that this room may have





Plate 4.40: Room between Walls 6 (left) and 5 (right), looking north-west. The quoin of Wall 6, forming a doorway with Wall 10, is just visible on bottom left

Plate 4.39: Wall 6, looking south-west, with doorway at left with stone threshold ('Wall' 7)

been a bath or pond located off the main courtyard, analogous to the possible 'purification room' in trench A5.1 (see below), although her only evidence appears to be the thickness of the plaster floor. Another internal doorway between Walls 6 and 10 also had a stone threshold ('Wall' 7) and was 2 m. wide (Plate 4.39). Again it was not determined if there was external access through Wall 5 to this latter doorway. The architecture in trenches A1.28–32 was not properly determined, but it may be that it consisted of small rooms accessed by doorways (Plate 4.40). In general, in both Phases 3 and 4 the rooms between Walls 5 and 8 contained many sherds of large cylindrical jars (Jars E, cf. Chapter 9), suggesting a storage function, and similar jars associated with pottery stands were found in the courtyard loci (Plates 4.41–42; cf. Plate 4.61).

The fourth main doorway, in Wall 23, was 2.40 m. wide, off centre, and appeared to create access between the plastered north-eastern courtyard and a doorway in Wall 28, the external long wall. The doorway in Wall 23 was plastered (60.1.8), the plaster running up to stone paving 60.1.F11; the paving was set into a clay floor (60.8.1, 2) contemporary with a plaster floor (60.10.2) running up to Wall 25 (Plate 4.43). Wall 23 was plastered, the plaster curving around into the entrance (Plate 4.44). The doorway in Wall 23 was later blocked, in Phase 4. This doorway was probably associated with the doorway through Wall 28, 1.50 m. wide, built against the external face of Wall 23, which provided direct external access into the main building (Plate 4.45). In between the two doorways, against Wall 23, was a stone bench or platform (60.7.F21, not planned) plastered



Plate 4.41: Cylindrical jar (Jar E) found in topsoil in trench A1.1, looking south-east



Plate 4.42: Smashed cylindrical jar (Jar E) on Phase 4 surface 5.13.3 in the north-east courtyard



Plate 4.43: Square A60, with stone paving (centre) and Wall 25 (top), looking north-west



Plate 4.44: The plaster on Wall 23 (right) curving around the side of the wall into the doorway; on the left is the later Phase 4 blocking. Looking south-east



Plate 4.45: Wall 28, looking north-east, with doorway on the left

together with the Phase 3 plaster floor (60.7.6) which ran up to Walls 23 and 28. It is tempting to interpret the plastered bench as a feature associated with the doorways, perhaps as seating for guards or those waiting to enter the building.

The north-eastern courtyard was defined by Walls 8, 34, 43, 44 and probably 26, and measured approximately 19.5 by 20.5 m. The Phase 2 fill was sealed by a plaster floor (4.1.14, cf. Figure 4.18; cf. also Figure 4.11, where there are three plasterings, 1.3.5–7, over the Phase 2 fill deposits). Following accumulated deposits of earth and stones, the courtyard was replastered (4.1.9, 7a). The cutting of a pit (4.1.8) was followed by a final replastering (4.1.7b, 6) (Plate 4.46). The sequence revealed in trench A5.11 is slightly different from that in trenches A4.1 and

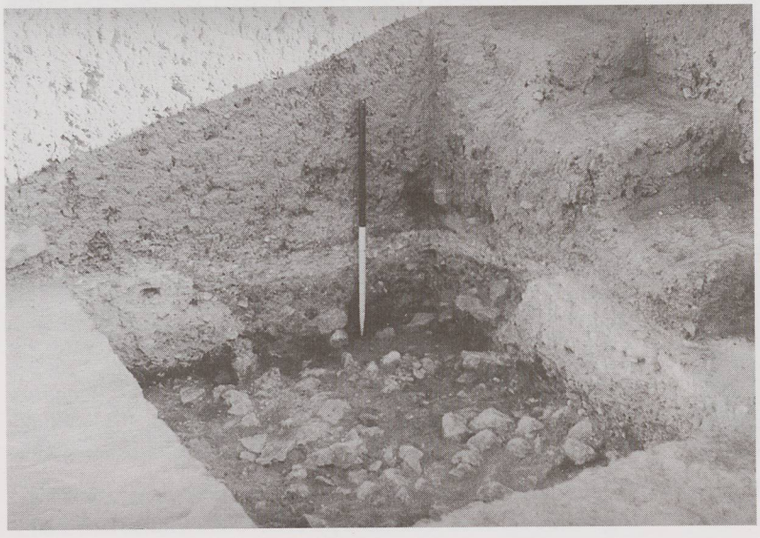


Plate 4.46: Final plastering of the north-east courtyard (4.1.6) seen in the south-east facing section of trench A4.1 (cf. Figure 4.18)

1.3. In A5.11, the final plastering, dated to Phase 3, was followed by deep fill layers assigned to Phase 4, which were not identified in trench A4.1. Similarly, the courtyard sequence against Wall 8 in trench A5.13 (cf. Figure 4.19) is different, although some of the interpretations of the loci by the excavators are questionable: five separate plaster floors were identified (5.13.16, 14, 11, 8, 7), separated by earth deposits. Associated with the Phase 3 plaster surface in the middle of the courtyard (trench A5.12) was a circular stone-lined cistern 5 m. in diameter. Two drains appear to have been associated with the cistern, although it could not be proved that they actually fed into it.

Drain 60.4.F13 was stone-lined and plastered, and ran approximately northwards from near the cistern (Plate 4.47) and finally debouched through the doorway in Wall 23 (Plate 4.48). The stratigraphic records are unclear, but Bennett (1977: 5) claimed that there were two periods to this drain. According to her preliminary report, a hard brown clay floor was associated with the drain's later period, which overlay the earlier drain that ran at a different angle at its outlet and had an associated plaster floor. The single section drawing for trench A60.4 (unpublished) shows the drain associated with a plaster floor (unnumbered) probably contemporary with the plastered courtyard, and a hearth (60.4.F14) set into the same floor, the whole overlain by a deposit of burning and mudbrick collapse with no further evidence of occupation. The excavation notebook contains a marginal note about the second drain and clay floor, but does not assign them locus numbers or incorporate them into the overall stratigraphic sequence. A photograph seems to confirm two periods for the drain (Plate 4.49). In trench A5.13, the 'fill' of the drain (5.13.6a) overlay the final plaster floor of the courtyard (5.13.7) and was itself sealed by a 'mud and lime surface' (5.13.6) with ashy occupation (5.13.5), followed by mud and lime patching (5.13.4f).

The same deposit of burning and mudbrick collapse as in trench A60.4 sealed a stone silo (60.6.F9) constructed against the angle of Walls 23 and 27 (Plates 4.50–51). The silo contained ash and pottery, including the sherds of a nearly complete painted bowl (Bennett 1977: fig.5: 1094). Bennett (1977: 5) regarded this as 'one

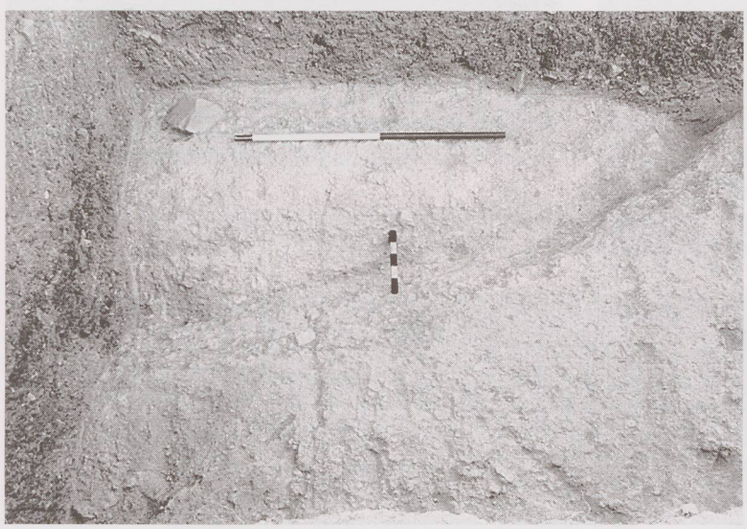


Plate 4.47: Drain 60.4.F13 running across plastered courtyard in trench A5.13, looking south-east



Plate 4.48: Drain 60.4.F13 running through the doorway in Wall 23, later blocked. Looking south



Plate 4.49: Drain 60.4.F13 in trench A60.4, looking south-east



Plate 4.50: Silo 60.6.F9, looking north-east



Plate 4.51: Silo 60.6.F9, looking north-west

of our most important pieces of dating evidence', since she considered that the mudbrick debris came from the collapse of 'Building B', that it antedated 'Building A', and that a later fire destruction level sealed the mudbrick debris and marked the end of 'Building A'. Her view cannot be completely excluded, but in fact there is no evidence at all that the mudbrick collapse antedated any later structural phases in Area A. The excavator of trench A60.6 identified several individual consecutive loci of burning and mudbrick collapse overlying the Phase 3 use, but there is nothing to indicate that they were not part of a single episode of burning and collapse marking the end of Iron Age/Persian occupation in Area A. The silo appears to be in a room off the main courtyard, defined by Walls 27, 26 and 44, which may have had a specific storage function. At the other end of this room, against the faces of Walls 26 and 44, there are indications of a cache of large storage jars (26.5.3).

The second drain (5.11.F27) was stone-lined and plastered (three plasterings were identified, set into the courtyard plaster), emerged from the northern corner of a plastered room in trench A5.1, and ran across the courtyard towards the cistern. The room in trench A5.1 measured 5 by 2.40 m. and had a plastered floor and walls (Walls 31, 34 and 43, and plaster 5.1.5/5.3.7) (Plate 4.52). Wall 37, against Wall 34, may have been a door blocking, but this is uncertain.

Outside the plastered room, the plaster of the courtyard joined an area of stone paving (5.2.7, 5.3.9, 5.4.7) against Wall 43 and drain 5.11.F27. Although no direct connection was established,



Plate 4.52: Plastered room in trench A5.1, tentatively identified as a 'purification room', looking west, with Wall 43 in foreground



Plate 4.53: Steps 5.9.F18 flanked by two circular bases, leading to long narrow room with plastered floor, with Wall 33 behind, looking west. Drain 5.11.F27 is in the foreground



Plate 4.54: Top of steps 5.9.F18, flanked by two circular bases (left), with Wall 33 on the right, looking south

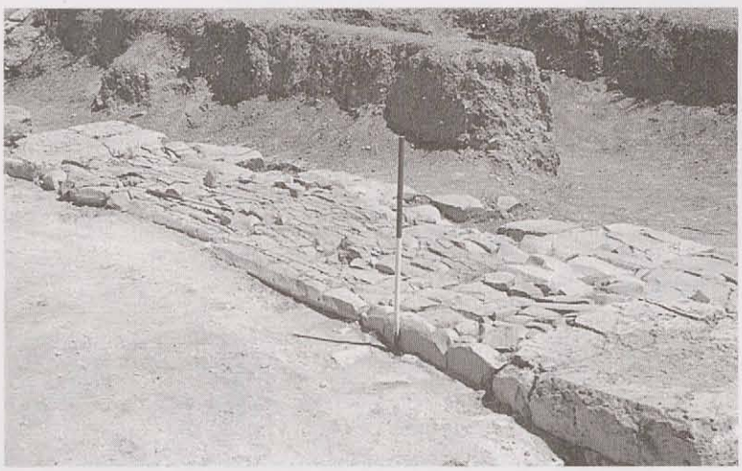


Plate 4.55: Steps 5.9.F18 showing spalling from intense heat. The imprint of an object of circular section can be seen on the column base on the right. Looking north



Plate 4.56: Detail of steps 5.9.F18

the stone paving probably originally led to shallow stone steps flanked by two circular bases (Plates 4.53–54). The steps (5.9.F18) were in well dressed limestone but were badly fractured and spalled by intense heat (Plates 4.55–56). The two bases, c. 1.20 m. square, framing an entrance approached by the steps, were in well dressed limestone on which the use of a bladed tool was still evident. On the upper part of both bases, the imprint of objects of circular cross-section, perhaps of wood, was clearly visible as a reddish circular discoloration. These objects would have been columns, statues or cult objects (cf. Reich 1992: 219).

The steps led into a long narrow room with a hard white plaster floor (5.5.7, 5.6.15, 5.7.7, 5.8.4, 25.3.8, 26.1.8) sealing two low stone podia (P1 and P2); ash and charcoal (5.6.14, 5.7.6) on the plaster probably reflects use of the floor, which was partially overlaid by an earth floor (5.5.3, 5.6.9, 12, 5.7.5). Associated with the plaster floor were a number of copper alloy objects identified as chair fittings (Plate 4.57; cf. Chapter 10).

There was no doorway through Wall 33 from this room to the south-west into the second courtyard. The preliminary plan of the Phase 3 building ('Building B') as published by Bennett (1977: 5 fig. 3) did not include Wall 33, which was assigned to 'Building A', implying that the narrow room led directly to the second courtyard. Figure 4.26 implies that Wall 44 of Phase 3 predated the first phase of Wall 33. Initially, Wall 44 was associated with a plaster floor (26.1.18) on make-up (26.1.18a, b), which was cut by a foundation trench for Wall 33 (26.1.20). The foundation trench was covered by a fill (26.1.17), and the overlying plaster floor (26.1.8) was the floor of the long narrow room, running up to both Walls 44 and 33 (Plate 4.58). At the beginning of Phase 3, therefore, there seems to have been access from the steps through to the south-western courtyard, but this was closed off by the construction of Wall 33, and there was no doorway in Wall 33. Immediately south-west of Wall 33 it appears that there was a series of small rooms with plaster floors (partitioned in Phase 4), although no coherent plan was recovered. Wall 51 in particular is enigmatic, abutting Wall 33, and rather than a wall may have been some form of platform or bench; however, it appears to have survived to the same absolute height as Phase 3 Wall 33, and it was not rebuilt in Phase 4 (Plate 4.59).

Other rooms of the Phase 3 building appeared to have one or two plaster floors or clay surfaces overlying the Phase 2 fill, occasionally with associated occupation deposits. However, descriptions of deposits, especially possible surfaces, in the



Plate 4.57: Steps 5.9.F18 between column bases (left), Wall 33 (right), and in between two podia (P1 and P2); podium P1 was overlain by plaster floor 25.3.8 which was contemporary with the Phase 3 use of the steps



Plate 4.58: Plaster floor 26.1.8 running up to Wall 33 (Phase 3), looking south-west

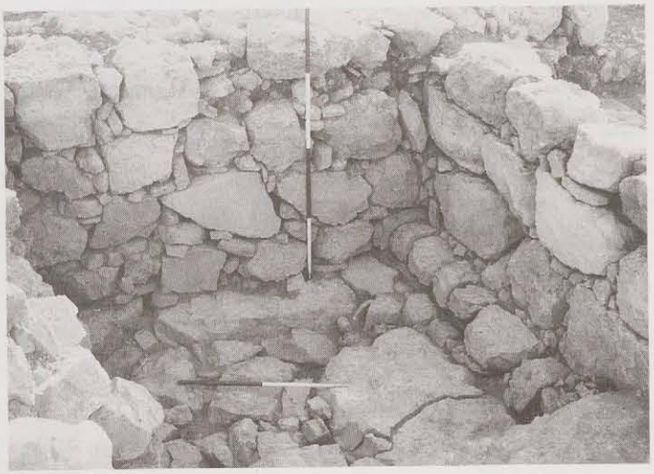


Plate 4.59: Wall 51 (bottom), perhaps a platform or bench rather than a wall, with Walls 33 (left) and 52 (right), looking east. Wall 51 was built in Phase 3 and abuts Phase 3 Wall 33 (the measuring rod is standing on the top course of Wall 33 Phase 3, with the Phase 4 rebuild above). Wall 52 was built in Phase 4

excavation notebooks are not very reliable, and the inexperienced supervisors had difficulty distinguishing between mud and lime plaster floors, beaten clay surfaces, mudbrick, and compact earth fill. In other loci, just one surface was revealed below final collapse and burning, consequently its phase is unknown, although it has been assumed as a working hypothesis that it belonged to the final Iron Age/Persian occupation phase, Phase 4. As a result of these uncertainties, Table 4.2 of additional Phase 3 loci below should be regarded as tentative rather than absolute.

Table 4.2: Phase 3 surfaces and occupation deposits not described in text

TRENCH	SURFACE	ASSOCIATED DEPOSIT	ASSOCIATED WALLS
A1.10	plaster floor 1.10.15	?fill 1.10.12-14	5
A1.20	?clay surface 1.20.19 make-up 1.20.18 clay surface 1.20.17		5, 6
A1.21	?plaster floors 1.21.7, 4		5, 6, + threshold 'Wall' 7
A1.22	plaster floor 1.22.16	?fill 1.22.10, 11, 14, 15	5
A1.23	clay surface 1.23.13 plaster floor 1.23.12		10, 11
A1.23a-24	plaster/clay floors 1.23a.23-21, 12		8, + threshold 'Wall' 9
A1.25	clay surfaces 1.25.7, 5	occupation 1.25.6	8, 12
A1.30-31	clay surfaces 1.30.8, 1.31.6		14, 15
A1.32	clay surfaces 1.32.7-9		18
A3.1	plaster floors 3.1.14, 7		31, 34, 37
A3.2	plaster floor 3.2.5		31, 33, 35
A7.4	?plaster floor 7.4.8	?accumulation 7.4.7 occupation 7.4.6	51
A8.1	plaster floor 8.1.9 ?stone paving 8.1.8		42, 59
A8.5	make-up 8.5.12 plaster floors 8.5.9, 6	ashy soil 8.5.10, 7	60
A9.1-2	?clay surface 9.1.16a	ashy hearth 9.2.11	42, 62, 63, 64
A9.5	plaster floor 9.5.6		62, 66
A9.6	plaster floor 9.6.3		62, 73, 74, 75
A9.7	?plaster floor 9.7.9 clay surface 9.7.6	brown earth 9.7.8 accumulation 9.7.5	74, 75
A10.1	?clay surface 10.1.9		59
A11.1		?fill 11.19	77
A12.6	plaster floors 12.6.6, 2 (= 12.2.7)	?fill 12.6.5	10, 31, 32
A13.1	plaster floors 13.1.9, 13, 13.1.7, 13.1.4	occupation 13.1.8, 6, 4a	38, 39
A20.6	plaster floors 20.6.8-10	ashy 20.6.7 gritty soil 20.6.6	84
A21.2	plaster floor 21.2.9		71, 86
A25.4, 6	stony floors 25.6.10, 6 plaster floor 25.6.1	?earth fill 25.6.9 occupation 25.6.4, 2	50 (partially rebuilt), 51, 59
A26.2	plaster floor 26.2.10 make-up 26.2.5 plaster floors 26.2.1, 2	accumulation 26.2.9, 8, 6 cistern	23
A27.1	plaster floors 27.1.15, 11	soil and pottery 27.1.14	33, 46

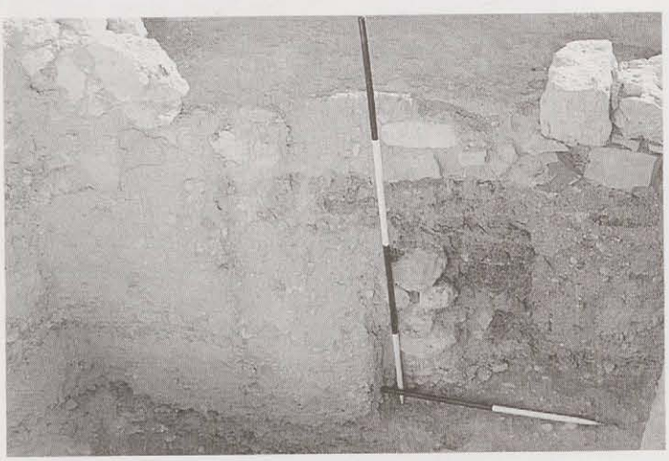


Plate 4.60: Walls 1 (left), 3 (mudbrick, middle) and 2 (right) in the south-west facing section of trench A1.11 (cf. Figure 4.13)

The cistern noted in trench A26.2, outside Wall 46, was not excavated properly, but was clearly associated with both Phase 3 plaster floors in the trench, and had gone out of use by Phase 4 (the Phase 4 rebuild of Wall 33 overlay the cistern).

There are indications of minor building or rebuilding within Phase 3, stratigraphically later than the initial Phase 3 walls (Figure 4.6). Walls 1, 2 and 3 were located north-east of Wall 5 and so were outside the Phase 3 building, at a point where bedrock drops sharply, creating a natural terrace on Area A (Plate 4.60). From the south-west facing section in trench A1.11 (Figure 4.13) it is difficult to establish the stratigraphic relationship of these three walls with the Phase 3 building. Wall 3, the earliest, was constructed in a foundation trench cut into a deposit of dark brown clay containing limestone and some pottery (1.11.7). This deposit, and those below it, could be interpreted as tip lines of fill and accumulation, sloping down

towards Area D from the Phase 3 building. If that was the case, Walls 1–3 would post-date at least the initial Phase 3 occupation, although this cannot be proved.

Wall 3 was not planned, and was drawn only in a section (Figure 4.13). It was a mudbrick wall on stone foundations, running north-east/south-west under Wall 2. Its length was not established, but it survived to 0.50 m. high and was 1.16 m. wide. After an intermediate deposit of burnt clay with lots of pottery sherds (1.11.6), which ran up to the outside of Wall 5, Wall 1 was built. Wall 1 was constructed of random rubble, one course (0.39 m.) wide and four courses (0.80 m.) high, running north-west/south-east for an excavated length of 1.36 m. After an intermediate deposit of dark brown clay (1.11.5), Wall 2 was joined to Wall 1 and built over Wall 3. Wall 2 was also aligned north-west/south-east, running for 1.45 m., constructed of random rubble, one course (c. 0.20 m.) wide, nearly half the width of Wall 1, and surviving to a height of three courses (0.53 m.).

It is difficult to interpret these three walls, especially Wall 3. Walls 1 and 2 were positioned c. 1 m. below Wall 5, and 1 m. above the walls in Area D, which might suggest that they functioned as retaining walls for the wash and accumulation from the Phase 3 building.

Wall 50, originally constructed as part of the Phase 2 stone platform, was rebuilt during Phase 3. Figure 4.25 suggests that the Wall 50 rebuild post-dated a deposit of compact earth (25.6.9), which lay on a stony floor (25.6.10), probably the original Phase 3 surface. Running up to the Wall 50 rebuild was a second stony floor (25.6.6) and later a plaster floor (25.6.1), which also ran up to the Phase 3 Wall 59. Although, the section drawing was not clear, it is possible that Wall 59 too was rebuilt later in Phase 3, with a foundation trench cut into the 25.6.9 deposit. It is clear that, apart from these minor rebuilds, the Phase 3 occupation continued.



Plate 4.61: Pottery stands, perhaps for cylindrical jars (Jars E) so common in Area A, were found in the mudbrick collapse (5.13.4a–d) in the north-eastern courtyard at the end of Phase 3

Although Bennett concluded that there was a destruction and collapse of her 'Building B' (i.e. the Phase 3 building) prior to the construction of her 'Building A', there is no evidence for widespread fire or collapse at the end of Phase 3. In some loci, there was no indication of any fire at all, even following the final occupation (e.g. A13.1, Figure 4.23). In others, there appeared to be an episode of fire and sometimes collapse prior to renewed occupation that has been assigned to Phase 4.

Traces of fire were found in the following loci at the end of Phase 3: an ashy layer (1.25.4) between Walls 8 and 12; ash on stone paving 60.1.F11, by the doorway in Wall 23; part, though not all, of the courtyard had a line of burning (5.13.4e) followed by a burned deposit and mudbrick pile (5.13.4a–d) which could be either collapse or part of the Phase 4 fill (cf. Figure 4.19; Plate 4.61); the stone steps at one end of the courtyard were cracked from burning; traces of burning were found on the floor (25.3.8) of the narrow plastered room at the top of the shallow steps, which was cut by a foundation trench for the Phase 4 rebuild of Wall 33; and, on the other side of Wall 33, Walls 50 and 51 were overlain by two burnt layers (25.4.10, 11). In trench A1.22, on the outside of Wall 5, the external wall of the building, a deposit of dark earth, ash, sherds and plaster chips may be evidence of a fire at the end of Phase 3, alternatively it could be interpreted as Phase 3 accumulation against the wall.

In summary, the Phase 3 building stood partly on the Phase 2 stone and earth fill and partly directly on bedrock with fill deposits against the lower part of the walls. The building was rectangular, based on two wings with a series of small rooms around two inner courtyards, although only one of the courtyards was properly excavated and the exact plan of the rooms of this phase was not recovered. The walls were plastered. Against the outer walls were traces of other structures. Four major doorways were uncovered, arranged symmetrically, two almost central on opposite ends of the building, two off-centre and diagonally opposite each other. Most doorways had a stone threshold, and the one leading into the north-eastern plastered courtyard may have had a mudbrick superstructure. Most of the rooms appeared to have plastered floors, although a few had clay surfaces (and the exact descriptions of deposits cannot always be relied upon). Within the plastered north-eastern courtyard a stone cistern was associated with two drains, one of which led from a small room with plastered walls and floor. At one end of the courtyard was a shallow flight of stone steps flanked by two stone bases bearing imprints of columns, statues or cult objects. The steps led to a long narrow plastered room associated with two low stone podia and copper alloy chair fittings. The plan of the south-western courtyard was not properly elucidated, but there does not appear to have been access between the two courtyards. It seems that the two parts of the building were separately accessed and were not connected by doorways. The narrow plastered room with the chair fittings was closed off by Wall 33; however, this wall was probably built later within

Phase 3, implying access between the two parts of the building earlier in the phase.

There was no widespread fire or collapse at the end of Phase 3, but traces of fire were found in some parts of the building, particularly in parts of the plastered courtyard, around the steps and in the narrow plastered room, and on the other side of Wall 33 which closed off that room.

Phase 4

This was the final phase of Iron Age/Persian occupation in Area A, represented by substantial rebuilding of the Phase 3 structure and the construction of some new walls (Figure 4.7). The new walls and rebuilding in the south-west part of the building, between Walls 33 and 79, are essentially what Bennett termed her 'Building A', which she regarded as a later and smaller rebuild of the Phase 3 structure (her 'Building B'). However, it is quite clear that the major walls to the north-east were also rebuilt, and with small differences the plan of the entire Phase 3 building seems to have been adhered to.

The new walls built in Phase 4 were 47, 48, 49, 52 (partial rebuild of Wall 59, creating a doorway), 53, 65 (not planned, visible only in a baulk in trench A9.2, parallel to the earlier Wall 63) and 78 (built against the external face of Wall 77, the long south-eastern wall of the building). The dense group of walls in trench A20.2 was not properly differentiated, and it is possible that some of these were first constructed in Phase 4. The walls certainly rebuilt in Phase 4 were 5, 6 (partial), 8, 23 (+ door blocking), 31, 33, 38, 44, 46, 54, 59, 71, 73, 74, 75, 77, 85, 86 and 89. Where there was clear evidence of Phase 3 occupation, the Phase 4 rebuilds were constructed in foundation trenches cut into the latest Phase 3 loci. No evidence was recorded concerning Wall 79, the south-western external wall of the building, but it is likely that its surviving upper courses were a Phase 4 rebuild (Plates 4.62–63). Of the Phase 3 walls, only Walls 11 and 51 were recorded as being out of use and covered over in Phase 4.



Plate 4.63: Wall 79, the south-western external wall of the Phase 3/4 building, looking north-west

There is some evidence of later rebuilding within Phase 4. In trench A9.6, Walls 73, 74 and 75 were rebuilt in Phase 4 in foundation trenches cut into the Phase 3 plaster floor (9.6.3) (cf. Figure 4.21; Plate 4.64). A plaster floor (9.6.2a) was associated with these Phase 4 rebuilds. Cut into this plaster floor was another foundation trench (9.6.3c) for a rebuild of Wall 62, originally constructed in Phase 2 and part of the stone platform

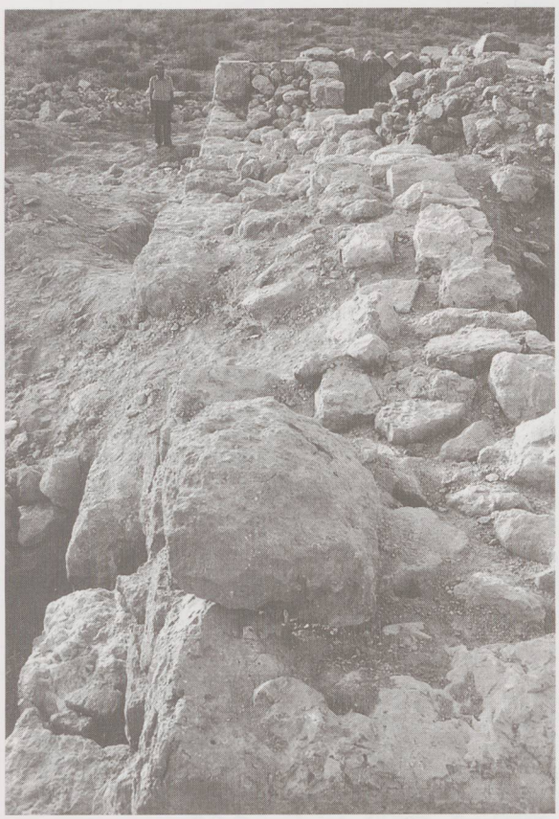


Plate 4.62: Wall 79, the south-western external wall of the Phase 3/4 building, looking north-west



Plate 4.64: Walls 76 (foreground), 74 (back), with Wall 75 (left) linking them, looking north-east

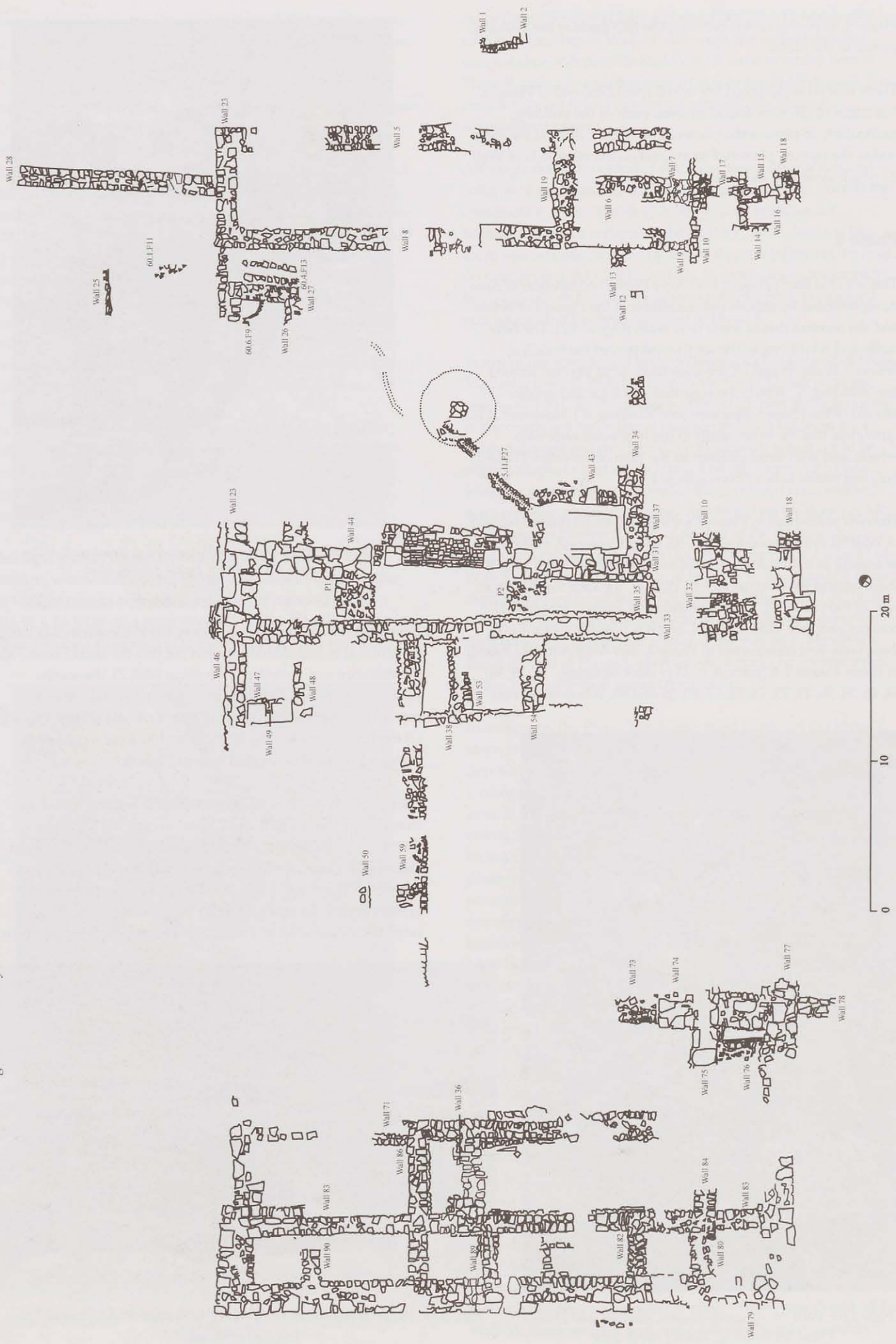


Figure 4.7: Plan of Phase 4

which raised the building. In trench A1.20, a foundation trench (1.20.9) for a rebuild of Wall 6 was cut into the second (1.20.5) of the plaster floors assigned to Phase 4 (cf. Figure 4.15). These are stratigraphically the latest rebuilds of the Area A building. Although the Wall 6 rebuild was associated with two consecutive plaster floors (1.20.10, 5), no surface or occupation deposit was found with the Wall 62 rebuild.

The Phase 4 rebuilds and new walls were quite different in construction from those of Phase 3. They were built in smaller, unsquared, coursed masonry, with snecking used considerably to obtain course heights that varied considerably along their own length. The walls were constructed of two skins with a rubble fill, with little use made of bonding. There is little evidence for the use of plaster on the Phase 4 walls, except on small partition walls. This difference can be seen clearly on the rebuilds (cf. e.g. Wall 5 in trench A1.10 (Figure 4.12), where the Phase 3 wall is plastered, but the Phase 4 rebuild is not).

The Phase 4 rebuilds of Walls 33 and 79 were constructed in a concave fashion along their ends, with their corners taking on a 'winged' effect (hence Bennett's nickname of 'Winged Building' for her 'Building A', e.g. 1983: 15). This technique was studied in detail at the corner formed by Walls 33 and 46. Here, the quoin was constructed in such a way that the blocks of masonry overhung the Phase 3 walls, which were being used as a foundation, by approximately 0.60 m., and were buttressed underneath by a specially constructed battered foundation. This battering effect was continued to the wall above with the remaining quoin courses being stepped back, presumably to give strength at the corners to a poorly constructed wall (Plates 4.65–67). This rebuild



Plate 4.66: Buttress at the corner of Walls 33 and 46 (Phase 4 rebuild), looking south-west



Plate 4.65: Buttress at the corner of Walls 33 and 46 (Phase 4 rebuild), looking south



Plate 4.67: Buttress at the corner of Walls 33 and 46 (Phase 4 rebuild), looking east

of the corners of the walls appears to be the explanation for the 'winged' effect. The central part of the Phase 4 rebuild of Wall 33 exactly followed the straight line of the original Phase 3 wall. However, the Phase 4 corner buttresses were constructed of thick, large stones which jutted out beyond the line of the Phase 3 wall. Close examination of the line of the Phase 4 rebuild of Wall 33 suggests that the concave effect is a result of the ends of the wall being brought into line with the jutting out corners. Thus, the entire wall is not concave: the central section is straight, and the ends flare out to join the new line of the rebuilt corners.

The existence of the 'winged walls' gives the area framed by Walls 33, 77, 79 and 46 the appearance of a separate building, but there is no doubt that the walls to the north-east of Wall 33 were also rebuilt (although admittedly it cannot be conclusively proved that the rebuilds were contemporary). It is perhaps significant that Walls 31 and 44, the walls either side of the stone steps in the north-eastern courtyard, were rebuilt in Phase 4, implying continued use of this important space. As with the Phase 3 building, it is likely that the two wings of the building, each with an internal courtyard, were not mutually accessible and should be considered as two separate activity areas.

The new Walls 47, 48 and 49 created three new plastered rooms, forming a self-contained complex against Walls 33, 38 and 46,



Plate 4.68: Phase 4 rooms in trenches A27.2 and 3, looking west. At the back is Wall 38



Plate 4.69: Phase 4 room in trench A27.3, looking west. Partition wall 49 is at the bottom, with Wall 47 on the right. Note the plaster of the floor running up to Wall 38 at the back



Plate 4.70: Phase 4 room in trench A27.1, looking north-east. The upright scale stands on the Phase 3 plaster floor which runs up to Wall 33. On the right is the doorway into the room formed by Phase 4 Wall 48. Note the 'bench' on Wall 46 (left): this was not properly recorded, and was probably either a bench or the original width of Wall 46 in Phase 3

with only one doorway leading to the rest of the building (perhaps into the south-western courtyard, although this cannot be demonstrated). The two smaller rooms (in trenches A27.2–3) each measured 1.34 m. square, with two small partition walls 0.27 m. wide (Walls 47 and 49) separating them from each other and from the larger room, which measured c. 3.5 by 3 m. (Plates 4.68–69). Walls 47 and 49 had plaster facing on both sides. A plaster floor (27.1.7) ran up to all the walls and over the step in the doorway between Walls 47 and 48. There were two drains: one in the middle of Wall 49, the other in the south-west corner of trench A27.3. In both doorways there was a step down into the room (Plate 4.70). The doorway between Walls 47 and 48 was found blocked, so presumably this must have been done prior to the end of Phase 4 (Plate 4.71).

Walls 52 and 53 appeared to create a new use for the space in trench A7.4. Wall 52 was a partial rebuild of Phase 3 Wall 59, and seemed to create a doorway over the earlier wall, which now functioned as a step (Plates 4.72–73). In Phase 3, trenches A7.3–4 had formed a larger room which was now partitioned through the middle by Wall 53, forming two small rooms measuring 2.50 by 1.80 m. and 2.70 by 2.10 m. respectively (Plates 4.74–75). Wall 53 was built over the Phase 3 Wall 38 and against its Phase 4 rebuild. A plaster floor (7.4.5) ran up to Walls 38, 52 and 53.

In the north-eastern part of the building, the circulation space was altered by the blocking of the doorway in Wall 23. The doorway, c. 2.30 m. wide, was blocked with poorly laid random rubble in hard, local limestone (Plates 4.76–77). Associated with the blocking was a clay surface (60.1.4, 7).

In many trenches, especially in the south-west part of the building, excavation reached only one surface below topsoil and collapse, normally identified as a plaster floor (Plate 4.78). It is assumed that these floors should be assigned to Phase 4. Elsewhere, many loci overlying the Phase 3 occupation consisted of what appeared to be deliberate earth or rubble fill deposits, sometimes overlain by a plaster floor or clay surface and associated occupation layers (Plate 4.79). This can be seen clearly in the north-eastern courtyard (Figure 4.19) where the burnt



Plate 4.71: Blocking in a doorway between Walls 47 and 48, looking west



Plate 4.72: Wall 52, built over Phase 3 Wall 59, created a new doorway. Looking south



Plate 4.75: Rooms in trenchs A7.4 (bottom) and A7.3 (top), divided by Phase 4 Wall 53, looking east



Plate 4.73: New doorway formed by Wall 52 in Phase 4, looking north-west from room in trench A7.4 to trench A25.6



Plate 4.74: Room in trench A7.4, bounded by Walls 53 (left), 38 (top), 59 (right, with Phase 4 'rebuild' Wall 52 on top) and 51 (middle), looking south-west



Plate 4.76: The Phase 4 blocking of the doorway in Wall 23 lying on the Phase 3 plaster floor 60.1.8, looking south-east



Plate 4.77: Wall 23, showing Phase 3 plastering (right) and Phase 4 blocking (left), looking south-east



Plate 4.78: Trenches A9.4, 5 and 11, looking east, showing association of Phase 4 plaster floor with Walls 42 (bottom left) and 62 (middle). The plaster floor overlay Wall 66 (right)



Plate 4.79: Trench A20.2, with Phase 4 fill 20.2.11 consisting of mud-bricks, clearly delineated, against Wall 86 (right), looking south-west

layers at the end of Phase 3 were overlain by a mudbrick fill (5.13.4, 5.11.6–4); lying on the fill were small stones and lime chips (5.13.3, 5.11.3) which were interpreted as the Phase 4 'walking surface', and which among other pottery yielded two pot stands. However, caution is necessary in automatically assigning to the Iron II/Persian Phase 4 any loci overlying Phase 3: A5.11.4, interpreted as mudbrick fill and assigned to Phase 4, nevertheless yielded one Roman body sherd among the Iron II/Persian pottery. This may be a stray; on the other hand it might indicate that this deposit is a later accumulation post-dating Iron Age/Persian occupation.

Most Phase 4 loci were overlain by thick deposits of black ash and burnt debris, followed by a layer of collapse. This implies

Table 4.3: Phase 4 surfaces and occupation deposits

TRENCH	SURFACE	ASSOCIATED DEPOSIT	ASSOCIATED WALLS
A1.10		fill/accumulation 1.10.14-12 ashy and clay mix 1.10.11-6 foundation trench for Wall 5 rebuild	5 (rebuild)
A1.20	make-up 1.20.11 plaster floors 1.20.10, 5	?fill 1.20.16-14, 12 earth layers 1.20.8, 7	5, 6 (rebuilds)
A1.22	clay surface 1.22.9	?fill 1.22.15-10 occupation or accumulation 1.22.8, 6-4	5 (rebuild)
A1.23	plaster floor 1.23.6	?fill 1.23.11	8 (rebuild), 10
A1.23a	?plaster floor 1.23a.6		
A1.25	?plaster floor 1.25.2	occupation 1.25.1	8 (rebuild), 12
A1.30-31	clay surface 1.30.5	fill 1.30.6	14, 15
A1.32	clay surface 1.32.6a		18
A5.5		brown soil and ash 5.5.2	31, 33 (rebuilds)
A5.11	stone and lime surface 5.11.3	fill 5.11.6-4	
A5.12		fill 5.12.3	
A5.13	stone and lime surface 5.13.3	fill 5.13.4	8 (rebuild)
A6.1	plaster floors 6.1.15-13	rubble fill 6.1.24, 23a earth fill 6.1.23-18 loose crumbly soil 6.1.10 pit 6.1.9	33 (rebuild)
A7.4	?plaster floor 7.4.5 ?clay surfaces 7.4.4, 2	fine soil and gravel 7.4.3	52, 53
A8.1	plaster floor 8.1.7		42, 59 (rebuild)
A9.1-2	plaster floor 9.1.8, 2	rubble fill 9.1.14 earth fill 9.2.5-4 earth layers 9.1.11, 2d	65
A9.5	plaster floor 9.5.4	fill 9.5.5 crumbly soil 9.5.3, 2	66 (plaster floor over wall)
A9.6	plaster floor 9.6.2a	?fill 9.6.2	73, 74, 75 (rebuilds)
A9.10	plaster floors 9.10.11, 3	red soil and plaster debris 9.10.2	?71 (rebuild)
A11.1	plaster floor 11.1.5	rubble fill 11.1.8, 7 earth fill 11.1.6 brown earth with chalky streaks 11.1.4 occupation 11.1.3	77 (rebuild), 78
A12.6		?fill 12.1.10	10, 31 (rebuild), 32
A20.2	make-up 20.2.10 plaster floors 20.2.9, 8	?fill 20.2.16-11	86 (rebuild)
A20.6		earth and stone fill 20.6.5-2	77, 85 (rebuilds)
A21.1	?make-up 21.1.7 plaster floor 21.1.6 ?clay surface 21.1.3	hard earth and stones, with burning 21.1.5, 4	83, 86 (rebuild)
A21.2	plaster floor 21.2.5	fill 21.2.7, 6 occupation 21.2.4	71, 86 (rebuilds)
A25.3	?clay surfaces 25.3.6, 5		33 (rebuild)
A25.4	clay surface 25.4.7		33 (rebuild), 52
A27.1	make-up 27.1.10 ?clay surface/make-up 27.1.9 plaster floor 27.1.7	compact brown earth and stones 27.1.6	33, 46 (rebuilds), 47, 48
A27.2	plaster floor 27.2.6		38 (rebuild), 47, 48, 49
A27.3	plaster floor 27.3.2		38, 46 (rebuilds), 47, 49
A30.2	?clay surfaces 30.2.4, 3	ash 30.2.5, 3a	
A50.5	plaster floor 50.5.7	ash 50.5.5	
A60.1	clay surface 60.1.4, 7		blocking of 23

that the Phase 4 occupation was brought to an end by an intense fire which was followed by the collapse of the walls. In only one trench (A20.2) did the collapse layer (20.2.7–5) precede the black ash (20.2.4), implying that some collapse preceded the fire. A few trenches yielded only collapse deposits in the uppermost layers, with no evidence of fire (A1.22, 1.33, 7.4, 27.1 and 60.1).

In summary, Phase 4 represented the final Iron Age/Persian occupation in Area A. In Bennett's preliminary reports, she reconstructed this phase as consisting of her 'Building A', confined to the south-west part of Area A. The stratigraphy rather suggests that much of the Phase 3 building was rebuilt, and the Phase 4 plan closely followed that of Phase 3. Some new walls were added, partitioning Phase 3 rooms to create smaller spaces. Most of the Phase 4 work consisted of rebuilds in a different technique, with the walls in foundation trenches cut into the Phase 3 deposits. An alternative term used by Bennett of her 'Building A' was the 'Winged Building', because of the concave construction of Walls 33 and 79. This effect might suggest that the area between these walls should be

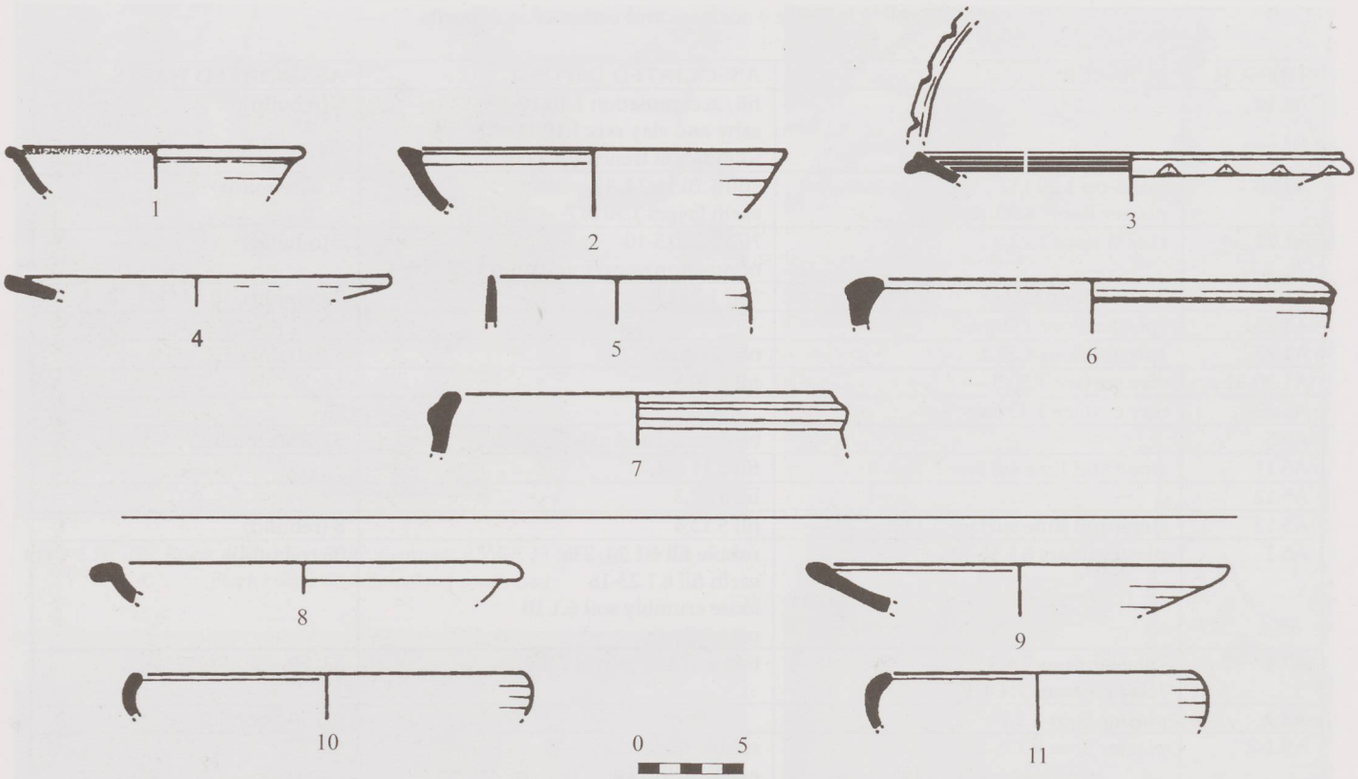


Figure 4.8: Attic and associated Iron II/Persian pottery, and Hellenistic pottery, from Area A Phase 4 and later deposits

Figure no.	Type	Locus	Description
1	Attic bowl	A50.5.4-5	Pink-brown fabric, no visible inclusions. Hard, semi-lustrous black slip in and out.
2	Bowl A	A50.5.4-5	Fired cream outside, pinkish-brown inside; core brown. Temper up to 2 mm.: lime, basalt.
3	Bowl A	A50.5.4-5	Fired red; core brown. Temper up to 1 mm.: lime, basalt; up to 4 mm.: grog. Red slip inside, and black lines.
4	Bowl A	A50.5.4-5	Fired pink; core light brown. Temper up to 1 mm.: lime, basalt. Cream slip inside.
5	Bowl H	A50.5.4-5	Fired yellowish-brown. Temper up to 1 mm.: profuse quartz; rare basalt.
6	Bowl R	A50.5.4-5	Fired red; core reddish-grey. Temper up to 1 mm.: basalt, quartz; up to 4 mm.: lime.
7	CP A	A50.5.4-5	Fired red. Temper up to 1 mm.: profuse quartz.
8	Hellenistic saucer	A7.4.?	Pinkish-brown fabric, no visible inclusions. Faintly lustrous brownish black slip in and out.
9	Hellenistic saucer	A20.2.4	Granular but clean bright pinkish-brown fabric, no visible inclusions. Semi-glazed: thin, somewhat streaky, matt dull grey-black slip in, on upper wall only out.
10	Hellenistic bowl	A20.2.4	Granular grey-pink fabric. Thin, faintly lustrous pale black slip in and out, streaky on outside.
11	Hellenistic bowl	A9.5.5	Granular but clean light brown fabric, occasional tiny rounded white inclusions, wide light grey core. Faintly lustrous black slip in and out, metallic sheen on inside.

considered as a separate building; as in Phase 3, there was no access through Wall 33 and the two parts of the building seem to have functioned as separate activity areas. Much of the Phase 4 surface in the south-west part of Area A was identified as a plaster floor, often the only surface reached below topsoil and collapse. The Phase 3 plaster in the north-east courtyard was overlain by a fill and a possible surface of small stones and lime chips. Intense fire and collapse found in most loci brought an end to Iron Age/Persian occupation in Area A.

Phase 4 deposits contained two fourth-century BC Attic sherds which are key evidence for dating (Figure 4.8; cf. report by Andrea Berlin in Chapter 9). One was in a Phase 4 ashy deposit (50.5.5) mixed with the Phase 5 collapse/burning deposit (50.5.4), overlying the Phase 4 plaster floor (50.5.7) (Figure 4.8:1; see Table 4.3). The second was found in 26.1.5, compact red-brown soil immediately overlying the Phase 3 plaster floor in the long narrow room (26.1.8); the interpretation of deposit 26.1.5 is uncertain, but it might tentatively date to Phase 4. Another unstratified late fourth-century Attic sherd was found in topsoil (20.2.1).

Five sherds dated to the third/second centuries BC were also found at Busayra, four of them in Area A, including one apparently within Phase 4. A black-slipped bowl rim dated to the third century BC was attributed to Phase 4 fill 9.5.5 (Figure 4.8:11). Two third/early second century BC sherds were found in black ash 20.2.4 overlying the Phase 4 collapse (Figure 4.8:9–10), and two more were found out of context in Square A7.4 (Figure 4.8:8) and in topsoil in Area B (B3.8.1) (see Berlin in Chapter 9 for full report).

The chronological implications of these sherds are profound, although caution is required since very few sherds are involved — with the stratigraphic problems of Area A it cannot be excluded that some or all were strays from post-Phase 4 contexts. Nevertheless, if they are accepted as dating evidence, they

indicate that Phase 4 continued at least until the late fourth century BC, and possibly into the third century BC, and thus ended some time between 300 and 200 BC.

Phase 5

This phase consisted of several narrow, elliptical walls built over or breaking through the walls of Phases 3 and 4, a possible stone threshing floor, and a burial tentatively assigned to Phase 5 (Figure 4.9). The walls assigned to this phase were: 4, 21, 40, 58, 68, 85 and 96. None of these was connected, they do not appear to have had any surfaces associated with them, and they give the impression of being enclosure walls for animals or other agricultural activities (Plates 4.80–81a, b).

Enclosed within the horseshoe-shaped Wall 4 (Plate 4.82) was a group of three large stones (1.18.F87) averaging 1.50 m. in length and between 0.50 and 0.85 m. across (Plate 4.83). These had been set carefully together with very small stones placed between the interstices. Immediately south-west of the stones was a fine basalt quern with two ledge handles (Reg. 893) set into the same earth on which the stones lay (Plate 4.84). To the north-west of the stones were an upright stone (0.32 by 0.24 by 0.50 m.) and



Plate 4.80: Wall 85 (foreground), looking north-west, overlying Wall 71 at top right



Plate 4.82: Horseshoe-shaped Wall 4, looking north-east, with stones 1.18.F87 to the right



Plate 4.81a: see below



Plate 4.81a, b: Wall 58 (top left) overlying the earlier Wall 42 (right)

Figure 4.9: Plan of Phase 5 (for relationship to structures of Phases 1–4, see Figures 4.1–2)



Plate 4.83: Stones 1.18.F87, looking south-east, with upright stone and stone with a worked hole (1.18.F88)

two faces of a stone with a worked hole (0.42 by 0.34 m.) (1.18.F88). It is possible that Wall 21 was also connected with Wall 4 and its associated features. Only sterile earth was found underneath one of the large stones. The stone quern is now missing and cannot be studied, but Bennett judged it to be 'undoubtedly Roman' (1975: 7), and perhaps associated with the Roman sherds found in topsoil in this area. Wall 4, the large stones and the quern together do not have an obvious function, but might be tentatively interpreted as a Roman threshing floor, at a time when the Iron Age/Persian structures on Area A were in ruins; the other elliptical walls might similarly be explained as connected with agricultural or pastoralist activities, perhaps in the same period, although there is no direct evidence for their date.

In trench A20.4, a burial (20.4.4) against Wall 83 cut through a plaster floor (20.4.3) which ran up to the wall (which was probably built in Phase 3 and rebuilt in Phase 4, but this is uncertain). The burial was not properly drawn or photographed, and the bones were not studied. The excavation notebook records it as a 'small human: also bones for three skeletons and three skulls, upper limbs, lower limbs, trunk, wrist, molar teeth, and wisdom teeth' (Plate 4.85). Plaster floor 20.4.3 was the only surface recorded in this trench, immediately below collapse and burning loci, suggesting that the floor dated to Phase 4. If this is correct, the burial is therefore later than the Phase 4 floor. It is not clear from the excavation records if the burial was covered by the burning and collapse deposits which ended Phase 4, and thus should be dated within that phase, or whether it cut into those deposits and should be dated later. The burial has been tentatively assigned to Phase 5, although there is no evidence to link it to the Roman(?) elliptical walls, and it is possible that it should be dated to Phase 4. The few pottery sherds recorded as coming from 20.4.4 date to the Iron II/Persian period (Figure 4.10), but they appear to be a mixture from a typical occupation deposit, and it is conceivable that they should be associated with the Phase 4 floor or collapse deposits rather than the burial itself. The excavation notebook records no finds associated with the burial.

In summary, evidence of activities post-dating the burning and collapse deposits of Phase 4 has been assigned to Phase 5, but it

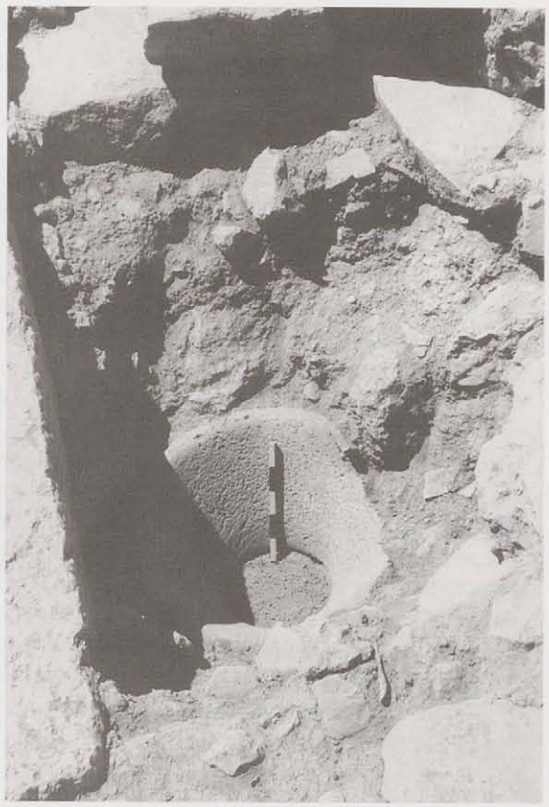


Plate 4.84: Basalt quern (Reg. 893) in situ *south-west of stones 1.18.F87, looking south-east*

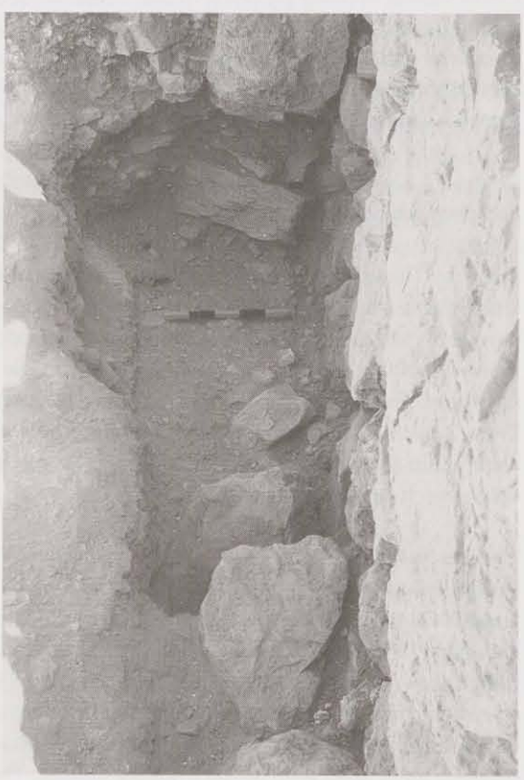


Plate 4.85: Burial 20.4.4 against Wall 83, with bones removed

is not clear if these activities were connected and dated to the same period. A possible threshing floor might date to the Roman period, based on a tentative dating of an associated quern. Several elliptical walls might be interpreted as having an agricultural connection, but no evidence for their date was

Figure 4.10: Pottery possibly associated with Burial A20.4.4

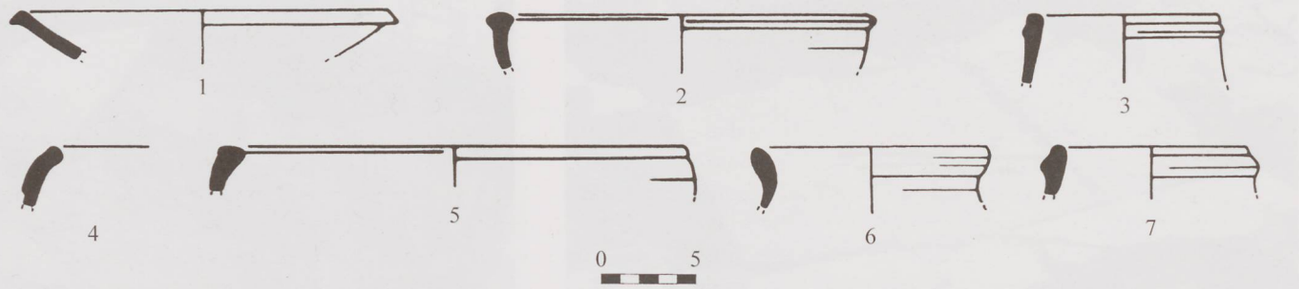


Figure no.	Type	Description
1	Bowl A	Fired pink; core brown. Temper up to 1 m.: lime, basalt, rare mica.
2	Bowl D	Fired pink; core brown. Temper up to 1 mm.: rare basalt and mica.
3	CP A?	Fired red; core greyish-red. Temper up to 1 mm.: profuse quartz; up to 4 mm.: basalt.
4	Jar C	Fired buff outside; inside and core grey. Temper up to 1 mm.: rare lime.
5	Jar C	Fired pinkish-buff; core brownish-grey. Temper up to 3 mm.: basalt, lime.
6	Jar D	Fired pinkish-buff. Temper up to 3 mm.: lime.
7	Jar G?	Fired cream; core brownish-grey. Temper up to 3 mm.: lime, basalt, quartz, grog.

found — they may or may not be connected with the threshing floor. A poorly recorded burial against Wall 83 clearly cut through a Phase 4 floor, but it is conceivable that it predated the final Phase 4 burning and collapse layers.

Area A: summary and interpretation

Disentangling the early phases is complex, but the earliest evidence of occupation on bedrock seems to be Wall 41, associated with two plaster floors (Phase 1). There may have been other Phase 1 walls and deposits (e.g. possibly Wall 42), but there is a lack of evidence since little was excavated to bedrock.

In Phase 2 a series of stone walls and associated earth, stone and plaster fill deposits, incorporating the Phase 1 walls and deposits, created a stone and earth platform for the Phase 3 building. The walls of the Phase 2 platform were arranged in a lattice framework which acted as a retaining structure for the hard earth fill. It seems clear that the Phase 2 platform and the Phase 3 building were constructed as part of a single building operation. The Phase 3 building was constructed partly on the Phase 2 platform and partly directly on bedrock. It was rectangular in plan, measuring 76.50 by 38 m., with traces of other structures against it.

The Busayra Area A platform is closely paralleled by the podium supporting the palace-forts of Lachish strata (V), IV and III and the 'residency' of stratum I (Reich 1992: 208–9; Ussishkin 1993: 906–7; Aharoni 1975: 34). This had very similar dimensions (76 by 36 m.) and, although constructed in three stages, also consisted of deep stone walls varying in depth depending on the height of the ground, with the spaces between them filled with debris from the mound. This building method has similarities to the podia supporting palaces and temples in Mesopotamia and north Syria (Bienkowski 1995). As in Mesopotamia, Lachish and elsewhere, the purpose of the platform at Busayra Area A was presumably to elevate the building above the surrounding buildings on the summit of the site. The probable palace in Busayra Area C was similarly raised on a stone and earth platform (see Chapter 6).

The Busayra Area A Phase 3 building consisted of two wings, each with rooms around an inner courtyard. The walls were plastered. Four symmetrically placed major doorways were found, two central and two off-centre. The plan of the south-western wing was not properly elucidated. The courtyard of the north-eastern wing contained a stone-lined cistern associated with two drains, one emerging from a small room with plastered floor and walls. At one end of the courtyard stone paving led to shallow stone steps flanked by two circular stone bases bearing the imprint of columns, statues or cult objects. The steps led up to a long narrow room with a plastered floor, associated with two low stone podia and copper alloy chair fittings, perhaps suggesting that it originally contained an impressive chair or throne. There was no direct access between the two courtyards, and it is possible that the two parts of the building functioned separately.

Bennett (1977: 4–6; 1983: 15) proposed that this building was very suggestive of a temple, with the small plastered room, from which one drain exited, identified as a 'purification room', before entering the long narrow plastered room reached by the steps, described as a 'cella' or 'holy of holies'. Reich (1992: 219) also identified the building as a temple, although some of his criteria applied only to the preliminary plan which has now been superseded. Some of the elements are paralleled by temples dating to the late Iron Age. A similar long narrow plastered room accessed from a courtyard at Kuntillet 'Ajrud, dating to the eighth century BC, was identified as a cult place (Meshel 1978). Steps flanked by pedestals supporting statues or cult objects leading into the cella of a temple are known from Khorsabad (Loud 1936: pl.76; Loud and Altman 1938: pls 18:A–C, 26:E), Tell Halaf (Nauman et al. 1950: 349–57, fig.165, tables 66:1, 67:2) and Tell Abu Salima (Petrie and Ellis 1937: 6–7, pls II:7, X, XI, XXXI; Reich 1984), although in those cases, all apparently Assyrian, the steps were the full width of the cella, unlike Busayra (Reich 1992: 221–2). The 'Solar Shrine' of Lachish stratum I, probably Persian/Hellenistic in date, had a large courtyard from which steps led to a long narrow room beyond which was the sanctuary (cf. Ussishkin 1993: 910–11). At both Busayra and Temple Complex 650 at Tel Miqne, dating to the seventh century BC (Gitin and Cogan 1999: 195 fig. 3), these

buildings were particularly associated with a characteristic type of storage vessel, a long cylindrical jar (Jar E, cf. Chapter 9), although they are not identical types; in both buildings these vessels were found in similar contexts, in the small rooms along the side of the courtyard facing the sanctuary (personal communication, S. Gitin and T. McCullough). At Miqne these may have been used for olive oil. At Busayra, they are more or less confined to this building, and so far have not been found elsewhere in Edom. Similar jars were also found in the seventh-century BC public building at Malhata Area A (Beit-Arieh 1998: 32, 35; personal communication) and in the eighth-century BC stratum II storehouse at Beersheba (Aharoni 1973: pl. 58:18–28). The Miqne and Beersheba parallels might suggest that the small rooms around the courtyard of the Busayra Area A building were temple store rooms, containing a large number of cylindrical jars perhaps used to store oil for use in temple ceremonies.

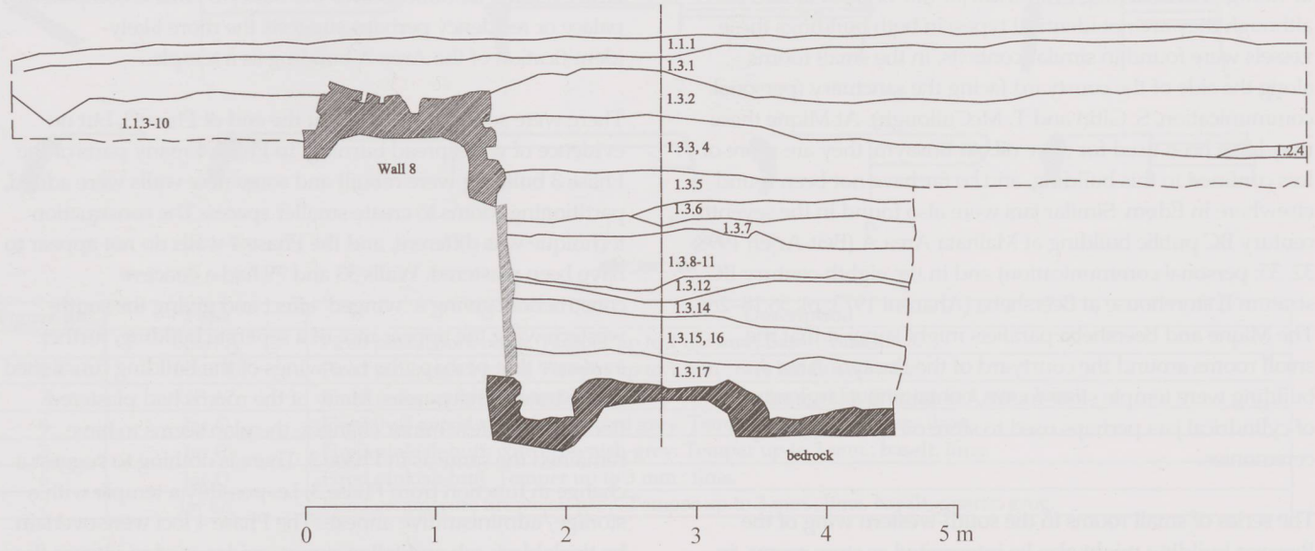
The series of small rooms in the south-western wing of the Busayra building might also be interpreted as store rooms, in which case that wing might have functioned as a storage and perhaps administrative annexe to the temple proper. Reich (1992: 215, 219) compares this wing with Building 3002 at Hazor stratum III (Yadin *et al.* 1958: 45–54, pls XII, CLXXVII) and points out a similarity with Neo-Babylonian houses at Babylon and Ur, which might support an identification of the south-western wing as an administrative annexe to the temple proper in the north-eastern wing.

Nevertheless, it must be emphasised that nothing was found within the building to prove its identification as a temple, which must remain tentative. The present writer previously argued for its identification as a palace or residency (Bienkowski 1995), based on similarities in the plan and positioning on a stone platform to late Iron Age palaces in Assyria and the Levant (cf. Turner 1970; Amiran and Dunayevsky 1958), and this must remain a possibility. However, the identification of the Busayra Area C complex as a palace or residency perhaps suggests the more likely identification of the Area A building as a temple.

There were some traces of fire at the end of Phase 3, but no evidence of widespread burning. In Phase 4 many parts of the Phase 3 building were rebuilt and some new walls were added, partitioning rooms to create smaller spaces. The construction technique was different, and the Phase 4 walls do not appear to have been plastered. Walls 33 and 79 had a concave construction, giving a 'winged' effect and giving the south-western wing the appearance of a separate building, further evidence that perhaps the two wings of the building functioned as separate activity areas. Many of the rooms had plastered floors. With a few minor changes, the plan seems to have remained the same as in Phase 3. There is nothing to suggest a change in function from Phase 3, i.e. possibly a temple with a storage/administrative annexe. The Phase 4 loci were overlain by thick black ash and fallen stones, evidence of an intense fire that ended Iron Age/Persian occupation in Area A. Two Attic sherds found in Phase 4 deposits imply that Phase 4 continued at least to the late fourth century BC, while a single third-century BC sherd from a Phase 4 deposit, unless it is a stray, implies continuity of occupation into the third century BC.

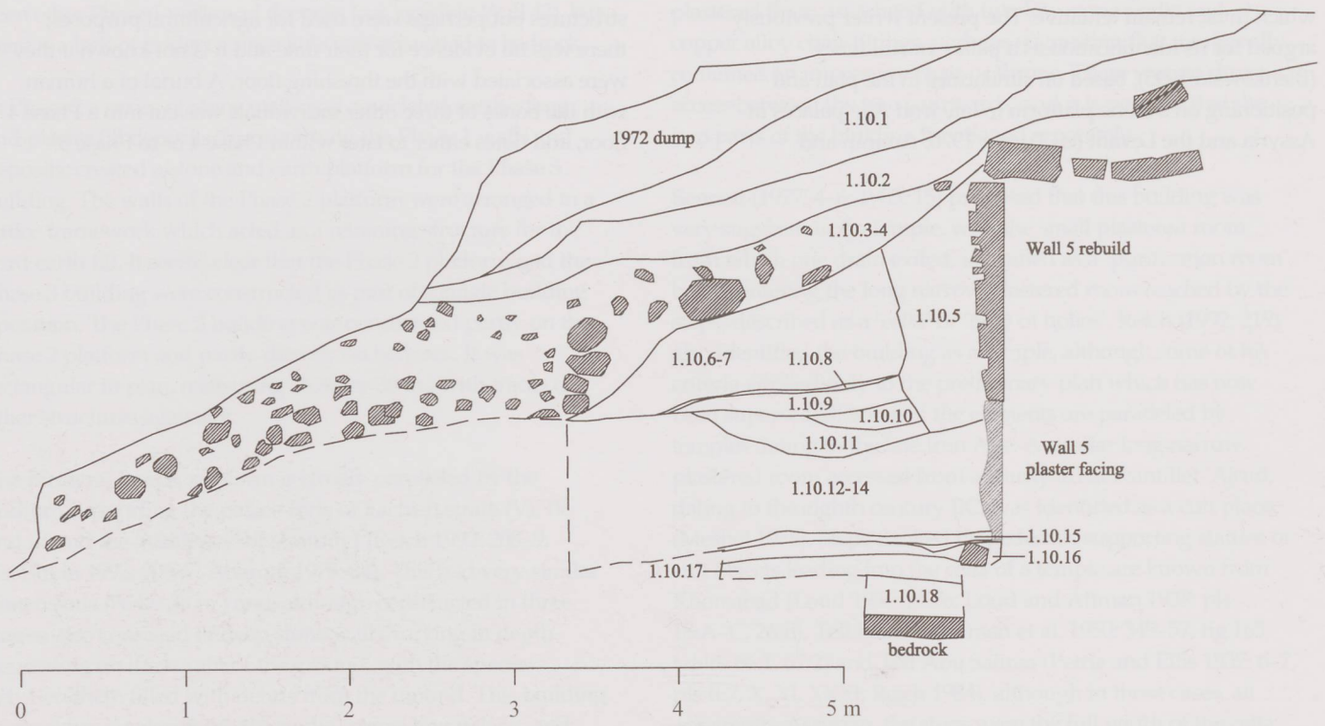
There was some evidence of use following Phase 4, but it was not a coherent phase of occupation (Phase 5). Three large stones associated with a basalt quern, enclosed within a horseshoe-shaped wall, may have been a Roman threshing floor. Other narrow elliptical walls were not domestic structures but perhaps were used for agricultural purposes; there was no evidence for their date and it is not known if they were associated with the threshing floor. A burial of a human with the bones of three other individuals was cut into a Phase 4 floor, and dates either to later within Phase 4 or to Phase 5.

Figure 4.11: Section A1: Trenches A1.1–3, north-west and north-east facing



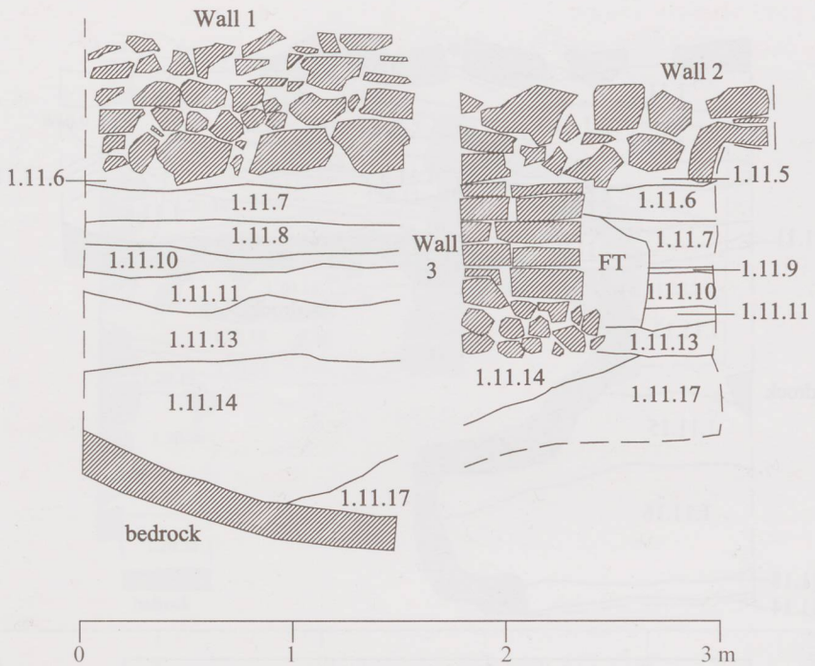
1.1.1: topsoil
1.1.3–10: heavy burning
1.3.1: mortary clayey soil, with burning
1.3.2: mortary crumbly soil, burnt
1.3.3, 4: burnt debris
1.3.5: make-up and plaster floor
1.3.6: plaster floor
1.3.7: plaster floor
1.3.8–11: earth and stones
1.3.12: earth and stones
1.3.14: brown earth
1.3.15, 16: hard compact earth
1.3.17: hard earth and stone fill

Figure 4.12: Section A2: Trench A1.10, north-west facing



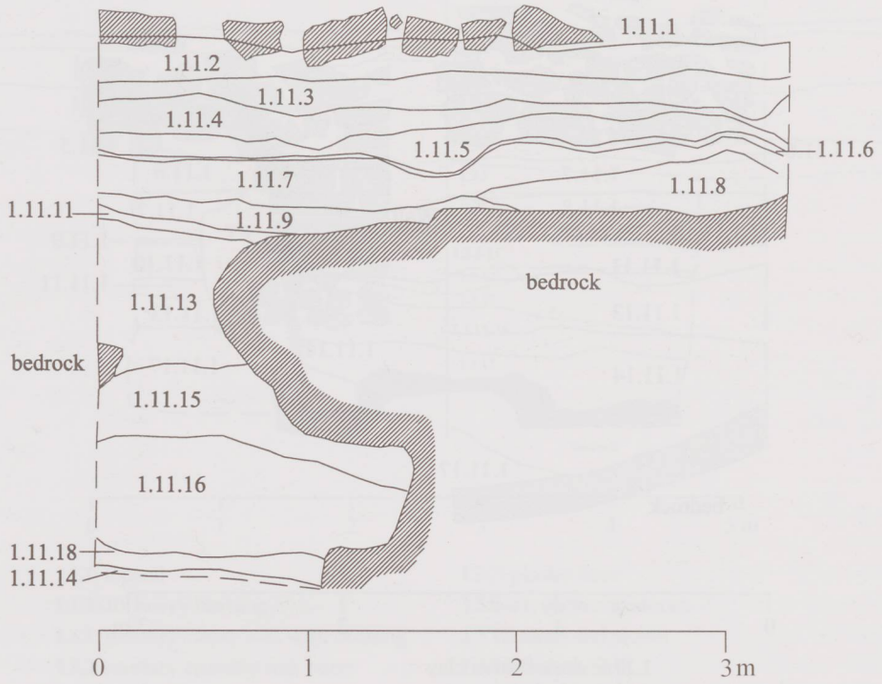
1.10.1: black burnt soil and stones
1.10.2: clay fill and small stones
1.10.3–4: stones and clay fill
1.10.5: foundation trench
1.10.6–7: hard brown clay and small stones
1.10.8: ashy
1.10.9: dark brown clay with limestone
1.10.10: burnt ashy
1.10.11: ash and clay mix
1.10.12–14: clay fill
1.10.15: plaster floor
1.10.16: yellow gritty clay
1.10.17: ash with dark brown clay
1.10.18: soft brown clay and small stones

Figure 4.13: Section A3: Trench A1.11, south-west facing



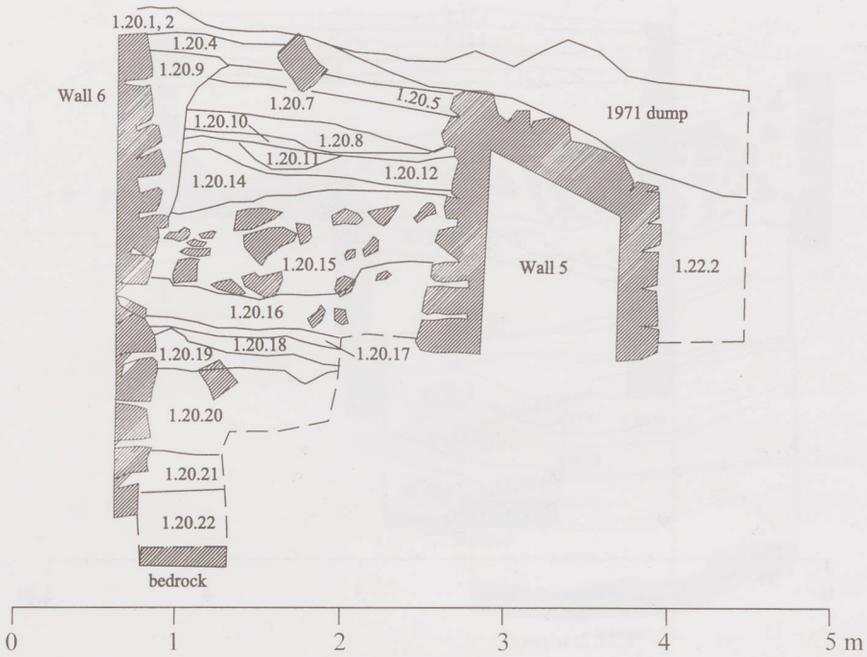
1.11.5: dark brown clay
1.11.6: ashy
1.11.7: dark brown clay and limestone
1.11.8: dark green clay with limestone chips
1.11.9: dark brown clay with grey streaks
1.11.10: clay fill
1.11.11: hard brown gritty stony clay
1.11.13: brown clay with ashy streaks
1.11.14: brown clay and limestone
1.11.17: green and yellow clay

Figure 4.14: Section A4: Trench A1.11, north-east facing



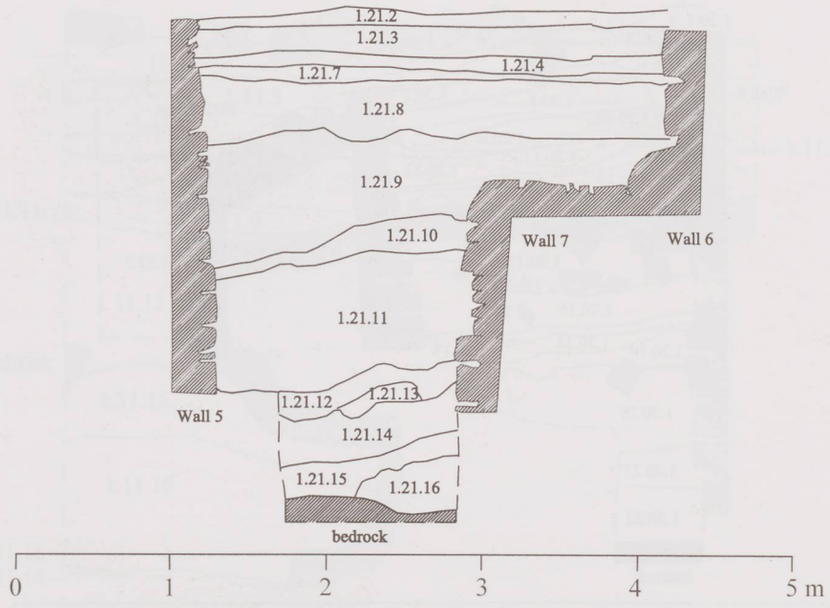
1.11.1: brown clay and stones
1.11.2: dark brown clay
1.11.3: dark brown clay with limestone
1.11.4: dark brown clay with limestone chips
1.11.5: dark brown clay
1.11.6: ashy
1.11.7: dark brown clay and limestone
1.11.8: dark green clay with limestone chips
1.11.9: dark brown clay with grey streaks
1.11.11: hard brown gritty stony clay
1.11.13: brown clay with ashy streaks
1.11.14: brown clay and limestone
1.11.15: ashy soil
1.11.16: hard brown clay
1.11.18: hard brown clay

Figure 4.15: Section A5: Trench A1.20, south-east facing



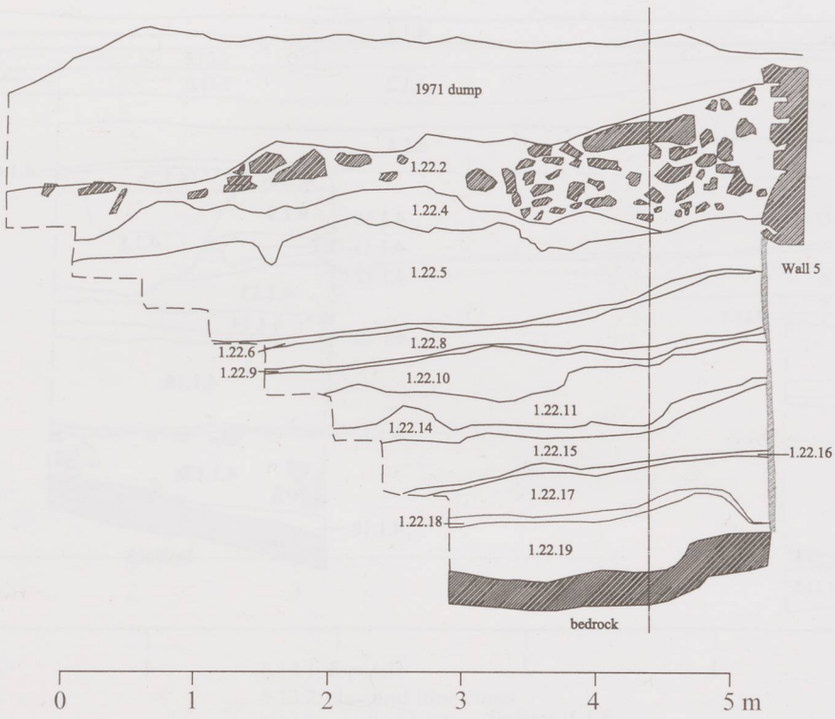
1.20.1, 2: topsoil
1.20.4: burned soil and ash
1.20.5: plaster floor
1.20.7: loose yellowish soil, plaster and ash
1.20.8: compact dark brown earth
1.20.9: foundation trench
1.20.10: plaster floor
1.20.11: light brown compact earth
1.20.12: compact yellow plastery soil
1.20.14: plaster, rubble and charcoal
1.20.15: loose earth and stones
1.20.16: compact earth and stones
1.20.17: dark brown compact earth
1.20.18: compact brown earth
1.20.19: clay
1.20.20: clay
1.20.21: brown earth and ash
1.20.22: compact yellow earth
1.22.2: clay fill

Figure 4.16: Section A6: Trench A1.21, north-west facing



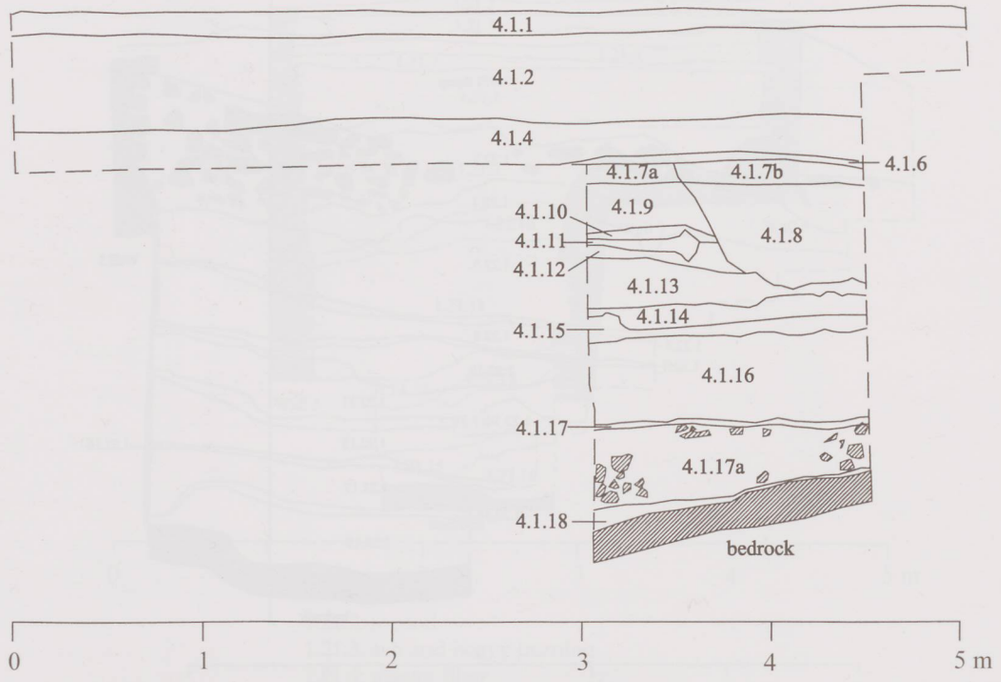
1.21.2: topsoil
1.21.3: ash and heavy burning
1.21.4: plaster floor
1.21.7: crumbly soil with plaster and ash
1.21.8: compact clay with limestone flakes
1.21.9: loose powdery earth
1.21.10: mixed earth
1.21.11: yellow clay and stones
1.21.12: yellow clay
1.21.13: compact brown clay
1.21.14: clay and ash
1.21.15: ash and brown soil
1.21.16: sterile compact yellow

Figure 4.17: Section A7: Trench A1.22, south-west and north-west facing



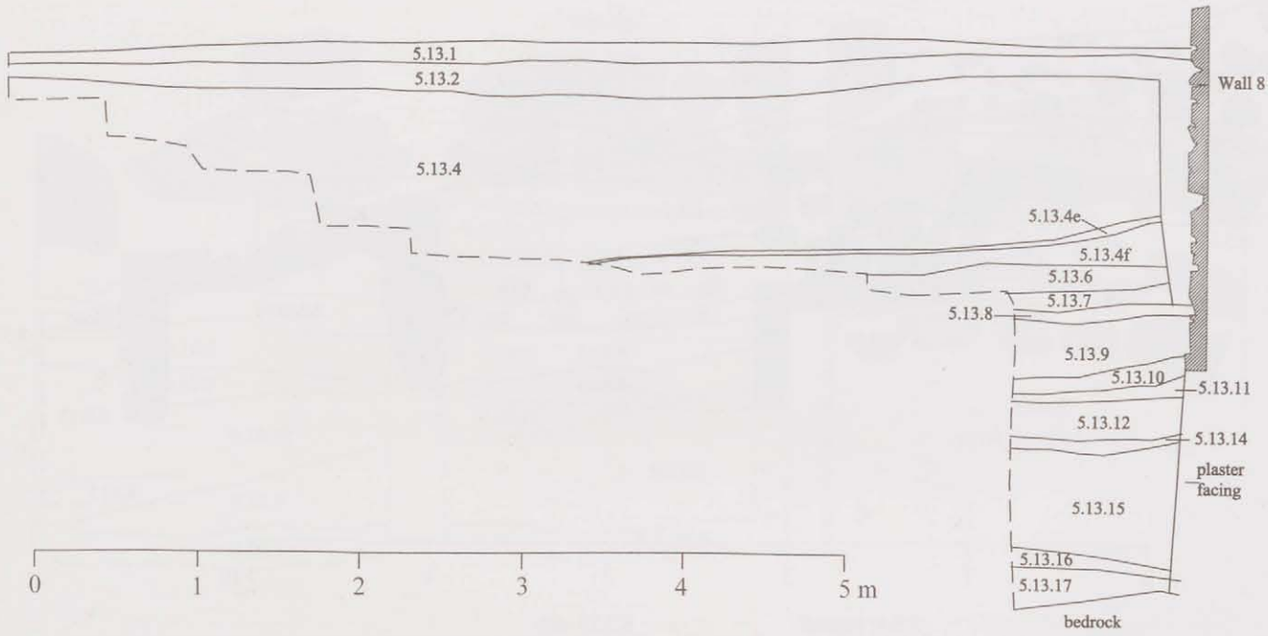
1.22.2: earth and stones
1.22.4: brown earth and plaster chips
1.22.5: loose brown earth with plaster chips
1.22.6: ashy brown earth and stones
1.22.8: yellow earth, ash and plaster lumps
1.22.9: clay surface
1.22.10: dark earth, ash, plaster chips
1.22.11: sandy soil
1.22.14: earth and plaster chips
1.22.15: earth and limestone flakes
1.22.16: plaster floor
1.22.17: earth, plaster, stones, ash
1.22.18: ashy
1.22.19: compact earth and stones

Figure 4.18: Section A8: Trench A4.1, south-east facing



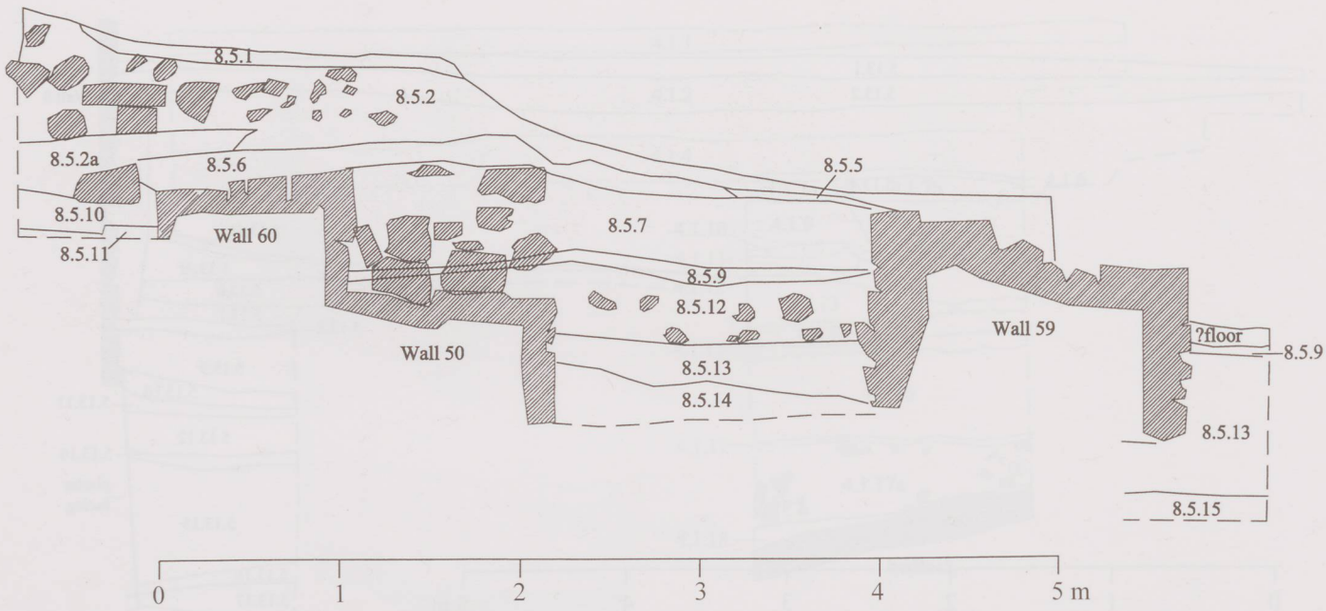
4.1.1: topsoil
4.1.2: clay, lime chippings and burning
4.1.4: burnt layer
4.1.6: plaster floor
4.1.7a, b: plaster floors
4.1.8: pit
4.1.9: plaster
4.1.10: plaster, earth and pebbles
4.1.11: dark brown clay and stones
4.1.12: light brown loose soil
4.1.13: streaky clay
4.1.14: plaster floor or tamped surface
4.1.15: plaster and pebbles
4.1.16: dark brown fill
4.1.17: clay
4.1.17a: tightly packed stones
4.1.18: red-brown soil

Figure 4.19: Section A9: Trench A5.13, south-east facing



5.13.1: topsoil
5.13.2: clay and lime chips
5.13.4: mudbrick fill
5.13.4e: burning
5.13.4f: mud and lime patching
5.13.6: mud and lime floor
5.13.7: plaster floor
5.13.8: plaster floor
5.13.9: powdery earth and stones
5.13.10: mud floor
5.13.11: plaster floor
5.13.12: dark brown clay
5.13.14: plaster floor
5.13.15: brown earth
5.13.16: plaster floor
5.13.17: brown earth

Figure 4.20: Section A10: Trench A8.5, south-west facing



8.5.1: topsoil
8.5.2: rubble
8.5.2a: fine ashy earth
8.5.5: fine ashy earth
8.5.6: plaster floor
8.5.7: dark earth
8.5.9: plaster floor
8.5.10: ash
8.5.11: plaster floor
8.5.12: small stones
8.5.13–15: clay and plaster

Figure 4.21: Section A11: Trench A9.6, south-east facing



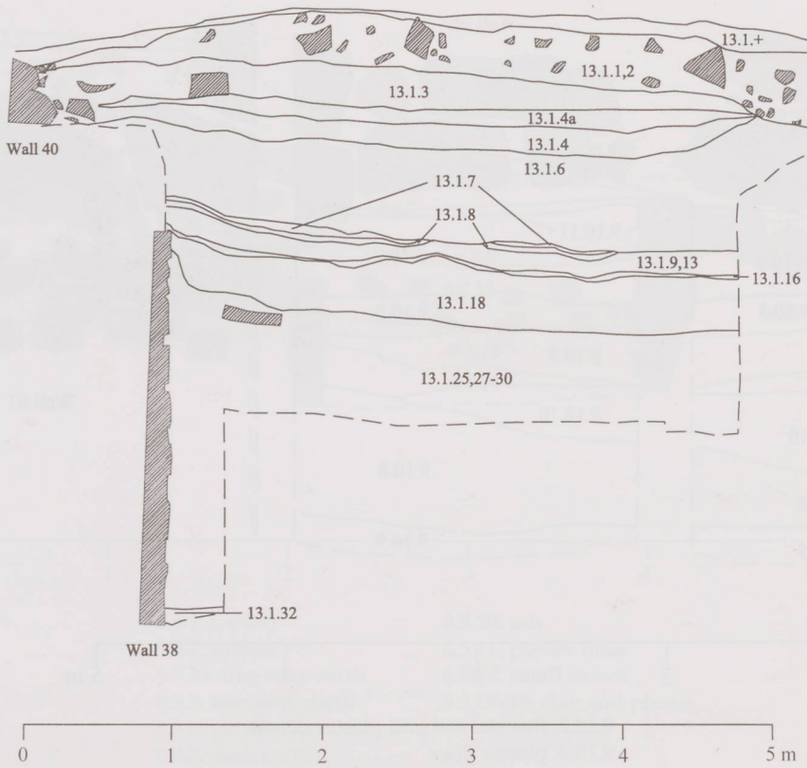
9.6.1: topsoil
9.6.2: crumbly with white flecks
9.6.2a: plaster floor
9.6.3: plaster floor
9.6.5: brown soil
9.6.6: white compact soil
9.6.7: rubble, plaster and soil
9.6.8: brown clayey

Figure 4.22: Section A12: Trench A9.10, north-east and south-east facing



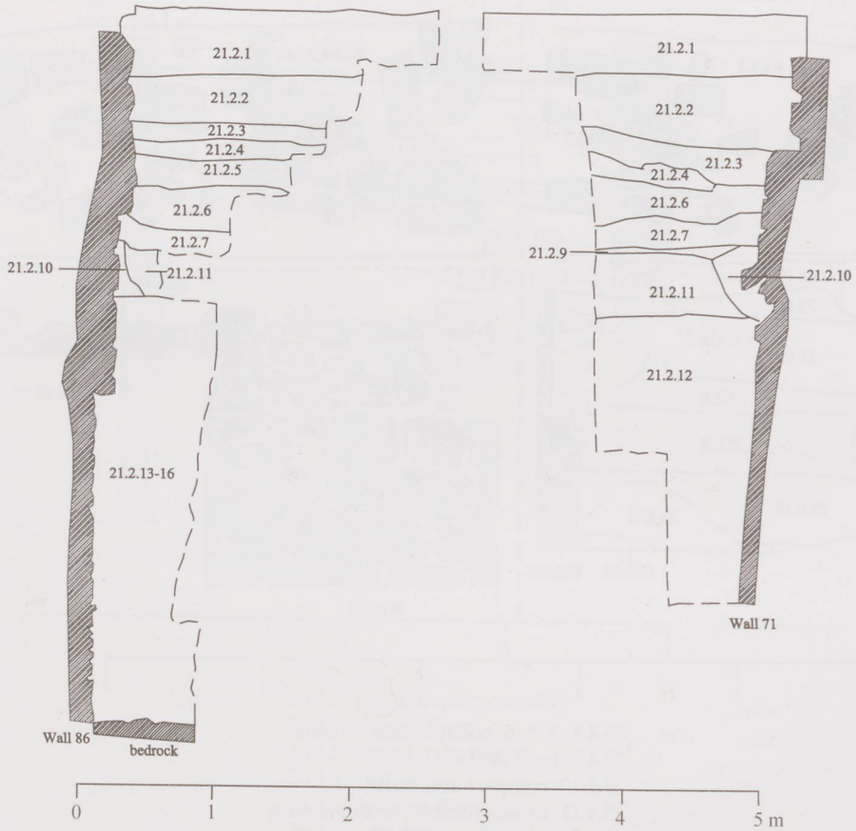
9.10.2: fine red soil and plaster debris
9.10.3: plaster floor
9.10.7: mudbrick fill
9.10.8: rubble fill
9.10.9: brown earth fill
9.10.10: rubble fill

Figure 4.23: Section A13: Trench A13.1, north-west facing



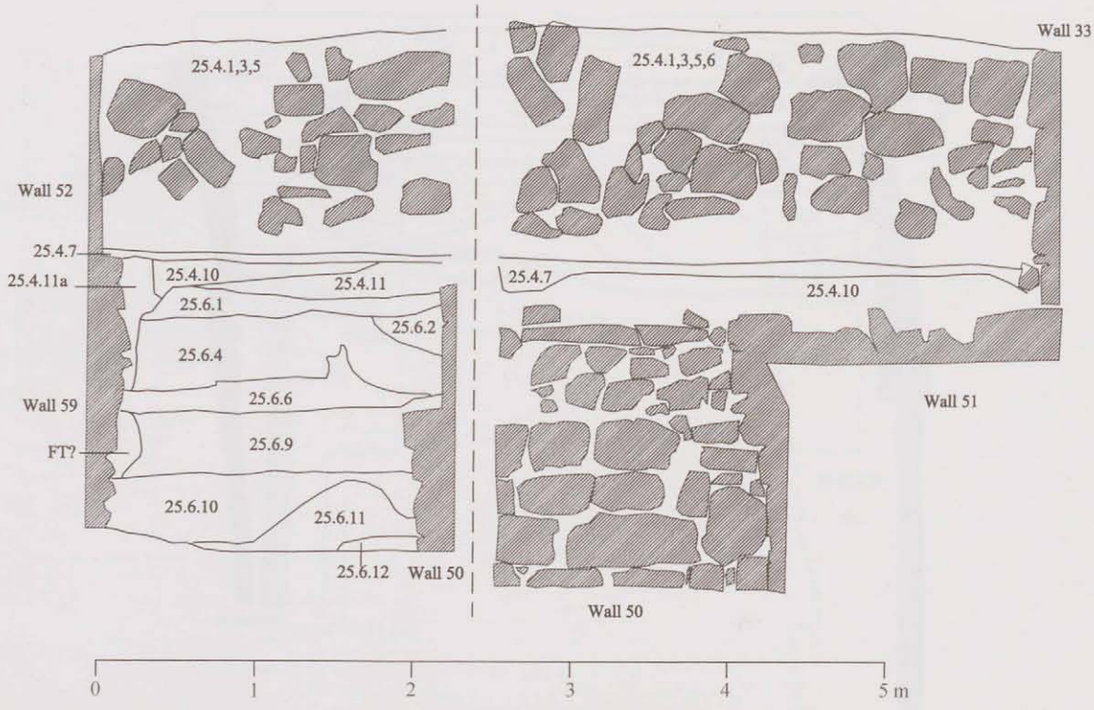
13.1.+: topsoil
13.1.1, 2: orangey soil
13.1.3: mud and rubble
13.1.4a: grey occupation deposit
13.1.4: plaster floor
13.1.6: light brown rubbly
13.1.7: plaster floor
13.1.8: dark brown clayey
13.1.9, 13: plaster floor on stone base
13.1.16: thin light brown clayey
13.1.18: dark brown clay
13.1.25, 27–30: accumulation/?fill
13.1.32: sterile compact brown

Figure 4.24: Section A14: Trench A21.2, north-east and south-east facing



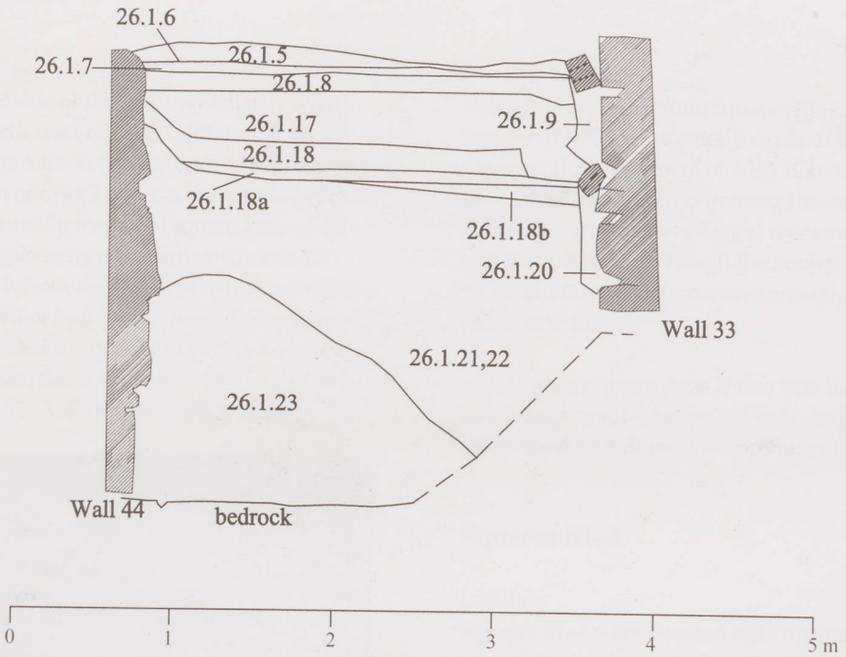
21.2.1: topsoil
21.2.2, 3: hard soil, rubble, some burning
21.2.4: burnt soil with small stones
21.2.5: plaster floor
21.2.6, 7: clay and rubble fill, lumps of plaster
21.2.9: plaster floor
21.2.10: foundation trench
21.2.11–16: earth and rubble fill

Figure 4.25: Section A15: Trenches A25.4 and A25.6, north-east and south-east facing



25.4.1, 3, 5, 6: collapse and burning
25.4.7: hard surface
25.4.10: compact and burnt
25.4.11: loose crumbly, with burning
25.4.11a: foundation trench
25.6.1: plaster floor
25.6.2: reddish brown, burnt
25.6.4: compact powdery
25.6.6: stony floor?
25.6.9: compact earth
25.6.10: stony floor?
25.6.11: loose yellowish earth
25.6.12: brown earth

Figure 4.26: Section A16: Trench A26.1, north-west facing



26.1.5, 6, 7: compact crumbly
26.1.8: plaster floor
26.1.9: foundation trench
26.1.17: fill
26.1.18: plaster floor
26.1.18a, b: make-up
26.1.20: foundation trench
26.1.21, 22: fill
26.1.23: fill

5. AREA B

Piotr Bienkowski

Area B was on the west side of the site, immediately south-west of Area A and north-west of Area C (Plate 5.1). Its purpose was to excavate a lower terrace wall which, because of its visible surface width of over 3 m., was thought to be an ancient town wall. Eventually the initial square against the perimeter wall was supplemented by further squares to investigate the approach from the defences, which included a gateway, towards the major building in Area A. Excavation in the 1971–4 seasons revealed a sequence of perimeter walls and a series of houses between those walls and Area A (Bennett 1973: 11; 1974: 16–19; 1975: 3–4; 1977: 6–7; 1983: 9–11).



Plate 5.1: General view of Area B from Area A, looking south-west

Area B was excavated in 10 squares, B1–10 (Figures 5.1–2). The excavations were never completed: many trenches were not dug to bedrock, and some simply revealed the tops of the walls and reached the first occupation layer below topsoil. There was no continuity of excavation between the perimeter wall and Area A, and it has proved impossible to phase the loci in the different squares together into an overall phasing scheme for Area B. There was a rise of 4 m. in the level of bedrock between trenches B2.8 and B6.2; bedrock was not reached in the trenches further to the north-east towards Area A. Absolute heights are always an unreliable guide to the contemporaneity of structures, but in this case they are totally meaningless and, even in the absence of stratigraphic links, they offer no guide at all to the relative phasing in separate squares. As a result, in this report Area B is divided into three units for the purpose of stratigraphic description: Squares B1–4, Squares B5–8, and Squares B9–10. An attempt is made at the end to summarise the overall development of Area B, but there are many unresolved problems concerning the chronology of the defences and the chronological relationship between the houses and the defences. Although the houses have a rectangular plan, excavations were not extensive enough to reveal coherent plans of the structures.

All the pottery from Area B was Iron II/Persian, except for a few Roman and Nabataean sherds, and one possible Byzantine lamp sherd (not drawn), in topsoil and collapse loci.

Squares B1–4

Location

Squares B1–4 were situated right against the perimeter wall. In general, the excavated squares were oriented north-west/south-east, although Square B1 was slightly out of alignment (it was excavated separately in 1971 and filled in at the end of that season, prior to the opening of other Area B squares in 1972, cf. Bennett 1974: 18). The following trenches, which appear on the plan (Figure 5.2), were either not excavated or only dug through topsoil to clear the tops of the walls: 1.4, 2.1, 2.3, 2.5, 2.8, 2.10, 3.20 and 4.1. Trench B3.5 was never defined or excavated and does not appear on the plan.

Trench B2.9 was a cave complex consisting of two 'rooms' and a tunnel, the use of which predated Phase 6, since a foundation trench for Wall 16 of that phase cut through the latest deposits in the cave mouth (cf. Figure 5.16). Although Walls 3 and 10, associated with the cave and tunnel, have been assigned to Phases 2 and 4 respectively in the matrix (Figure 5.3), this is rather hypothetical, and the cave and tunnel are described separately below.

Phase 0

Bedrock was reached in Squares B1, 2 and 4, but not in Square B3, where the earliest occupation is unknown.

Phase 1

Occupation prior to the earliest walls of Phase 2 was found only in trench B2.2. A deposit of white gritty soil (2.2.26) lay directly on bedrock. 2.2.26 was overlain by a deposit of hard ashy brown soil (2.2.25), although the two layers were not differentiated during excavation. Both contained considerable quantities of sherds, and are probably to be interpreted as occupation directly on bedrock. It was not recorded how far this occupation extended horizontally. Unfortunately, the pottery from these Phase 1 contexts has not been found and cannot be illustrated.

Phase 2

This was the phase of the earliest walls in Squares B1–4 (Figure 5.4). In all phases, walls were constructed of dry-stone masonry, of large and small uncoursed rubble.

Figure 5.1: Overall plan of Area B, showing square numbers and datum points

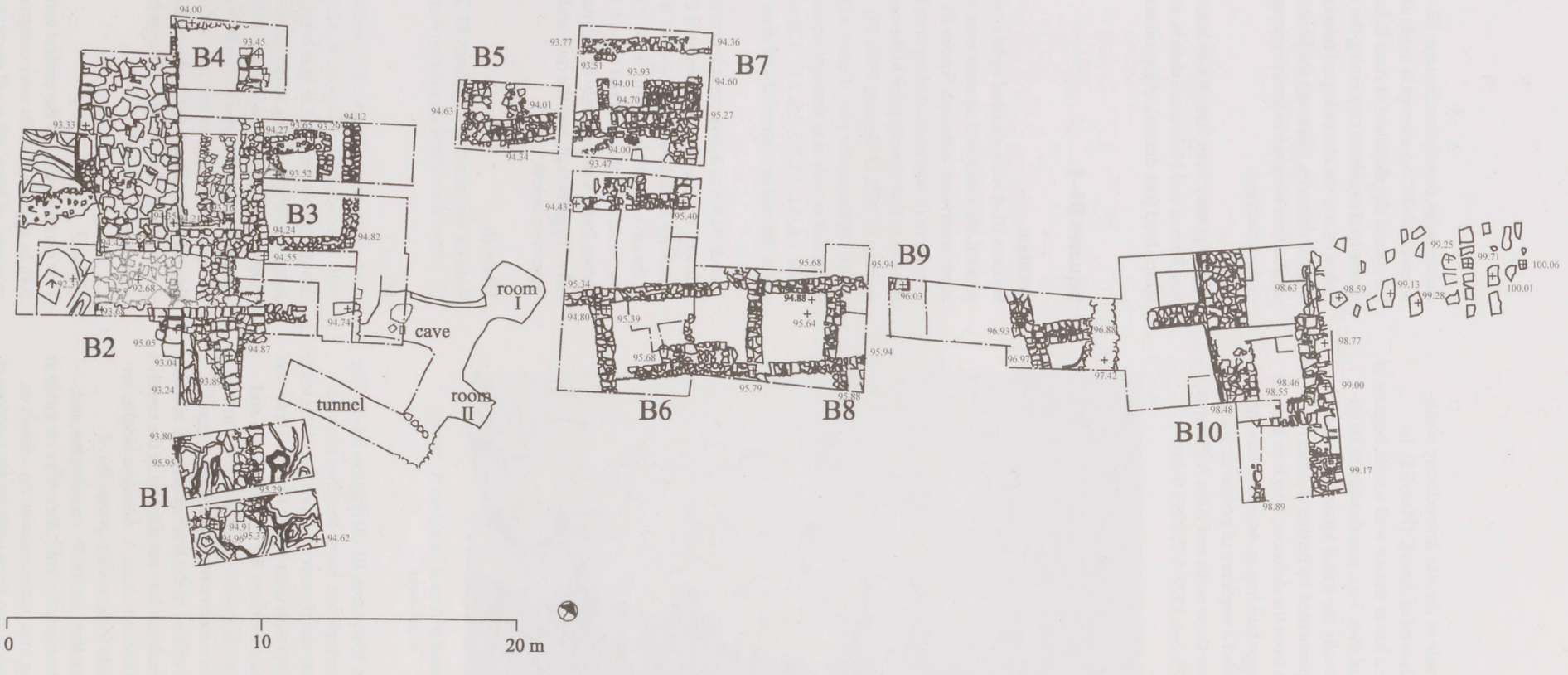


Figure 5.2: Overall plan of Area B, showing trench numbers and location of sections

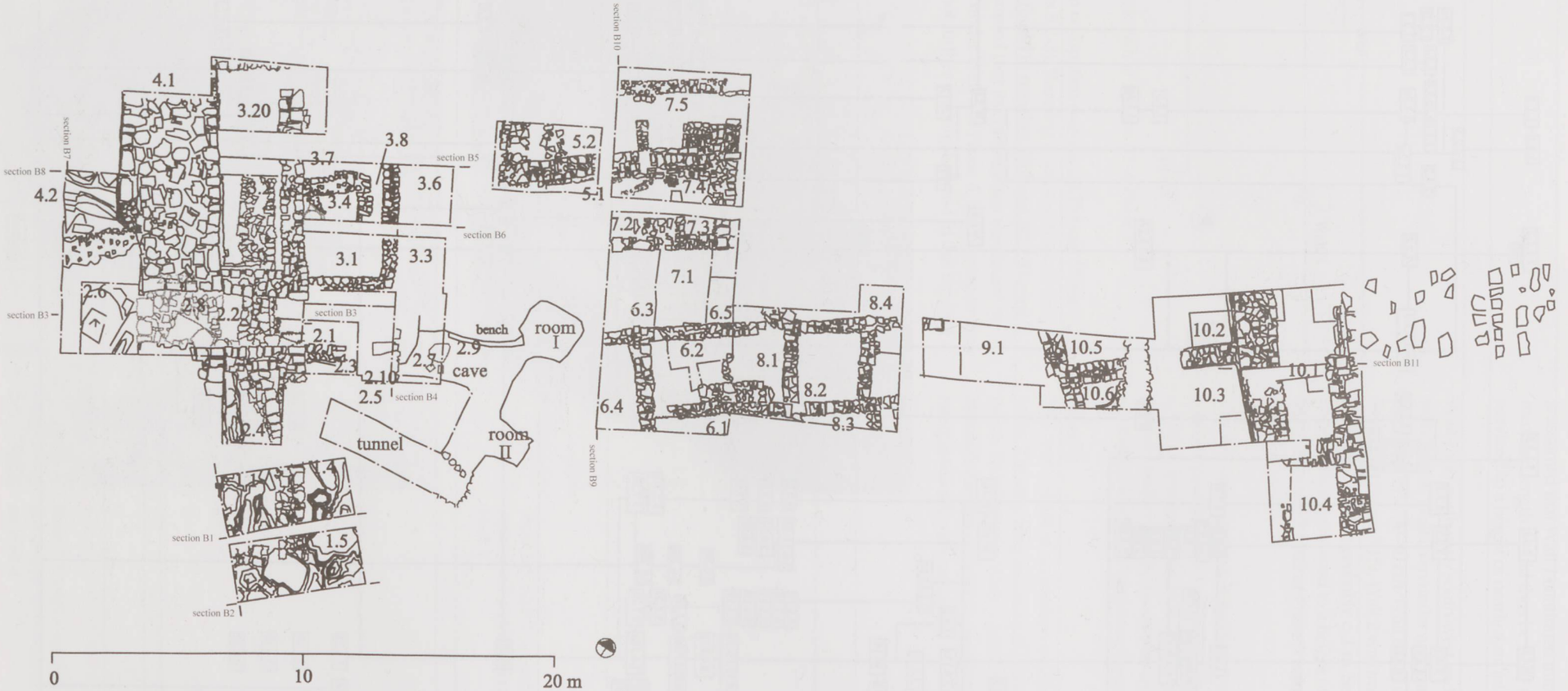
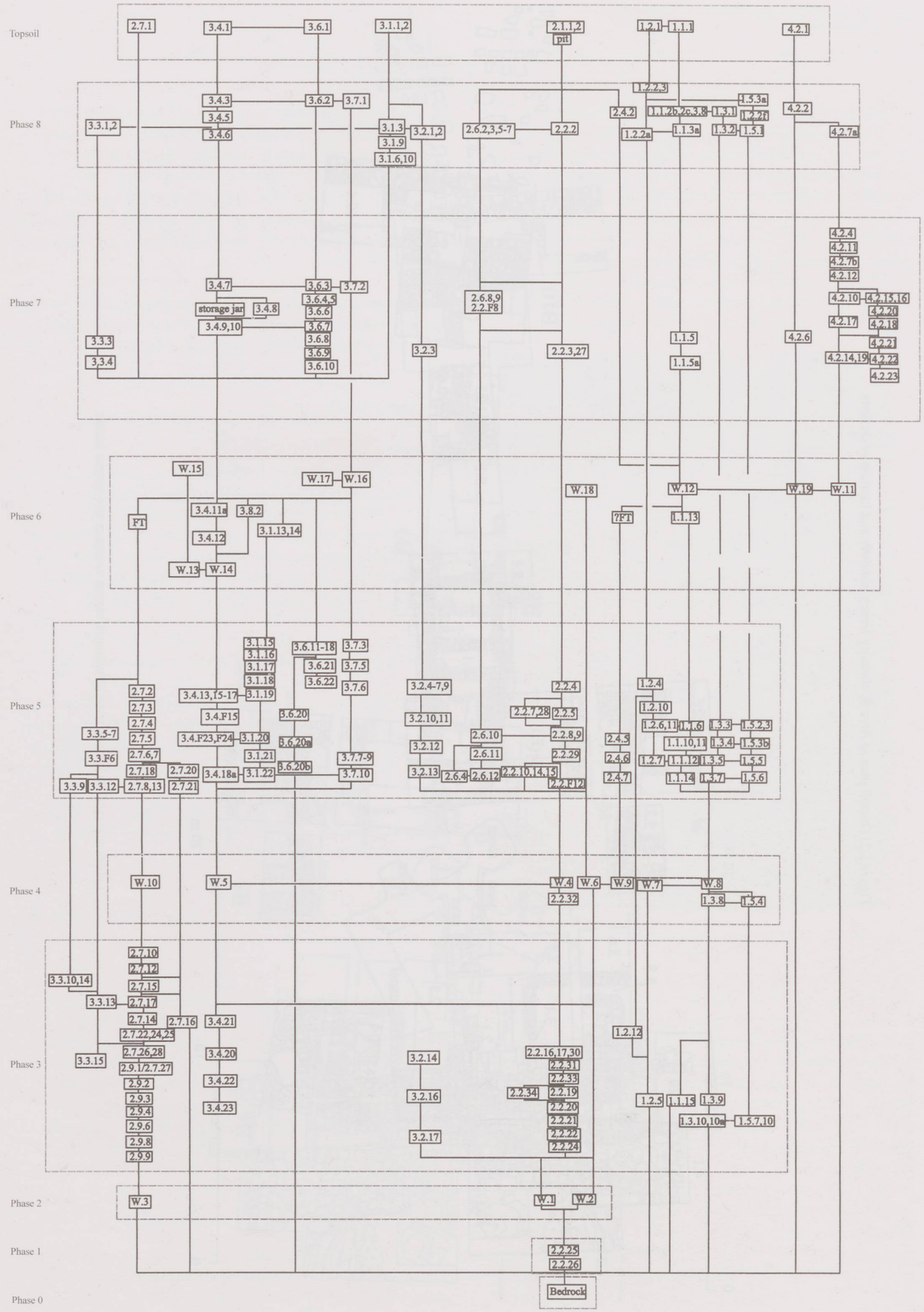


Figure 5.3: Stratigraphic matrix of Squares B1–4



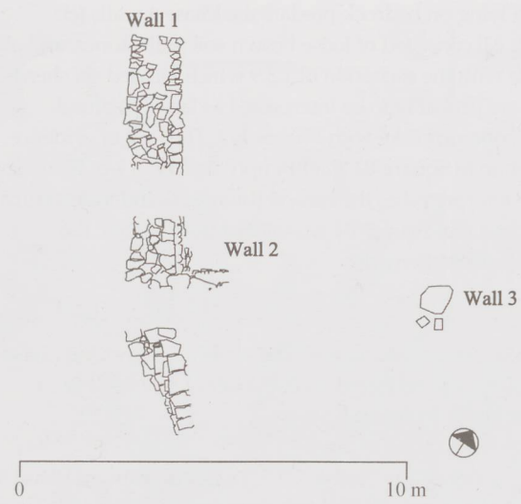


Figure 5.4: Plan of Squares B1–4 Phase 2

Wall 1 lay directly on occupation deposit 2.2.25 from Phase 1 (cf. Figure 5.15; Plates 5.2–3). Running north-west/south-east, Wall 1 was certainly found in trenches B3.2 and B2.2. During excavation it was assumed that its continuation was found in trench B2.4, running under Wall 6 of Phase 4, but turning to the east. This point was not further investigated, and in this report it is assumed that Wall 1 continued into trench B2.4. Its total recorded length would thus be 10.50 m. It was 1.50 m. wide and survived to a height of nearly 4 m. (cf. Figure 5.15).

Wall 2 ran north-east/south-west and its corner was bonded with Wall 1. Wall 2 ran under and parallel to Wall 6 of Phase 4, but offset by c. 30–40 cm. Wall 6 was essentially a later rebuild of Wall 2 (cf. Figure 5.15). Wall 2 was traced for 3 m. Its width is uncertain, but was probably c. 1 m. Section B3 in Figure 5.15 suggests that it survived to a height of just over 4 m. up to the level of paving 2.2.F12 of Phase 5 before it was rebuilt, slightly offset, as Wall 6.

Too little was excavated of the Phase 2 walls to reconstruct a coherent plan (for Wall 3, cf. cave and tunnel, below). Wall 1 ran for c. 6.50 m. before meeting Wall 2, and then apparently turned to the east for a further 4 m. Its dimensions and location on the edge of the site suggest that it may have been the earliest town wall.

Phase 3

This was a phase of occupation associated with the Phase 2 walls. The only long sequence of Phase 3 loci excavated was in trench B2.2, between Walls 1 and 2 (best seen in Figure 5.15), although the lack of detail in recording the deposits means that interpretation is very uncertain.



Plate 5.2: Wall 1 (centre), overlain by Walls 4 (top right) and 5 (left), looking east. Note mud plaster on Wall 4



Plate 5.3: Wall 1 (centre) overlain by Walls 5 (left) and 4 (top), with Wall 11 on right. Note mud plaster on Wall 4

Against the rubble foundations of Walls 1 and 2 was a 1-m. deep deposit of large stones (2.2.24, 2.2.22), almost certainly part of the structure of the walls to retain the foundations. Overlying this was an ashy deposit (2.2.21) up to 0.80 m. deep, perhaps to be interpreted as the initial occupation against the Phase 2 walls. The loci immediately above this are difficult to interpret. 2.2.21 was overlain by 2.2.20, a deposit of brown clay up to 1 m. deep, then either by a 0.90-m. deep deposit of reddish-brown stony clay (2.2.19) or by a thinner deposit of grit (2.2.34). It is possible that these loci were surfaces or floors, although the stony and gritty deposits might be explained as bedding for 2.2.33, recorded only as a 'white floor' with no pottery, perhaps a deliberately laid floor. Overlying this floor was a layer of brown soil (2.2.31), 0.50 m. deep, then a hard grey deposit (2.2.16, 17, 30), possibly both to be interpreted as occupation on the floor.

In trench B3.2, the earliest locus excavated was a grey-brown deposit (3.2.17) against Wall 1, perhaps the initial Phase 3 occupation contemporary with 2.2.21. This was overlain by a layer of hard brown soil (3.2.16), then by a deposit of rubble (3.2.14) concentrated 'above' Wall 11, suggesting a collapse of the wall.

A few other loci can be allocated to Phase 3 simply because stratigraphically they predate the Phase 4 walls, although it cannot be discounted that they belong to Phase 1. In trench B3.4, the earliest locus excavated was a layer of fine grey soil with small stones (3.4.23), overlain by a layer of dark brown compact clay (3.4.22), then a layer of loose soil (3.4.20), and an ashy layer (3.4.21) (visible in Figure 5.18), perhaps to be interpreted as a series of occupation layers and trampled surfaces. In Square B1, several loci lying on bedrock predate the Phase 4 walls (cf. Figure 5.3). All consisted of loose brown soil with stones, and all were sterile with the exception of 1.3.9 which yielded six sherds. These loci are probably to be interpreted as largely natural colluvium contemporary with Phases 1–3. The lack of evidence for occupation in Square B1 might imply that Wall 1 of Phase 2, if correctly interpreted as the earliest town wall, did indeed turn to the east and that Square B1 was at that time outside the boundary of the settlement.

Phase 4

This was a structural phase, with the walls built over the Phase 2 walls which were no longer in use. Walls 4 to 9 have been assigned to Phase 4 (Figure 5.5).

A foundation trench for Wall 4 (2.2.32) was cut through Phase 3 deposits. Wall 4 ran north-east/south-west for 2.50 m., between Wall 5, to which it was bonded, and up to the line of the later Wall 11 from Phase 6. Wall 4 was 1 m. wide and survived to a height of 2 m.

Wall 5 was bonded with Wall 4 and at right angles to it, running north-west/south-east for a total excavated distance of 8 m. from Wall 4 as far as trench B3.20 (Plates 5.4–5). It was 1 m. wide and survived to a height of 2.45 m. The plan implies that Wall 5 ended within trench B3.20, but that trench was not properly excavated and the excavator's notebook makes no mention of finding the end of the wall. It cannot be discounted that Wall 5 continued further to the north-west than appears on the plan. Just to the north-west of Wall 5, in the trench B3.20 baulk, appeared a wall which was not excavated, but which

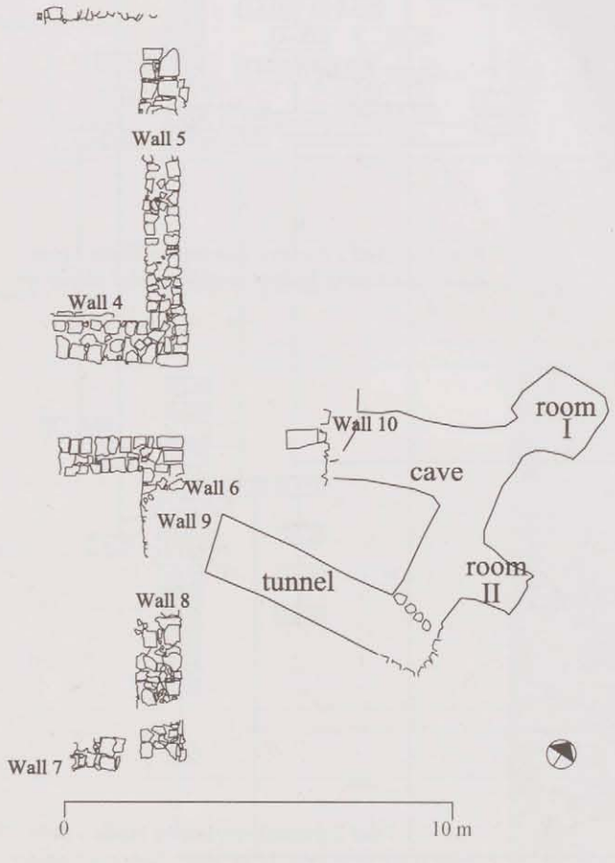


Figure 5.5: Plan of Squares B1–4 Phase 4



Plate 5.4: Trenches B3.1–3 looking south-west, showing Walls 16 (foreground), 17, 5 (across centre) and 4



Plate 5.5: Junction of Walls 5 and 4, looking south-west

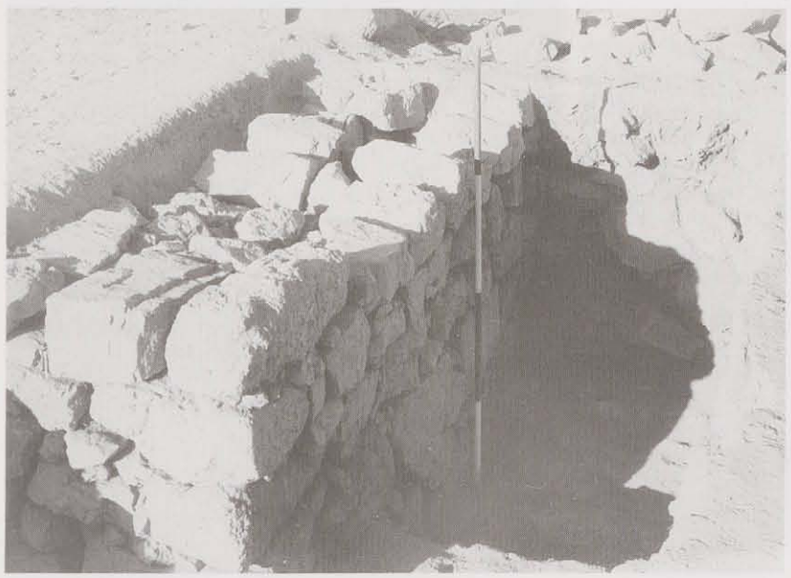


Plate 5.6: Wall 6, looking south-west, with Phase 7 blocking 2.2.F8 visible at top right

ran parallel to Wall 4 and may well have dated to Phase 4 as part of the same structure. A patch of yellow-green mud plaster was found on Wall 5, and it is likely that many of the walls were originally plastered (cf. Plates 5.2–3).

Wall 6 was an offset rebuild of Wall 2 from Phase 2, along the same alignment and 1 m. wide, exactly parallel to Wall 4 (Plate 5.6). Wall 6 appears to have been bonded with Wall 9, which appeared in the corner of trench B2.4, running north-west/south-east, along the same alignment as Wall 5. Virtually no information was recorded concerning Wall 9, but it is likely that it continued in Square B1 as Wall 8. A foundation trench for Wall 8 (1.3.8, 1.5.4) was cut through Phase 3 deposits (cf. Figure 5.13). Wall 8 was 1.10 m. wide and survived to a height of 1.25 m. Walls 8/9 together were traced for a distance of 8.50 m. from Wall 4 to the south-eastern edge of Square B1. Bedrock rises suddenly at the end of the wall to the same height as the stub of Wall 8, and it is possible that any further continuation of the wall built on bedrock has disappeared in the collapse of Phase 8 (Plate 5.7).

Wall 7 was not bonded with Wall 8, since it seems that the rise in bedrock between the two walls was utilised structurally (see Plate 5.7). Wall 7 ran north-east/south-west for a distance of 2 m., pre-sumably to the line of the later Wall 12 of Phase 6, as with Walls 4 and 6, although the end of Wall 7 was not found. Wall 7 was c. 1 m. wide but survived only to a maximum height of 0.30 m.

The plan of the Phase 4 walls shows two distinct combinations of walls apparently framing an entrance or gateway. These are the walls which Bennett originally identified as parallel and transverse walls forming a casemate construction against the main perimeter wall (Bennett 1973: 11; 1974: 18). According to her tentative phasing, this main perimeter wall (Walls 11 and 12) predated the 'casemate' walls, and, logically, this appears to make sense, particularly since Phase 4 Walls 4, 6 and 7 all seem to end at the line of the perimeter wall (Plates 5.8–9). Nevertheless, the stratigraphic evidence as recorded is quite clear that Walls 11 and 12 belong to Phase 6 and postdate these Phase 4 walls, which should not therefore be identified as casemates. During excavation Bennett was uncertain of the date of the main perimeter wall (Bennett 1974: 18), but always assumed it predated the 'casemate' walls. The main perimeter wall was not really extensively investigated (see below, Phase 6), and the evidence pointing to its later date was not recognised. There is no evidence for any earlier walls below Walls 11 and 12 which might have closed off rooms formed by Walls 4 to 9 during Phase 4. In the absence of such walls, the



Plate 5.7: Walls 8 (foreground), 7 (top left) and 12 (top right), looking south-west, showing rise in bedrock between Walls 7 and 8





Plate 5.8: Wall 11 (right) built against Wall 4 (left), with Wall 1 below, looking south

Plate 5.9: Walls 11 (right), 4 (left) and 6 beyond, looking south

most likely interpretation is that the Phase 4 walls created an entrance or gateway, which was stone-paved in Phase 5.

Phase 5

This was a phase of occupation associated with the Phase 4 walls. Trench B2.2, the area between Walls 4 and 6, was particularly important for the overall interpretation of Area B and the sequence of the defences. Against Walls 4 and 6, and immediately covering foundation trench 2.2.32 for Wall 4, was an area of stone paving (2.2.F12; Figures 5.6, 15; Plate 5.10). The paving consisted of two courses of flat stones laid between Walls 4 and 6 and beyond them to the south-west and north-west; it was traced for 1 m. under Wall 11 of Phase 6 which was built over part of the paving. It is not clear from the excavation notebook or photograph, but notes in the archive suggest that this paving was ramped upwards into the town. The location on the edge of the site perhaps suggests the creation of a paved entrance and gateway between Walls 4 and 6, and the paving beyond the walls to the north-west might be identified as a paved track or road approaching the gateway. The stones of the paving appear to have been set into a deposit of hard clay (2.2.10, 14, 15) although, since the full extent of the paving was not properly recorded, it is possible that this hard clay formed a clay floor surrounding the paving. It appears to be

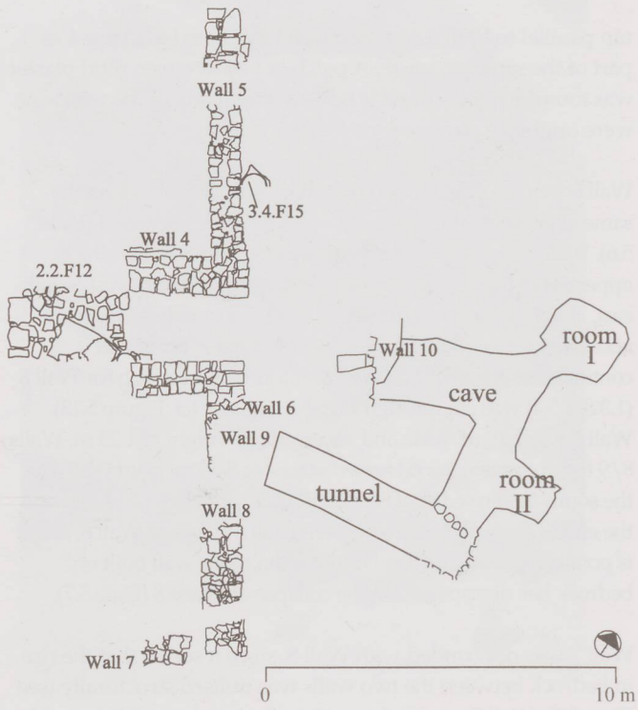


Figure 5.6: Plan of Squares B1–4 Phase 5





Plate 5.11: Tabun 3.4.F15 surrounded by ash layer 3.4.13, overlain by earth floor 3.4.9 with storage jar, by Wall 5, looking south

Plate 5.10: Stone paving 2.2.F12 (centre), looking south-west, with Wall 6 (left) and later blocking 2.2F8 (just visible at top)



Plate 5.12: Broken pottery in ashy earth 3.2.12 (Phase 5), looking south-west, below later Wall 11 (Phase 6)

contemporary with firm clay deposits in trench B2.6 (2.6.4, 12), probably the surface beyond the stone paving and outside the entrance area.

Probably contemporary with the stone paving was a deposit of firm mortary soil mixed with sherds (3.2.13) in trench B3.2, between Walls 4 and 5. On the other side of Wall 5, laid against the wall and perhaps connected with its construction, was a deep deposit of stone fill (3.1.22, 3.4.18a, 3.7.7–10), cutting through Phase 3 loci 3.4.20 and 3.4.21 (cf. Figure 5.18). Above this was a hard clay layer (3.1.21), perhaps to be identified as a surface, and probably associated with a tabun (3.4.F15) (Plate 5.11). This tabun had a complex and confusing construction which affected the layers below it. The tabun (seen in Figure 5.18) was c. 0.85 m. in diameter, located c. 4 cm. from Wall 5. It rested on a sloping semi-circle of mudbricks interspersed with plaster or mortar (3.1.20, 3.4.F23, 24). The tabun itself was constructed of greenish clay, burnt on top. Associated with the tabun, and running from it, was a thick deposit of ash (3.1.19, 3.4.13, 15–17) with considerable quantities of charcoal, pottery and bones, some showing signs of burning.

Further to the north-east, in trench B3.6, the sloping, stepped bedrock was plastered, perhaps creating a series of manageable steps (cf. Figure 5.17). There appeared to be two episodes of plastering (3.6.20b, 20) interspersed with a thin layer of fine grey-brown soil (3.6.20a), perhaps associated with the use of the steps. Although this plastering of the stepped bedrock has been allocated to Phase 5, this cannot be demonstrated conclusively, since there are no walls in trench B3.6 which can be dated prior to Phase 6 against which the relative sequence can be checked.

Immediately overlying these occupation deposits in Square B3 and in trenches B2.2 and 2.6 were individually identified

deposits of clay, thick black ash, stones, plaster, some bones, and large quantities of pottery (cf. Figure 5.3), suggesting an episode of fire or destruction and collapse in this area at the end of Phase 5 (Plate 5.12). No loci were found which could be convincingly identified as occupation deposits associated with use of the stone paving and clay floor in the entrance and gateway, and it is likely that any such deposits have disappeared within the Phase 5 collapse layers.

The area enclosed by Walls 6–9, in principle the equivalent to Walls 4 and 5 on the opposite side of the 'entrance', has a rather confusing stratigraphy and is difficult to interpret. In trench B2.4, a layer of soft beige soil (2.4.7) may have been bedding for two clay floors with ash patches (2.4.6, 2.4.5). In trenches B1.1 and 1.2, a layer of loose soil and stones (1.1.14) may also have been bedding for a plaster floor (1.1.12, 1.2.7). This floor was fairly rough, with small chalk/limestone chips and stones, and sloped down to the north-west. Immediately over the plaster floor was a deposit of loose crumbly earth and stones and patches of burning (1.1.10, 11), then chalky, powdery soil with plaster remnants (1.1.6, 1.2.6, 11), overlain by two layers of loose earth with small stones (1.2.10, 1.2.4). These loci overlying the floor do not appear to be occupation deposits, and might be explained either as deliberate fill or as an accumulation of silt and stones.

On the other side of Wall 8/9, in trenches B1.3 and 1.5, running up to Wall 8 was a plaster floor (1.3.7, 1.5.6) with an uneven, firm surface sloping down slightly to the south-west. This was overlain by two layers of compact, chalky soil (1.3.5, 1.5.5 and 1.3.3, 1.5.2, 3) with a layer of compact ashy soil in between (1.3.4, 1.5.3b), probably to be interpreted as trodden surfaces and occupation deposits on the plaster floor.

The individual sequences in Phase 5 are confusing, but its essential nature is clear. The use of the Phase 4 walls consisted of what appears to be a stone-paved entrance and gateway (possibly incorporating a paved approach to the gateway), a clay floor with a tabun, plastered steps on bedrock, and plaster floors in Square B1. The existence of plaster floors on either side of Wall 8 might however suggest that this wall should not be identified as a perimeter wall, since there was occupation beyond it, and perhaps implies the existence of further walls to the south-west edge of the site which have not been discovered. The Phase 5 occupation in the gateway and in Square B3 ended with tiplines of ash, stones, bones and pottery, interpreted as evidence of fire or destruction and collapse. Although the ash deposits were deep, over 1 m. in places, they were localised, since no such evidence was found overlying the Phase 5 deposits in Square B1.

Phase 6

This phase represents the construction of new structures against the Phase 4 walls, over the Phase 5 occupation and destruction deposits. The stratigraphy of these Phase 6 structures is complex, and admittedly it is not always demonstrable that they are strictly contemporary, although in all cases they post-date Phase 5 and represent the final structures built in Squares B1–4 (Figure 5.7).

The earliest Phase 6 structures were Wall 13 bonded with Wall 14, forming a right-angled construction of uncertain function. Wall 14, built immediately over Phase 5 destruction deposits (3.4.13), ran north-west/south-east for 2 m. before disappearing into the trench B3.4 baulk (cf. Plates 5.13–14). It survived to three courses high. Wall 13 ran north-east/south-west for 0.70 m. under Wall 15, although at a slightly different angle. Only one course survived.

Running up to Wall 14 was a deposit of ash and clay (3.4.12), either a surface with associated occupation or a base for plaster

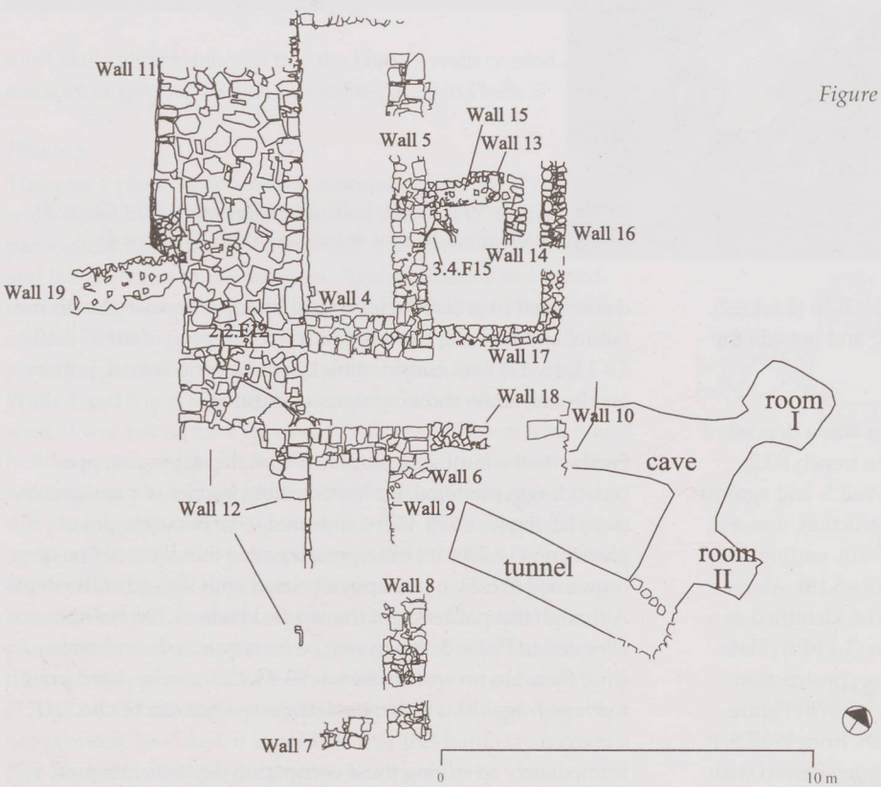


Figure 5.7: Plan of Squares B1–4 Phase 6



Plate 5.13: Wall 16 on surface 3.8.2, with Wall 14 in foreground, looking north-east

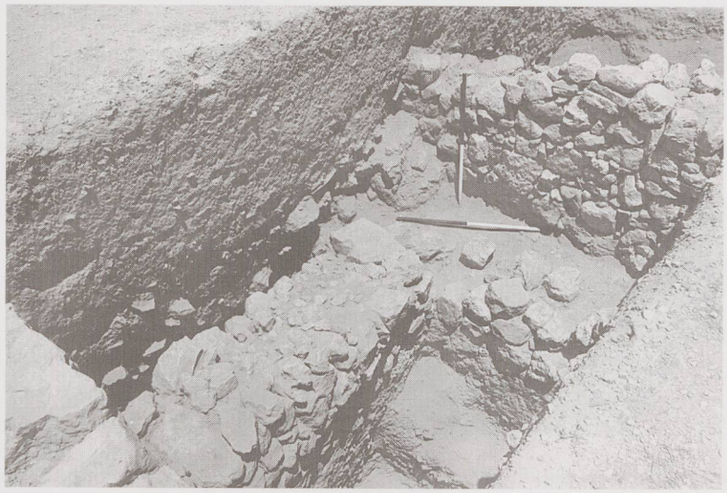


Plate 5.14: Wall 15 (foreground) abutting Wall 14, with Wall 16 at top, looking north-east

floor 3.4.11a, a fragment of which was found overlying it. The stratigraphy of these deposits is difficult to untangle, especially their relationship with tabun 3.4.F15 of Phase 5. It is possible that the tabun continued in use in Phase 6, although its original mudbrick construction clearly predates Wall 14.

Although excavated in separate trenches and not co-ordinated, it is likely that a clay deposit (3.8.2), running up to Wall 14, and a layer of brown clay with ash patches (3.1.13, 14), overlying 3.1.15 from Phase 5, should be interpreted as clay surfaces contemporary with the plaster floor (Plate 5.13).

The next stage of construction created a rectangular room formed by Walls 15, 16, 17 and 5. Wall 15 was built over Wall 13, nearly on the same alignment but running for 2 m. and abutting both Walls 5 and 14 (Plate 5.14). Wall 15 was c. 0.60 m. wide and had traces of mudplastering on both faces.

A foundation trench for Wall 16 was cut through Phase 5 destruction layers (2.7.2), although it also appears that the wall was constructed directly on surfaces 3.8.2 and 3.1.13, 14 of Phase 6. Wall 16 ran north-west/south-east for 4.75 m. and was 0.70 m. wide (Plate 5.15; cf. Plates 5.4–5). Although approximately



Plate 5.15: Walls 16 (left) and 17 (right), looking east



Plate 5.16: Wall 18 (front) abutting earlier Wall 6, looking south-west



Plate 5.17: Wall 11, with Walls 1 (bottom centre) and 5 (bottom left), looking west

eight courses of small uncoursed rubble survived, these totalled only 1 m. in height; compared with the walls of Phases 2 and 4, this was a very roughly constructed wall, although some fragments of mudplaster were found attached to it. A corridor 0.50-m. wide was formed between Walls 16 and 14.

Wall 16 was bonded with Wall 17 which ran north-east/south-west for 3 m. to abut Wall 5 of Phase 4 (cf. Plates 5.13–15). Wall 17 was of similar construction to Wall 16, c. 0.60 m. wide, with four courses of small rubble surviving to 0.90 m. in height.

It is likely that Wall 18 was contemporary with Walls 16 and 17. Along the same alignment and of the same construction as Wall 17, and abutting Wall 6 of Phase 4, Wall 18 was traced for a length of 1.50 m. and may be the only excavated evidence for a room similar to that in Square B3 (Plate 5.16).

Although it cannot be linked directly to the other Phase 6 walls, it seems that the large perimeter wall (Walls 11 and 12) also dates to this phase (Plate 5.17). A foundation trench for Wall 12 (1.1.13) cut through Phase 5 deposits (cf. Figure 5.14 and Plate 5.7). A possible foundation trench for the same wall in trench B2.4 cut through floor 2.4.5 of Phase 5. Wall 12 is part of the major wall which can be traced on the surface encircling the whole site. An entrance 2-m. wide was left between Walls 12 and 11, the same width as that created in Phase 4 by Walls 4 and 6. Wall 11 was built on bedrock and partly over stone paving 2.2.F12 of Phase 5 (Plate 5.18). This stone paving is



Plate 5.18: Walls 11 (left) and 12 (right) built on stone paving 2.2.F12, looking east (photo taken in 1999)

what Bennett (1974: 18) described as the cobbled floor of the entrance, and was tentatively interpreted above as a paved track approaching the gateway. Bennett's remarks about 'a narrowing of the gateway' should be disregarded, since she wrongly assumed that Wall 11 predated the stone paving. It is possible that in Phase 6 the stone paving, possibly ramped, was still in use or was cleared, although at the end of Phase 5 part of it at least had been covered by destruction and collapse deposits.

The perimeter wall, comprising Walls 11 and 12, survived to 3.80 m. in height. At its widest, at an offset on Wall 11, it was 3.70 m. wide, but it narrowed to 3.20 m. wide at the approach to the gateway. Here it abutted Walls 4 and 6 of Phase 4. Walls 11 and 12 were constructed of coursed limestone rubble, roughly squared, with snecking, the average length of the stones being 0.40 m. wide by 0.30 m. high. Built in two skins, the central section of the wall was filled with small pieces of masonry and rubble set in mortar. The lowest two courses of the wall appeared better and more closely constructed and were very slightly offset, perhaps to provide a firm foundation on bedrock. Gaps caused by shelving bedrock were filled with large stones on which smaller stones had been laid. The wall had a series of offsets along its length, each offset varying from 0.80 to 1 m., well bonded into the main wall. Structurally there appears to be no reason for the offsets, but from a defensive point of view perhaps they gave a better field of view along each smaller section of wall.

Associated with Wall 11, at its offset, were a batter and Wall 19 (Plate 5.19; cf. also Bennett 1974: pl. IIIA). The batter appeared to be a stone fill between Wall 11 and Wall 19, at the point where Wall 11 narrowed. Wall 19 abutted Wall 11 and was built partly on bedrock. Beyond it, Wall 11 continued for 2.50 m. and ended in a series of worked quoins to form one side of the postern gateway. Wall 19 was excavated for a length of 3 m. running north-east/south-west out from Wall 11 towards the slope at the edge of the site. Only its foundations seemed to survive, and only a width of 1 m. was revealed, although it is likely that it was wider. Wall 19 appears to have been built in association with Wall 11, which strongly fortified this approach to the gateway, and which was partly built over stone paving tentatively interpreted as an earlier paved track. The wadi slope here is relatively gentle, perhaps suggesting that the function of Wall 19 was to block off the approach or road to the gateway from the north-west, encouraging instead an approach to the newly fortified gateway from the south-east.

The Phase 4 walls were still in use during Phase 6, since the new walls abutted them. In Phase 6, the plan of Squares B1–4 appears to consist of a series of rectangular rooms or houses behind a massive perimeter wall pierced by a postern gateway. A wall outside the perimeter wall seemed to close off an approach to the gate from the north-west. In trench B3.4, two phases of construction are evident, with the enigmatic right-angled structure formed by Walls 13 and 14, associated with a plaster floor and other clay surfaces, superseded by a rectangular room formed by Walls 15, 16, 17 and 5, with a corridor created by Wall 14.



Plate 5.19: Wall 11 (left), batter, and Wall 19 (right), looking east



Plate 5.20: Blocking 2.2.F8 with Walls 6 and 12 on the left, looking south-west

Phase 7

This phase represents the final occupation in Squares B1–4, associated with the Phase 6 structures. In the new spaces/rooms created by the perimeter wall, overlying the Phase 5 destruction and collapse deposits, were layers of brown and yellow clay, containing unbroken pottery (3.2.2, 2.2.3, 27) and two loci of plaster floors (1.1.5a, 5) running up to Wall 12. At some point the gateway was blocked with a double line of stones 3-m. wide, the upper offset from the lower



Plate 5.21: Blocking B2.2.F8 on clay fill B2.6.8, 9, between Walls 6 (left) and 4 (right), looking south-west



Plate 5.22: Blocking B2.2.F8 on clay fill B2.6.8, 9, between Walls 11 (left) and 12 (right), looking north-east



Plate 5.23: Plaster floor 4.2.10, 15, 16 running up to the batter on Wall 11 (left), with Wall 19 at top, looking east

(2.2.F8), built on a clay fill (2.6.8, 9), in line with Walls 11 and 12 and abutting them (Plates 5.20–22; cf. also Plate 5.6). Section B3 (Figure 5.15) suggests that this blocking overlay or cut through the final Phase 7 clay surface (2.2.3, 27) within the gateway, implying that the blocking was constructed shortly before the end of occupation in Squares B1–4.

It is impossible to correlate these loci with the rather confusing sequence of deposits in trenches B4.1 and 4.2, to the south-west of Wall 11, outside the perimeter wall. A badly broken plaster floor (4.2.10, 15, 16) ran up to the batter on Wall 11 (Plate 5.23). The floor was described as rough, crumbly and containing gritty stones. If Wall 19 blocked off an earlier track from the north-west towards the gate, as suggested above, the function of the plaster floor is difficult to explain, although perhaps it was connected with the blocking of the gateway. The deposits immediately below this floor (cf. Figure 5.3) were a mixture of stones and loose soil and suggest a deliberate fill against the outside of the perimeter wall, with a final layer of fine clay (4.2.20) prior to the laying of the plaster floor. The plaster floor was overlain by a hard packed, crumbly, white-flecked soil (4.2.12), perhaps another surface, and over this was a thin deposit of dark, powdery ash (4.2.7b) containing burnt pottery and bone, interpreted as an episode of burning. This burnt deposit was overlain by brown earth darkened with charcoal, containing small stones and white chips (4.2.11), possibly a surface, and then a compact clay deposit with charcoal flecks (4.2.4), possibly the final surface, on which the stones of the Phase 8 collapse rested. This surface sloped up to Wall 19 (Plates 5.24–25).

A deposit of compact earth with stones (4.2.6) overlay what survived of Wall 19, but this could not be satisfactorily interpreted.

A number of loci represent the Phase 7 use inside and outside the room bounded by Walls 5, 15, 16 and 17. In trench B3.6, outside the room, there was a sequence of surfaces against Wall 16, some of which can be correlated with surfaces within the room on the other side of the wall: earth floor and surface (3.6.10, 9), ashy layer (3.6.8), second earth floor and surface (3.6.7, 6), and third earth floor and surface with ash patches (3.6.4, 5, 3). Earth floor 3.6.7 was correlated with floor 3.4.9, 10 inside the room, which covered tabun 3.4.F15 of Phase 5. On this floor was a small patch of burning (3.4.8), and into the floor against Wall 5 was inserted the inverted top of a large storage jar, lined with plaster or cement, perhaps used as a basin (cf. Plate 5.11). This floor was overlain by a mud deposit (3.4.7) identified as the final surface (equated with 3.6.3, and also with 3.7.2 on the other side of Wall 15), on which lay the stones of the



Plate 5.24:Wall 11 (left), with surface 4.2.4 sloping up to Wall 19 (right), looking east



Plate 5.25: Wall 11, with collapse 4.2.2 lying on surface 4.2.4, looking east

Phase 8 collapse. Two loci in trench B3.3, ashy compacted soil (3.3.4) and red compact soil with white flecks (3.3.3), are probably to be identified as occupation and surface contemporary with these other surfaces.

Phase 7 can be summarised as a phase of several plaster floors and surfaces associated with the Phase 6 structures, both inside and outside the perimeter wall, and the blocking of the gateway. Within trench B3.20, between Walls 11 and 5, a large number of storage jars was found, unfortunately not properly stratified. This might imply that some of the (casemate?) rooms against the perimeter wall were used for storage, but within which phase is unknown.

Phase 8

This was a phase of fire and collapse of the walls, affecting every trench excavated, overlying the final Phase 7 surfaces and the remains of the Phase 6 walls. The Phase 8 loci consisted of thick black ash, large stones, large quantities of blackened pottery and bone, mudbrick, pockets of red soil, and some dark brown compacted, crumbly soil which may have been roof remnants or mudbrick (Plates 5.26–27). A particularly large cache of pottery



Plate 5.26: 'Destruction' layer 1.2.2, looking north-east



Plate 5.27: Broken pottery from Phase 8 loci in trench B1.1, looking north



Plate 5.28: Pottery cache in B2.4.2, looking east



Plate 5.29: Burnt pottery in 4.2.7a against Wall 19, looking south-east

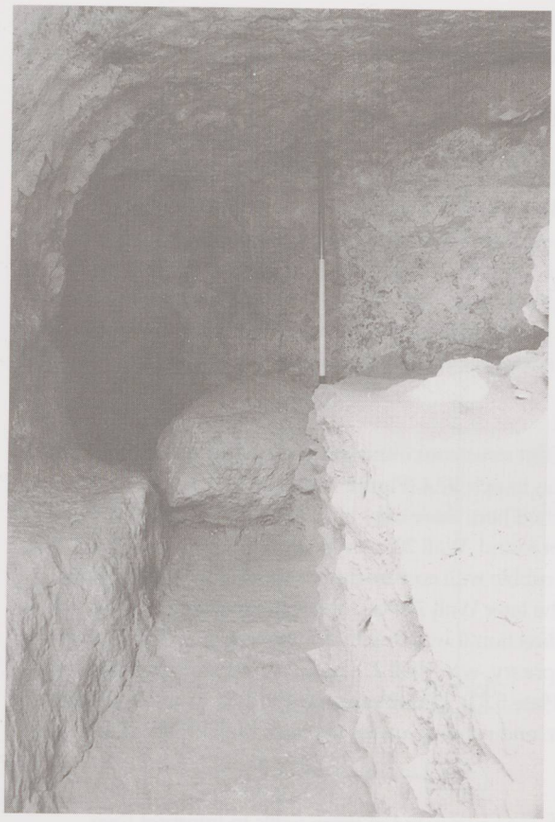
was found against Wall 12, among ash patches, containing several whole pots (2.4.2) (Plate 5.28).

It was suggested in the preliminary reports that the vast amount of pottery in Area B might represent the sacking of the Area A buildings to the north-east (Bennett 1973: 11), or that Area B in its final phase was a dumping ground for pottery (Bennett 1974: 18). The site notebooks also proposed that the thick layer of ash, full of pottery, must have been swept or thrown down from Area A against the perimeter wall in Area B. However, there is nothing to suggest that the ash and pottery is not local to Area B. Every trench showed evidence of burning in Phase 8; evidence of fire and collapse was also found outside the perimeter wall, where 4.2.2 consisted of rubble (cf. Plate 5.25), presumably stones from the wall, and 4.2.7a was a deposit of ash with a large quantity of burnt pottery and bone (Plate 5.29). This suggests that an episode of burning and wall collapse in Squares B1–4, including the perimeter wall, marked the end of occupation in this area. The Phase 8 loci were overlain by topsoil. A pit just below topsoil, cut into a deposit of rubble and ashy soil (2.2.2) dating to Phase 8, and recorded on section B3, appears to be fairly recent.

Cave and tunnel

During the excavation of trench B2.7 in the 1973 season, at the base of a series of ashy tiplines, the entrance to a cave complex was discovered (Bennett 1975: 4). This was excavated in 1974 (Bennett 1977: 6–7). No proper plans of the cave complex were produced, and only one adequate section of the cave entrance was drawn (Figure 5.16). This partly ties the cave deposits into the overall phasing of Squares B1–4, since a foundation trench for Wall 16 of Phase 6 cut through the latest loci in trench B2.7. This suggests that the use of the cave complex should be dated between Phases 1 and 5. In the matrix (Figure 5.3), the two other walls shown in the section drawing have been allocated to the two structural phases 2 and 4, but this is hypothetical, and in fact it is impossible to correlate the cave sequence convincingly with the sequence in Squares B1–4. Moreover, there does not appear to be any real stratigraphy in the cave complex: most of the deposits, including those recorded on the section drawing, appear to be rubble, clay or ash fill, perhaps part of a roof fall.

The cave complex consisted of an entrance passage in trench B2.7 (Plate 5.30), two chambers named Rooms I and II, and a tunnel leading back towards the defences. The walls, floor and ceiling of the entire complex were plastered. At the cave entrance was Wall 3, perhaps an outer wall for the cave complex. Wall 3 has been allocated to Phase 2 in the matrix (Figures 5.3–4), although this is uncertain. Above the cave entrance, Wall 10 has been tentatively assigned to Phase 4, but no proper plan of it was drawn (it is best seen in Figure 5.16). Apart from two possible surfaces (2.7.21, 20) possibly



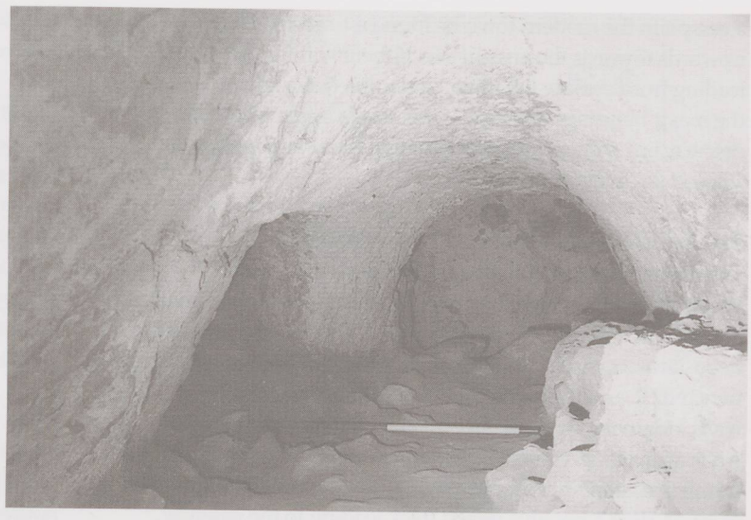


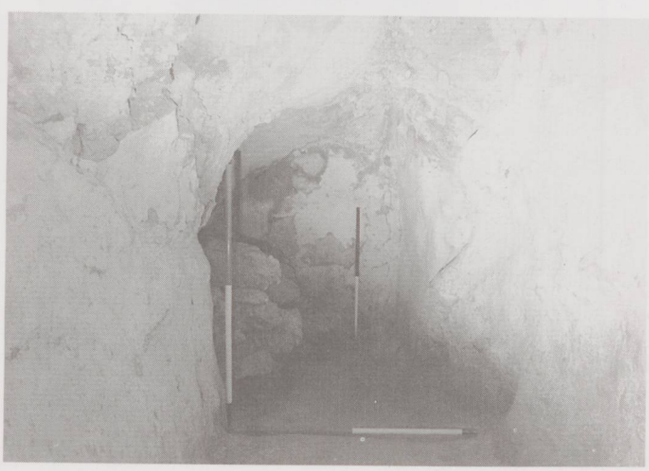
Plate 5.31: Room I in the Area B complex

Plate 5.30: Entrance to cave complex in trench B2.7

associated with the wall, the rest of the loci shown on the section appear to be ash and rubble tiplines, as found elsewhere in Squares B1–4 at the end of Phase 5.

The fill within the cave appeared to slope downwards from the front to the back of the cave. Two small walls were found inside, perhaps functioning as retaining walls for the fill. On the north-west side of the entrance was a ledge plastered on the top and side (marked 'bench' in Figure 5.2). This ledge, shelf or bench was c. 0.30 m. wide by 0.40 m. deep and sloped up towards Room I. Room I measured 2 x 2 m., with a ceiling height of nearly 1.70 m. (Plate 5.31). Some of the stones in the fill had traces of red and black paint, but with no distinguish-able pattern. Room II measured c. 1.5 x 1 m. and contained only fill. The excavator speculated that it might have been an abandoned attempt to cut another tunnel. Immediately to the south of Room II was a blocking of large stones, forming a crude wall across the passage, which was 1.30 m. wide at that point. Beyond this wall was another stone and fill wall, perhaps blocking another tunnel or chamber to the east towards Area A; this was not investigated. The tunnel turned a right angle to the west. A 6-m. length of the tunnel was excavated, and it was a constant 1.50 m. wide (Plate 5.32a, b). The roof was broken, but a blocked circular hole remained in the roof, and below it there was a slight depression in the plastered floor. The tunnel was not further excavated, since work was dangerous due to rock fall from the roof as the fill was removed.

The excavator concluded that the cave complex was not artificial but deliberately cut. Its function is unknown: among the possibilities are tombs, habitations, mining, water supply, and defence. Level readings on the tunnel floor suggested that, if it continued, it would have emerged under the defences. During the excavation a local man reported that while digging





Plates 5.32a, b: Interior of tunnel in Area B cave complex, showing plaster floor

a cesspit in the modern town he found a tunnel leading upwards towards the ancient site. If there was indeed a tunnel leading from outside the town, under the defences and towards the major buildings on Area A, this might imply a link with defence, but nothing was found within the cave complex to suggest its function.

Squares B1–4: summary and interpretation

The earliest occupational deposit (Phase 1) was overlain by Wall 1 (Phase 2), which may have been the earliest town wall, bonded with Wall 2. The only long sequence of occupational deposits associated with these walls (Phase 3) was found in trench B2.2, and their interpretation is uncertain. The Phase 4 walls, originally wrongly identified by Bennett as casemate walls against a perimeter wall, created an entrance or gateway which was stone-paved and possibly ramped in Phase 5, incorporating a possible paved track leading to the gateway. The Phase 2 walls were no longer in use. Contemporary with the paving were plaster floors in Square B1, plastering of bedrock in trench B3.6, apparently to create steps, and a complex tabun (3.4.F15) which seemed to rest on a sloping semi-circle of mudbricks, associated with a surface. The end of Phase 5 in the gateway and Square B3 was marked by deposits of ash, stones, clay, plaster, pottery and bones, suggesting a localised episode of fire or destruction. A cave complex consisting of two chambers and a tunnel was cut and used sometime between Phases 1 and 5, but its function is unknown. In Phase 6 a series of rectangular rooms or houses was added in two phases of construction against the Phase 4 structures, which were still in use, and a massive perimeter wall (Walls 11 and 12) with a postern gateway was built. A wall outside the perimeter wall (Wall 19) may have blocked off a track or road up the gentle wadi slope from the north-west, instead encouraging an approach to the gate from the south-east. The final phase of occupation in Squares B1–4 (Phase 7) consisted of several plaster floors and clay surfaces associated with the Phase 6 structures, including the inverted top of a plaster-lined storage jar set into a floor in trench B3.4. Some of the rooms against the perimeter wall may have been used for storage. At some point during this phase, probably postdating the final surface, the gateway was blocked, presumably blocking access into the site at this point. This occupation was ended by fire and the collapse of the structures (Phase 8), with every trench yielding layers of thick black ash, stones and burnt pottery and bone.

Squares B5–8

Location

Squares B5–8 were located immediately north-east of Squares B1–4, on the same alignment, but there was no stratigraphic connection between them. The following trenches, which appear on the plan (Figure 5.2), were either not excavated or only dug through topsoil to clear the tops of the walls: 5.1–2, 6.1, 6.5, 7.1–3, and 8.1–4. Most of the trenches in these squares were therefore not excavated systematically, and sensible stratigraphy could be extracted only from trenches B6.2–4 and 7.4–5, which form the basis of the matrix (Figure 5.8). It is likely that many of the walls in the remaining trenches were contemporary with those in trenches B6.2–4 and 7.4–5, since they were seen to continue on the surface. These walls have been included as blocks in the matrix (Figure 5.8), although their relative phasing cannot be demonstrated conclusively.

Phase 0

Bedrock was reached only in trenches B6.3 and 6.4. Figure 5.21 shows the heavily shelving character of bedrock, especially in trench B6.4 where it was only a few centimetres below the modern surface. Clearly, the deposits here are very shallow, and the section drawing shows that they do not date to the earliest phase. However, bedrock was not reached in Square B7. Thus, it cannot be demonstrated that Phase 1 as published here is indeed the earliest deposit in Squares B5–8.

Phase 1

The earliest structures excavated in Squares B5–8 were Walls 20 and 21, in trench B7.4 (Figure 5.9), although since bedrock was not reached here there may have been earlier deposits which were not found. Wall 20, seen in section B10 (Figure 5.22), was a small rubble wall constructed of small stones, just visible under the later Wall 25; too little was excavated to judge in which direction it was oriented. Adjacent to it, and probably contemporary, was Wall 21, also a rubble wall, running north-south (Plate 5.33). Wall 21 survived to 1.30 m. in length, the northern end running under the later Wall 25; it was 0.34 m. wide.

Too little was excavated of these walls to interpret their function, although their flimsy construction suggests they were not structural walls, but perhaps partition walls defining a space for a tent, storage or animals.

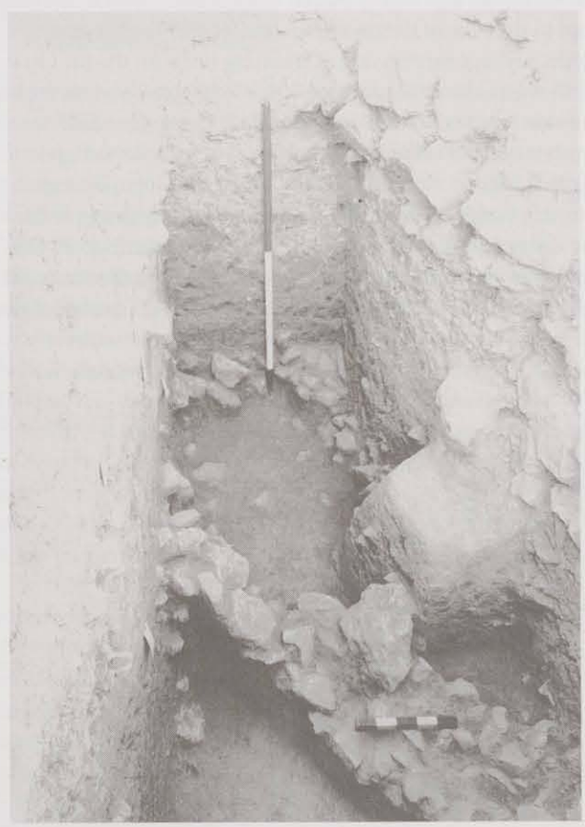
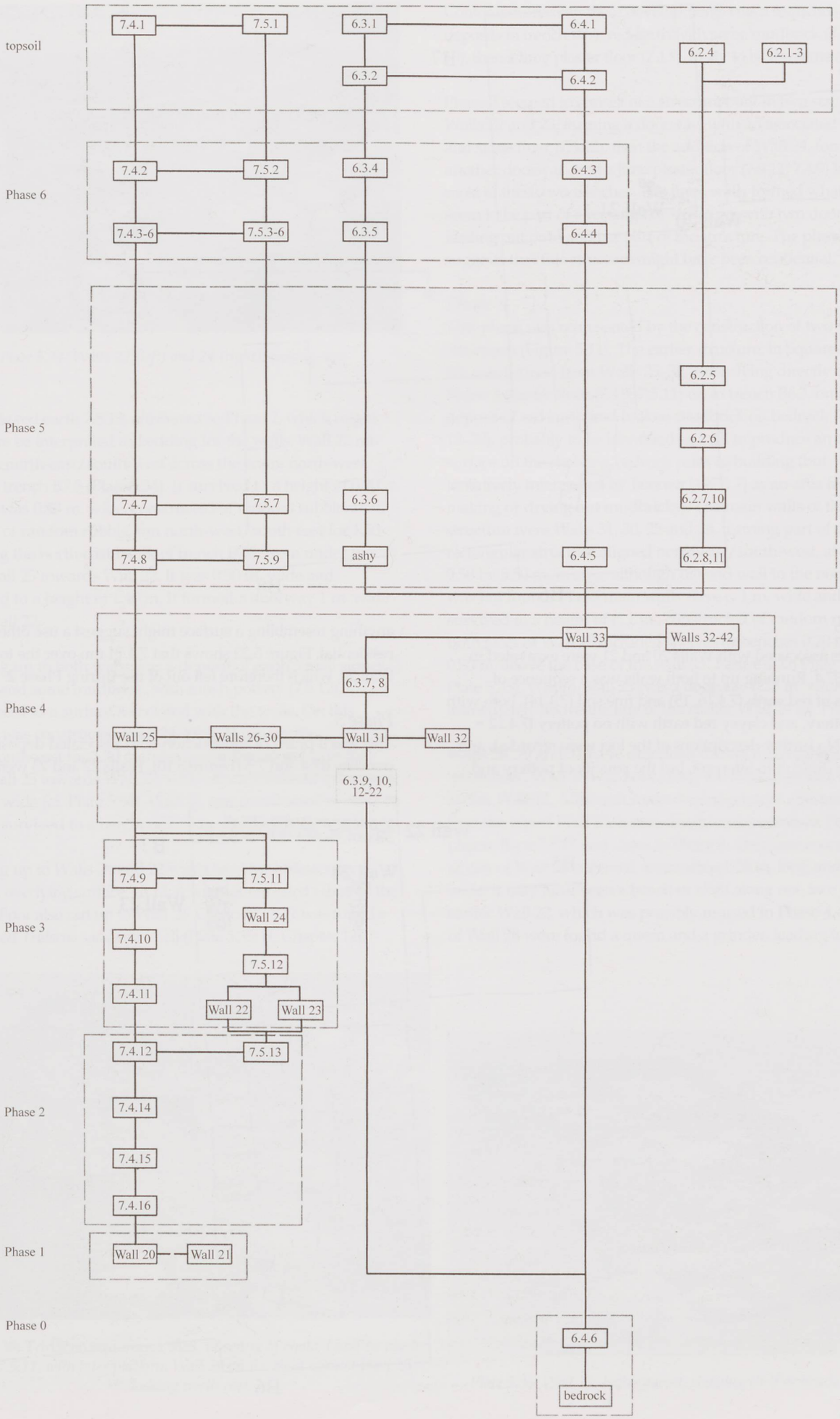


Plate 5.33: Walls 21 (bottom) and 20 (middle), looking south-west

Figure 5.8: Stratigraphic matrix of Squares B5–8



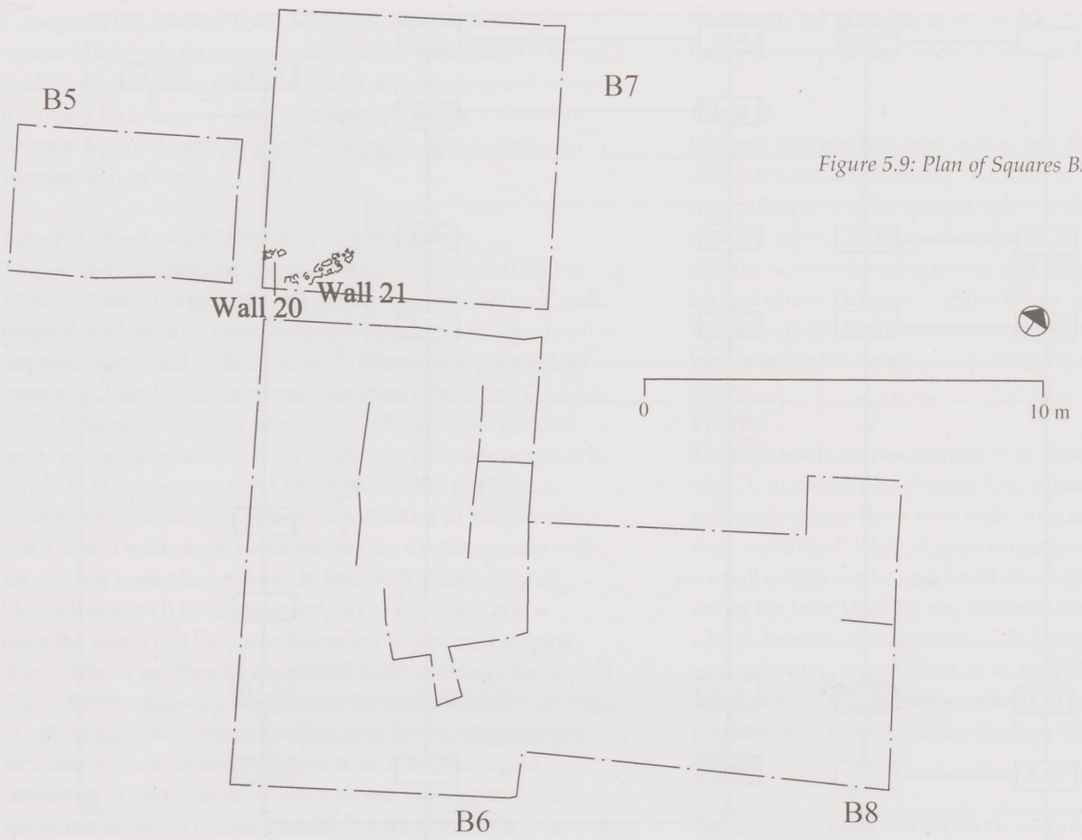


Figure 5.9: Plan of Squares B5–8 Phase 1

Phase 2

Deposits associated with Walls 20 and 21 were excavated in trench B7.4. Running up to both walls was a sequence of deposits of red earth (7.4.16, 15) and fine soil (7.4.14), both with little pottery, and clayey red earth with no pottery (7.4.12 = 7.5.13). No further descriptions of the loci were recorded, and they are difficult to interpret, but the paucity of pottery and anything resembling a surface might suggest a use other than residential. Figure 5.22 shows that 7.4.14 ran over the top of Wall 20, which therefore fell out of use during Phase 2.

Phase 3

This was a phase of construction with associated deposits in trenches B7.4 and 7.5 (Figure 5.10). Walls 22 and 23 were built

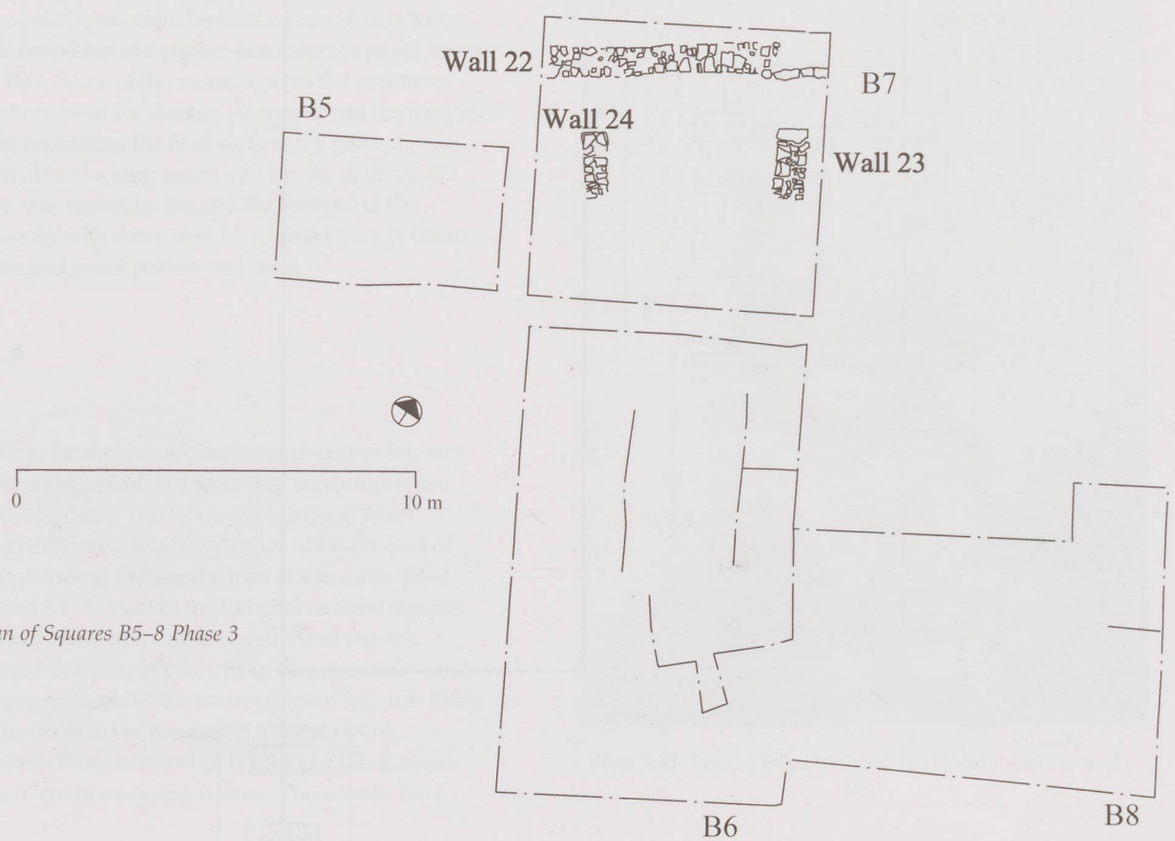


Figure 5.10: Plan of Squares B5–8 Phase 3



Plate 5.34: Walls 22 (left) and 24 (right), looking east

on sterile red earth 7.5.13, attributed to Phase 2, which might therefore be interpreted as bedding for the walls. Wall 22 ran for 5 m. north-east/south-west across the entire north-west edge of trench B7.5 (Plate 5.34). It survived to a height of 0.90 m. and was 0.50 m. wide, constructed of random rubble. Wall 23, also of random rubble, ran north-west/south-east for 1.50 m. along the north-east baulk of trench B7.5, from under the later Wall 25 towards Wall 22. It was 0.50 m. wide and survived to a height of 1.40 m. It formed a doorway 1 m. wide with Wall 22.

Running up to both walls was a deposit of earth, small stones, plaster and some mudbrick, with much pottery (7.5.12), interpreted as a surface associated with the walls. On this surface was constructed Wall 24. Wall 24 ran north-west/south-east for 1.30 m. from under the doorway in the later Wall 25 towards Wall 22, with which it formed a doorway 1.10 m. wide (cf. Plate 5.34). Wall 24 was constructed of random rubble, survived to a height of 1.10 m. and was 0.45 m. wide.

Running up to Walls 24 and 22 was a hard lime plaster floor (7.5.11), overlying surface 7.5.12; it was not recorded whether the plaster floor also ran up to Wall 23. On floor 7.5.11 was found a decorated *Tridacna squamosa* shell (Plate 5.35; cf. Chapter 12).

Contemporary with these developments was a sequence of deposits in trench B7.4: red earth with some mudbrick (7.4.11, 10), then a lime plaster floor (7.4.9), likely to be the same as 7.5.11.

Phase 3 seemed to consist of a structure built in two stages: Walls 22 and 23, forming a doorway, with an associated earth and stone floor (7.5.12), then the addition of Wall 24, forming another doorway, and a lime plaster floor (7.5.11, 7.4.9) laid over most of these two trenches. The three walls formed what would seem to be part of a rectangular structure, with two doorways leading out or to another part of the structure. The plaster floor suggests that this structure might have been residential.

Phase 4

This phase was represented by the construction of two separate structures (Figure 5.11). The earlier structure, in Squares B7 and B5, was formed from Walls 25–32, either lying directly on the Phase 3 plaster floor (7.4.9, 7.5.11) or, in trench B6.3, on a deposit of red earth and broken mudbrick on bedrock (6.3.9, 10, 12–22), probably to be identified as a fill to produce an even surface on the shelving bedrock prior to building (but tentatively interpreted by Bennett [1977: 7] as an area for making or drying out mudbricks). The main walls of the structure were Walls 31, 30, 25 and 26, forming part of a rectangular structure aligned north-east/south-west, at least 9.50 by 5.50 m. in area, although the end wall to the north-west was not found. These main walls were c. 1 m. wide and survived to a height of c. 1 m., constructed of random rubble. Both faces of Wall 25 included shelves or benches 0.20 m. wide, 0.80 m. above the base of the wall (cf. Figure 5.22; Plate 5.36; cf. Plate 5.35). Within Wall 25 was a doorway 0.75 m. wide, immediately above the line of the earlier Wall 24 (cf. Plate 5.38).

Walls 28, 29 and 32 were described during excavation as stone 'platforms'. Wall 28 was built along the south-east face of the earlier Wall 22. Although it survived to a lower absolute height than the top of Wall 22, it was clearly constructed on Phase 3 plaster floor 7.5.11 and dates to Phase 4. Only one course of stones of Wall 28 survived, measuring 1.20 m. long and 0.50 m. wide. It may have been a bench or shelf along one face of the earlier Wall 22, which was possibly re-used in Phase 4. On top of Wall 28 were found a quern and a grinder, leading to



Plate 5.35: Tridacna squamosa *shell, in centre of photo, lying on plaster floor 7.5.11, with later platform Wall 29 on the right against Wall 25, looking north-east*



Plate 5.36: Wall 25, looking west, showing shelf or bench on left

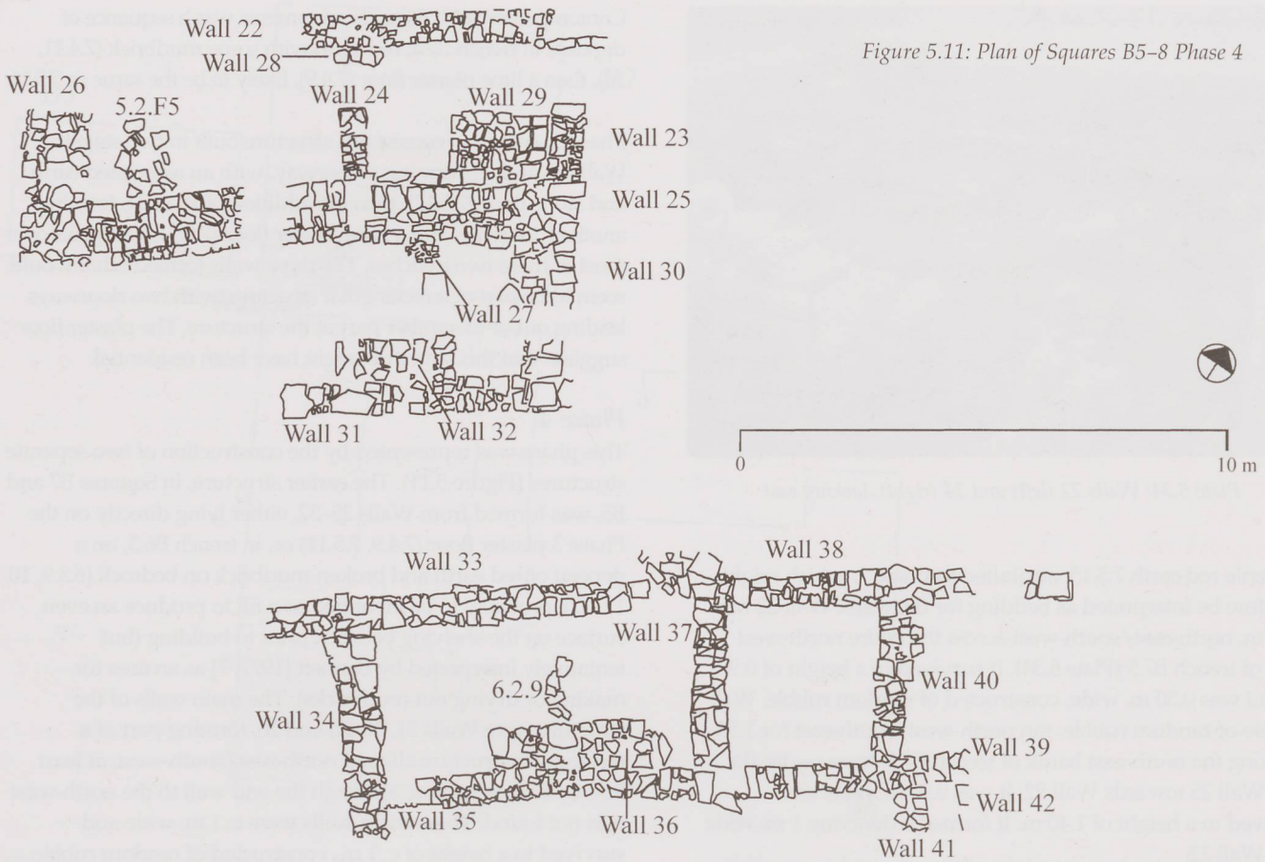


Figure 5.11: Plan of Squares B5–8 Phase 4

Bennett's description of these stone structures as 'working platforms' (1977:7) (Plates 5.37–38).

Wall 29 was built between Wall 25 and the earlier Wall 23, and also survived to a lower absolute height than the top of Wall 23 (cf. Plate 5.35). It was not recorded how many courses survived of Wall 29. It measured 1.60 x 1.30 m., but its function was not determined. Wall 32 appears to be a similar 'platform' or shelf against Wall 31, measuring 2 x 0.50 m.

Wall 27 was a small rubble wall 1.14 m. long and 0.45 m. wide running north-west/south-east from Wall 25 to the south-east



Plate 5.37: Stone quern and grinder laying on Wall 28 (top), with Walls 22 (right), 24, 25 and 29 (left), looking south-west



Plate 5.38: Stone quern and grinder lying on Wall 28 (bottom), with Walls 24 and 25 (top) showing doorway in Wall 25, looking south-east

baulk of trench B7.4, perhaps dividing the space between Walls 25 and 31.

Running up to Wall 31 was a hard red deposit (6.3.7, 8), interpreted as a surface associated with the outside of the structure. On this surface was constructed part of the second structure, in Squares B6 and B8 (cf. Figure 5.21), although owing to rising bedrock to the south-east, some of the walls were directly on bedrock. This structure, oriented on the same axis as that in Squares B7 and B5, comprised Walls 33–42, forming a rectangular structure at least 11.50 m. long and 4.25 m. wide. Two complete rooms were revealed, divided by Wall 37, measuring 5.25 x 2.50 m. and 2.50 x 2.50 m. The beginnings of further rooms appeared beyond the excavated walls. The walls were c. 0.60 m. wide and survived to a height of c. 1 m. (two to three courses deep), mostly of medium and small stones but some larger ones. There appeared to be a doorway 1.10 m. wide between Walls 33 and 37. No doorways were recorded for the room bounded by Walls 37–40, but only the tops of these walls were cleared and these trenches were not excavated systematically.

Wall 36, against Wall 35, appeared to be a platform or shelf similar to those in the structure in Square B7. Wall 36 measured 2.50 x 0.50 m., but its surviving height was not recorded.

In summary, Phase 4 consisted of a rectangular structure in Squares B7 and B5, characterised by the addition of shelves, benches or platforms, although no complete plan of a room was recovered. On a surface associated with this structure was con-structed a second rectangular structure in Squares B6 and B8. Two complete rooms were excavated, one exactly square in plan.

Phase 5

This was a phase of occupation deposits associated with the Phase 4 walls. In Square B7, running up to the Phase 4 walls, was a deposit of soft earth with pottery and ash (7.4.8, 7.5.9), probably an occupation deposit, overlain by a thick lime plaster floor (7.4.7, 7.5.7) which covered all of trenches B7.4–5 and ran within the doorway in Wall 25.

Between the two Phase 4 structures, in trench B6.3, an ashy deposit (unnumbered) overlay the Phase 4 surface (6.3.7, 8). Over the ash deposit was a hard yellow deposit (6.3.6), possibly a laid clay surface. Cut into the surface was a small pit; a localised ash deposit on the surface may be the remnant of a tabun.
In trench B6.4, against Walls 33 and 34, a deposit of hard red soil with stones and chalk (6.4.5) was probably natural accumulation over sterile soil (6.4.6) on bedrock.

In trench B6.2, within the room bounded by Walls 33–35 and 37, there was a sequence of deposits associated with the walls. Over a deposit of hard packed red earth mixed with chalk (6.2.8, 11) was a hard clay layer (6.2.7, 10), identified as a surface. Onto this surface was built a tabun (6.2.9) comprising six blackened, rounded stones c. 6 cm. in diameter arranged in an arc. Overlying the surface was another hard clay deposit (6.2.6), possibly another surface. Over this was a deposit of red earth with very small stones and mudbrick, which is difficult to interpret: it may be an occupation layer on the surface, or accumulation of soil, stones and occupation debris, or conceivably part of topsoil layers.

In the corner formed by Walls 37 and 38 was constructed a semi-circular stone storage space for large pottery jars (Plate 5.39).

Phase 5 occupation deposits were distinctive in different parts of this area. Within the Square B7 structure there was a lime plaster floor. Between the two structures was a surface with a pit and a possible tabun, suggesting an activity area connected with storage and cooking. The room in Square B8 contained a storage space for large pottery jars. Within one room of the structure in Square B6 were two consecutive clay surfaces, the earlier with a stone tabun, again suggesting cooking. In trench B6.4, outside that room, a thin, probably accumulated deposit on sterile soil suggests that the Phase 5 deposits in this trench may have been outside the structure.

Phase 6

All the loci assigned to this phase consisted of earth, ash and plaster mixed with large quantities of pottery and stones, suggesting an episode of burning and collapse. It appears that the burning was localised, since no evidence of fire was found in the structure in trench B6.2, although immediately to the south-west the shallow deposits in trench B6.4 comprised burning and collapse. The Phase 6 loci were overlain by topsoil.

Squares B5–8: summary and interpretation

Since bedrock was not reached in all the trenches, it cannot be demonstrated conclusively that Phase 1 was the earliest use of this part of the site. The two earliest walls (Phase 1) were flimsy



Plate 5.39: Storage space for large pottery jars between Walls 37 (left) and 38 (top), looking west

constructions, unlikely to function as house walls. The deposits associated with them (Phase 2) did not include an identifiable surface and are difficult to interpret, and the walls fell out of use during this phase. Phase 3 consisted of three walls comprising part of a rectangular structure built in two stages, with two doorways, and an associated plaster floor. Two separate rectangular structures were built in Phase 4, the earlier structure, in Squares B7 and B5, including shelves, benches or platforms against the walls, but no complete room plan was recovered. The later structure, in Squares B6 and B8, consisted of two complete rooms and parts of others. The Phase 5 deposits associated with these structures reveal differential use. The Square B7 structure had a lime plaster floor, perhaps suggesting a house room. Between the structures, and therefore possibly an external area such as a courtyard, were a pit and a possible tabun, perhaps connected with storage and cooking. In one room of the Square B6 structure were two consecutive clay surfaces, the earlier with a stone tabun, perhaps indicating cooking inside that room. Beyond it, trench B6.4 may have been another external area, judging from the thin, probably accumulated deposit on sterile soil. The end of occupation in Squares B5–8 is characterised by burning and collapse (Phase 6), although this was localised and did not affect the room in trench B6.2.

After an initial phase of uncertain use, Squares B5–8 were probably residential, with evidence of small, rectangular structures with cooking and storage facilities either within them or in external areas perhaps to be identified as courtyards. The shelves, benches or platforms against the walls may have been for storage or sitting.

Squares B9–10

Location

Squares B9–10 were located immediately north-east of Square B8, on the same alignment, but with no stratigraphic connection between them. The following trenches, which appear on the plan (Figure 5.2), were only cleared to the tops of the walls and the collapse layers below topsoil: 9.1, 10.4–6. The only trenches which were systematically excavated were B10.1–3, and bedrock was not reached in any of them. Only one usable section drawing was produced, for trench B10.1 (Figure 5.23). No phasing matrix has been produced for Squares B9–10: apart from simple, short sequences in trenches B10.2 and 3, the only other sequence, in trench B10.1, is illustrated in Figure 5.23, and it has proved impossible to correlate and interpret conclusively the relative phasing between trench B10.1 and trenches B10.2–3. The interpretation of these squares is very uncertain. The following account describes the stratigraphic phases, but separately presents two different possible interpretations.

Figure 5.12: Plan of Squares B9–10

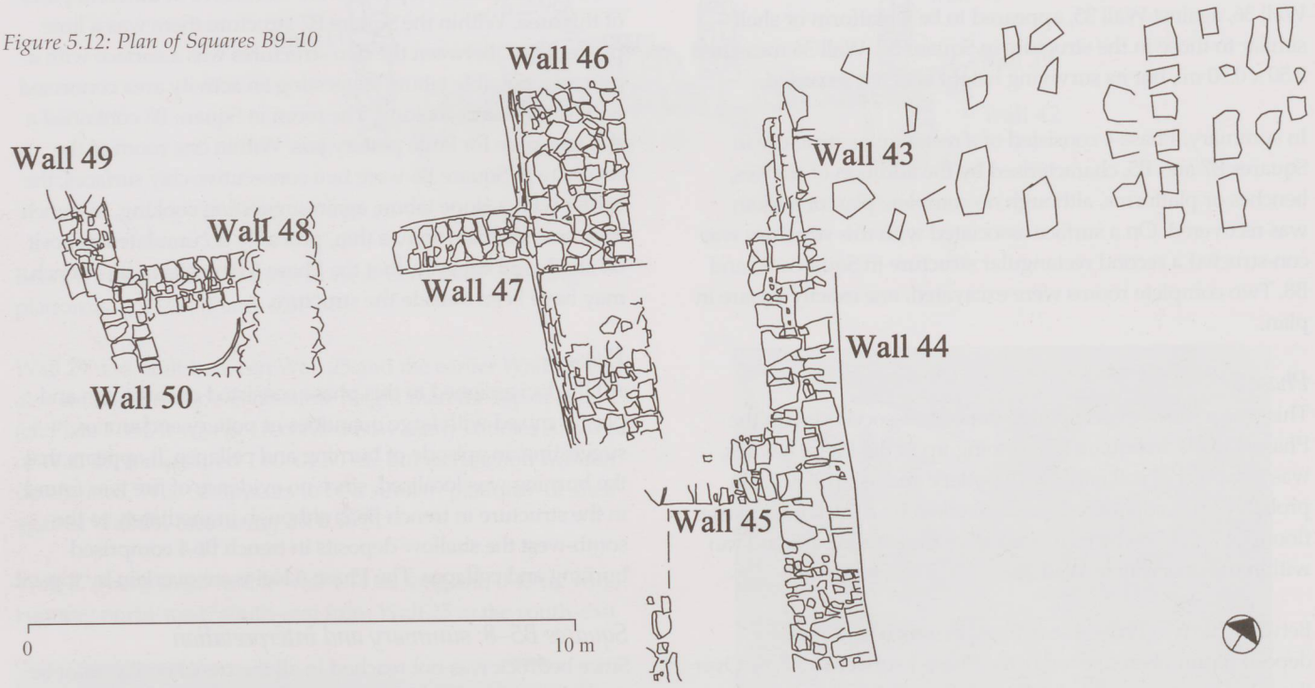




Plate 5.40: Walls 43, 46 and 47, looking east

Phase 1

Since bedrock was not reached, it is not known if there are unexcavated deposits earlier than the present Phase 1. To this phase are assigned all the visible walls in Squares B9–10 (Figure 5.12). Walls 43–47 were certainly the earliest excavated loci in



Plate 5.41: Walls 43 and 44 (top), 46 (middle) and 47 (bottom), looking north-east



Plate 5.42: Walls 43 (left) and 44 (middle), with rubble 10.1.14 (bottom), looking east

trenches B10.1–3 (Plates 5.40–41); it is not known if Walls 48–50 were originally contemporary. Since none of the bases of the walls were reached, it is not known if the walls were originally constructed in different phases.

Walls 43 and 44 ran north-west/south-east along the north-east baulk of trenches B10.1 and 4, closest to Area A (Plate 5.42). Wall 44 was well built of coursed and snecked stones, and was traced for 7 m. Its excavated width was 1.50 m., although its north-east face was not found. It was excavated to a height of 2.20 m., but its base was not reached. It was bonded to Wall 43, of similar construction, offset 0.50 m. to the north-east. Wall 43 was traced for 3 m. (cf. Plates 5.43, 45). Its excavated width was 1 m., but its north-east face was also not found. It was excavated to the same height of 2.20 m.

Wall 46, of rougher construction than Walls 43 and 44, ran parallel to those walls for an excavated length of 6 m. (Plates 5.43–45), although it is possible that the trace of a wall found in trench B10.4 is the continuation of Wall 46; if so, its total excavated length would be 10 m. It was 1.60 m. wide and was excavated to a height of 2.70 m. The plaster surviving on the wall joined with the plaster of floor 10.2.12 of Phase 2.

Running south-west/north-east between Walls 44 and 46, and bonded to both, was Wall 45, 2 m. long, 1.18 m. wide, and excavated to a height of 0.97 m.

Abutting Wall 46 was Wall 47, running south-west/north-east for 2.60 m. (cf. Plates 5.40, 41, 44, 45). It was 0.72 m. wide and was excavated to a height of 1.68 m. As with Wall 46, plaster on Wall 47 joined with the plaster of floor 10.2.12 of Phase 2.

Only the tops of Walls 48–50, built of small uncoursed rubble, were cleared. Wall 48 ran south-west/north-east for 1.55 m. towards Wall 47, but did not meet it. The north-east end of Wall 48 was covered by unexcavated rubble and was not cleared. It was 0.80 m. wide and was excavated to a height of 0.82 m. Wall 49 ran north-west/south-east for 1.68 m. to bond with Walls 48 and 50. It was 0.83 m. wide and was excavated to a height of 0.80 m. Wall 50 ran north-west/south-east for 1.65 m. to bond with Walls 48 and 49. It was 0.66 m. wide and was excavated to a height of 0.70 m.

Phase 2

This was a phase of deposits associated with the use of the Phase 1 walls. In trench B10.3 there was a sequence of three deposits running up to Walls 46 and 47: solid red clay (10.3.9), perhaps a surface; compact limey earth with small stones (10.3.8), probably make-up for the plaster floor (10.3.7).

In trench B10.2, there was a longer sequence of deposits: plaster floor (10.2.12) joining with the plaster on Walls 46 and



Plate 4.43: Wall 46 (bottom), with Wall 43 visible at top, looking north-east



Plate 5.44: Walls 46 (left) and 47 (right), looking north-east, with plaster facing on both



Plate 4.45: Walls 46 (middle) and 47 (bottom), with Wall 43 just visible at top, looking north-east

47 (Plate 5.46); a deposit of clay, charcoal and plaster (10.2.9, 11), perhaps occupation on the floor; fragments of plaster (10.2.8a), probably either fragments of a broken plaster floor or plaster fallen from a ceiling or walls; a thin layer of stones (10.2.8), perhaps fill or make-up; and a deposit of compact earth with some plaster (10.2.7) running up to Walls 46 and 47, probably a floor.

In trenches B10.5 and 6, immediately below collapse levels, was a plaster floor (10.5.9, 10.6.4) running up to the Phase 1 walls.

The sequence in trench B10.1 can be seen in Figure 5.23. The deposits were not described in detail, and the sequence can be summarised as follows:
Compact white deposit (10.1.18)
Grits (10.1.17)
Rubble, mud and plaster (10.1.14/16)
Mud and plaster deposit (10.1.13)
Foundation trench for Wall 44 rebuild (10.1.15)
Mud and plaster deposit (10.1.8, 9, 11)
Possible pit (unnumbered)
Foundation trenches for rebuild of Walls 43 and 44 (10.1.10, 12)
Deposit of mud and limestone chips (10.1.5)

Two possible interpretations of this sequence are presented below.

Phase 3

In trenches B10.2–6, the Phase 2 deposits were overlain by tumbled stones mixed with earth (10.2.5–6, 10.3.4–6, 10.5.2–4, 8, 10.6.2–3) (Plate 5.47). This is interpreted as an episode of collapse. These deposits were overlain by topsoil.



Plate 5.46: Plaster floor 10.2.12 joining with plaster on Walls 46 (left) and 47 (right), looking east

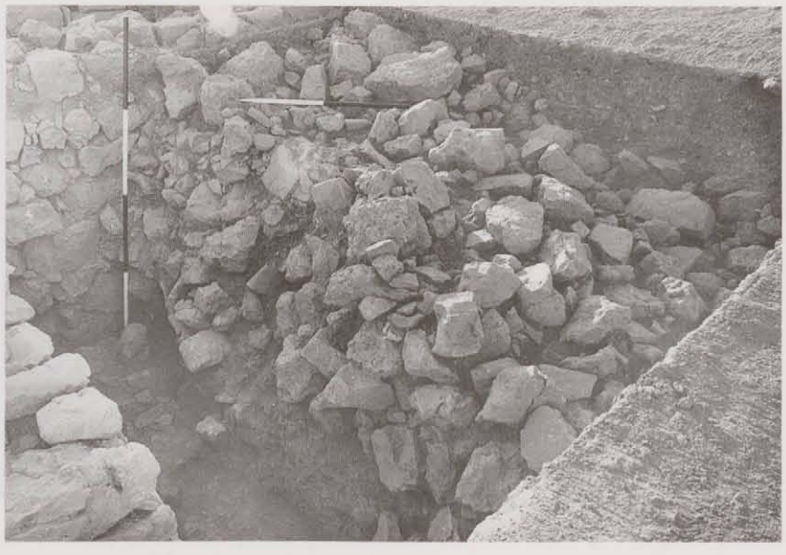


Plate 5.47: Collapse deposits 10.3.4–6, looking east, with Wall 47 at bottom left

No collapse deposits were found in trench B10.1, where the Phase 2 deposits were directly overlain by topsoil.

Squares B9–10: summary and interpretation

There were only two main excavated phases in these squares: Walls 43–50 (Phase 1), and the use of those walls (Phase 2), with collapse deposits (Phase 3) overlying all but trench B10.1.

There is little doubt that in trenches B10.2, 3, 5 and 6 the Phase 2 deposits are to be interpreted as occupation. In each trench there was at least one plaster floor, and in trench B10.2 perhaps as many as three, although the cursory descriptions make interpretation difficult. Walls 47–50 appear similar in construction to the walls in Squares B5–8, and are perhaps to be identified as house walls.

The interpretation of Walls 43–46 and the deposits in trench B10.1 is more problematic. The construction of the walls and the nature of the deposits are quite different from that elsewhere in Squares B9 and 10. There seem to be two possible interpretations:

INTERPRETATION 1

Walls 43–46 are to be identified as particularly well built house walls, enclosing a rectangular area subdivided by Wall 45. The sequence of deposits in trench B10.1 could be identified as a floor (10.1.18), followed by make-up for another floor (10.1.17), several collapse and debris deposits (10.1.14/16, 13), a rebuild of Wall 44, a series of mud and plaster surfaces or floors (10.1.8, 9, 11), a possible pit and a second rebuild of Wall 44, and another floor (10.1.5).

The disadvantage of this interpretation is the particularly well constructed nature of, especially, Walls 43 and 44, and the likelihood that these walls and Wall 46 continued well beyond Square B10 in both directions (the lines of the walls continuing can just be traced on the aerial photograph, Plate 1.2). Some of the deposits in trench B10.1 might be interpreted as occupation deposits, but need not be. The lack of collapse deposits compared with the rest of Square B10 should also be taken into account.

INTERPRETATION 2

It is conceivable that Walls 43 and 44 were the south-west edge of a stone platform raising and supporting the buildings on Area A. There are several reasons for proposing this. Although bedrock rises naturally to the north-east, it is quite clear that the buildings in Area A were further raised artificially (cf. Chapter 4). The rise begins along the line of Walls 43 and 44. The aerial photograph (Plate 1.2) clearly shows several terraces — some if not all artificial — along the promontory of Busayra. The highest part of the site is Area A, and the south-west line of the rectangular terrace on which Area A sits is along the line of Walls 43 and 44. The construction of these walls is considerably better, and using larger stones, than that of Walls 47–50, and resembles 1.1.F1 in Area C, also identified as part of a stone platform raising the Area C complex (cf. Chapter 6). If Walls 43 and 44 were indeed part of the stone platform supporting the Area A building, the 0.50-m. offset where they bonded cannot be explained.

During excavation, Wall 46 was identified as a buttress wall supporting a terrace. Its south-west face was a straight, vertical line, lined with plaster, against which was built Wall 47, but its north-east face was described as uneven, perhaps suggesting that it was not an ordinary house wall. Furthermore, during excavation the deposits in trench B10.1 between Walls 44 and 46 were tentatively interpreted as an earth, stone and plaster fill (the possible pit was not described during excavation, but noticed only during the drawing of the section, cf. Figure 5.23). If Walls 43 and 44 were part of a stone platform, Wall 46 might be explained as a retaining wall for a supporting fill against the platform. The two 'rebuilds' of Wall 44 could have been stages in the construction of the stone platform. Wall 45 acted as a cross-wall between the stone platform and the retaining wall, creating a sort of casemate system to contain the fill. Identification of the deposits as a fill would explain the lack of collapse deposits in trench B10.1, since the area between Walls 44 and 46 was densely packed, probably up to the top of the walls. The deposits within trenches B10.2 and 3 reflect occupation against the south-west face of the retaining wall (Wall 46).

If this second interpretation is correct, Walls 43, 44 and 46 were essentially structural walls to raise and support the buildings on Area A, rather than 'an inner defensive wall' (Bennett 1975: 4), 'a massive barrier wall, which was probably the dividing line between the aristocracy on Area A and their servants and dependants on Area B' (Bennett 1983: 11). A group of stones in a vaguely linear arrangement on the slope between Walls 43 and 44 and the south-west wall of the building on Area A was tentatively proposed during excavation as part of 'a properly laid paved entrance...to the building on the Acropolis' (Bennett 1977: 7), and perhaps associated with the entrance in that wall (Area A, Wall 79). It might also be explained simply as stones from the buildings on Area A fallen down the slope. A heavy fall of masonry on the slope prevented a systematic search for a paved entrance (Bennett 1977: 7).

The present writer inclines towards the second interpretation, but caution is necessary since the proposed stone platform was not investigated in depth in order to test this identification.

Area B: overall summary and interpretation

It is difficult to co-ordinate the phases in Squares B1–4, B5–8 and B9–10 to produce a coherent account of the development of Area B. Bedrock was not reached at all in Squares B9–10, and only in part of Squares B5–8, so the earliest use of these squares cannot be demonstrated. During excavation, Bennett proposed that the structures in Squares B6 and 8 should be attributed to the latest stratified occupational period in Square B3, that is, to Phase 6 in Squares B1–4 (Bennett 1975: 4). There is no stratigraphic evidence for this correlation, but given the similarity of architecture it is a reasonable proposal.

According to this tentative reconstruction, the Phase 4 structures in Squares B5–8 would be contemporary with the Phase 6 structures and the major perimeter wall in Squares B1–4. The earlier structures in Squares B5–8 (Phases 1 and 3)

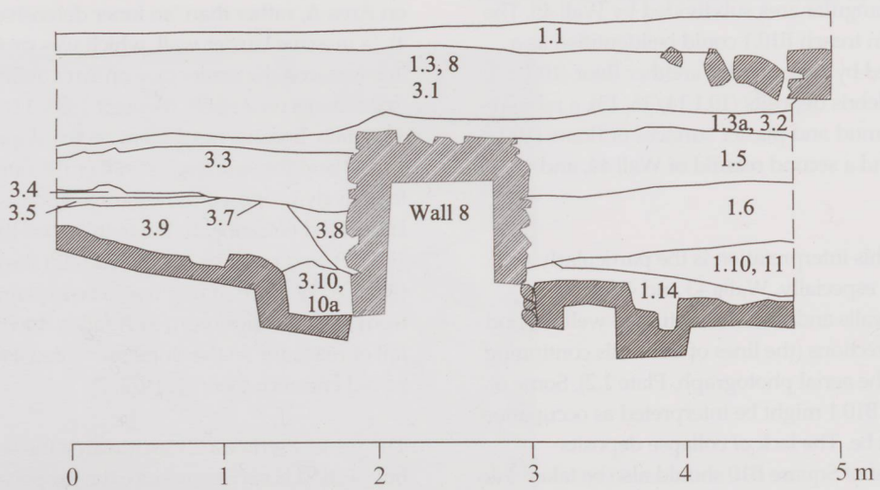
would then broadly correlate with Phases 2 and 4 in Squares B1–4 and the use of the cave complex.

It is particularly difficult to judge where Squares B9–10 fit in. The structures formed from Walls 47–50 could be correlated with the latest structures in Squares B1–8. However, if Walls 43–46 are interpreted as part of a stone platform to raise and support the major building in Area A Phase 3, it may well be that their original foundation should date to an earlier phase. In this way, the relative date of these walls can be correlated with Area A: if the interpretation as a stone platform is accepted, Walls 43–46 cannot predate Area A Phase 2.

In summary, Area B consisted of a series of walls on the perimeter of the site, creating a paved entrance or gateway, originally possibly approached by a paved track. This possible track was blocked off in a later phase, encouraging an approach to the gate from a different direction, and in the final phase the gate itself was blocked. Some of the rooms against the perimeter wall may have been used for storage, as was the case at Iron I Tall al-ʿUmayri (Clark 1994: 144–5). The area north-east of the perimeter walls was utilised by a cave complex and by a series of flimsy constructions culminating in a number of rectangular structures associated with plaster floors, benches or shelves, storage and cooking, and a possible courtyard, suggesting domestic occupation. These structures apparently filled the whole area between the perimeter walls and Area A. Walls 43–46 may have been associated with these domestic structures, but it is tentatively proposed that they were part of a stone platform and retaining wall to raise and support the major buildings on Area A. In the latest structural phase, domestic structures were built against the retaining wall.

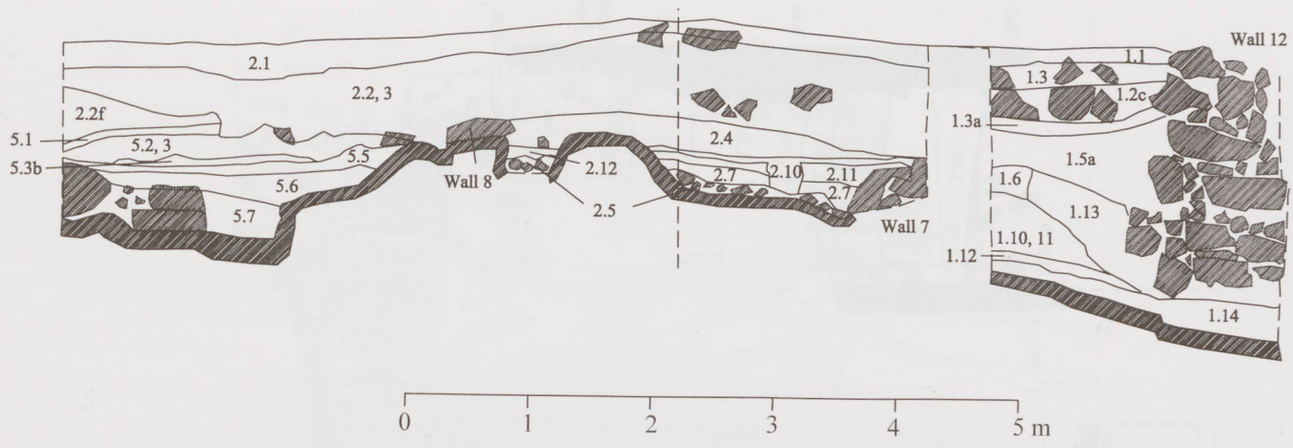
The latest occupation in Area B was ended by fire and collapse, which was fairly widespread although some parts apparently remained unaffected.

Figure 5.13: Section B1: Square B1, north-west facing



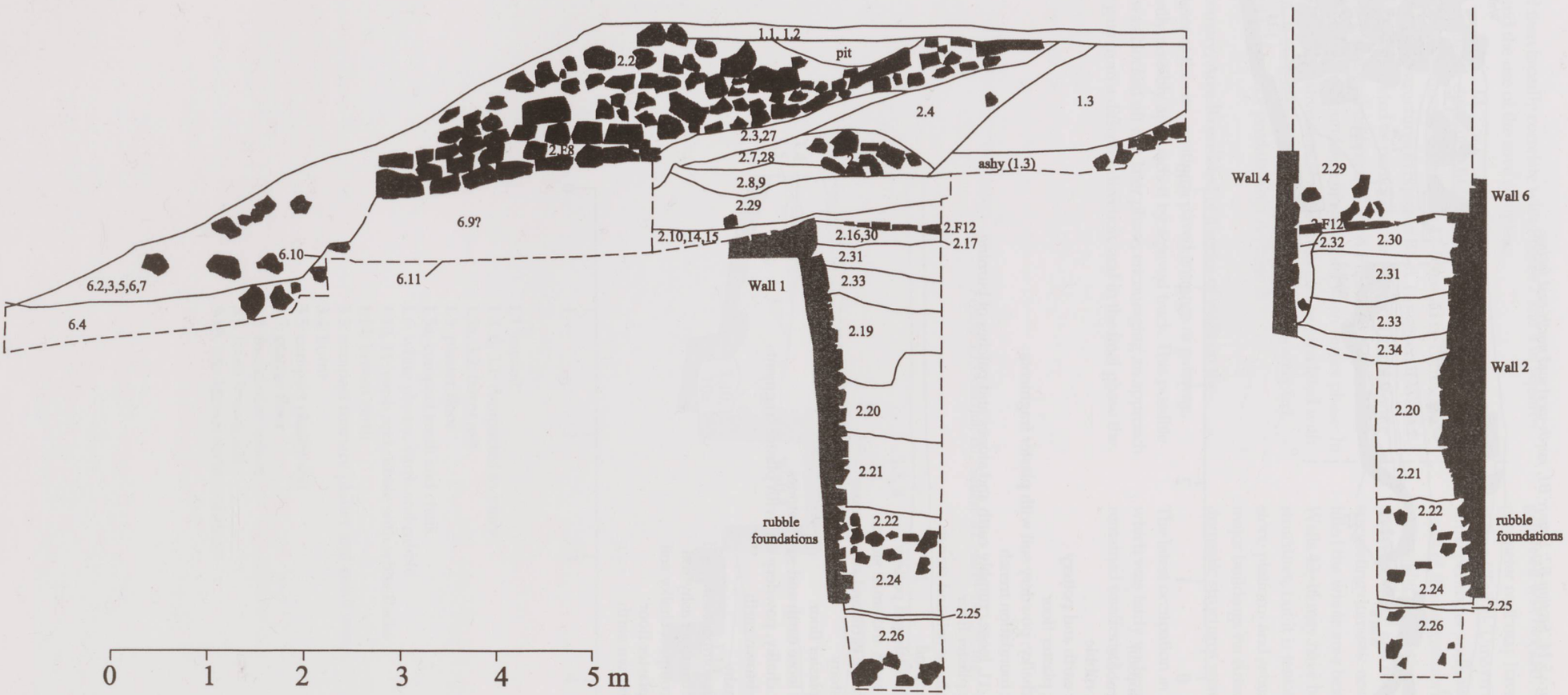
1.1: topsoil
1.3, 8, 3.1: compacted mortary
1.3a, 3.2: burnt ash
1.5: plaster floor
1.5a: compact earth and chalk
1.6: white plaster, earth and rubble
1.10, 11: earth and rubble with white flecks
1.14: brown earth
3.3: compact mortary plaster and small stones
3.4: burnt
3.5: compact chalky soil
3.7: plaster floor
3.8: foundation trench
3.9: loose brown soil
3.10, 10a: brown earth and stony

Figure 5.14: Section B2: Square B1, north-west and north-east facing



1.1: topsoil
1.3: rubble
1.2c: rubble
1.3a: earth and pottery
1.5a: plaster floor
1.6: chalky, powdery soil with plaster fragments
1.13: foundation trench
1.10, 11: loose crumbly earth and stones and patches of burning
1.12: plaster floor
1.14: loose soil and stones
2.1: topsoil
2.2, 3: earth and pottery
2.2f: earth and small stones
2.4: loose earth and small stones
2.5: stony
2.7: plaster floor
2.10: loose earth and small stones
2.11: chalky, powdery soil with plaster fragments
2.12: brown earth
5.1: ashy
5.2, 3: compact ashy soil
5.3b: compact ashy soil
5.5: compact chalky soil
5.6: plaster floor
5.7: brown earth

Figure 5.15: Section B3: Trenches B2.6 and B2.2, south-east and south-west facing

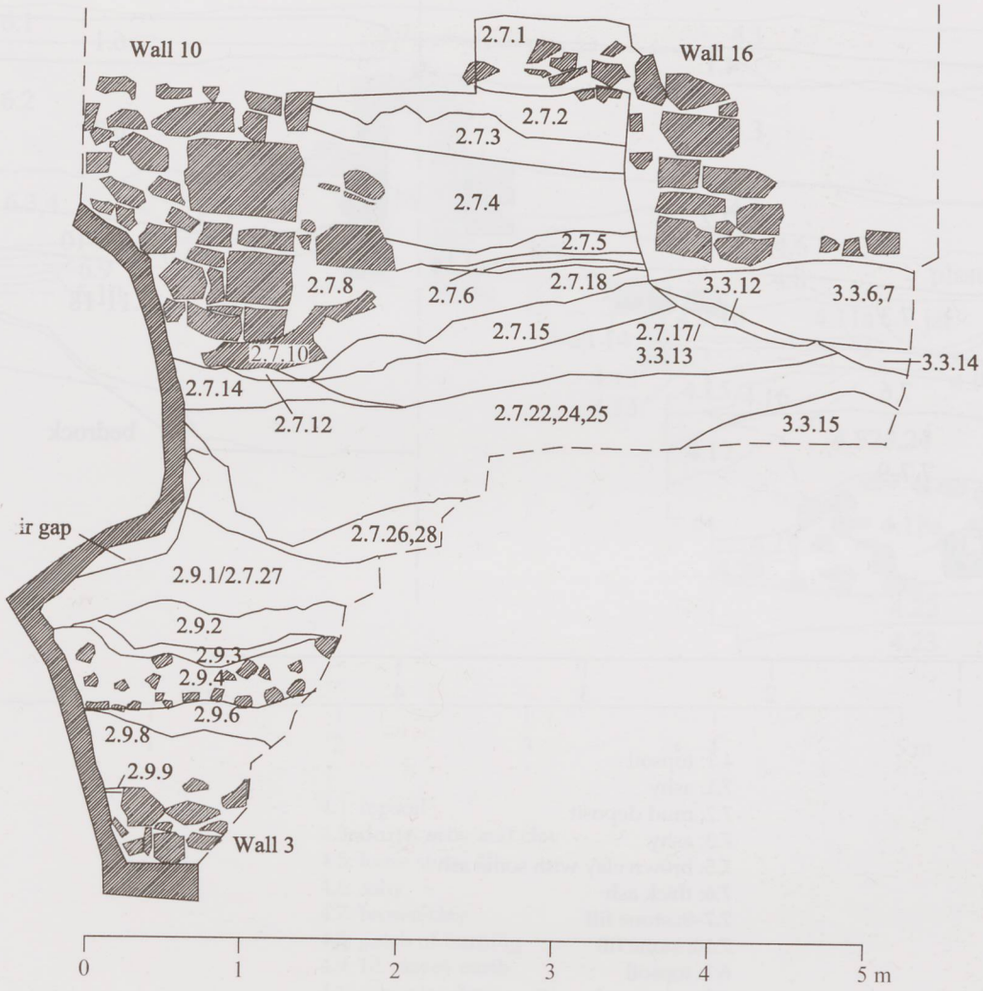


1.1, 1.2: topsoil
1.2, 2.2: rubble and ashy soil
1.3: clay
2.4: clay and pottery
2.F8: stone blocking
2.3, 27: brown and yellow clay
2.5: clay and stones
2.7, 28: ash and stones
2.8, 9: clay and ash
2.29: grey ash
2.10, 14, 15: hard clay
2.F12: stone paving

2.16, 30: hard grey
2.17: hard grey
2.31: brown soil
2.32: foundation trench
2.33: white floor
2.34: grit
2.19: reddish-brown stony clay
2.20: brown clay
2.21: ashy
2.22: large stones
2.24: large stones
2.25: hard ashy brown soil

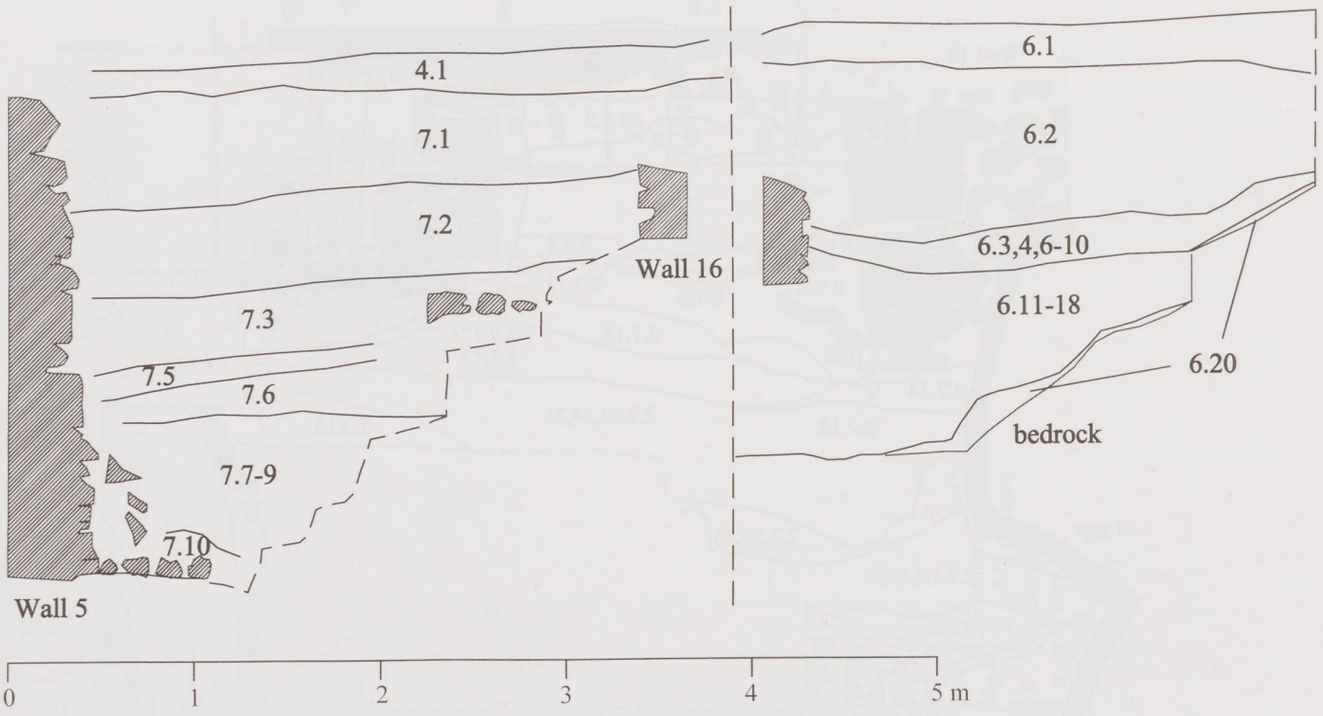
2.26: white gritty soil
6.2, 3, 5-7: collapse
6.8: clay fill
6.9: clay fill
6.10: ashy
6.11: ashy

Figure 5.16: Section B4: Trenches B2.7, B2.9 and B3.3, north-east facing



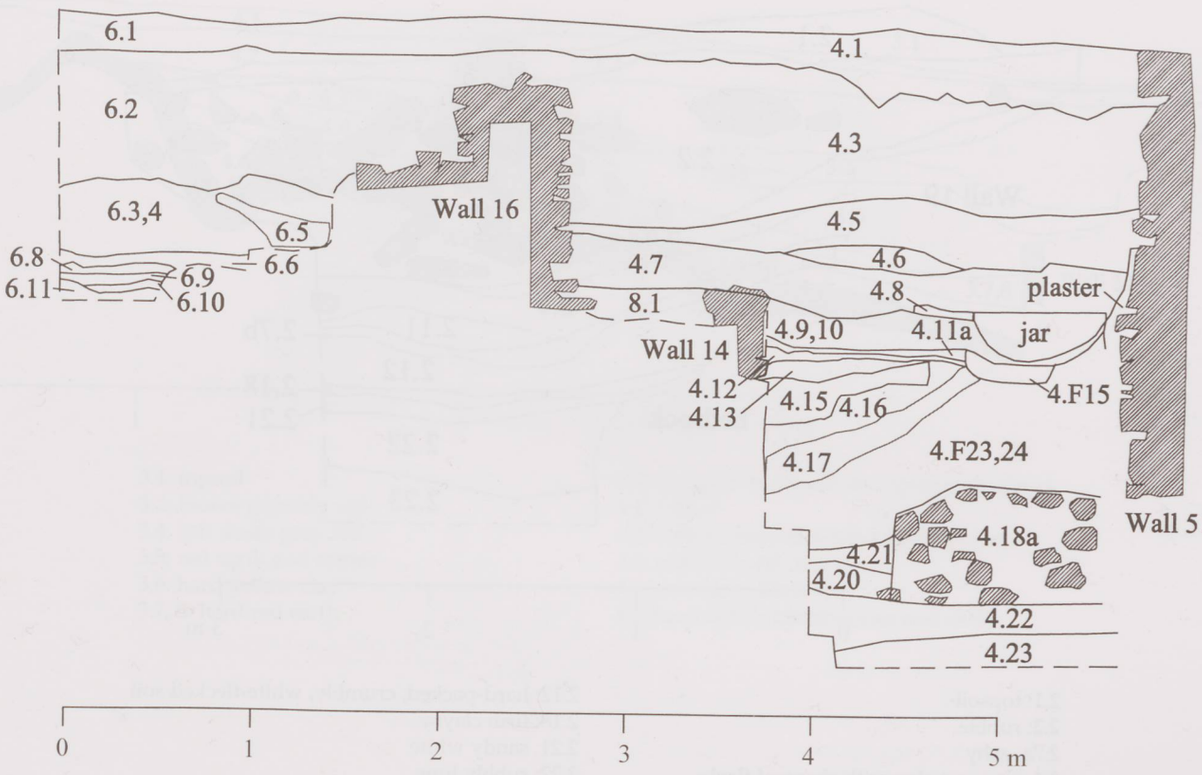
2.7.1: topsoil
2.7.2: fine ash and pottery
2.7.3: packed gritty clay
2.7.4: fine ash and clay
2.7.5: hard clay
2.7.6: rubbly
2.7.8: ashy
2.7.10: mudbrick
2.7.12: rubble, traces of burning
2.7.14: hard sandy clay and ash
2.7.15: plaster debris
2.7.17, 3.3.13: stones
2.7.18: ashy
2.7.22, 24, 25: gritty stony clay
2.7.26, 28: ashy
2.7.27, 2.9.1: ash and clay
2.9.2: sandy ash
2.9.3: rubble
2.9.4: stones
2.9.6: ash, clay and rubble
2.9.8: clay and stones
2.9.9: plaster floor
3.3.6, 7: fine red-brown soil and ash
3.3.12: rubbly clay
3.3.14: loose ashy rubble
3.3.15: stones

Figure 5.17: Section B5: Trenches B3.4, B3.7 and B3.6, south-east facing



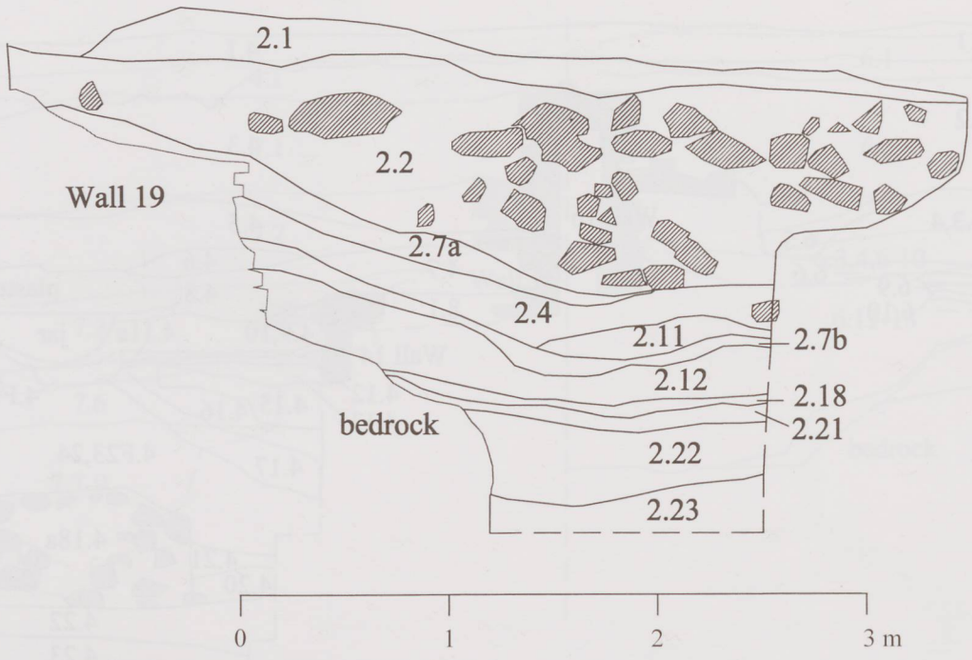
4.1: topsoil
7.1: ashy
7.2: mud deposit
7.3: ashy
7.5: brown clay with some ash
7.6: thick ash
7.7–9: stone fill
7.10: stone fill
6.1: topsoil
6.2: ashy earth
6.3, 4, 6–10: series of earth surfaces and ash layers
6.11–18: pit
6.20: plaster

Figure 5.18: Section B6: Trenches B3.6, B3.8 and B3.4, north-west facing



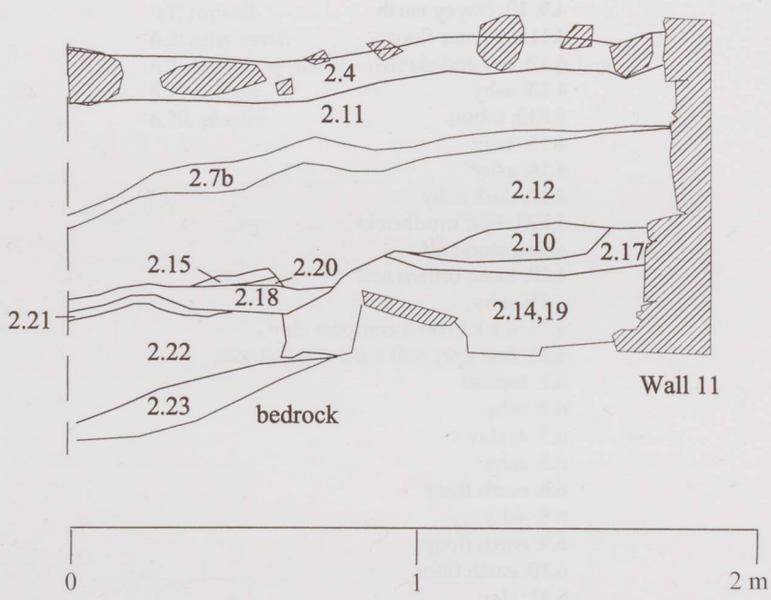
4.1: topsoil
4.3: dusty, ashy and clay
4.5: loose stone fill
4.6: ashy
4.7: brown clay
4.8: patch of burning
4.9, 10: clayey earth
4.11a: plaster floor
4.12: ash and clay
4.13: ashy
4.F15: tabun
4.15: ashy
4.16: ashy
4.17: dark ashy
4.F23, F24: mudbricks
4.18a: stone fill
4.20: loose brown soil
4.21: ashy
4.22: dark brown compact clay
4.23: fine grey soil with small stones
6.1: topsoil
6.2: ashy
6.3, 4: clay
6.5: ashy
6.6: earth floor
6.8: ashy
6.9: earth floor
6.10: earth floor
6.11: clay
8.1: loose brown soil

Figure 5.19: Section B7: Trench B4.2, north-east facing



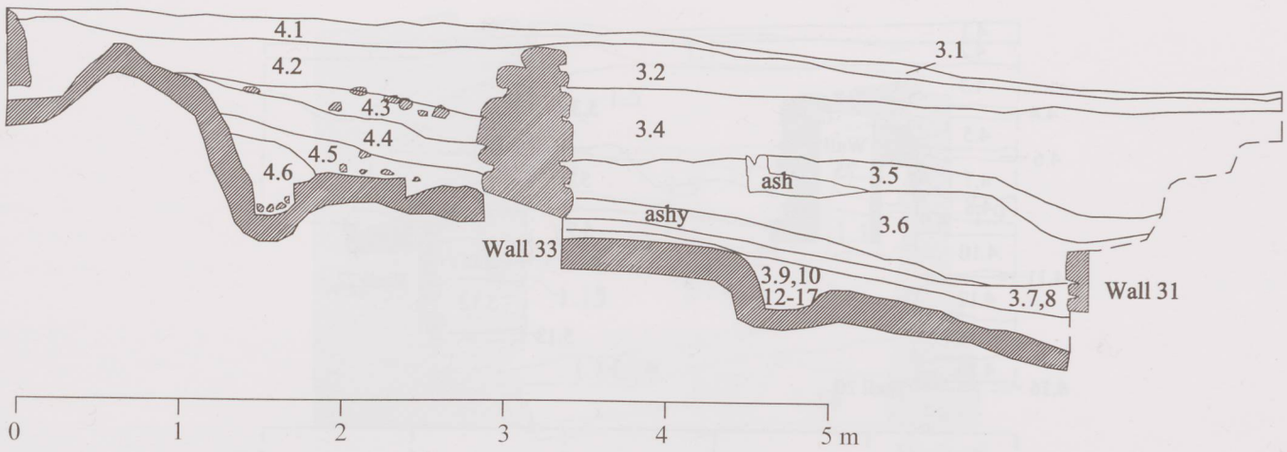
2.1: topsoil
2.2: rubble
2.7a: ashy
2.4: compact clay with charcoal flecks
2.11: small stones and white chips
2.7b: dark powdery ash
2.12: hard-packed, crumbly, white-flecked soil
2.18: firm clayey
2.21: sandy white
2.22: rubbly lime
2.23: dark brown

Figure 5.20: Section B8: Trench B4.2, south-east facing



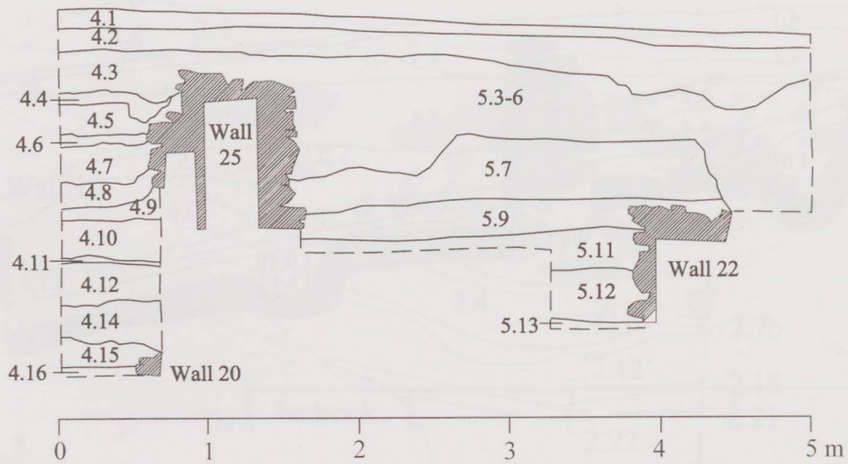
2.4: compact clay with charcoal flecks
2.11: small stones and white chips
2.7b: dark powdery ash
2.12: hard-packed, crumbly, white-flecked soil
2.10: plaster floor
2.15: plaster floor
2.20: fine clay
2.17: firm, white flecks
2.18: firm clayey
2.21: sandy white
2.14, 19: dark brown stony
2.22: rubbly lime
2.23: dark brown

Figure 5.21: Section B9: Trenches B6.3 and B6.4, north-east facing



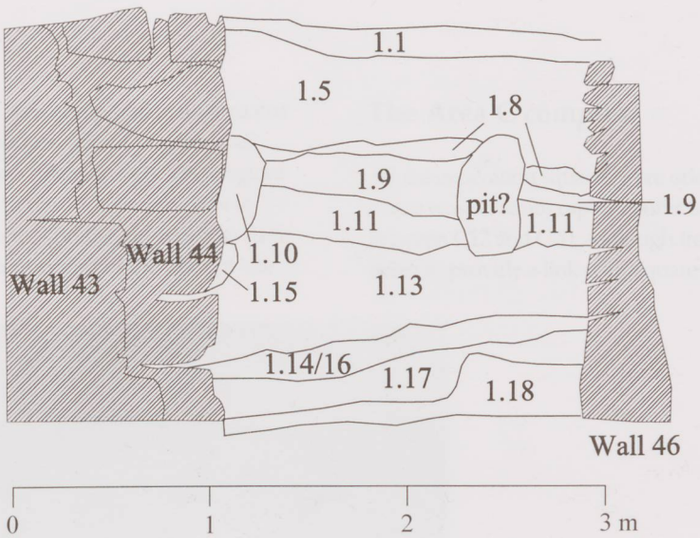
3.1: topsoil
3.2: brown crumbly soil
3.4: soft dusty grey soil
3.5: red earth and stones
3.6: hard yellow clay
3.7, 8: hard red earth
3.9, 10, 12-17: red earth and broken mudbrick
4.1: topsoil
4.2: brown crumbly earth and white chips
4.3: reddish earth and stones
4.4: soft dusty black soil
4.5: hard red soil with stones and chalk

Figure 5.22: Section B10: Trenches B7.4 and B7.5, north-east facing



4.1: topsoil
4.2: small stones, plaster and earth
4.3: red earth, plaster and stones
4.4: ash and earth
4.5: small stones, plaster and earth
4.6: earth and ashes
4.7: plaster floor
4.8: soft earth with pottery and ash
4.9: plaster floor
4.10: red earth with mudbrick
4.11: red earth with mudbrick
4.12: clayey red earth
4.14: fine soil
4.15: red earth
4.16: red earth
5.3-6: rubble
5.7: plaster floor
5.9: soft earth with pottery and ash
5.11: plaster floor
5.12: earth and stone floor
5.13: clayey red earth

Figure 5.23: Section B11: Trench B10.1, north-west facing



1.1: topsoil
1.5: muddy soil with limestone chips
1.8: muddy soil with plaster fragments
1.9: muddy soil with plaster fragments
1.10: foundation trench
1.11: muddy soil with charcoal and plaster
1.13: muddy soil with plaster
1.14, 16: compact whitish
1.15: loose infill of soil
1.17: small grits
1.18: compact whitish

6. AREA C

Piotr Bienkowski

Area C was located on the south side of the site, in an area cut by bulldozers constructing the modern school playground between the 1971 and 1972 seasons (Plates 6.1–3). The original aim, when this area was opened in the 1971 season, was to investigate if there were any defences on the approach to Area A, since here was the only easy connection of the ancient site with the modern village (Bennett 1973: 11). Excavation in the 1971, 1972, 1974 and 1980 seasons revealed what Bennett tentatively identified as the podium or foundation for a defensive tower (C1); a large building apparently similar to that in Area A (C10–25); and traces of buildings against the town wall (C3). No stratigraphic link was established between the 'foundational structure' and the large building. A total area of 67 m. north-south by 105 m. east-west was excavated (Bennett 1973: 11; 1974: 7–8; 1977: 7–8; 1983: 15–16).



Plate 6.1: General view of Area C during excavation in 1974, looking south

Area C was excavated in 12 squares: C1–3, 10–12, 14, 20–23, 25 (Figures 6.1–2). There was no apparent reason for the missing numbers in the sequence (C4 was a slit trench excavated at the end of the 1974 season but uncompleted, which attempted to link up stratigraphically C1 with C10, superseded in the 1980 season by trench C10.5; Bennett 1974: 8). There was no physical link between Square C3, against the town wall, and the rest of Area C. Square C3 is thus treated separately in this report. The remainder of Area C is discussed as a unit, entitled 'The Area C complex'.



Plate 6.2: General view of Area C, showing the mound of the main complex, looking south-east (photo taken in 1999)

The Area C complex

All the excavation squares were oriented north-west/south-east. There was no stratigraphic connection between C1 and C10, or between C12 and C20. Although trench C10.5 was excavated in order to provide a link with Square C1, in fact no connection was ever established: the section drawing of trench C10.5 was totally unrelated to the excavation notebook, with no locus numbers, and including walls and loci not mentioned in the notebook. Some attempt has been made in the following report to link these squares together in the overall phasing, but in the absence of stratigraphic evidence such an attempt is no more than reasoned guesswork.



Plate 6.3: General view of Square C20 during excavation in 1974, looking east, with Walls 27 (right) and 26 (left), and the modern village beyond

Usable section drawings were produced for Squares C1, 2, 11, 20–22. No section drawings at all were produced for the central part of the Area C complex, comprising Squares C10 and 12. Most of that area was not excavated to bedrock, so the nature of the earliest phases is very uncertain.

Trench C14.3 was excavated by an inexperienced volunteer with no supervision, and no sense can be made of the excavation

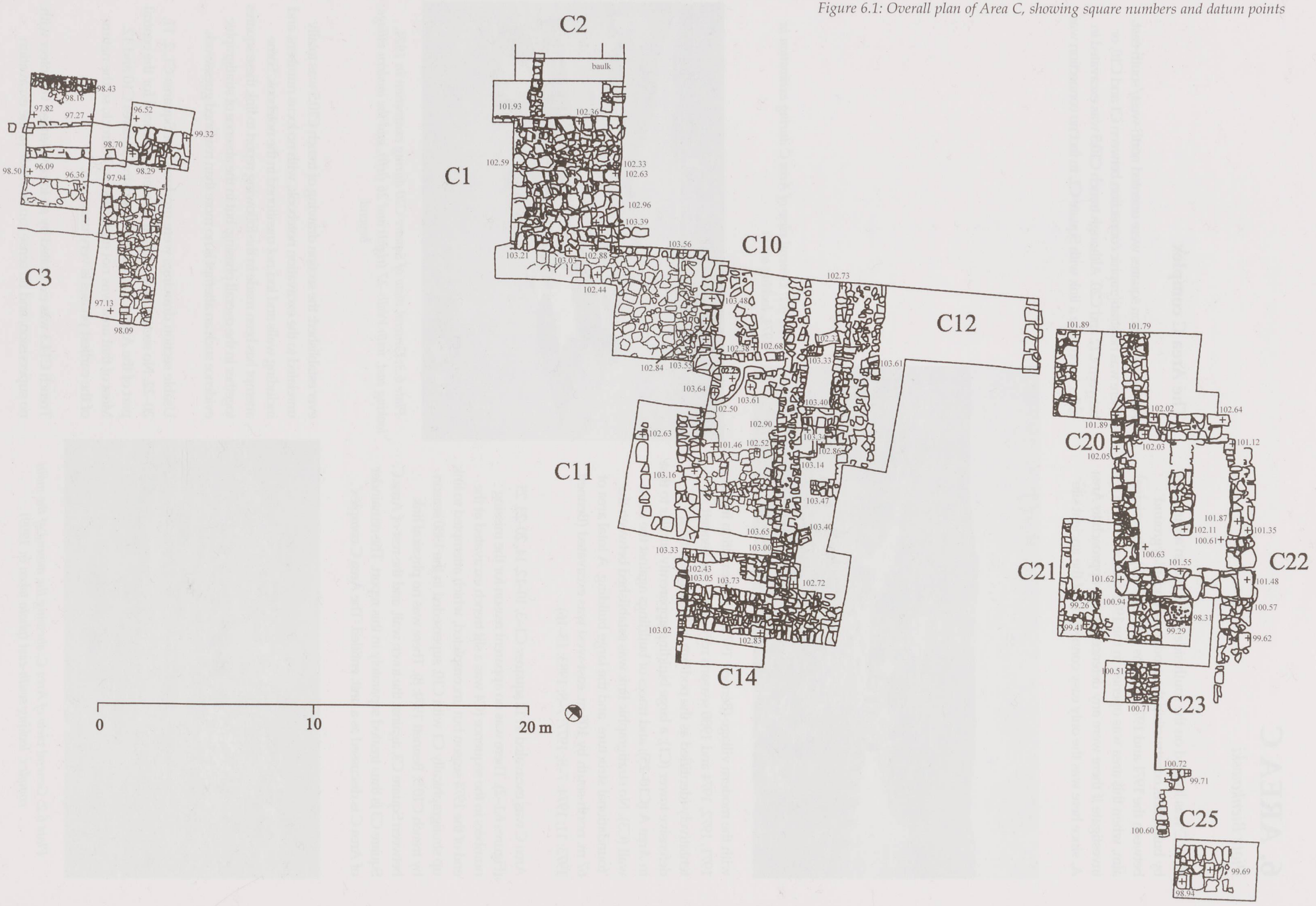
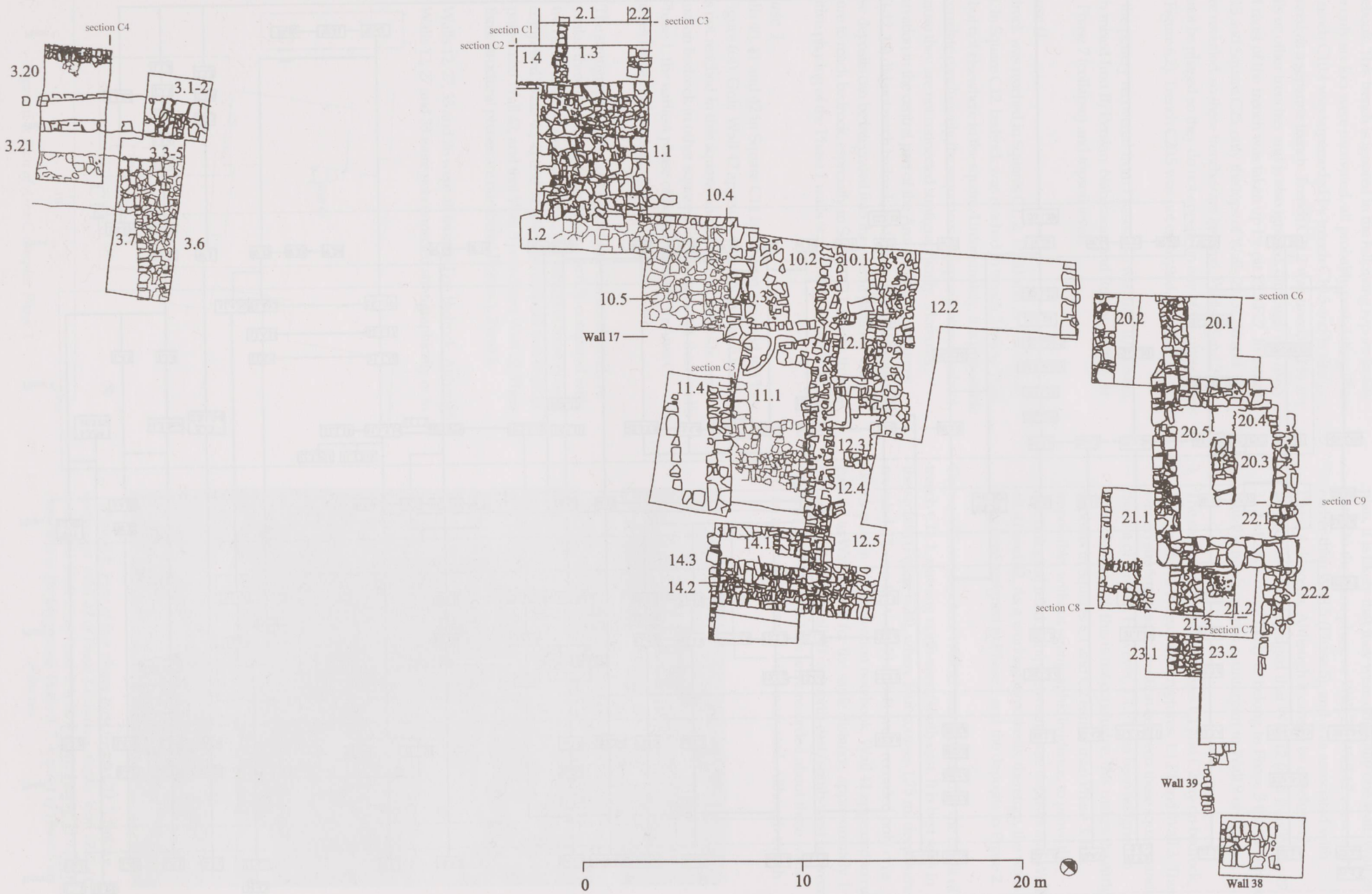


Figure 6.1: Overall plan of Area C, showing square numbers and datum points

Figure 6.2: Overall plan of Area C, showing trench numbers and location of sections



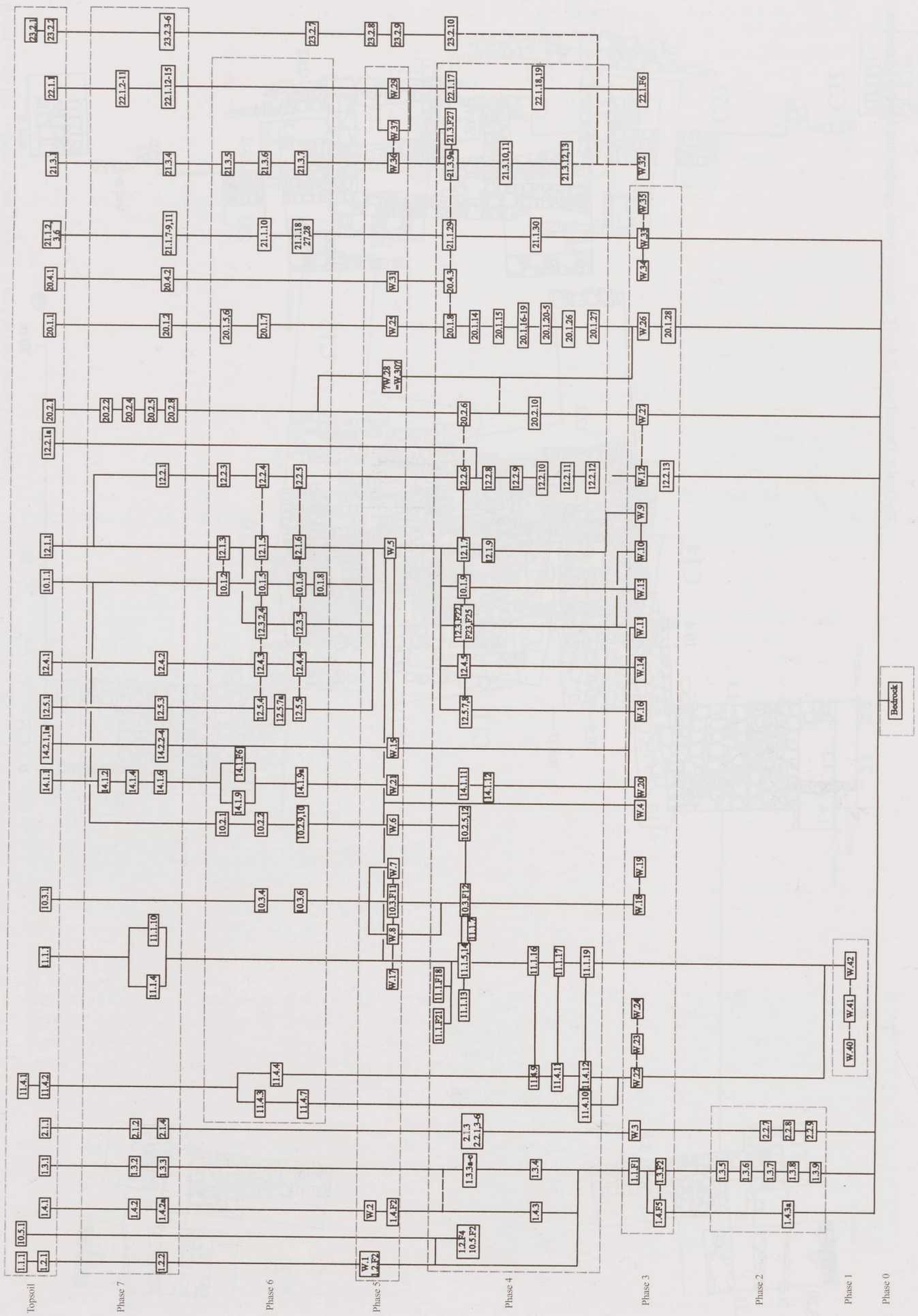


Figure 6.3: Stratigraphic matrix of the Area C complex

notebook. This trench is ignored in the following report: in any case only six loci were excavated, all probably post-dating Phase 5. Trench C10.4 was superseded by trench C10.5 and is also ignored as a separate trench. Trench C21.2 was unrelated to any walls or other trenches and is also ignored, although it is likely that most of the trench was taken up by pit 21.3.F27. In trench C20.3 and Square C25, only the tops of Walls 29, 31, 38 and 39 were revealed, so these trenches are ignored. Walls 38 and 39 cannot be phased so they do not appear on any of the phase plans (cf. Figure 6.2). Trench C20.5 was not excavated.

All the pottery recovered from Phases 2–6 was Iron II/Persian, with mixed Iron II/Persian, Nabataean and Roman pottery in the Phase 7 (collapse) and topsoil levels.

Phase 0

Bedrock was reached in Squares C1, 2, 12, 20 and 21 (see Figure 6.3). In Square C12, bedrock was reached in trench 2 below Wall 12, but not elsewhere in the square. Unfortunately, it is impossible to correlate conclusively the sequences of deposits above bedrock because they are not connected stratigraphically. Moreover, excavation in the central part of the Area C complex (Squares C10–12, 14) did not reach bedrock, and it is only by inference that these deposits can be integrated into the overall phasing. The failure to reach bedrock, especially in Square C11, means that the relative phasing of the Phase 1 walls is not totally secure.

Phase 1

Walls 40, 41 and 42 in Square C11 have been assigned to Phase 1 (Figure 6.4). Only Wall 42 appears on the plan. Since bedrock was not reached in this square, and walls and deposits were found on bedrock in other squares, the allocation of these walls to Phase 1, the earliest phase of human activity in Area C, requires some explanation.

1. The stratigraphic evidence from Square C11 conclusively revealed three structural phases (cf. Figure 6.3), compared with two in all other squares in Area C. The earliest of these phases comprised Walls 40, 41 and 42. There is no doubt that Wall 22 post-dated Wall 42, and that Wall 5 post-dated Wall 22. These three structural phases are numbered Phases 1, 3 and 5.

2. Walls 12, 27, 33 and 26 were all founded on bedrock. Although Walls 12, 27 and 33 were not connected stratigraphically or in plan, it is likely that they were originally one wall. Wall 26 dated to the same phase as Wall 27. Wall 12 was clearly earlier than Wall 5 (Phase 5), and was associated with Phase 4 deposits. Although it cannot be conclusively demonstrated, it is judged that Wall 12 (and thus Walls 27, 33 and 26) is more likely to belong to Phase 3 than to Phase 1, as the north-eastern counterpart to Wall 9 of Phase 3.

3. The earliest deposits in Squares C1 and C2 lay on bedrock, and pre-dated the earliest structures, 1.1.F1 and Wall 3. There was no stratigraphic connection between these squares and the rest of Area C. However, 1.1.F1 has been assigned to Phase 3; although this is not conclusive, this makes the early deposits in Squares C1 and C2 earlier than Phase 3. It is impossible, without stratigraphic evidence, to prove the chronological relationship between these deposits and Walls 40, 41 and 42. As a working hypothesis, therefore, the walls have been assigned to Phase 1 and the deposits to Phase 2.

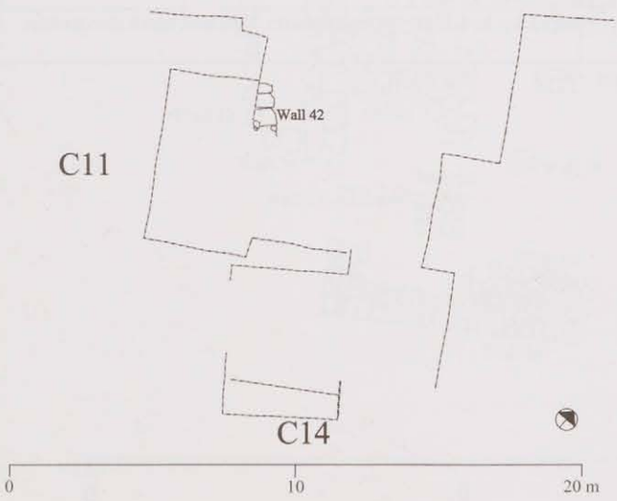


Figure 6.4: Plan of Area C complex Phase 1

Only a 1.75 m. stretch of Wall 42 was excavated in the baulk of trench C11.1, running north-west/south-east. It is best seen in the section (Figure 6.24), where four courses 1.75 m. deep were revealed (Plate 6.4). Walls 40 and 41 were recorded only on a sketch plan in the excavation notebook. Wall 41 appeared to run parallel to Wall 42 and for the same distance, approximately 1 m. to its north-east; Wall 40 ran north-east/south-west between Walls 41 and 42. No details were recorded about these walls and no associated deposits were excavated. Although trench

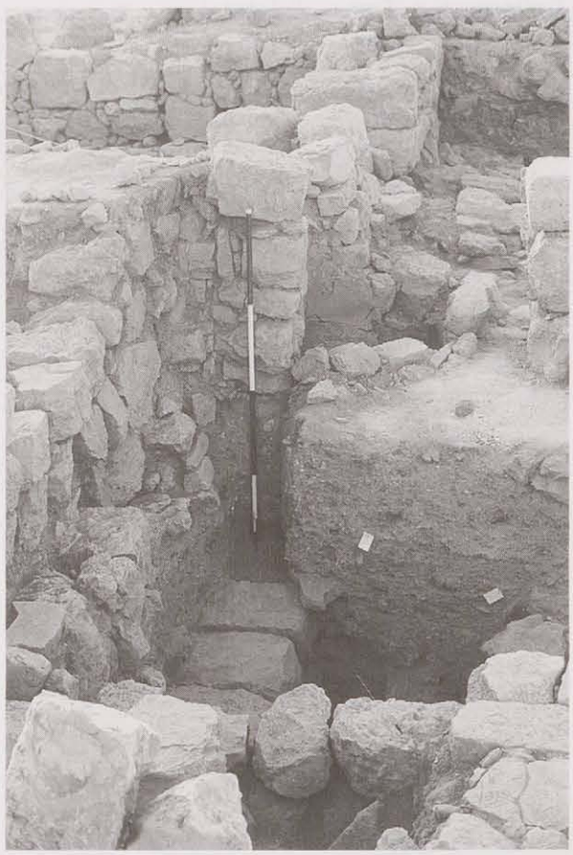


Plate 6.4: View of four phases from trench C11.1, looking north-west. Wall 42 of Phase 1 is bottom middle, with Wall 41 to its right. Wall 22 of Phase 3 is on the left. Paving 11.1.13 of Phase 4 is in the foreground. Walls 8, 7, 6 and 1 of Phase 5 are at the top

Figure 6.5: Pottery from Area C complex Phase 2

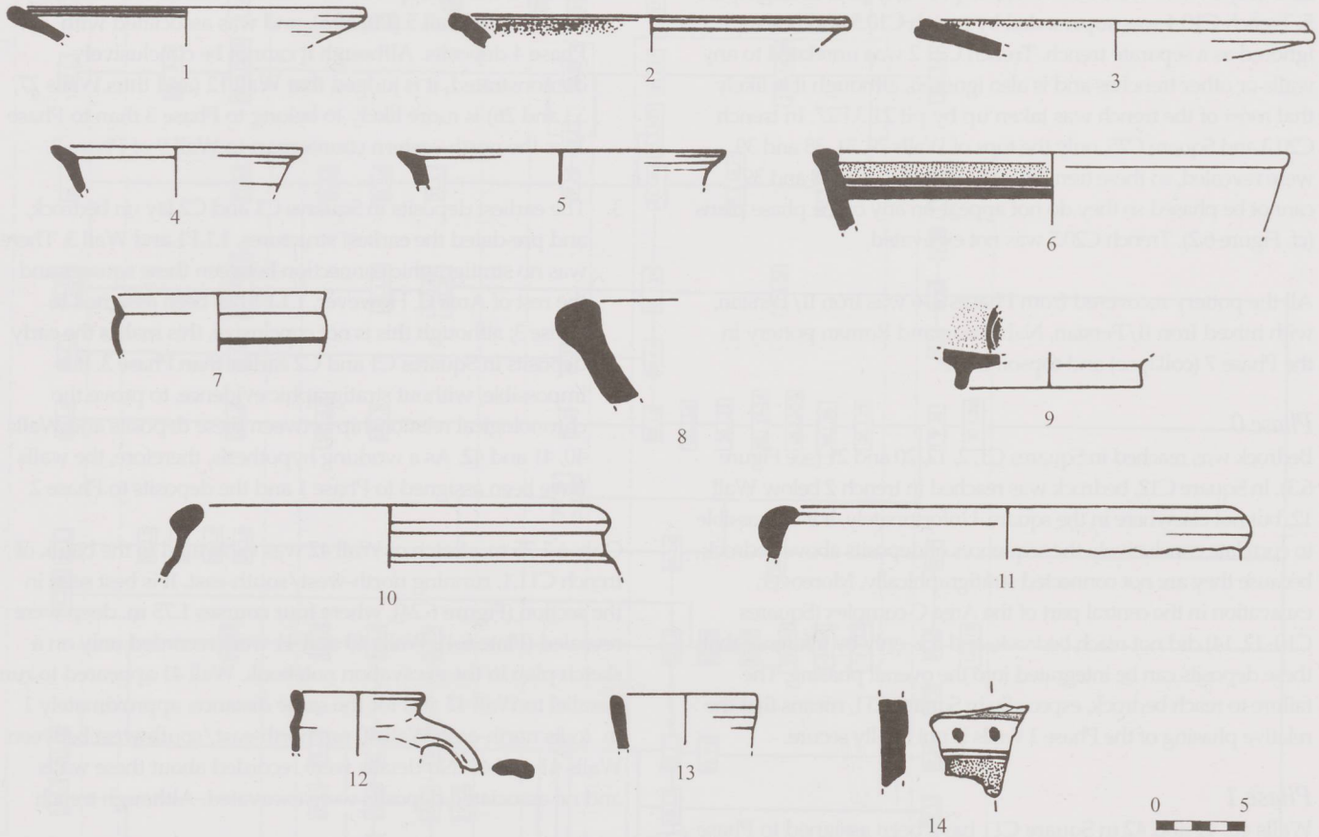


Figure no.	Type	Locus	Description
1	Bowl A	C1.3.7	Fired yellowish-buff. Temper up to 2 mm.: quartz, basalt, lime. Red slip on rim, black lines.
2	Bowl A	C1.3.7	Fired red; core buff. Temper up to 2 mm.: quartz. Red slip inside, black lines.
3	Bowl A	C1.3.7	Fired red; outside core buff; inner core black. Temper up to 1 mm.: profuse quartz; basalt, grog. Red slip inside.
4	Bowl B	C1.3.7	Fired pink; core buff. Temper up to 2 mm.: quartz, lime, basalt; up to 4 mm.: grog.
5	Bowl B	C1.4.3a	Fired pink; core buff. Temper up to 2 mm.: quartz, grog, basalt.
6	Bowl D	C1.4.3a	Fired pink; core buff. Temper up to 1 mm.: quartz, basalt; up to 4 mm.: lime. Red slip inside, black lines.
7	Bowl N	C1.3.6	Fired pale brown. Temper up to 1 mm.: lime, basalt. Black line outside.
8	Bowl R	C1.4.3a	Fired pale brown; core black. Temper up to 4 mm.: lime, basalt, grog, vegetable. Cream slip in and out.
9	Bowl base	C1.4.3a	Fired pink; core pale brown. Temper up to 2 mm.: quartz, basalt. Red slip inside, black lines.
10	Jar C	C1.3.6	Fired pale brown. Temper up to 1 mm.: quartz, lime, basalt.
11	Jar C	C1.3.7	Fired pink; core brown. Temper up to 2 mm.: profuse quartz; lime, basalt; up to 4 mm.: grog.
12	Jug C	C1.4.3a	Fired pale brown; core brown. Temper up to 3 mm.: lime, basalt, quartz. Resembles Late Iron I forms from Ammon.
13	Misc jar	C1.3.6	Fired buff. Temper up to 4 mm.: lime, basalt, grog.
14	Body sherd	C1.3.6	Fired pinkish-brown; core grey. Temper up to 1 mm.: profuse quartz. Red and black decoration externally.

C11.4 was excavated in 1980 with the specific objective of finding deposits associated with Wall 42, digging inexplicably ceased as soon as the top of the wall was reached, thus missing the opportunity of potentially finding deposits and pottery associated with the earliest walls in Area C.

It is likely that more walls of Phase 1 existed in the central part of the Area C complex (Squares C10–12, 14), but this was not excavated below Phase 3.

Phase 2

This is a phase of occupational deposits on bedrock below Phase 3 walls in trenches C1.3 and 4 and trench C2.2 (for pottery from this phase, see Figure 6.5). No stratigraphic connection was established between these Phase 2 deposits and the Phase 1 walls, and, as explained above, the chronological relationship between them cannot be demonstrated conclusively.

In trench C1.4 immediately overlying bedrock was a 1-m-deep layer of 'bricky' material with very little pottery and a few small stones near the bottom (1.4.3a). This may have been a floor surface; the lack of recorded organic debris, the paucity of pottery, and a possible layer of small stones at its base suggest it may have been a deliberately laid floor.

In trench C1.3 immediately overlying bedrock was a series of five loci attributed to Phase 2, very cursorily recorded: an 8-cm-deep layer of sterile red soil (1.3.9); a 2-cm-deep layer of sterile firm yellow soil (1.3.8); a 77-cm-deep layer of mixed brown soil and small stones (1.3.7); an ashy plastery surface (1.3.6); and a layer of compact soil (1.3.5). The lack of detailed recording makes interpretation difficult. Bennett identified 1.3.6 as occupation on a floor; it was overlying 1.3.7 which may have been a floor surface similar to 1.4.3a, and which overlay apparently sterile soil over bedrock. 1.3.5, overlying the ashy plastery surface 1.3.6, may have been another surface.

In trench C2.2 immediately over bedrock was a deposit of earth, stones, pottery and charcoal (2.2.9) in the hollows of the bedrock. This appears to be a levelling fill. Overlying it was a deposit of hard brown-yellow clay (2.2.8), probably a surface. This was overlain by softer mixed brown-grey earth with some burnt brick (2.2.7), probably an occupation deposit on the surface.

Phase 3

This was the major structural phase of the Area C complex (Figure 6.6). The walls were aligned on a north-west/south-east axis. They were constructed of dry-stone masonry of both large

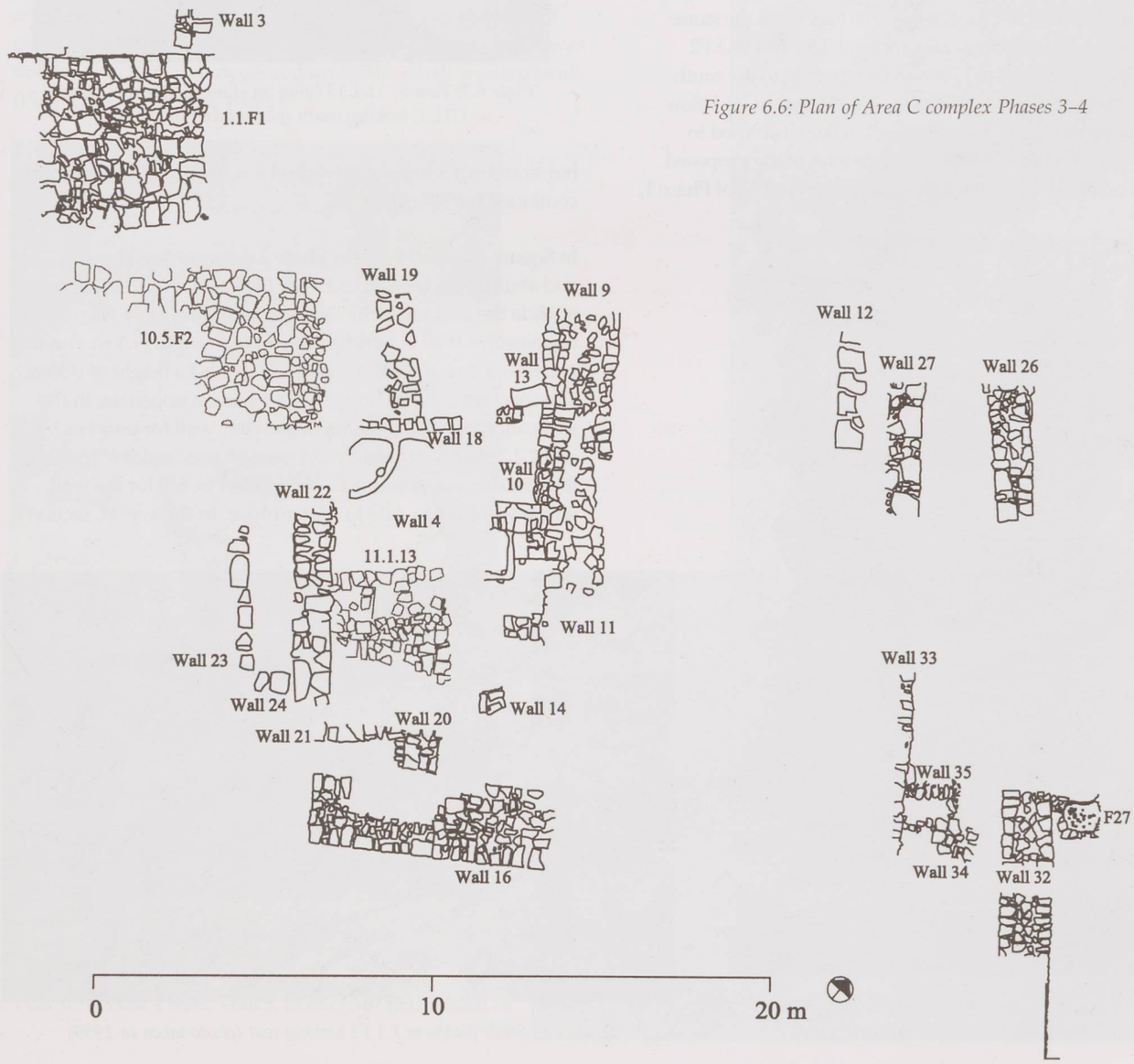


Figure 6.6: Plan of Area C complex Phases 3–4

and small roughly coursed rubble, normally at least two stones wide, with occasional evidence of mudplastering.

Although bedrock was reached in only a few places, the evidence suggests that the central part of the Area C complex was built on a stone platform, possibly mixed with earth fill. This hypothesis was not proposed during excavation and thus was not tested. Bennett tentatively identified Square C1 as the stone foundations of a defensive tower (1974: 7), but did not recognise that this stone 'platform' might extend further. The possibility of a raised stone platform occurred during analysis of the stratigraphy and architecture, and on-site observation in May 1999.

Only parts of the proposed stone platform were excavated. The nature of the stone platform is best seen in structure 1.1.F1, belonging to Phase 3. The north-west face of 1.1.F1 was completely cleared, and originally identified as a separate wall (Plates 6.5–6). It was excavated for 6 m. north-east/south-west, constructed in a foundation trench (1.4.F5, 1.3.F2) cut into the Phase 2 deposits (see Figure 6.20). It could be traced on the surface for a further 3 m. to the south-west. It measured 6 m. north-west/south-east and survived to a height of 2.80 m. The structure itself was not excavated and it cannot be confirmed that it was indeed a solid stone platform, but the size of stones throughout makes it likely. It also seems likely that the stone platform extended further to encompass 1.2.F4 and 10.5.F2 which appear as a layer of Phase 4 stone paving to the south-east. The stone platform was also visible in Square C11 below Phase 4 stone paving 11.1.13 (Plate 6.7), where it seemed to partly overlie the Phase 1 walls. Four courses of the proposed platform below 11.1.13 were visible, abutting Wall 42 of Phase 1, but since bedrock was not reached it is likely that the platform continued further down.



Plate 6.7: Paving 11.1.13 lying on stone platform in trench C11.1, looking south (photo taken in 1999)

In Square C2, Wall 3 lay on Phase 2 deposits (see Figure 6.22) and abutted the base of 1.1.F1 (cf. Plate 6.5). Wall 3 was thus outside the area raised by the stone platform. Only two courses remained of Wall 3, which survived to a length of 2 m. running north-west/south-east, a width of 1 m. and a height of 0.50 m. The function and phasing of Wall 3 remain uncertain. In the excavation notebook, the reports on this wall for trenches C1.3 and C2.2 imply completely different phases, and it is possible that the excavators missed a foundation trench for the wall, which would then date to a later phase. In this report, section



Plate 6.5: 1.1.F1 on the left, with Walls 2 (top) and 3 (bottom), looking south-west



Plate 6.6: Stone platform 1.1.F1 looking east (photo taken in 1999)

C3 (Figure 6.22) has been used as evidence for phasing.

In Square C11, Wall 22 clearly overlay Wall 42 from Phase 1 according to a sketch section in the excavation notebook. No intermediate deposits were noticed or recorded. Wall 22 ran north-west/south-east for 6 m., was 1 m. wide and survived to a height of 1.5 m. The lower courses were slightly offset to the east, and it is possible that the wall was rebuilt in Phase 5 (Plate 6.8). Wall 24 was bonded with Wall 22; it consisted of three large cut blocks running north-east/south-west for 1 m. Wall 24 apparently joined Wall 23, of which two courses survived; Wall 23 ran parallel to Wall 22 1.5 m. to its south-west (Plate 6.9). No information was recorded relating to the stratigraphic position of Walls 23 and 24. It is not certain that they date to Phase 3, but their association with Wall 22 makes it a reasonable hypothesis.

A trace of a wall (Wall 4) appeared below Wall 5 of Phase 5 in trench C11.1 (Plate 6.10), offset by 0.75 m. This was not excavated and its extent was not elucidated. The few stones visible appear to be parallel to the line of the lower offset courses of Wall 22.

In Square C10, Walls 18 and 19 belonged to Phase 3. Wall 18 ran north-east/south-west for 3 m. between and under Walls 5 and 8 of Phase 5. Wall 18 was only 0.30 m. wide. Wall 19 ran north-west/south-east for 3.75 m. from Wall 18, to which it was not bonded, until it disappeared under the north-western baulk (Plate 6.11). It was 1 m. wide.



Plate 6.8: Wall 22, looking south-east

In Square C14, Wall 20 is attributed to Phase 3. It may be formed from two bonded walls at right angles to each other, one running north-east/south-west for 3 m. from the south-western baulk with only its south-eastern face visible, the other running north-west/south-east for 1 m. The latter run was at least 1 m. wide but overlain by Wall 5 of Phase 5 so its full width was not excavated (Plates 6.12–13). The end stones formed a face, suggesting that there was an entrance 0.60 m. wide between Walls 20 and 16.

Wall 16 was excavated for a length of 7 m. running north-east/south-west; no end or corner was excavated. It was between 2 and 2.50 m. wide. Part of it was rebuilt in Phase 5 as



Plate 6.9: Walls 23 (left), 24 (bottom) and 22 (right), looking north-west



Plate 6.10: Wall 4 below Wall 5, looking east (photo taken in 1999)



Plate 6.12: Walls 20 (left), 5 (top) and 15 (right). The deposit in front of Wall 20 is the pottery 'cache' of 14.1.9a



Plate 6.13: Wall 20 (left), with Walls 15 and 16 on the right, looking north-east

Wall 15 bonded with Wall 5, and during excavation no precise differentiation between Walls 16 and 15 was recorded (Plates 6.14–15).

Wall 9 ran north-west/south-east and was traced for a distance of 8.50 m., although neither end was discovered. During excavation it was tentatively proposed that Wall 9 turned to the north-east opposite Wall 14, but no evidence for this has been found. It is perhaps more likely that it joined up with Wall 16 to form a corner. Three to four courses of Wall 9 survived. It was between 1.65 and 1.73 m. wide, with a niche or recess in its north-eastern face which measured 0.58 m. deep by 2.58 m. long (Plate 6.16). The north-east face of the wall and the south-west face in trenches C12.3 and C12.4 were plastered (Plate 6.17). The vertical face of the niche may also have been plastered. The remainder of the south-east face was apparently not plastered. On its south-east face, Wall 9 had a 'shelf' of stones protruding from its base. During excavation it was uncertain if this shelf was part of Wall 9 or the remains of an earlier wall. Excavation did not continue below Wall 9 so this point was not elucidated. However, the 'shelf' bonded with Wall 10, and was plastered: this plaster joined with plaster floor 12.1.7 of Phase 4, suggesting that the 'shelf' was probably an integral part of Wall 9 and dated to Phase 3



Plate 6.14: Walls 15 and 16, looking north-east, with Wall 5 at top



Plate 6.15: Walls 15 and 16, looking north-west, with Wall 21 on the left



Plate 6.16: Wall 9, showing the niche on its north-eastern face, looking south

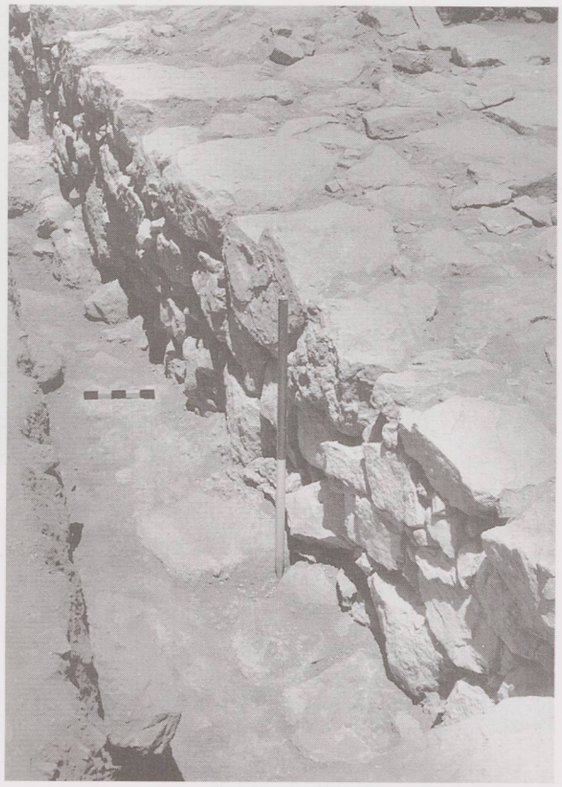


Plate 6.18: Wall 9, showing plastered 'shelf' joining with plaster floor 12.1.7, looking north



Plate 6.17: Walls 9 (left) and 11, looking east, showing plaster on walls joining up with plaster steps 12.3.F23



Plate 6.19: Wall 10, on right, bonded with the 'shelf' of Wall 9, on left, looking east

(Plates 6.18–19). Its function is uncertain: it could have been a shelf or a bench.

In trench C10.1, a large flat stone (10.1.F33) by Wall 13 lay under stones of Wall 9, with the Phase 4 plaster floor (10.1.9) running up to it and curling against it (Plates 6.20–21). It is possible that this was a threshold stone in a doorway formed by Walls 9 and 13.

Within Phase 3, Wall 13 appears as an isolated stub: running north-east/south-west for 0.74 m., it was 0.61 m. wide and consisted of five to six courses surviving to between 0.82 and



Plate 6.20: Walls 13 (left) and 9 (right), with 'threshold stone' 10.1.F33 in between, looking north. The surface in the foreground is plaster floor 12.1.7, which originally curled up against the stone



Plate 6.21: Walls 13 (left) and 9 (right), with 'threshold stone' 10.1.F33 in between, looking north. The surface in the foreground is plaster floor 12.1.7, running up to the stone at the same absolute height

1.16 m. in height. Although it was bonded with Wall 5 of Phase 5, and therefore rebuilt, there is no doubt that it dates originally to Phase 3 since the Phase 4 plaster floor (12.1.7) ran up to it. It formed a doorway 1 m. wide with Wall 9.

Wall 10 was bonded with the Wall 9 'shelf', and ran north-east/south west for 1.60 m. between Walls 9 and 5. It was 1 m. wide, consisted of three courses and survived to 0.92 m. in height. Its south-east face consisted of small stones against which was some plaster joining to the Phase 4 plastered features in trench C12.3. Wall 10 was also bonded to Wall 5 of Phase 5, testifying to a rebuild.

Wall 11 ran north-east/south-west from Wall 9 for a distance of 1.29 m. It was 0.70 m. wide and survived to between 0.92 and 1 m. in height (four to five courses). On both faces was some plaster, which on the north-west face joined to the Phase 4 plastered features in trench C12.4. Wall 11 was not bonded to Wall 9. It appeared to form a doorway with Wall 5 of Phase 5, which in later phases appeared to be blocked (Plate 6.22).

Wall 14, like Wall 13, appears as an isolated stub in Phase 3. It ran north-east/south-west for 0.78 m., was 0.74 m. wide and survived to six courses 1.03 m. high. Although it was bonded to Wall 5 of Phase 5, it is clear that Wall 14 dates to Phase 3, since plaster on the wall joined with the Phase 4 plaster floor (12.4.5).

On the north-east side of Square C12, Wall 12 was constructed on a layer of red soil (12.2.13) above bedrock (Plate 6.23). This red soil produced no finds and was interpreted as a fill prior to the construction of the wall. Wall 12 was traced for 3 m. running north-west/south-east in the north-eastern baulk. Nine courses survived, 3.08 m. high, the top two courses consisting of large stones (average 40 x 55 cm.), the lower courses of small stones (average 36 x 27 cm.). Although no stratigraphic connection was established between Walls 12, 27 and 33, it is possible that they were all a single north-west/south-east wall, traced for 15.50 m. as the north-eastern counterpart to Wall 9; their combined width was 2.25 m. This is not certain, however, since Wall 27, in the south-western baulk of Square C20, appears to have been built directly on bedrock, although nowhere was this explicitly stated in the records. Wall 27 was described as having a mudbrick facing. Wall 33, in the south-western baulk of Square C21, was not properly recorded, but appears to have survived to a height of 2 m. and was apparently built on sterile soil which may also have been a deliberate fill like 12.2.13. The continuation of Wall 27 to Wall 33 was easily traced on the surface.

Walls 34 and 35 were built on the same sterile soil as Wall 33. They were both single courses of stones forming a rectangular structure c. 1.50 x 1.50 m. (Plate 6.24).

Wall 26 has been attributed to Phase 3 (cf. Figure 6.25) but its phasing is complex. A foundation trench for Wall 26 (20.1.28) was recorded as cut into bedrock, but it is not visible in the section drawing (Figure 6.25). The site supervisor in the 1974 season recorded foundation trenches for Wall 26 cut through



Plate 6.22: Wall 11 (left) forming a doorway with Wall 5 (right), with possible blocking in between, looking south. Bath 12.3.F25 and plastered steps 12.3.F23 are in the foreground



Plate 6.23: Wall 12 resting on 12.2.13 above bedrock, looking north-east



Plate 6.24: Walls 34 and 35, looking south-east



Plate 6.25: Wall 26, looking west

later plaster floors in trenches C20.1 and C20.2. However, in the 1980 season Bennett disagreed with the identification of the foundation trenches, and concluded that Wall 26 was founded on bedrock with no proper floor before 20.1.8 of Phase 4 (cf. Plate 6.53). It is possible that Wall 26 was rebuilt in Phase 5: a 'facing' to Wall 26 was recorded as contemporary with Wall 25 of Phase 5, and since the Phase 4 plaster floor 20.1.8 did not run up to Wall 26 it may have been cut by a foundation trench for the Phase 5 rebuild. In this report, Bennett's 1980 on-site identification of Wall 26 as built directly on bedrock is followed. Here it has been attributed to Phase 3, leaving open the possibility of a Phase 5 rebuild. Nevertheless, the phasing of the deposits in trench C20.1 is complex, and it cannot be excluded that Wall 26 was contemporary with Phase 1. Wall 26 was traced for 4 m. running north-west/south-east. It was 1.20 m. wide and survived to a height of 2.80 m. (Plate 6.25).



Plate 6.26: Wall 32 in Square C23, looking north-east

Wall 32 appeared in Squares C21 and C23: there is little doubt that it is the same wall (Plate 6.26). Its stratigraphic position was not recorded and its phasing is uncertain. There is some inconclusive evidence from trench C21.3 that Phase 4 deposits ran up to Wall 32, which would date it to Phase 1 or 3. In the stratigraphic matrix (Figure 6.3) it has not been attributed to any phase, but it was probably earlier than Phase 4. Wall 32 ran north-west/south-east and its total length traced from Wall 36 (which may have overlain it) was 5 m. (although it could be traced in topsoil for a further 3.50 m.), width 1.60 m. It is conceivable that it was a continuation of Wall 26 of Phase 3.

It is difficult to reconstruct a coherent plan of the Phase 3 structures, although the use of certain spaces becomes clearer in Phase 4 and is discussed below. The extent of the area raised on a stone platform appears to encompass the whole of the Area C complex from 1.1.F1 up to Wall 12/27/33; beyond that line the ground level slopes down sharply and the structures to the north-east were built on a lower absolute level. To the south-east, the raised area seems to continue for 8 m. beyond Wall 16.



Plate 6.27: Plaster floor 12.2.6 running up to Wall 9, looking south. A patch of burning can be seen on the floor

Wall 3 was built against the base of 1.1.F1 and appears to be part of a structure outside the raised area. Wall 26 (and 32?) may have been the external wall of a separate structure outside the raised area. The main raised building might then be defined by thick walls (12/27, 9, 16), some of them 2 m. wide or more, with narrower walls defining spaces within the building.

It is clear that the Phase 1 walls were no longer visible: Wall 22 of Phase 3 lay on top of Wall 42 of Phase 1. Unfortunately crucial elements of the Phase 3 structures are missing. The central area between Walls 9 and 33 was not excavated at all. Excavation did not continue below Wall 5 of Phase 5, so it is unknown what Phase 3 walls existed in that part of the complex, apart from the trace of Wall 4. Some walls must have been constructed there in order to explain the isolated stubs of Walls 13 and 14. Similarly, there was no excavation below the Phase 5 structure and entrance in Squares C20–22, so it is unknown what was happening between Walls 26 and 32 in Phase 3. There is a hint of some structure in trench C22.1 which may date to Phase 3: running north-west/south-east under Walls 29 and 36 of Phase 5, and under Phase 4 deposits, was feature 22.1.F6, at first identified as stone paving but then possibly as an earlier wall. However, this was not excavated and its full extent and nature were not revealed.

Phase 4

The use of the Phase 3 walls was marked by the construction of several installations and surfaces with associated occupation deposits (Figure 6.6). In most of Squares C10–12, excavation did not continue below the final Phase 4 surface, a mudplaster floor with associated installations which could be traced across most of the Area C complex and which gives the impression of having been deliberately laid. In terms of stratigraphic interpretation this was a key deposit, since it enabled the stratigraphy of different trenches to be tied together.

The plaster floor, which ran up to most of the Phase 3 walls and occasionally joined with plastering on the walls (see above, and cf. Plates 6.17–18), comprised the following loci (cf. Figure 6.3): 11.1.5,



Plate 6.28: Plaster floor 12.2.6 joining with plastering on Wall 9, looking south-west

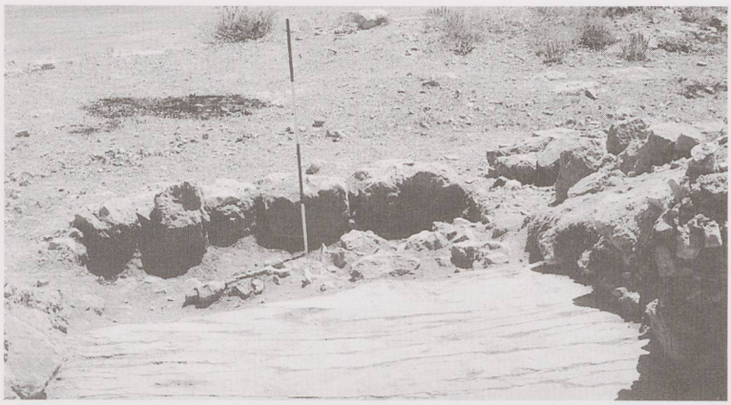


Plate 6.29: Plaster floor 12.2.6 breaking off before it reaches Wall 12, looking north-east



Plate 6.30: Plaster floor 12.2.6, looking south-west towards Wall 9, showing the break in the floor



Plate 6.31: Stone paving 11.1.13, to the left of Wall 5, looking north-west



Plate 6.32: Stone paving 11.1.13, with stone feature or wall across trench C11.1, showing tall stone with 'crucible' immediately in front of it, looking south

14; 10.2.5, 12; 12.5.7, 8; 12.4.5; 10.1.9; 12.1.7; 12.2.6; 20.2.6; 20.1.8; 20.4.3; 21.1.29; 21.3.9a; 22.1.17; and possibly 23.2.10. In trench C12.4, there were traces of red paint on the plaster floor (12.4.5). Plaster floor 12.2.6 ran up to Wall 9, and joined with plaster on the wall; however, the floor in the niche on the north-east face of Wall 9 was not plastered (Plates 6.27–28). Floor 12.2.6 extended to the north-east, but broke off c. 4 m. from Wall 12 (Plates 6.29–30). It is likely, however, that the floor did originally run up to Wall 12, but had been washed away due to the erosion on the slope which at this point drops to a lower level.

Associated with the plaster floor in trench C11.1 was an area of stone paving (11.1.13) against Wall 22, and a packed earth floor (11.1.7) in the south-east corner which merged into the plaster floor (Plates 6.31–33). Although the plaster floor slightly overlapped the paving in places, it is quite clear that it was contemporary and it covered a separate area of the trench.



Plate 6.33: Stone paving 11.1.13, with stone feature or wall across trench C11.1, showing tall stone on left, and Wall 5 on right, looking north



Plate 6.34: Pottery on earth floor 14.1.11, looking east

A packed earth floor with ash patches (14.1.11) was also found in trench C14.1, between Walls 20 and 15. On the floor, in a 'semi-circular soft patch', was found a pottery cache against Wall 16 (Plate 6.34), including a cooking pot (Figure 9.40:13) and part of a pilgrim flask. The floor overlay a deposit (14.1.12) of rubble and soil containing pottery, bone, charcoal and plaster (possibly fragments of fallen wall plaster?).

Stone paving 11.1.13 was laid on a stone platform probably contemporary with 1.1.F1 of Phase 3; inexplicably, this stone platform under 11.1.13 was not recorded in any way during excavation, but a photograph was taken in May 1999 (cf. Plate 6.7). The stone paving was contemporary with the use of the stone platform elsewhere (1.1.F1, 1.2.F4, 10.5.F2) and was at the same absolute height (Plates 6.35–39). North-west of 1.1.F1 and



Plate 6.35: Paving 10.5.F2, looking west, showing relationship with Walls 1, 7 and 8



Plate 6.36: Paving 10.5.F2, detail



Plate 6.37: Wall 1 and 1.1.F1, looking north



Plate 6.38: Wall 1 and 1.1.F1, looking west



Plate 6.39: Wall 1 and 1.1.F1, with paving 1.2.F4 on the right, looking north-east

against its base, associated with Wall 3, were found compact earth deposits with ash patches (1.4.3; 1.3.4; 1.3.3a–e; 2.2.1, 3–6; 2.1.3), probably trampled surfaces, further evidence that 1.1.F1 marked the limits of the raised complex.

Between Walls 22 and 18 was a plastered storage bin (10.3.F12), cut by Walls 6 and 8 of Phase 5. The north-west edge of the bin was straight, 1.20 m. long and c. 0.81 m. high, and built up against Wall 18. The side was curved, broken by a stone built into it and partly plastered on top. The sides were c. 20 cm. thick with c. 5 cm. of plaster on the inside and outside and c. 10 cm. of stone fill inside the plaster covering. The plastering of the bin joined the surrounding plaster floor (11.1.5, 14; 10.2.5, 12).

Cut into plaster floor 11.1.5 was a pit (11.1.F18) containing burnt soil and sherds from a pot, suggesting that the pit may originally have held the pot. Also in the pit were burnt grains identified as corn, perhaps originally held in the pot. A second pit (11.1.F21) was cut into the floor (Plate 6.40), located midway between paving 11.1.13 and storage bin 10.3.F12. Associated with the surrounding plaster floor was a heavy concentration of pottery, consisting almost entirely of sherds from heavy storage jars (Plate 6.41). A quern was also found on the floor. The floor showed signs of heavy burning.

The records are rather confused with regard to the layout of paving 11.1.13. There appears to have been a one-course-wide



Plate 6.40: Pit 11.1.F21, looking west, with Wall 8 on the top right



Plate 6.41: Paving 11.1.13 with heavy concentration of pottery on plaster floor 11.1.5, looking west

wall resting on the paving, running north-east/south-west, 'slightly circular' in plan, and associated with a tall stone. In front of the tall stone was a small stone with a hollow in the top, tentatively identified on excavation as a crucible. This



Plate 6.42: Possible hearth in trench C10.3, in corner formed by Walls 5 and 18, looking east



Plate 6.43: Stone toilet 12.3.F22, looking north-east

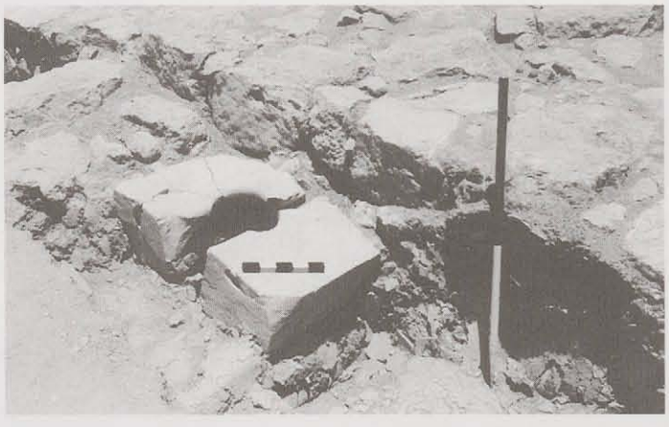


Plate 6.44: Stone toilet 12.3.F22, looking north

feature does not appear clearly on the plan but it was photographed (cf. Plate 6.32). It is possible that this is to be identified as a Phase 4 stone feature associated with the storage installations in trench C11.1, rather than a later Phase 5 wall, but its function is unknown since it was so poorly recorded. From the photograph, it appears that this wall or feature did not extend across the whole paving to the line of the later Wall 5.

The original excavation records identified a group of stones, some burnt, in the corner formed by Walls 18 and 5 (from Phase 5) as a hearth (Plate 6.42). Since one of the stones was overlain by Wall 5, this would date the hearth to Phase 4. However, no recognisable pattern could be discerned in the plan of the stones, and they are interpreted here as burnt and collapsed stones from the surrounding walls.

A group of plastered installations was constructed against Walls 9 and 10. In the corner formed by these walls was a stone with a keyhole shape cut in it (12.3.F22), measuring 0.83 x 0.49 x 0.25 m. (Plates 6.43–44). The surface of the stone was smoothly cut, although the sides were rougher. The stone was cracked and the south-eastern part slanted down. Originally the hole may have been circular but perhaps as a result of the cracking it was distorted. The hole measured 0.25 x 0.18 m. The straight cut to the hole measured 0.25 x 0.18 m. The stone lay above a stone-lined pit, with traces of plaster. At a depth of c. 0.40 m. within the pit was a possible duct leading out to the south, but this was not further investigated. The south-western face of the pit was constructed of one piece of stone, while the other faces were of smaller stones, of which three or four courses were visible. This installation is interpreted as a toilet: an alternative identification as a press has been discounted on account of the possible duct leading down and out.

Immediately south-west of toilet 12.3.F22, against Wall 10, was a series of plastered steps and changes of level (12.3.F23) (Plate 6.45a, b). The highest level of plaster was 5 cm. lower than the base of toilet 12.3.F22, but the plaster made a smooth join. The plaster formed a step down, between 12 and 20 cm. deep, to a plastered stone step 20 cm. deep. At the bottom of the step the plaster sloped down, joining with the plaster of Walls 9 and 11 and covering the rest of trench C12.3, joining with the plaster of bath 12.3.F25 (see below). The plaster surface was broken and showed considerable signs of burning: the plaster was grey, and in places almost black. Through the doorway formed by Wall 11 was another step down, and the plaster joined with plaster floor 12.4.5.

To the south-west of 12.3.F23, against Wall 10 and cut by Wall 5 of Phase 5, was a large plastered container, probably a bath (12.3.F25) (cf. Plate 6.45a, b; Plates 6.46–47). The plaster of the north-east side of the bath joined with the highest level of 12.3.F23, and, after the steps dropped, the plaster of the bath joined the lowest plaster level. On the south-east side of the bath was a plastered step, opposite a plastered step inside the bath, presumably to facilitate getting in and out. The side of the bath was c. 0.18 m. thick at the top, but thickened lower down. The floor of the bath undulated and varied in depth, and it is possible that the north-western end of the bath, against Wall 10, was intentionally shallower.

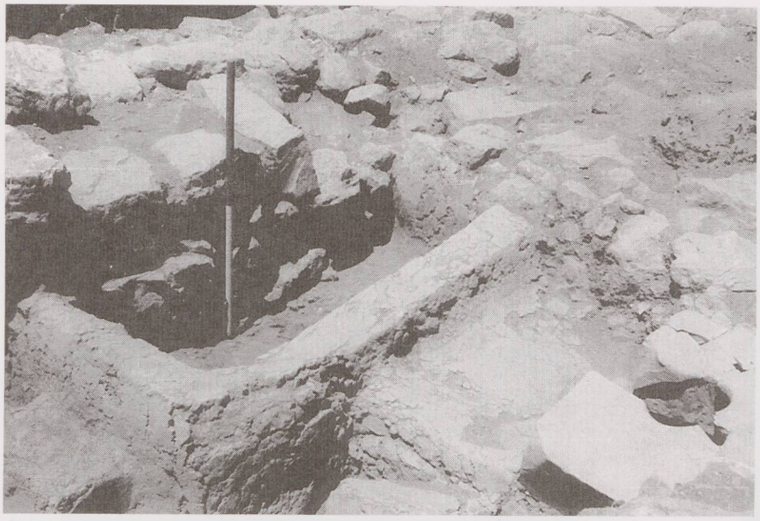


Plate 6.45a, b: Bathroom in trench 12.3, looking west (a) and north-west (b), with toilet (12.3.F22), plaster steps (12.3.F23 and bath (12.3.F25)



Plate 6.45b: see above

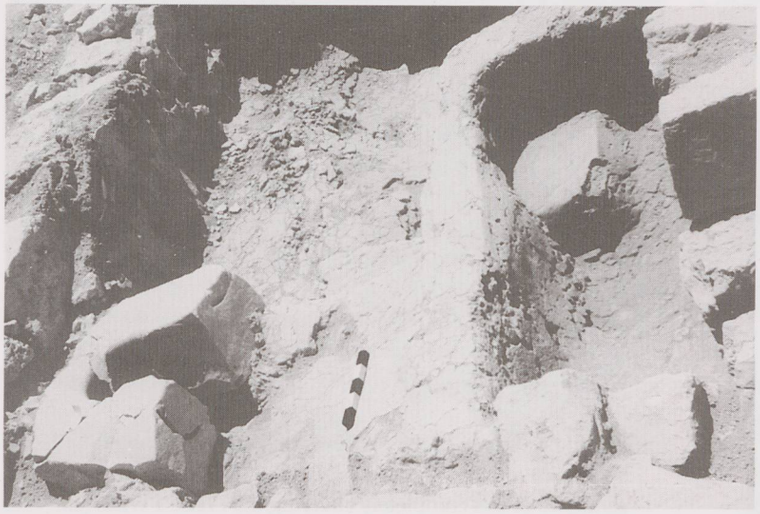


Plate 6.46: Bathroom in trench C12.3, looking south-east, with toilet (12.3.F22), plaster steps (12.3.F23) and bath (12.3.F25)



Plate 6.47: Bath 12.3.F25 looking south-east

Dimensions of bath 12.3.F25:

DIMENSION	EXTERNAL	INTERNAL
Depth (max.)	0.60 m.	0.51 m.
Length	1.64 m.	1.43 m.
Width: SE end (surviving)	0.94 m.	0.64 m.
Width: NW end (surviving)	0.77 m.	0.50 m.
Step	L: 0.25 m. W: 0.40m. D: 0.18 m.	L: 0.39 m. W: 0.18-23 m. D: 0.10-15 m.

The installations in trench C12.3 appear to be a toilet and a bath built against Wall 10, associated with steps, all plastered together. This room was therefore a bathroom, accessed through a doorway formed by Wall 11. It is likely that Wall 4 originally formed the south-west wall of the bathroom, although the surviving stump of the wall under Wall 5 of Phase 5 runs below the level of the bath.

In trenches C21.2/21.3, pit 21.3.F27 probably belongs to Phase 4, although the evidence is not conclusive (Plates 6.48–50). This



Plate 6.48: Pit 21.3.F27, looking south-east, with two pottery juglets



Plate 6.50: Pit 21.3.F27, looking north, showing pebble base

was a stone-built pit, probably originally circular with a diameter of 1.50 m., and a depth of at least 1.25 m. (cf. Figure 6.26). The excavator of the pit did not recognise

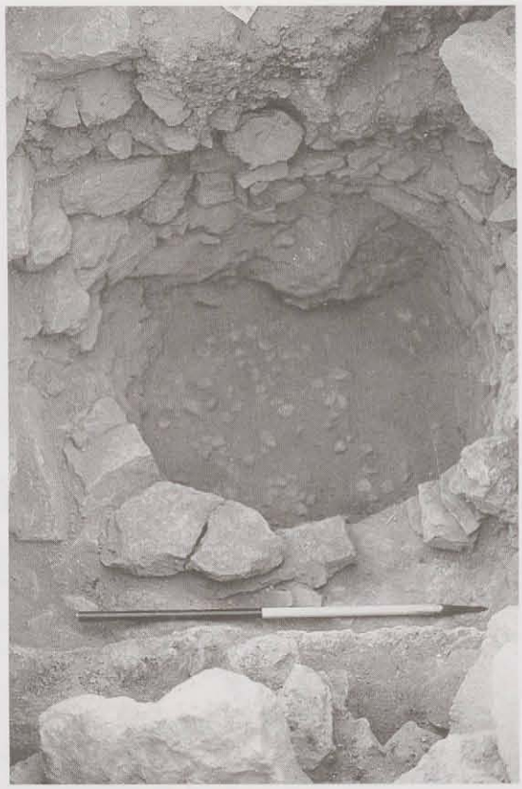


Plate 6.49: Pit 21.3.F27, looking north-west, showing pebble base

what he was digging, and recorded many separate loci and fragments of walls that in fact were probably part of this single pit. From the confused records, it appears that the pit had two phases of a pebble base, and was probably plastered. Two pottery juglets were found resting within the pit, but not on the pebble base. The precise stratigraphic position of the pit was not made clear in the excavation notebook. The section drawing (Figure 6.26) suggests that Wall 36 of Phase 5 may have been constructed over the pit; since it is known that the wall was built over the Phase 4 plaster floor (21.3.9a), the allocation of the pit also to Phase 4 might be implied, although this is not conclusive.

In some trenches, Phase 4 loci underlying the plaster floor level were excavated. In trenches C11.1 and C11.4 there was a sequence of loci completely covering the Phase 1 walls (cf. Figure 6.24): a compact deposit of light sand, stones, charcoal, pottery, shell and bone (11.1.19; 11.4.12); overlain by a layer of ash (11.1.17; 11.4.11); overlain by a deposit of brown earth (11.1.16; 11.4.9). This last deposit lay directly below plaster floor 11.1.5, 14. It is difficult to provide a conclusive interpretation of these loci: they may have been earlier Phase 4 occupation deposits associated with the Phase 3 walls, alternatively they can be interpreted as make-up for the Phase 4 plaster floor or fill connected with the Phase 3 stone platform. In trench C11.4, south-west of Wall 22, a deposit of brown soil with small burnt patches (11.4.10) has been allocated to Phase 4, although the phasing of this trench cannot be correlated with trench C11.1 on the other side of Wall 22: trench C11.4 has a sequence of burnt loci up to topsoil, and it is possible that they were all part of a single episode of destruction and collapse (Phase 7?).

In trench C12.1, plaster floor 12.1.7 overlay a deposit of brown earth with patches of lime and ash (12.1.9), which might be interpreted as make-up for the floor.

In trench C12.2, plaster floor 12.2.6 overlay a deposit of compact yellowish soil with chalky flecks and fragments of mudbrick (12.2.8). As a result of erosion downslope, towards Wall 12 locus 12.2.8 was directly overlain by topsoil. However, a longer sequence of earlier loci was excavated against Wall 12. On sterile soil (12.2.13) against the wall was a deposit of dark compact earth (12.2.12), interpreted during the excavation as a fill, overlain by two ash-smeared trampled surfaces (12.2.11, 12.2.10), the earlier with traces of plaster, followed by a deposit of dark compact earth with some stones, perhaps fallen from Wall 12 (12.2.9) (Plate 6.51). This was overlain by 12.2.8. Both 12.2.8 and 12.2.9 contained very little pottery, and were interpreted during the excavation as mixed wash eroded down the slope. This suggests an initial period of Phase 4 occupation associated with the Phase 3 walls, followed by an episode of erosion, and finally the laying of the plaster floor across the whole complex; however, it is just conceivable that all or some of these loci underlying plaster floor 12.2.6 were fill raising this part of the complex to the level of the stone platform elsewhere.

In trench C20.2, below plaster floor 20.2.6, described as an area of yellow, corroded plaster broken by collapse from Phase 7, a deposit of compact yellow soil with a thin layer of ashy soil on top (20.2.10) lay directly on bedrock, against Wall 27 (Plate 6.52). During excavation this was identified as an earth floor. If, as proposed above, Wall 27 was the same as Wall 12, then the sequence on the two sides of the wall was different, perhaps confirming that Wall 12/27 was the external wall of a building. However, the sequence might be different only because the wash layers in trench C12.2 (12.2.8–9) would have accumulated against Wall 12 and did not continue downslope into trench C20.2.



Plate 6.51: Wall 12 with deposit 12.2.9, looking north



Plate 6.52: Deposit 20.2.10 (earth floor?), looking south-east, with Walls 26 (left) and 27 (right)



Plate 6.53: Plaster floor 20.1.8, looking south-west, running nearly up to Wall 26 (top) and under Wall 25 (left)

The phasing of Wall 26 has been discussed above (Phase 3). Bennett's view during the 1980 season was that plaster floor 20.1.8 was the first surface associated with the wall (Plate 6.53), and thus that the underlying loci were fill and/or make-up. This is difficult to accept, since the section drawing (Figure 6.25) shows 2.25 m. of deposits between bedrock and the plaster floor, surely excessive for a fill (although it is conceivable that this may have been fill raising the floor to the level of the stone platform to the south-west). The loci running up to Wall 26 from bedrock were:

- Brown earth with mudbrick fragments and stones (20.1.27)
- A hard deposit, with some charcoal (20.1.26)
- A series of loci of red clay, mudbrick and fragments of plaster (20.1.20–25)
- A fill of stones, mudbrick and red earth (20.1.16–19)
- A thin, corroded plaster deposit (20.1.15)
- A layer of small foundation stones (20.1.14)
- Plaster floor (20.1.8)

It is dangerous to disagree with the excavator's on-site identification in retrospect, but the description of the loci allows a different interpretation: fill on bedrock (20.1.27), a surface (20.1.26), a further episode of fill (20.1.20–25, 20.1.16–19), a plaster floor (20.1.15) (Plate 6.54), foundation stones as make-up (20.1.14), and a plaster floor (20.1.8). If this interpretation is correct, then three occupation surfaces can be allocated to Phase 4. Nevertheless, given the uncertainty of the phasing of Wall 26, which could conceivably have been built initially in Phase 1, it is possible that some of the occupation surfaces allocated to Phase 4 might date to Phase 2.

In trench C21.1, running up to Wall 33, immediately underlying the plaster floor (21.1.29) was a deposit of yellow-brown clay with chalk (21.1.30). No further description was



Plate 6.54: Corroded plaster floor 20.1.15 running up to Wall 26 (top), looking south-west

recorded. Although some sherds were found within this deposit, it is impossible to judge whether it was an occupation deposit or a fill.

The sequence in trench C21.3 is difficult to reconstruct, since it was not recorded what loci ran up to Wall 32 and bedrock was not reached. The earliest locus reached was a deposit of light grey and brown soil with ash patches (21.3.12, 13), overlain by a deposit of black ash with plaster fragments (21.3.10, 11). Over this was laid the plaster floor (21.3.9a). It is possible that the two earlier loci were occupation deposits, probably associated with Wall 32.

The sequence in trench C22.1 has been described above (see Phase 3), with the uncertain identification of 22.1.F6 as either stone paving or a wall possibly dating to Phase 3. This feature was overlain by a deposit of compact yellowish clay with ash patches (22.1.18, 19), probably a surface with associated occupation, which was overlain by the plaster floor (22.1.17).

In summary, the Phase 4 occupation associated with the Phase 3 walls appears to have consisted of several subphases. Where excavation continued below the Phase 4 plaster floor, there is evidence for between one and three surfaces with associated occupation, although the phasing is not always certain. Furthermore, it is occasionally difficult to judge whether the deposits reflect occupation, fill, or make-up for the plaster floor, and it is possible that some of the loci were fill associated with the stone platform raising the complex. Against Wall 12, following two occupation surfaces, there appears to be wash accumulation immediately below the plaster floor, perhaps suggesting an episode of erosion prior to the laying of the plaster floor.

The plaster floor was the latest surface within Phase 4. It can be traced across most of the complex, and appears to have been deliberately laid. In one area there are traces of red paint on the plaster. The plaster floor joined with the plastering on the walls, especially Wall 9. Certain areas were stone-paved, and some had packed earth floors. The associated installations give indications of the use of the complex.

The area between Walls 12 and 9 was probably plastered, although erosion has removed the plaster towards Wall 12. The excavated extent of the plaster in this area was 6.50 m. north-east/south-west and 8.50 m. north-west/south-east. The extent of the plastered area to the north-west and south-east was not established. If we assume that the maximum extent would have been from the line of Wall 16 in the south-east as far as the line of 1.1.F1 in the north-west, the maximum possible size of this plastered area would be 20.50 x 6.50 m. The niche in Wall 9 in that case would be just off-centre. Even if this plastered area did not extend quite so far, the excavated extent on its own suggests that it be interpreted as a reception room or a plastered courtyard.

The room formed by Walls 9, 10 and 11 was a bathroom, with bath, toilet and a series of steps all plastered together, indicating a certain degree of luxury. Excavated evidence suggests that the room was entered through a doorway formed by Wall 11. During excavation it was proposed that the stub of Wall 14 might have been a seat in the waiting room next to the bathroom, but perhaps this is too fanciful. Nevertheless, in Neo-Assyrian palaces and residences, bathrooms were usually entered through an ante-room (Turner 1970: 196).

Trench C11.1 contained a plaster floor, stone paving and an area of earth floor, as well as a plastered bin and two pits cut into the floor. One of the pits contained sherds from a pottery vessel and grains of corn, while the surrounding floor had sherds mostly from large storage jars. The evidence suggests that this area may have been used for food storage. Stone paving continued in trench C10.5 and Square C1 on the stone platform.

A packed earth floor was found in trench C14.1, in the area forming a doorway between Walls 20 and 15, perhaps leading to the storage and bathroom areas.

The area north-east of Wall 27 was at a lower absolute level and appears not to have been artificially raised. One possibility suggested above (Phase 3) was that Walls 26 and 32 might have formed the external wall of a separate structure. Nevertheless, this building too appears to have a laid plaster floor in the same stratigraphic position as that to the south-west. Walls 34 and 35 were single-coursed and formed a rectangular structure, possibly for some form of storage. A stone-built pit in trenches C21.2/ 21.3 may also have been for storage, since two pottery juglets were found within it.

The massive walls, plastered reception room/courtyard, plastered bathroom, and stone-paved food storage area suggest that this complex be interpreted as luxurious living quarters, perhaps with some public function. The full extent of this Phase 3/4 complex was not established, but from what has been excavated we can assume that originally it covered an area of at least 26 x 24 m. bounded by 1.1.F1 and Walls 12/27 and 16, a total area of 624 square metres.

Trenches C12.3 and 11.1, the bathroom and storage areas, show evidence of heavy burning on the plaster floor, suggesting at the very least a localised fire at the end of Phase 4 (for pottery from Phase 4, see Figures 6.7–12).

Phase 5

This was a phase of construction over the Phase 4 deposits (Figure 6.13). Since the Phase 5 walls were built directly on the Phase 4 plaster floor, it appears that this floor was re-used in

Figure 6.7: Area C complex Phase 4: Bowls A

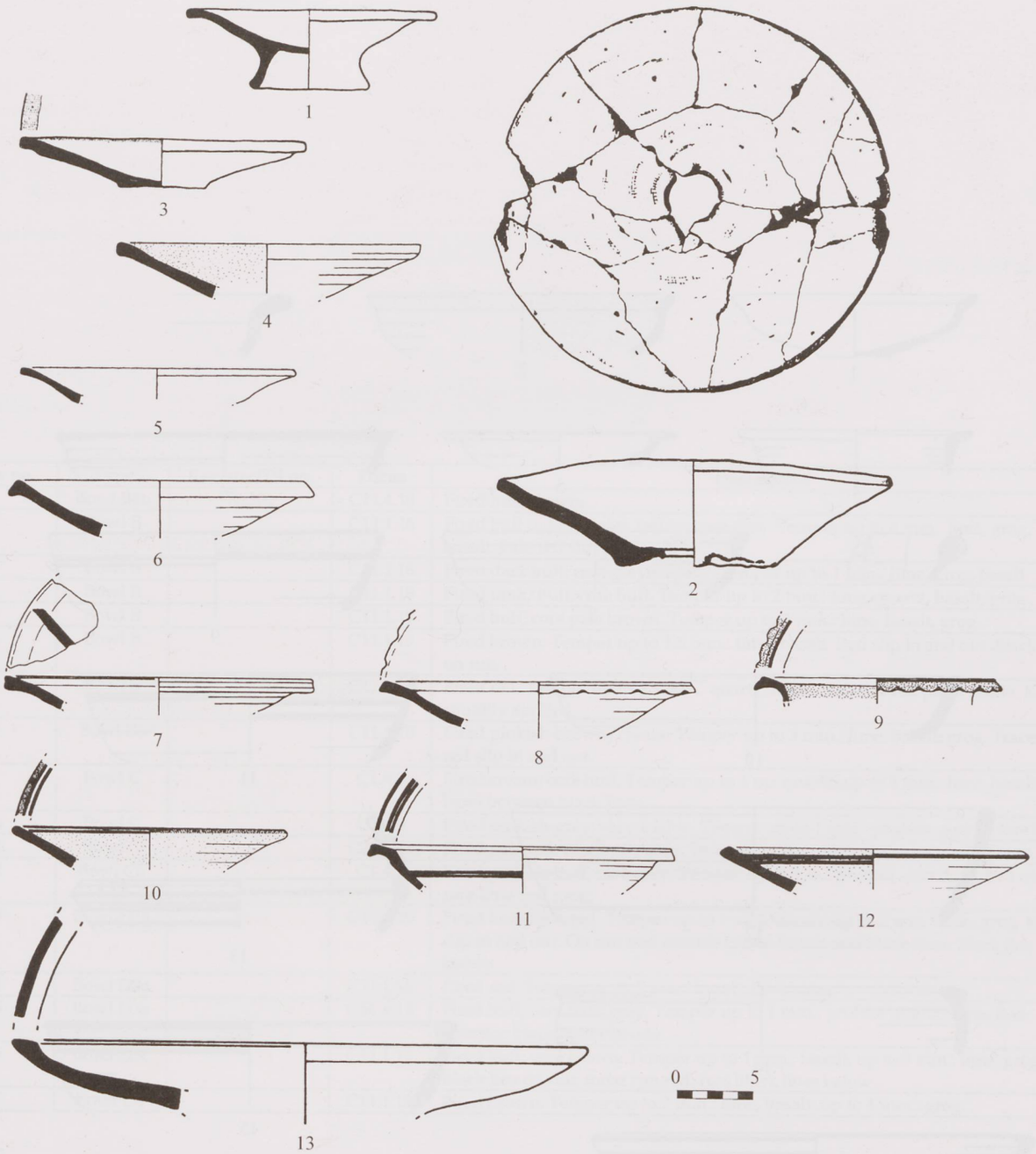


Figure no.	Type	Register/TS no.	Locus	Description
1	Bowl A1e	R1234	C21.3.10	Fired buff-pink. Lime temper.
2	Bowl A2a	R1274	C21.3.12	Fired orange-pink; core black. Base has deliberate hole.
3	Bowl A3a	R1242	C21.3.12	Fired orange-buff. Lime temper. Signs of burning on rim.
4	Bowl A		C11.1.16	Fired pink; core brown/black. Temper up to 2 mm.: lime, grog. Red slip inside.
5	Bowl A		C11.1.19	Fired yellowish-buff; core grey. Temper up to 0.5 mm.: quartz; up to 2 mm.: lime, grog.
6	Bowl A		C11.1.19	Fired grey/buff/pink; core grey. Temper up to 1 mm.: profuse basalt; up to 2 mm.: lime, grog.
7	Bowl A		C11.4.12	Fired pink; core buff. Temper up to 2 mm.: lime, quartz; up to 3.5 mm.: basalt. Black paint slash inside.
8	Bowl A		C11.4.12	Fired pale brown. Temper up to 2 m.: lime, rare basalt and grog.
9	Bowl A		C1.3.3d	Fired pale brown. Temper up to 1.5 mm.: lime, rare basalt. Red slip inside and on denticulated rim. Black lines.
10	Bowl A		C1.3.3d	Fired yellowish-buff. Temper up to 1 mm.: profuse quartz; up to 2 mm.: lime. Possible buff slip inside. Red line on outer rim, then black line and brown/black line.
11	Bowl A		C1.3.3d	Fired grey. Temper up to 1 mm.: lime, basalt. Dark grey/brown lines.
12	Bowl A		C21.3.13	Fired pink; core pale brown. Temper up to 2 mm.: quartz; up to 4 mm.: lime, basalt. Black lines. Traces of red slip inside.
13	Bowl A var.		C12.1.7a	Fired red. Temper up to 4 mm.: lime, grog, basalt. Black line on rim.

Figure 6.8: Area C complex Phase 4: Bowls B, C, D

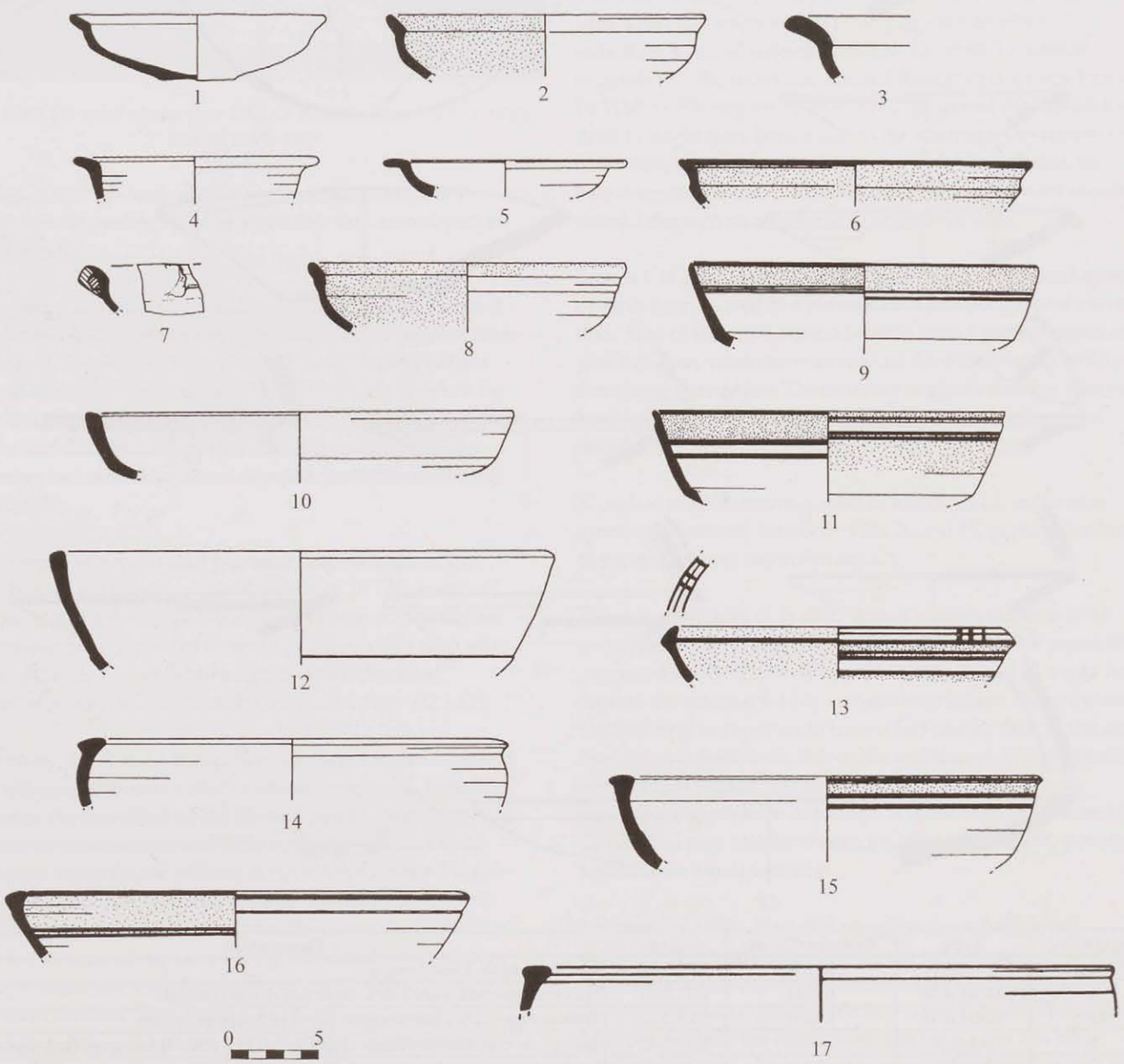


Figure no.	Type	Register/TS no.	Locus	Description
1	Bowl B4b	R1301	C11.4.10	Fired buff-orange.
2	Bowl B		C11.1.16	Fired buff outside, pink inside; core grey. Temper up to 4 mm.: lime, grog, basalt. Pale red slip inside.
3	Bowl B		C11.1.16	Fired dark buff; core greyish-buff. Temper up to 1 mm.: lime, grog, basalt.
4	Bowl B		C11.1.19	Fired pink/buff; core buff. Temper up to 2 mm.: lime, quartz, basalt, grog.
5	Bowl B		C11.1.19	Fired buff; core pale brown. Temper up to 2 mm.: lime, basalt, grog.
6	Bowl B		C11.1.19	Fired brown. Temper up to 1.5 mm.: lime, basalt. Red slip in and out. Black line on rim.
7	Bowl B		C12.1.7a	Fired red. Temper up to 0.5 mm.: quartz, lime. Traces of red paint inside. Knob roughly applied.
8	Bowl B6		C11.4.10	Fired pinkish-brown/cream. Temper up to 3 mm.: lime, basalt, grog. Traces of red slip in and out.
9	Bowl C		C1.4.3	Fired cream; core buff. Temper up to 1 m.: quartz; up to 4 mm.: lime, basalt. Red band between black lines.
10	Bowl C		C1.4.3	Fired pinkish-grey; very friable. Temper up to 1 mm.: profuse quartz, rare lime.
11	Bowl C		C21.3.13	Fired pale red; core buff/grey. Temper up to 1 mm.: lime, grog, rare basalt.
12	Bowl C5		C1.4.3	Fired pinkish-buff; core grey. Temper up to 1 m.: profuse quartz; up to 2 mm.: rare lime and grog.
13	Bowl D2a		C11.1.19	Fired brownish-red. Temper up to 1 mm.: basalt; up to 2 mm.: lime, grog. Red slip in and out. On rim and outside cream bands and black lines; black line inside.
14	Bowl D3a		C11.1.16	Fired red. Temper up to 2 mm.: basalt, lime, grog.
15	Bowl D3a		C11.4.12	Fired buff; core dark grey. Temper up to 1 mm.: profuse quartz; lime. Red between black lines outside.
16	Bowl D3c		C11.1.19	Fired buff; core brown. Temper up to 1 mm.: basalt; up to 3 mm.: lime, grog. Black line on rim; inner rim red, two black lines below.
17	Bowl D4		C11.1.19	Fired brown. Temper up to 2 mm.: lime, basalt; up to 4 mm.: grog.

Figure 6.9: Area C complex Phase 4: Bowls D–N

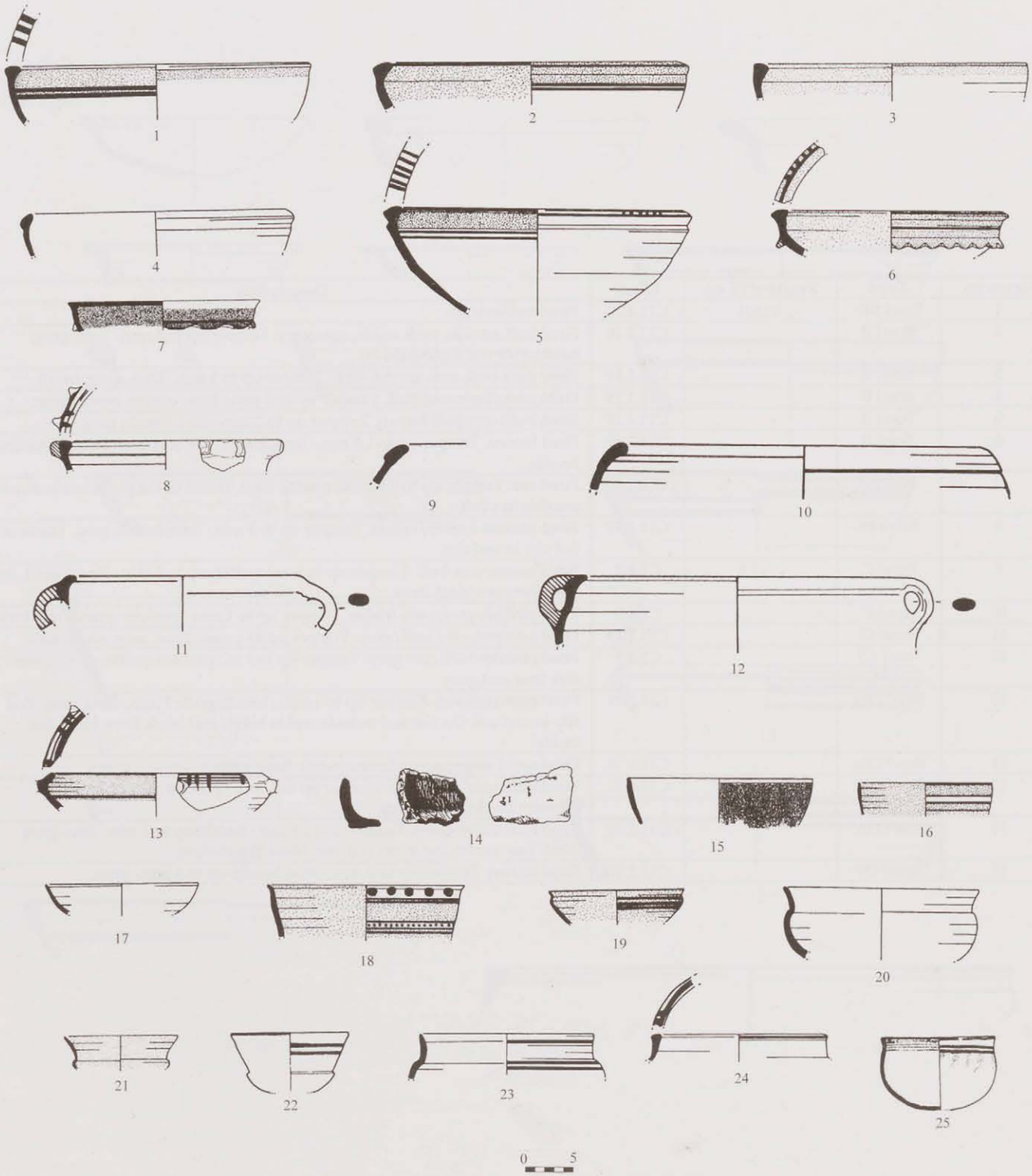


Figure no.	Type	Register/TS no.	Locus	Description
1	Bowl D4a		C11.1.19	Fired red; core grey. Temper up to 1 mm.: basalt; up to 3 mm.: lime, grog. Red and black decoration.
2	Bowl D4a		C11.4.12	Fired buff; core grey. Temper up to 1 m.: quartz, basalt, lime; up to 2 mm.: grog. Broad bands of red slip in and out, and black lines.
3	Bowl D4a		C11.4.12	Fired reddish-brown; core yellowish-brown. Temper up to 2 mm.: rare basalt, lime and grog. Red slip inside, and band on external rim.
4	Bowl D4a		C12.1.7a	Fired pink; core yellowish-brown. Temper up to 2 mm.: lime; up to 4 mm.: basalt; up to 5 mm.: grog.
5	Bowl D4a		C21.3.12	Fired pink; core yellowish-brown. Temper up to 0.5 mm.: quartz; up to 3 mm.: basalt, lime. Red and black decoration.
6	Bowl D5a		C11.1.19	Fired red. Temper up to 0.5 mm.: basalt; up to 1 mm.: lime. Red slip in bands outside, continuous inside. Black decoration on rim.
7	Bowl D5	TS431	C1.3.3a	Fired pink. Temper up to 1 mm.: quartz, lime. Red and black decoration.
8	Bowl E3		C1.4.3	Fired pink; core yellowish-brown/grey. Temper up to 1 mm.: quartz; up to 2 mm.: lime, basalt, grog. Traces of red slip inside. Black decoration.
9	Bowl F2		C11.1.19	Fired buff. Temper up to 2.5 mm.: basalt, lime.
10	Bowl F2		C11.4.10	Fired light brown; core grey. Temper up to 2 mm.: basalt, lime.
11	Bowl F2a		C11.4.12	Fired buff; core reddish-brown/grey. Temper up to 1 mm.: profuse quartz; up to 2 mm.: basalt, grog; up to 3 mm.: lime.
12	Bowl F2a		C11.4.12	Fired reddish-brown. Temper up to 2 mm.: basalt, grog; up to 3 mm.: lime.
13	Bowl F2b	TS3023	C11.1.19	Fired pink; core yellowish-brown. Temper up to 2 mm.: grog; up to 3.5 mm.: lime. Red slip inside and on rim. Black decoration.
14	Bowl G	R150	C2.2.6.F9	Negev Ware: coarse lime temper.
15	Bowl H	TS326	C2.2.6	Fired red; core yellow. Temper up to 0.5 mm.: quartz, mica, lime. Red and black decoration.
16	Bowl H		C11.1.19	Fired red; core grey. Temper up to 1 mm.: lime, basalt. Red slip inside. Bands of red and white slip outside, and black lines.
17	Bowl H		C21.1.30	Fired red; core grey. Temper up to 0.5 mm.: profuse quartz; up to 1 mm.: lime.
18	Bowl J		C11.4.12	Fired brown; core grey. Temper up to 1 mm.: lime, rare basalt. Brown slip? in and out, outside with two bands of white slip. Burnished in and out. Dark brown decoration.
19	Bowl J1b		C11.1.19	Fired brown. Temper up to 1 mm.: basalt, lime. Red slip in and out. Black lines outside.
20	Bowl J1c	TS3034	C11.4.10	Fired brown; core grey. Temper up to 2 mm.: basalt; up to 5 mm.: lime.
21	Bowl K		C21.3.11	Fired red. Temper up to 0.5 mm.: quartz; up to 1 mm.: lime, basalt, grog, flint. Red slip in and out.
22	Bowl K2	R1277	C21.3.12	Fired buff. Reddish slip and black lines.
23	Bowl N		C11.1.16	Fired dark brown; core grey. Temper up to 2 mm.: basalt; up to 3 mm.: lime, grog. Cream slip in and out.
24	Bowl N?		C11.1.19	Fired cream outside, buff/pink inside; core yellowish-brown. Temper up to 2 mm.: lime, basalt, grog. Dark grey decoration.
25	Bowl N2	R1257	C21.3.13	Fired buff/pink. Red and black decoration, with vertical red stripes.

Figure 6.10: Area C complex Phase 4: Bowls O, R, Miscellaneous, Cooking Pots A, B, D

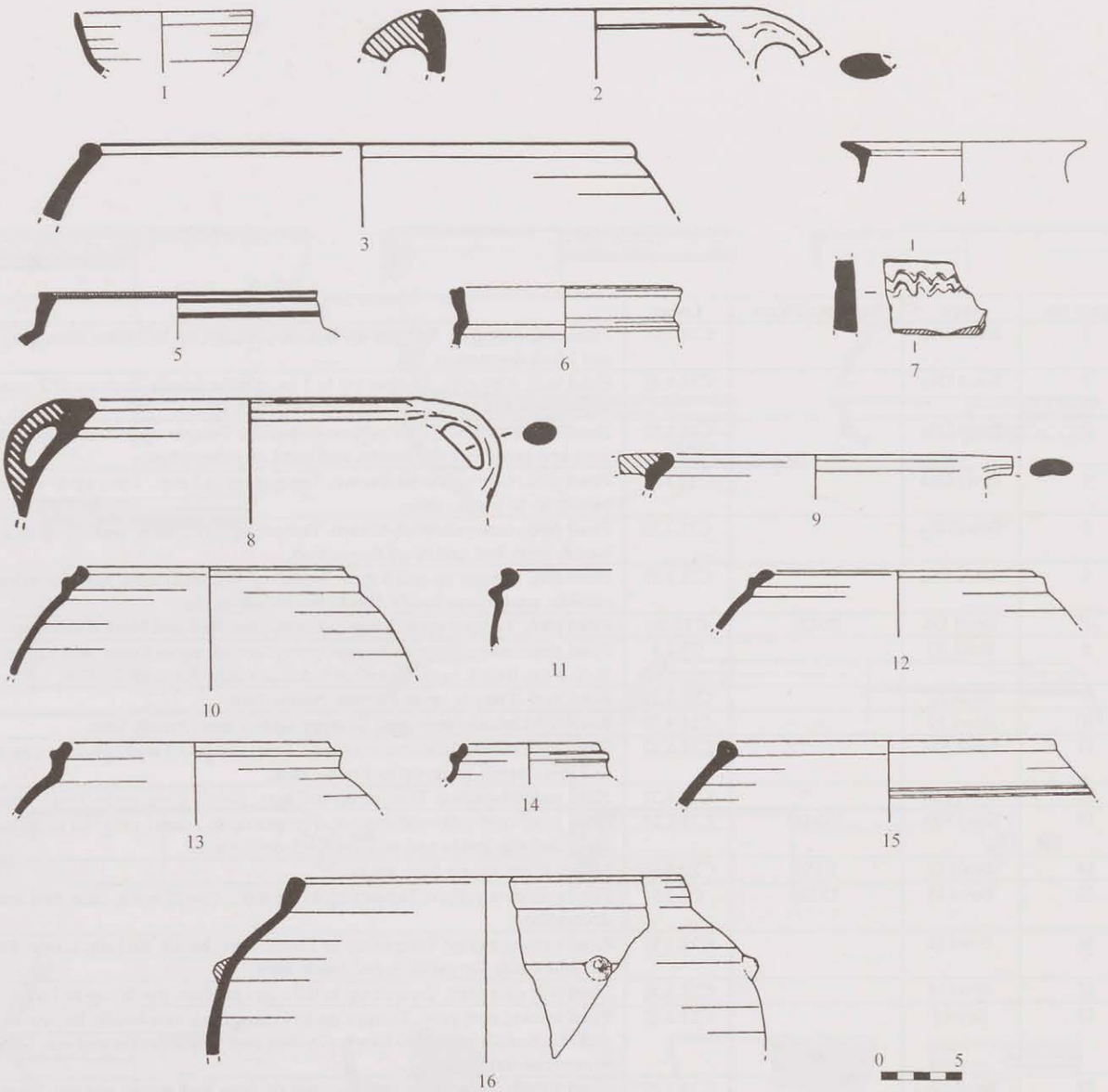


Figure no.	Type	Register/TS no.	Locus	Description
1	Bowl O?		C11.4.12	Fired pale brown. Temper up to 2 mm.: lime, basalt, quartz, grog.
2	Bowl R		C14.1.11	Fired pinkish-buff. Temper up to 1 mm.: quartz; up to 2 mm.: lime, basalt.
3	Bowl R	TS3035	C11.4.10	Fired red; outer core grey, inner core reddish-grey. Temper up to 1 mm.: quartz.
4	Misc bowl		C1.3.3e	
5	Misc bowl		C2.2.4	
6	Misc bowl		C11.4.12	Fired buff/grey; core brown. Temper up to 1 mm.: lime; up to 3 mm.: basalt.
7	Body sherd	TS3025	C20.1.25	From storage jar? Fired pink/grey; core grey. Temper up to 2 mm.: quartz, lime. Wavy line incised at leather-hard stage.
8	CP A		C11.1.16	Fired grey/pink outside, pink inside; core pink. Temper up to 1 mm.: profuse quartz; up to 2 mm.: basalt; up to 4 mm.: grog.
9	CP A		C11.1.19	Fired grey; core reddish-grey. Temper up to 1 mm.: profuse quartz.
10	CP A		C11.4.9	Fired red with burnt patches. Temper up to 1 mm.: profuse quartz.
11	CP A		C11.4.9	Fired grey; core red. Temper up to 1 mm.: profuse quartz.
12	CP A		C1.3.3a	Fired red/black outside; pinkish-buff inside; core red/grey. Temper up to 1 mm.: profuse quartz.
13	CP B		C11.1.14	Fired pink. Temper up to 1 mm.: profuse quartz; up to 2 mm.: rare grog.
14	CP B		C11.1.19	Fired grey outside; inside and core greyish-red. Temper up to 1 mm.: profuse quartz, rare lime.
15	CP D		C11.1.16	Fired reddish-grey; core grey. Temper up to 1 mm.: profuse quartz; rare lime; basalt.
16	CP D		C11.1.19	Fired red outside, grey inside; core grey. Temper up to 1 mm.: profuse quartz; up to 2.5 mm.: rare lime.

Figure 6.11: Area C complex Phase 4: Cooking Pots D, E, Jars A

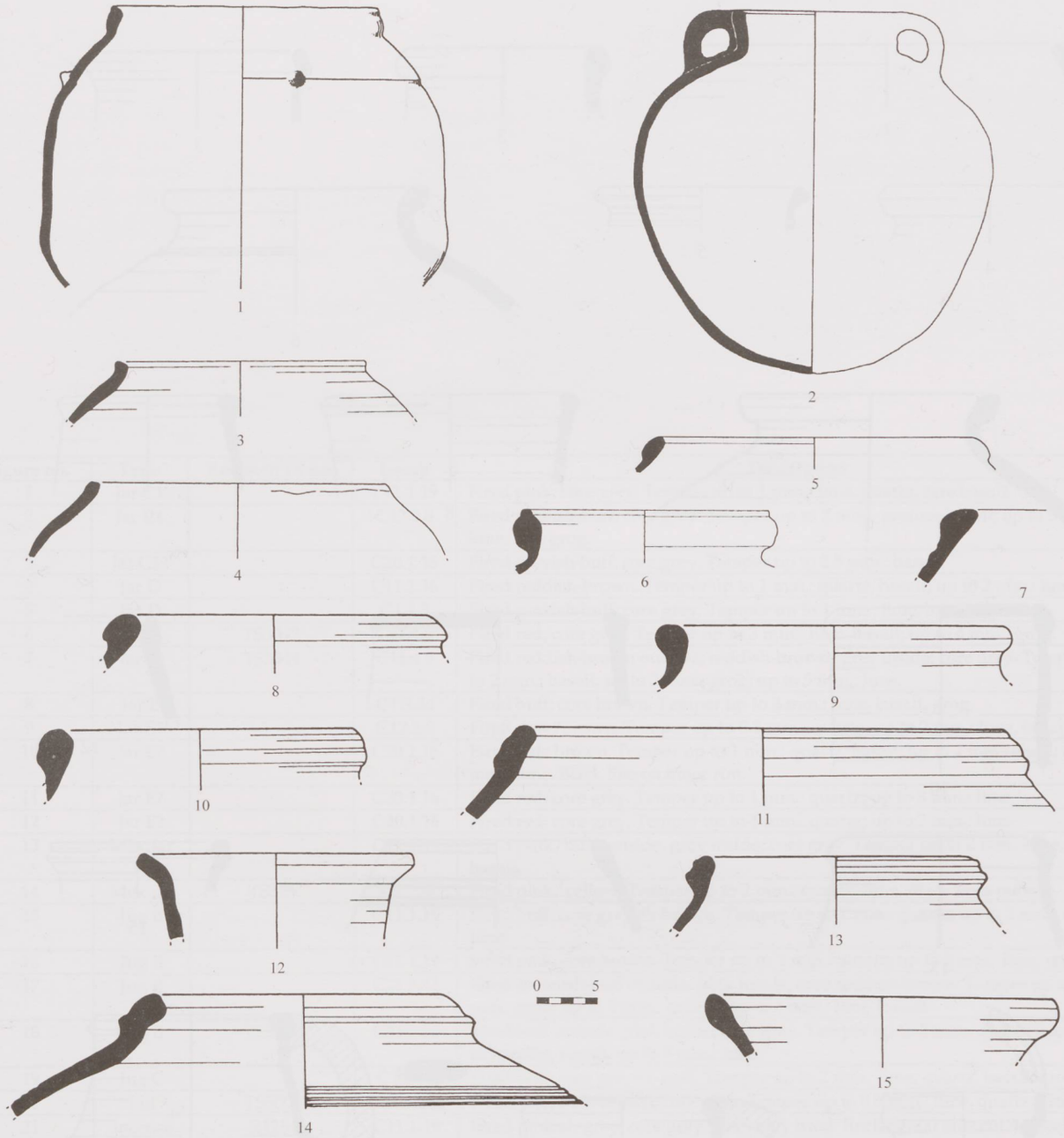


Figure no.	Type	Register/TS no.	Locus	Description
1	CP D	R1231	C11.1.19	Fired red outside, red inside. Knob on shoulder.
2	CP D	R1201	C14.1.11	Fired red/grey. Coarse quartz temper.
3	CP D		C11.4.9	Fired grey outside, pink inside; core reddish-grey. Temper up to 1 mm.: profuse quartz.
4	CP D		C1.3.3c	Fired grey/red outside; inside and core red. Temper up to 1 mm.: profuse quartz, rare grog.
5	CP E		C1.3.3c	
6	Jar A1?	TS375	C1.3.3c	Fired red; core brown. Temper up to 3 mm.: quartz, lime.
7	Jar A2		C10.2.12	Fired pink; core pale brown. Temper up to 1 mm.: quartz; up to 2 mm.: basalt, rare lime.
8	Jar A2		C11.1.19	Fired pink; core grey. Temper up to 3 mm.: profuse basalt; up to 2 mm.: grog.
9	Jar A2		C1.3.3a	Fired grey. Temper up to 2 mm.: profuse lime; up to 1 mm.: rare quartz.
10	Jar A2		C1.3.4	Fired grey; core black. Temper up to 1 mm.: profuse quartz; up to 2 mm.: rare lime.
11	Jar A1		C21.3.11	Fired brownish-grey; core grey. Temper up to 5 mm.: lime, rare grog.
12	Jar A2?	TS3002	C11.1.19	Fired buff; core grey. Temper up to 1 mm.: profuse quartz; lime.
13	Jar A1?	TS3004	C21.3.11	Fired pink; core greyish-pink. Temper up to 1 mm.: quartz; up to 2 mm.: lime, grog, rare basalt.
14	Jar A2	TS3005	C21.3.11	Fired red/buff outside, grey inside; outer core red, inner core grey. Temper up to 2 mm.: basalt; up to 5 mm.: lime.
15	Jar A2	TS3020	C11.1.16	Fired pink; core grey. Temper up to 2 mm.: lime, basalt, shale.

Figure 6.12: Area C complex Phase 4: Jars C, D, E, Jugs, Miscellaneous

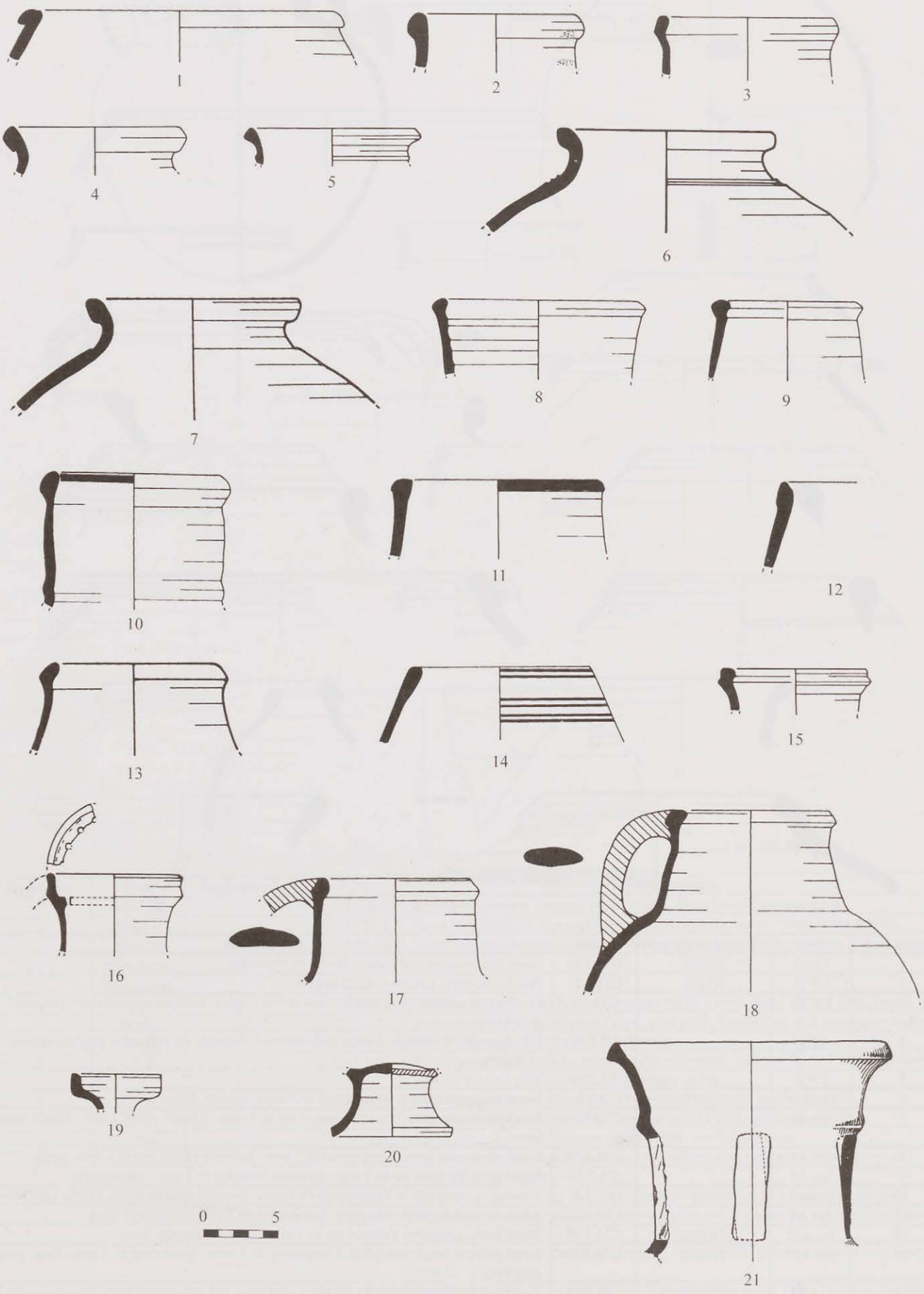


Figure no.	Type	Register/TS no.	Locus	Description
1	Jar C1		C11.1.19	Fired pink; core grey. Temper up to 1 mm.: lime, quartz, rare basalt.
2	Jar C1		C12.2.8	Fired pinkish-buff; core grey. Temper up to 2 mm.: profuse basalt; up to 3 mm.: lime, rare grog.
3	Jar C3?		C20.1.16	Fired greyish-buff; core grey. Temper up to 2.5 mm.: basalt.
4	Jar D		C11.1.16	Fired reddish-brown. Temper up to 1 mm.: quartz, basalt; up to 2 mm.: lime.
5	Jar D		C1.4.3	Fired pinkish-buff; core grey. Temper up to 1 mm.: lime, basalt.
6	Jar D	TS3043	C11.4.9	Fired red; core grey. Temper up to 3 mm.: lime, basalt; up to 4 mm.: grog.
7	Jar D	TS3044	C11.4.9	Fired reddish-brown outside, reddish-brown/grey inside; core grey. Temper up to 2 mm.: basalt; up to 3 mm.: grog; up to 5 mm.: lime.
8	Jar E		C1.3.3a	Fired buff; core brown. Temper up to 2 mm.: lime, basalt, grog.
9	Jar E?		C12.2.9	Fired grey/brown. Temper up to 0.5 mm.: quartz; up to 2 mm.: lime, basalt.
10	Jar E?		C20.1.16	Fired pale brown. Temper up to 1 mm.: quartz, basalt; up to 2 mm.: shale; up to 3 mm.: lime. Black line on inner rim.
11	Jar E?		C20.1.16	Fired red; core grey. Temper up to 1 mm.: quartz; up to 3 mm.: lime.
12	Jar E?		C20.1.16	Fired red; core grey. Temper up to 1 mm.: quartz; up to 3 mm.: lime.
13	Misc jar		C11.1.19	Fired pink/buff outside, grey inside; core grey. Temper up to 2 mm.: lime, quartz, basalt.
14	Misc jar	TS325	C2.2.6	Fired pink/yellow. Temper up to 2 mm.: quartz, lime. Black lines outside.
15	Jug B		C11.1.16	Fired buff; core greyish-brown. Temper up to 1 mm.: quartz; up to 2 mm.: basalt, lime.
16	Jug B		C11.1.19	Fired pink; core brown. Temper up to 1 mm.: quartz; up to 2 mm.: lime, grog.
17	Jug B		C21.3.11	Fired greenish-buff outside, pink inside; core reddish-brown. Temper up to 1 mm.: grog; up to 3 mm.: quartz; up to 4 mm.: lime, basalt.
18	Jug B	TS3026	C21.3.12	Fired buff outside, pink inside; core grey. Temper up to 2 mm.: quartz (especially in handle), basalt; up to 3 mm.: lime.
19	Jug C		C11.4.9	Fired buff; core greyish-buff. Temper up to 2 mm.: lime, quartz, basalt, grog.
20	Lid	TS3008	C21.3.11b	Fired yellowish-brown; core grey. Temper up to 0.5 mm.: lime, quartz, grog.
21	Incense burner	R1254	C11.1.19	Fired pinkish-grey; core grey. Unevenly fired. Rectangular slits cut vertically from exterior.

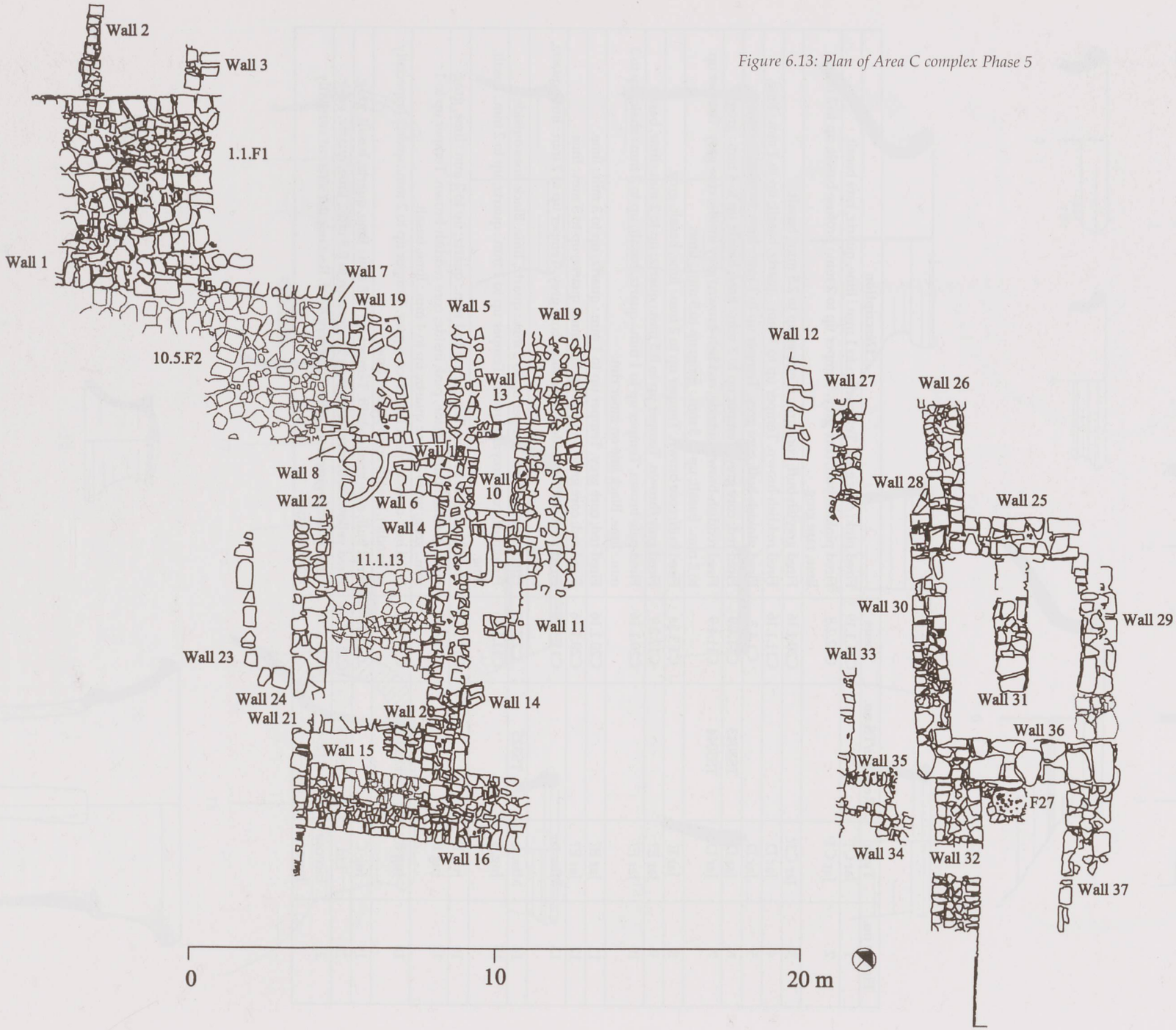


Figure 6.13: Plan of Area C complex Phase 5

Phase 6. Similarly, Wall 1 was built on the Phase 3 stone platform 1.1.F1, suggesting that this too was re-used. Where the evidence is clear, it appears that some of the Phase 3 walls were rebuilt and bonded into the Phase 5 walls.

Wall 5 was constructed on top of the Phase 4 plaster floor, and Walls 10, 13 and 14 from Phase 3 were rebuilt and bonded into it. In the excavation notebook there was some confused speculation concerning a possible foundation trench for Wall 5 in trench C10.2, but from all other trenches it is quite clear that it directly overlay the Phase 4 plaster floor. Wall 5 ran north-west/south-east, and was traced from the north-western baulk as far as Wall 15, a distance of 14.50 m. (Plate 6.55). It was 1.25 m. wide and survived to three to four courses.

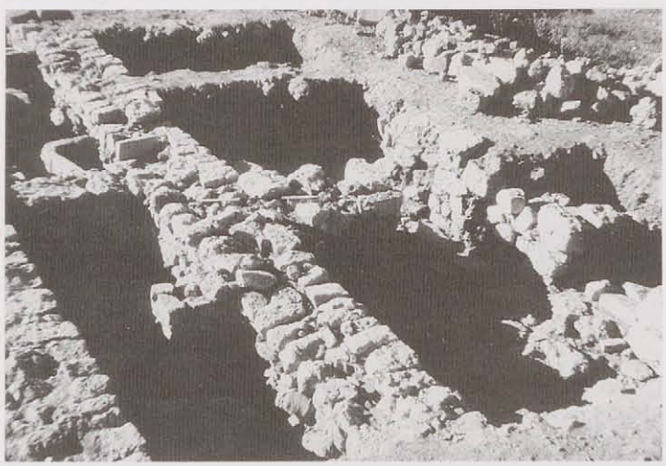


Plate 6.55: Wall 5, looking south



Plate 6.56: Walls 5 (left) and 6 (top), looking south-east



Plate 6.57: Wall 6 (left) and possible blocking (right), looking south-east

Wall 6 was also built on the Phase 4 plaster floor and was bonded into Wall 5 (Plate 6.56). It ran north-east/south-west for 1.50 m., was between 1 and 1.50 m. wide and survived to three courses. It partly overlay one end of bin 10.3.F12 of Phase 4. Its end formed a doorway with Wall 8. However, the evidence from the excavation notebook was unclear regarding the nature of this doorway. There was some indication that a stone blocking filled the doorway but it was not clear what the blocking was built on, i.e. whether it dated to Phase 5 or later (Plate 6.57).

Wall 8 ran north-west/south-east for 3 m., forming doorways with Walls 6 and 7. It was not traced further to the south-east than the edge of bin 10.3.F12 from Phase 4 which it overlay. It was 1.10 m. wide and survived to three to four courses in height.

Wall 7 was a continuation of Wall 8 to the north-west after a doorway 1.40 m. wide. It was of the same construction as Wall 8. One large stone 1.10 x 0.40 x 0.60 m. formed one side of the doorway. The wall was 1.75 m. long and ran up to Wall 1.

The doorway between Walls 7 and 8 contained a group of stones which formed a step (10.3.F11). The upper step consisted of two large and three smaller stones, between 0.50 and 0.60 m. below the surviving top of Walls 7 and 8. The lower step was less complete and consisted of four stones c. 0.80–0.90 m. below the surviving top of the walls (Plate 6.58).



Plate 6.58: Walls 7 and 8 with threshold step 10.3.F11, looking south-west





Plates 6.59a, b: Wall 1 with doorway, looking south-west (a) and north (b)

Wall 1 was built over the stone platform (assigned to Phase 3) in Square C1 (1.1.F1) (Plate 6.59a, b; cf. Plates 6.37–39). Square C1 was not stratigraphically linked with the rest of the Area C complex, so the allocation of Wall 1 to Phase 5 is not certain. The wall ran north-east/south-west, and was traced for 9.50 m. between the north-west baulk of Square C1 and Wall 7, which Wall 1 joined. It is not known if Wall 1 continued beyond Wall 7. Little was recorded concerning Wall 1. It seems to have survived to only one course, c. 0.45 m. high. It was 1.50 m. wide and had a doorway 1.60 m. wide. The threshold of the doorway (1.2.F2) consisted of two large flat stones projecting beyond the line of the wall. The stones appeared to be well cut and showed few signs of wear, suggesting that this may have been an important entrance.

Wall 17 was not recorded during excavation but was discovered on a study visit to the site in May 1999. It was bonded to Wall 8 and ran the length of the south-east baulk of trench C10.5 on the same line as Wall 6. Walls 1 and 17 thus defined a room 4.90 m. wide, entered through a doorway between Walls 7 and 8. The distance to the doorway between Walls 7 and 8 from both Walls 1 and 17 was 1.75 m. in each case (Plate 6.60).

In trench C1.4, a foundation trench (1.4.F2) was cut through the Phase 4 earth floor (1.4.3) and Wall 2 was constructed in it, running north-west/south-east, abutting the lower courses of stone platform 1.1.F1 (cf. Figure 6.21 and Plate 6.5). It is likely that this foundation trench also cut Phase 4 deposits in trench C1.3 (1.3.3a–e), but this was not recorded. A photograph shows Wall 2 overlying the lower Phase 4 deposit (1.3.4) (Plate 6.61). Wall 2 was traced for a distance of 3 m., was 0.50–0.60 m. wide, and survived to a height of 1.70 m. It appeared poorly constructed compared with the other Phase 5 walls. The original excavation records are slightly unclear, but a doorway was recorded in Wall 2, extending 1.28 m. from the face of 1.1.F1. There was a threshold c. 0.50 m. above the foot of the wall, with four courses beneath the threshold. On the plan, the doorway can be recognised where the stones of the threshold are slightly wider than the continuation of the wall to the north-west. No datum levels were taken on this wall, so there is no record of absolute height, but a study visit in May 1999 confirmed that it was constructed against the base of 1.1.F1 at an absolute height similar to that of the structures in Square C3, thus perhaps forming part of a structure outside the raised complex.

In Square C14, Wall 15 was a partial rebuild of Wall 16, and was bonded with Wall 5. Wall 15 ran from Wall 5 for 2.50 m. on top of Wall 16, but only half its width. It appears to have created a doorway 1.25 m. wide with Wall 21, the floor of the doorway being formed by the underlying Wall 16. The surviving height of Wall 15 was 0.68 m. above the level of Wall 16 in the doorway (cf. Plates 6.13–15).



Plate 6.60: Wall 17 (right) bonded to Wall 8 (left), looking east (photo taken in 1999)



Plate 6.61: Wall 2 (right) overlying deposit 1.3.4, looking south, with 1.1F1 on the left



Plate 6.62: Wall 21, with trench 14.3 on the left, looking north-west

Wall 21 was built on the earth floor (14.1.11) of Phase 4 (Plate 6.62). It ran along the line of the north-west baulk of Square C14 for 5 m. Its relationship with Walls 16, 20 and 22 was not recorded. It appears to cut across the line of Walls 16 and 20 and to be on a similar but not identical line to Wall 22 of Phase 3. The surviving height of Wall 22 is similar to that of Wall 21, so it is possible that Wall 22 was re-used or rebuilt in Phase 5.

In Squares C20–22, a discrete structure, comprising Walls 25, 28–31, 36–37, was built directly on the Phase 4 plaster floor (cf. Figures 6.26, 28). The stratigraphic position of this structure was quite clear, although there were some uncertainties. Wall 28 was a poorly recorded short stub of a wall against Wall 26 of Phase 3, and apparently later than that wall. It seems to act as an infill on the corner between Wall 26 and Wall 30, whose stratigraphic position was not recorded. It has therefore been assumed that Walls 28 and 30 formed part of the Phase 5 structure, as Wall 30 appears to be bonded with Wall 36, although this was not specifically noted in the excavation records (Plates 6.63–64).

Wall 37 appeared to be parallel to Wall 32 of Phase 3, and survived to the same absolute height, lower than Wall 36, suggesting the possibility that Wall 37 too might date to Phase 3. Wall 37 was not extensively excavated, but the excavator was quite clear that it was contemporary with Wall 36. The excavation records suggest that Wall 37 was poorly preserved and partly bulldozed, although the plan of the wall does not reflect this. There was a suggestion by the excavator that the loci in trench C22.2 included foundation trenches for Walls 36 and 37, but these were noted as apparently damaged by bulldozing and it was not recorded what locus they were cut



Plate 6.63: Walls 30, 32 and 36 during excavation, looking north-west. Wall 32 is in the foreground. Wall 36 runs across the picture, with Wall 30 turning at a right angle to the top. Walls 30 and 36 belong to the Phase 5 structure built over the Phase 3 Wall 32

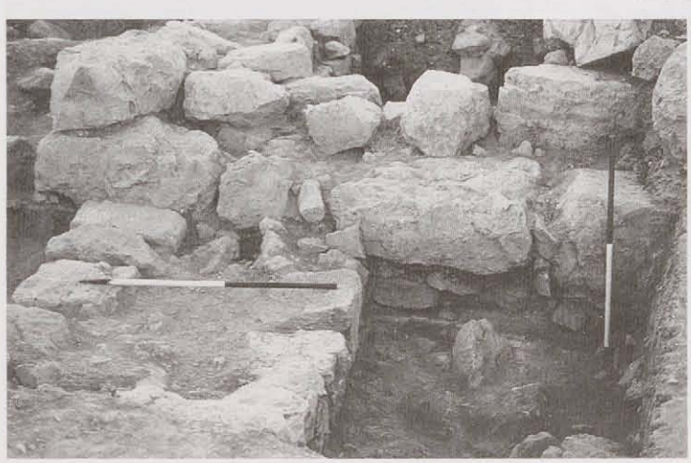


Plate 6.64: Wall 32 (left), pit 21.3.F27 (right), and Wall 36 (top), looking north-west



Plate 6.65: Fill in gateway in Square C22

from. This in any case conflicts with other evidence in the notebooks which makes clear that all walls in Square C22 were built on the Phase 4 plaster floor. In this report, Wall 37 is dated to Phase 5, but its phasing cannot be regarded as totally secure.

The Phase 5 structure in Squares C20–22 was rectangular, measuring 8.40 x 6.60 m. externally, 5.75 x 4.50 m. (maximum) internally, oriented north-west/south-east. The details of the walls were not recorded: they varied between 1 and 1.50 m. in width but their surviving height was not recorded. The internal space was divided by Wall 31, 4.25 m. long running north-west/south-east from Wall 25, leaving a space or corridor 1.50 m. wide between the end of Wall 31 and Wall 36. Wall 31 created two narrow rooms within the structure, the south-western one 1.50 m. wide, the north-eastern one 1.75 m. wide. Directly opposite that corridor, between Walls 29 and 36, was a gate 1.50 m. wide formed by two piers. Both piers had three courses of large limestone blocks and survived to a height of c. 1.75 m. (cf. Figure 6.28 for Wall 29 pier). The area between the piers (trench C22.1) consisted mainly of fill — fallen mudbrick, stones and patches of ash (dated to Phase 7) (Plate 6.65). There were two different colours of mudbrick in the fill: red mudbricks, and below them yellow mudbricks, both types showing signs of burning. The excavator speculated that this might be evidence for a roof over the gate made of yellow mudbricks, with a superstructure of red mudbricks, but this point was not further investigated. The floor of the gate was paved with stones lying on the Phase 3 plaster floor (22.1.17) (Plate 6.66a–d).



Plate 6.66a: caption below



Plate 6.66b: caption below



Plate 6.66c: caption below

Plates 6.66a–c: Gateway between Walls 29 and 36 in Square C22, looking south-west, with Wall 30 beyond



Plate 6.66d: Gateway between Walls 29 and 36 in Square C22, looking south-west, with Wall 30 beyond

The plan of this structure as excavated and recorded does not show any further doorways. There is a suspicion of a blocked doorway where Wall 30 meets Wall 25, but Wall 30 was poorly recorded and this must remain speculation. A study visit in May 1999 revealed that the stones of the suspected blocking were out of place and not along the wall line, but it could not be confirmed that this was a blocking. The lack of a further doorway implies that the piered entrance led only to the two narrow rooms divided by Wall 31. There is no evidence that these rooms led anywhere else.

In order to understand the Phase 5 constructions, it is probably necessary to consider the overall plan of Phases 3 and 5 together. The evidence suggests that at least some Phase 3 walls were rebuilt and bonded into the new Phase 5 walls. Since the Phase 4 plaster floor and stone paving were used as the base for the construction of the Phase 5 walls, it appears that existing activity areas may have been re-used. Some changes were made in the use of space, since the Phase 4 plastered bath and bin were cut through by new Phase 5 walls (although the original extent of the bath is unknown). The impression is that the spaces within the structure were further subdivided and enclosed, and the circulation space was remodelled by the provision of several new walls provided with doorways: Walls 1, 2, 6, 7, 8, 15 and 17. No doorway was found in Wall 5 which was built across the middle of the structure from north-west to south-east, perhaps dividing off the storage areas from the bathroom and reception areas. North-east of the plastered reception room/courtyard a new structure was erected, consisting of a piered gate and two narrow rooms with no access beyond. It is possible that this structure should be interpreted as a gatehouse for the major structure, although the lack of a doorway leading through the proposed gatehouse might militate against this suggestion. If the 'gatehouse' and the main building were connected, albeit at different absolute heights, the total dimensions of this complex in Phase 5 would be at least 35 x 29 m. (bounded by 1.1.F1 and Wall 37), a total area of 1,015 square metres.[1]

Phase 6

This was a phase of occupation associated with the Phase 5 structures (which include the rebuilt Phase 3 walls). In the main part of the Area C complex, between Wall 12 and the line of Wall 7, it is possible to trace similar deposits of material, suggesting that this part of the complex at least was being used as a unit. Different deposits are found in other trenches, although in some the collapse of Phase 7 has apparently obliterated all traces of a Phase 6 occupation (Square C1, trenches C11.1, C20.2, C22.1). The later deposits, underlying Phase 7 collapse or topsoil layers, are confused and their allocation to Phase 6 is not certain.

Between Wall 9 and the line of Wall 7 there was a deposit of dark, burnt soil with rubble and concentrations of charcoal (12.1.6; 10.1.6; 12.3.5; 12.4.4; 12.5.5; 10.2.9, 10; 10.3.6) overlying the Phase 4 plaster floor and running up to the Phase 5 walls. No further description of this deposit was recorded. The two most likely possible interpretations are an occupation deposit following the Phase 5 structural additions, or debris from a fire overlying the Phase 4 plaster floor. With the evidence recorded, it is impossible to choose between these alternatives. 10.1.6 lay on 10.1.8, a layer of reddish soil, which can perhaps be interpreted as a levelling fill deliberately placed over the Phase 4 plaster floor (10.1.9) prior to a Phase 6 occupation.

The contemporary phase in the 'reception room/courtyard' (trench C12.2) was described as a layer of black and burnt red soil showing intense burning (12.2.5). This description seems to reflect a localised fire rather than an occupation deposit. This locus ran up to Wall 9, but not to any Phase 5 walls, and it has been allocated to Phase 6 because the locus overlay the Phase 4 plaster floor (12.2.6). Since the Phase 4 plaster floor in trenches C12.3 and C11.1 (bathroom and storage areas) showed signs of burning, probably reflecting a localised fire, it is possible that

[1] During the 1980 season, Bennett termed this structure a 'guardroom', but seemed to think that there was a ramp through the piered gate leading upwards at an angle of approximately 30°, turning to the right between Walls 30 and 31 and perhaps continuing to a first-floor level. The ramp was described in notes as 'constructed of a layer of stone slabs laid on edge, blinded with soil and stone chippings and screeded over with a layer of lime mortar'. There is no mention of this ramp in the Square C22 site notebook, and no sign of it in photographs or drawings, and it was not visible on site during a study visit in May 1999. Indeed, datum points taken during excavation on the Phase 4 plaster floor, on which the gate was built, just inside the gateway and against Wall 30, show almost exactly the same absolute height, indicating no ramping at all. This may have been no more than a fanciful interpretation by Bennett of the earlier wall or paving in Square C22: there is certainly no indication of a ramped floor. A similar 'ramp' was described in the Area B entrance, but again there is no archive evidence for it in the excavation notebooks and photographs.

12.2.5 was in fact a more intense fire in the 'reception room/courtyard' at the end of Phase 4. It is impossible to judge if 12.2.5 should be attributed to Phase 4 or 6.

In trench C12.5, the burnt deposit 12.5.5 was overlain by a small area of plaster (12.5.7a), followed by a deposit of compact yellow soil with chalky flecks and burnt patches which was traced over Squares C10 and C12 (10.1.5; 10.2.2; 12.1.5; 12.2.4; 12.3.2, 4; 12.4.3; 12.5.4), although it was not found in trench C10.3. This compact deposit is probably to be interpreted as a laid earth floor, mixed with some of the occupation deposit overlying it.

This earth floor was overlain in some trenches by Phase 7 collapse, in some by topsoil. In other trenches it was overlain by a deposit of fairly compact dark soil with occasional rubble and charcoal patches (10.1.2; 10.2.1; 10.3.4; 12.1.3). No on-site interpretation of these deposits was attempted, and it is difficult to judge if they were Phase 6 occupation deposits or trampled surfaces over the earth floor, or conceivably even part of the Phase 7 collapse or topsoil layers. In trench C12.2 (the 'reception room/courtyard'), the earth floor was overlain by burnt soil (12.2.3), varying in colour from red to grey to black, the burning described as more intense further down. This may be evidence of a fire in that room. An Eastern Sigillata bowl base recorded from that locus is unlikely to be evidence of Roman-period use; more likely the deposit was mixed with the overlying collapse deposit 12.2.1 of Phase 7, or 12.2.3 itself should be attributed to Phase 7.

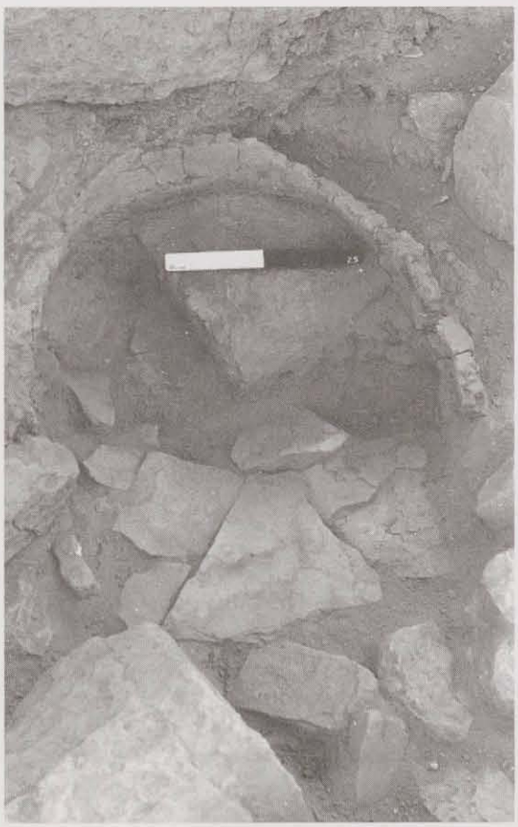


Plate 6.67: Tabun 11.4.F3

In trenches C11.4 and C14.1 the possible Phase 6 sequence was confused. In trench C11.4, since there were no Phase 5 walls, the allocation of these loci to Phase 6 is slightly subjective (and it was accepted above that these and the loci attributed to Phase 4 might all be part of a single episode of burning perhaps dating to Phase 7). Nevertheless, the loci to the south-west of Wall 22 seemed to be similar to those described above for Phase 6, with a deposit of localised burning (11.4.7) overlain by a compact earth surface (11.4.3). On the other side of Wall 22 was a deposit of soft brown soil with limestone inclusions (11.4.4), which might however be contemporary with the Phase 7 collapse deposits in trench C11.1 (11.1.4, 11.1.10). There is only a sketch section of these loci in the excavation notebook, and since the top of 11.4.4 appeared to be at the same absolute height as the top of 11.4.7, and both were overlain by topsoil, 11.4.4 was tentatively attributed to Phase 6. Apparently within 11.4.4 was a tabun (11.4.F3) consisting of a large coarse pottery vessel 30–35 cm. in diameter, associated with burning, with the stones underneath and around the vessel burnt and fire-cracked (Plates 6.67–68).

In trench C14.1, on the Phase 4 earth floor (14.1.11) and against Wall 21 of Phase 5, was a compact earth deposit containing large amounts of pottery sherds, especially large storage jars (14.1.9a) (cf. Plate 6.12), which formed the lower part of a deposit of medium hard packed brown soil with small stones (14.1.9). In the excavation notebook, Bennett added a note interpreting the pottery layer 14.1.9a as a destruction level, but this seems unlikely. An alternative explanation is that the pottery sherds formed the make-up for a compact earth floor (14.1.9), although admittedly the sherds seem quite large for such a function. Floor 14.1.9 was overlain by 14.1.6 of Phase 7, which also overlay a small area of stone paving (14.1.F6) against Wall 21, measuring 1.10 x 0.90 m., constructed of flat stones roughly laid, two courses high. One of the stones had a worn round depression in it: unfortunately this was not drawn or photographed and no further description or interpretation was provided. The relationship between this stone paving and floor 14.1.9 was not recorded: the paving may have been adjacent to or overlying the floor.

No occupation deposits were excavated within the possible gatehouse constructed in Phase 5. Trenches C20.1, C21.1 and C21.3 included loci overlying the Phase 4 plaster floor, on the outside of the 'gatehouse'.



Plate 6.68: Stones beneath tabun 11.4.F3, cracked and burnt from fire



Plate 6.69: Ash deposit 21.1.18, overlying plaster floor 21.1.29

In trench C20.1 there was a deposit of hard packed brown earth with traces of white limestone or plaster (20.1.7), overlain by a layer of flaky stone chips adjacent to decayed plaster (20.1.5–6). No further details were recorded, and no conclusive interpretation is possible, but these may have been traces of one or two surfaces or floors running up to Wall 25, with 20.1.5–6 perhaps the remains of a plaster floor damaged by Phase 7 collapse. The section drawing (Figure 6.25) clearly shows 20.1.7 running up to Wall 26, originally built in Phase 3 but possibly rebuilt in Phase 5 (see above, Phase 3), proving at least that it was still in use in Phase 6.

In trench C21.1, a thick layer of ash with lumps of charcoal (21.1.18, 27, 28) overlay the Phase 4 plaster floor (21.1.29) (Plate 6.69). The obvious interpretation would be as fire debris. The relationship of this locus to Wall 30 of Phase 5 was not recorded, so the attribution of this ash deposit to Phase 6 is not totally secure: it remains possible that the ash deposit should be allocated to Phase 4 prior to the construction of Wall 30. The section drawing (Figure 6.27) shows that the ash deposit ran up to Wall 33, and probably Wall 32, built in Phase 3, suggesting that these walls might still have been in use in Phase 6. Over the ash deposit was laid a plaster floor (21.1.10); the section drawing (Figure 6.27) is not clear on this point, since it appears that Phase 7 collapse (21.1.11) broke through the plaster floor and was found directly overlying the ash deposit.

In trench C21.3, a deposit of compact soil (21.3.7), perhaps a trampled surface, lay on the Phase 4 plaster floor (21.3.9a), and was overlain by a plaster floor (21.3.6) recorded as running up to both Walls 36 and 32. Wall 32, originally from Phase 3, was thus still in use, as also suggested by the evidence from trench C21.1. The plaster floor was covered by a layer of burnt soil and stones (21.3.5), interpreted during excavation as evidence for the final destruction of the building.

The sequence in trench C23.2 might include loci dating to Phase 6, but since the trench was not dug to bedrock it is difficult to tie the sequence into the rest of Area C. Furthermore, very few details of the loci were recorded, with no interpretation, hence in the stratigraphic matrix (Figure 6.3) the lower layers have not been attributed to any phase. The upper collapse layers can probably be dated to Phase 7. It was suggested above that a plaster floor (23.2.10) running up to Wall 32 might date to Phase 4; since it was the only plaster floor reached in this trench, it is also possible that it is contemporary with plaster floor 21.3.6 in the adjacent trench C21.3 and dates to Phase 6. That would leave three loci possibly also to be attributed to Phase 6: two deposits of chalky brown soil (23.2.9, 8), overlain by burnt soil (23.2.7). The brown soil deposits contained much pottery, including three pot stands, and might possibly be interpreted as occupation deposits, overlain by a layer of burnt soil from a fire, perhaps similar to 21.3.5 in the adjacent trench C21.3.

It is difficult to summarise Phase 6 effectively, since the sequence is confused and it is not always certain whether loci should be allocated to Phase 6 or to the preceding or succeeding phases, and the interpretation of loci is necessarily subjective. It appears that the Phase 3 and 5 walls were in use, and that the first Phase 6 deposits lay on the Phase 4 plaster floor. Whether the Phase 4 plaster installations were still in use is uncertain, since Phase 5 walls had broken through the Phase 4 plastered bath and bin. It is not certain if the earliest Phase 6 deposits in the main complex should be interpreted as occupation or fire debris, although the 'reception room/courtyard' certainly appears to have suffered a fire. It is possible that these burnt loci are further destruction from the final Phase 4 fire; however, since the excavators specified that the Phase 5 walls were built on the Phase 4 plaster floor and not on the burnt layer above, it would appear that the earliest burnt layer in Phase 6 may be evidence of a fire immediately following the construction of the Phase 5 walls. Next an earth floor was laid over most of this area, with stone paving in trench C14.1, but after that it is difficult to judge if the loci are occupation deposits or collapse/topsoil. The 'reception room/courtyard' had evidence for another fire. No occupation deposits were excavated from within the possible 'gatehouse', but the area around it appears to have had a plaster floor, followed by a burnt layer, perhaps evidence for a fire.

Thus Phase 6 may have begun with a fire, certainly in the 'reception room/courtyard' but possibly more widespread, although in other trenches these loci may represent occupation debris. This was followed by laid earth or plaster floors and possible associated occupation, and finally evidence for another fire perhaps limited to the 'reception room/courtyard' and the 'gatehouse' area (for pottery from Phase 6, see Figures 6.14–16).

Figure 6.14: Area C complex Phase 6: Bowls A–K

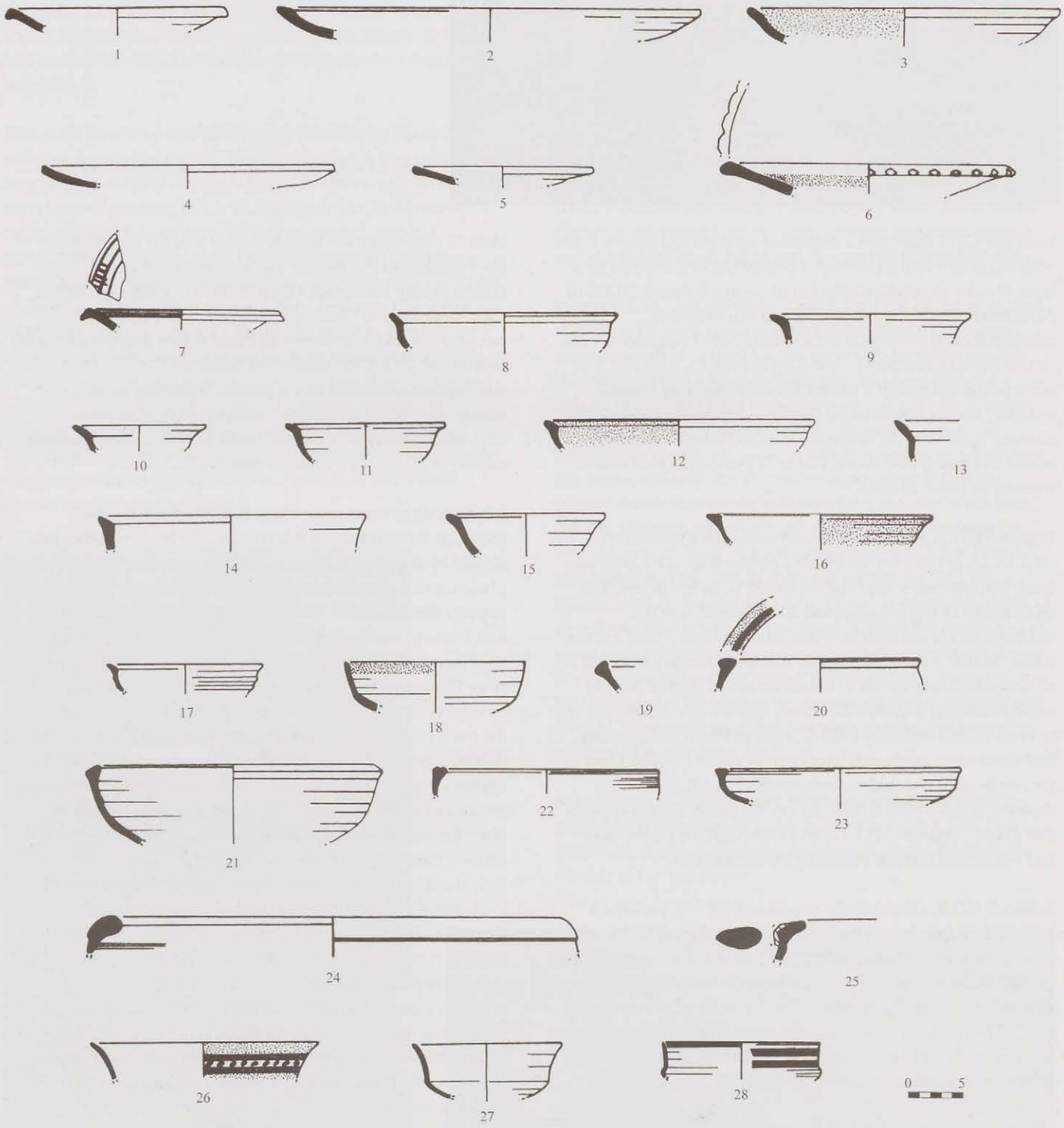


Figure no.	Type	Locus	Description
1	Bowl A	C10.3.6	Fired pink/buff; core buff. Temper up to 1 mm.: lime, rare quartz.
2	Bowl A	C12.4.3	Fired red. Temper up to 1 mm.: lime, quartz, grog. Traces of black line on rim edge.
3	Bowl A	C12.4.3	Fired buff; core grey. Temper up to 0.5 mm.: quartz. Red slip inside.
4	Bowl A	C12.4.3	Fired pale brown; core greyish-brown. Temper up to 1 mm.: quartz; up to 2 mm.: lime, basalt. Traces of reddish slip inside.
5	Bowl A	C12.4.3	Fired yellowish-buff. Temper up to 2 mm.: lime, basalt, grog.
6	Bowl A	C12.5.4	Fired buff; core grey. Temper up to 2 mm.: lime, basalt. Red slip inside towards centre.
7	Bowl A	C12.5.4	Fired yellowish-buff. Temper up to 2 mm.: lime, basalt. Red slip inside and on rim; band of white slip on upper rim. Black decoration on slip.
8	Bowl B	C10.1.8	Fired pink; core yellowish-brown. Temper up to 1 mm.: quartz. Black line on rim edge.
9	Bowl B	C10.3.6	Fired orange; core greyish-brown. Temper up to 4 mm.: basalt.
10	Bowl B	C10.3.6	Fired creamy grey outside; inside and core reddish-grey. Temper up to 3 mm.: lime, basalt.
11	Bowl B	C12.5.4	Fired orange. Temper up to 1 mm.: lime, basalt.
12	Bowl B	C12.5.4	Fired greyish-pink; core grey. Temper up to 1 mm.: quartz; up to 2 mm.: lime. Red slip inside. Black line on rim edge.
13	Bowl B	C12.5.4	Fired buff. Temper up to 1 mm.: profuse quartz.
14	Bowl B	C12.5.4	Fired pink; core pale brown. Temper up to 1 mm.: quartz, grog.
15	Bowl B	C20.1.7	Fired red. Temper up to 2 mm.: lime, basalt, grog.
16	Bowl B	C21.3.7	Fired red. Temper up to 0.5 mm.: quartz; up to 1 mm.: basalt. Red slip in and out. Traces of black line on rim.
17	Bowl B misc	C10.3.6	Fired red. Temper up to 0.5 mm.: basalt; up to 1 mm.: lime, grog.
18	Bowl C	C21.3.7	Fired pinkish-brown; core greyish-yellow. Temper up to 2 mm.: basalt, lime, grog. Red band on inner rim.
19	Bowl D	C12.5.4	Fired pink; core yellowish-brown; burnt patches inside. Temper up to 0.5 mm.: quartz; up to 2 mm.: grog.
20	Bowl D	C21.3.6	Fired pink; core yellowish-brown. Temper up to 1 mm.: profuse quartz; lime, basalt, grog. Black and red decoration.
21	Bowl D	C21.3.7	Fired cream/buff/pink; core brown/grey. Temper up to 3 mm.: lime, basalt. Red line on rim.
22	Bowl D2	C11.4.3	Fired yellowish-brown; core grey. Temper up to 1 mm.: grog; up to 2 mm.: basalt.
23	Bowl D3a	C11.4.3	Fired pink/grey; core grey. Temper up to 2 mm.: basalt, lime, grog.
24	Bowl F	C14.1.9a	Fired red; core yellowish-brown. Temper up to 1 mm.: quartz; up to 2 mm.: basalt.
25	Bowl F2a	C11.4.7	Fired greenish-buff; core grey-buff. Temper up to 1 mm.: quartz; up to 3 mm.: basalt.
26	Bowl K	C10.3.6	Fired reddish-brown; core grey. Temper up to 1 mm.: lime, basalt. Outside has red slip with black decoration.
27	Bowl K1	C12.1.5	Fired grey/buff; core dark grey. Temper up to 1 mm.: lime, basalt.
28	Bowl K1	C21.3.6	Fired red outside, yellowish-buff inside; core yellowish-buff. Temper up to 1 mm.: lime, basalt; up to 2 mm.: grog. Bands of red slip outside; inside has red slip and black line on rim.

Figure 6.15: Area C complex Phase 6: Bowls N, P, R, Cooking Pots, Jars A, C, D

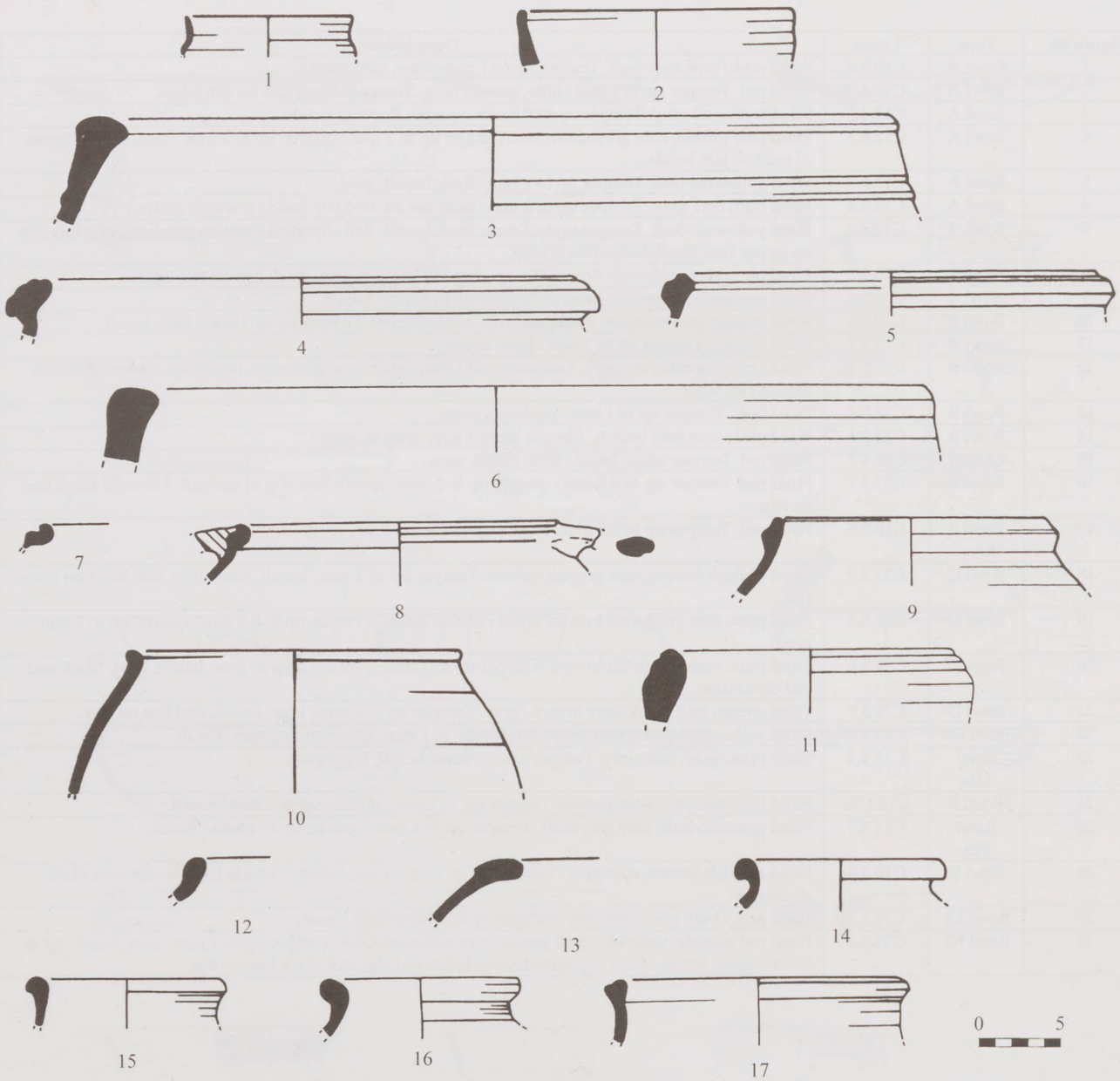


Figure no.	Type	Register/TS no	Locus	Description
1	Bowl N		C11.4.7	Fired red. Temper up to 1 mm.: basalt; up to 2 mm.: grog.
2	Bowl P?		C10.3.6	Fired reddish-brown; core grey. Temper up to 1 mm.: rare basalt; up to 2 mm.: lime, grog.
3	Bowl R		C10.2.2	Fired reddish-brown; core dark grey. White blooms in and out. Temper up to 1 mm.: quartz, lime, basalt.
4	Bowl R		C11.4.7	Fired red; core brown. Temper up to 1 mm.: profuse quartz; up to 2 mm.: profuse basalt.
5	Bowl R		C12.1.5	Fired red. Temper up to 1 mm.: quartz.
6	Bowl R		C20.1.7a	Fired pale brown; core pale brown/grey. Temper up to 2 mm.: lime, basalt, grog.
7	CP A		C11.4.7	Fired red/grey outside and core; inside red. Temper up to 1 mm.: profuse quartz.
8	CP A		C12.4.3	Fired pale grey/reddish-brown outside; dark grey inside and core. Temper up to 2 mm.: profuse quartz.
9	CP B	TS3015	C21.1.18	Fired dark reddish-brown. Temper up to 1 mm.: profuse quartz.
10	CP D		C12.5.4	Fired grey; core dark grey. Temper up to 1 mm.: profuse quartz.
11	Jar A1?		C12.1.3	Fired brown. Temper up to 2 mm.: basalt, lime, grog.
12	Jar C		C11.4.7	Fired grey; core dark grey. Temper up to 1 mm.: profuse lime; quartz.
13	Jar C		C12.3.2	Fired brown. White bloom in and out. Temper up to 2 mm.: lime, basalt.
14	Jar C		C14.1.9	Fired reddish-brown; core grey. Temper up to 2 mm.: quartz, lime.
15	Jar D		C11.4.4	Fired greyish-brown; core grey. Temper up to 1 mm.: lime, quartz; up to 2 mm.: basalt.
16	Jar D		C11.4.7	Fired pale brown; core grey. Temper up to 2 mm.: lime, basalt, quartz.
17	Jar D		C11.4.7	Fired red; core grey. Temper up to 2 mm.: lime, basalt, grog.

Figure 6.16: Area C complex Phase 6: Jars D, E, G, Miscellaneous

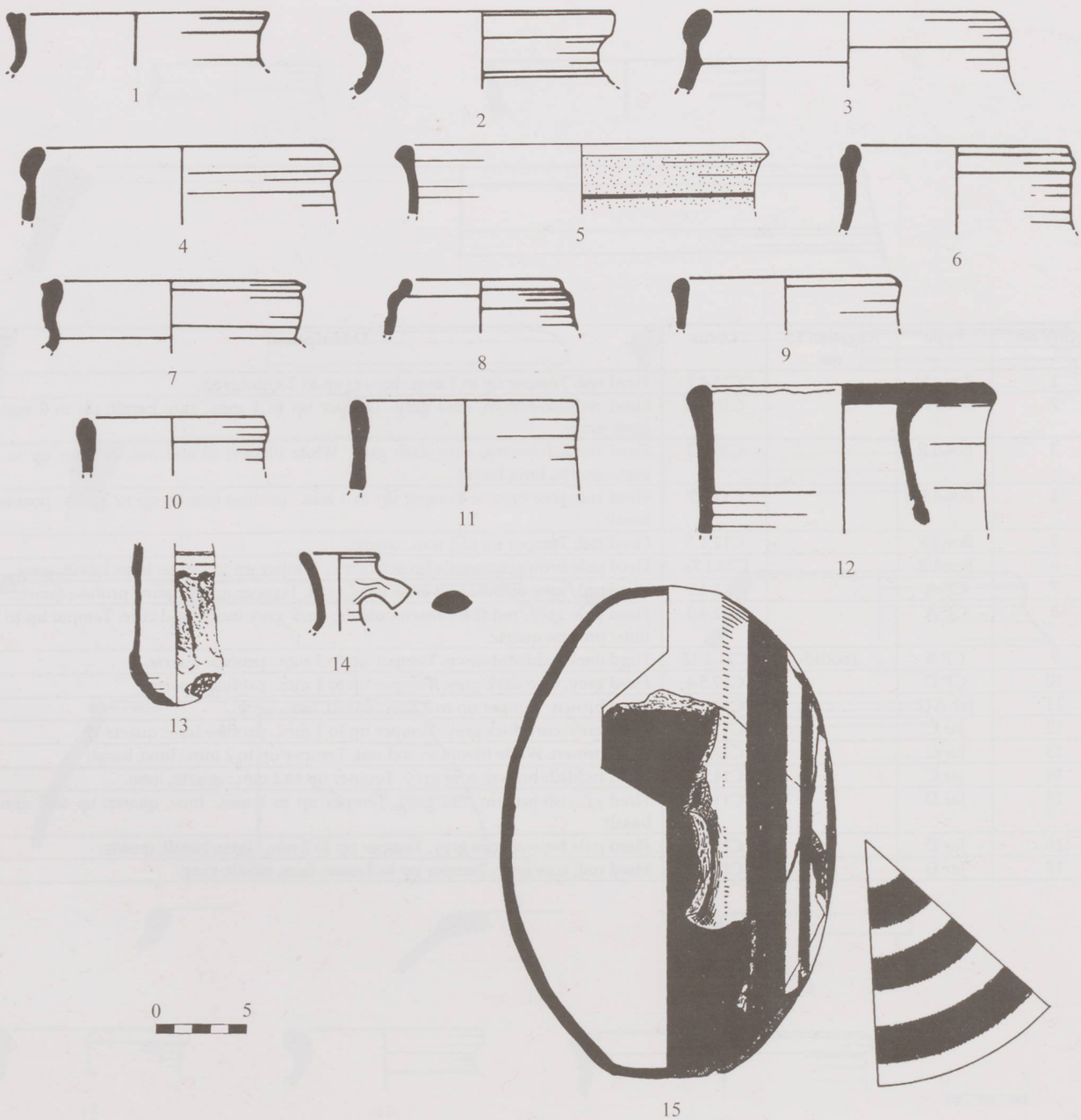


Figure no.	Type	Register/TS no	Locus	Description
1	Jar D		C12.5.4	Fired red. Temper up to 3 mm.: rare basalt.
2	Jar D		C14.1.9a	Fired pink; core grey. Temper up to 1 mm.: quartz; up to 2 mm.: lime, grog.
3	Jar D		C21.3.5	Fired red/buff; core grey. Temper up to 2 mm.: quartz; up to 3 mm.: basalt.
4	Jar D		C21.3.6	Fired reddish-brown; core grey. Temper up to 2 mm.: quartz, lime, basalt, grog.
5	Jar E?		C10.3.6	Fired reddish-brown; core grey. Temper up to 1 mm.: quartz; up to 2 mm.: lime, basalt.
6	Jar G?		C11.4.7	Fired pale brown; core reddish-brown. Temper up to 2 mm.: lime, basalt, grog.
7	Misc jar/bowl		C10.3.6	Fired red; core grey. Grey bloom in and out. Temper up to 1 mm.: lime, basalt; up to 4 mm.: quartz.
8	Misc jar/Jar C		C11.4.7	Fired grey/red outside; inside and core red. Temper up to 1 mm.: lime; up to 2 mm.: basalt.
9	Misc jar/Jar E		C10.1.8	Fired reddish-brown; core grey. Temper up to 1 mm.: quartz, basalt, lime.
10	Misc jar/Jar E		C14.1.9a	Fired buff; core grey-buff. Temper up to 1 mm.: quartz; up to 2 mm.: basalt; up to 2.5 mm.: lime.
11	Misc jar/Jar E		C21.3.5	Fired brown; core dark grey. Temper up to 1 mm.: profuse quartz; up to 2 mm.: lime.
12	Misc jar/Jar E	TS3030	C21.1.10	Fired red; core black. Temper up to 1 mm.: profuse quartz; lime. Black line on rim, and external stripe.
13	Jug E	R1243	C21.1.28	Fired grey. Lime temper. Sides appear to have been vertically shaved. Upper part outside painted red and black.
14	Misc jug		C10.2.2	Fired reddish-brown. Buff bloom in and out. Temper up to 1 mm.: lime, quartz.
15	Flask	R1126	C14.1.9	Fired buff. Lime and quartz temper. Red decoration.

Phase 7

In some trenches, Phase 6 deposits were overlain directly by topsoil. In others, there were one or more rubble deposits, denoting one or more episodes of collapse (Phase 7). With only a few exceptions, all the loci attributed to Phase 7 in the matrix (Figure 6.3) consisted of rubble, fragments of plaster and mudbrick, often burnt, ashy soil and pottery (Plate 6.70). In trench C14.1, there was a deposit of thin black ash (14.1.4) between two rubble deposits, suggesting an episode of collapse, followed by fire, and then further collapse. In trench C20.2 four separate deposits of rubble, mudbrick and plaster collapse were identified. The first two (20.2.8, 20.2.5) were mixed collapse deposits, the next was identified as a collapsed plaster floor with fallen mudbrick (20.2.4). The last one in the sequence consisted of decayed plaster (20.2.2), perhaps evidence for the collapse of a roof or a second storey. It is possible that the four collapse deposits nevertheless represent a single collapse episode, which might explain why the plaster from the roof or second storey was deposited at the end of the sequence rather than at the beginning.

Phase 7 loci contained a preponderance of Iron II/Persian pottery, with occasional Nabataean and Roman sherds.

The Phase 7 layers were overlain by topsoil. In Squares C10, C11 and C12, 'topsoil' was in fact fine soil and rubble which had been recently deposited by a bulldozer in preparation for the intended construction of a reservoir (Plate 6.71).

Area C complex: summary and interpretation

The relative phasing of Phases 1 and 2 is not absolutely certain. Only three walls (40, 41, 42) have been allocated to Phase 1, none excavated to their bases and with no associated occupation deposits. They were located in Square C11, although it is likely that more Phase 1 walls originally existed in the central part of the Area C complex which was not excavated below Phase 4. The occupation deposits of Phase 2 were not stratigraphically connected with the Phase 1 walls, but were found in Squares C1 and 2 below Phase 3 walls. Interpretation is difficult, but the loci appear to have consisted of one or two surfaces with some associated occupation deposits, unrelated to any excavated walls.

In Phase 3 a major complex was constructed, raised on a well built stone platform, consisting of thick, probably external walls, and narrower internal walls defining smaller rooms. The use of the complex in Phase 4 consisted of one to three surfaces with associated occupation, culminating in plastering of most of the floors and walls; some of the plaster floors were painted



Plate 6.70: Phase 7 collapse in trench C11.1 (11.1.4), with Wall 5 behind, looking north-east

red. The activity areas identified included a massive plastered reception room/courtyard bounded by thick walls, one with an unplastered niche; a small plastered bathroom with a bath (12.3.F25) including steps for getting in and out, a toilet (12.3.F22) and steps (12.3.F23); and a stone-paved storage area with a plastered bin (10.3.F12), two pits, one probably for a jar storing grain (11.1.F18), and sherds from numerous storage jars. The whole complex probably covered an area of at least 624 square metres and is perhaps to be interpreted as luxurious living quarters with some public function. It is tempting to speculate that the niche in Wall 9 of the reception room/courtyard had some important function, and the lack of plastering on the floor of the niche suggests that it may originally have held an installation that has now disappeared. Reich (1992: 220; 1993: 266) proposes that it might originally have held a stone slab, similar to those found in the reception rooms of Neo-Assyrian residences and palaces, set in the floor against one wall, occasionally standing next to the throne dais. Their function remains unproved (Turner 1970: 186–8).

The limits of the complex were not identified so it is difficult to reconstruct a coherent plan. Perhaps the most likely reconstruction is a large rectangular courtyard with one or two rows of smaller rectangular rooms on the south-west side. The area to the north-east does not appear to have been raised and probably belonged to a separate adjacent building, while the other sides of the courtyard were not excavated. The large stone blocks in Square C1, interpreted by Bennett as tower foundations, had the effect of raising part at least of this structure on a sort of platform. This platform extended at least as far as Square C11, where stone paving 11.1.13 was resting on it; it is



Plate 6.71: Soil and rubble being deposited on Area C by a bulldozer in 1971, in preparation for the intended construction of a reservoir

likely that the stone platform also underlay stone paving 1.2.F4/10.5.F2. Since the rest of the central part of the complex was not excavated below Phase 3, it is not known how far the stone platform extended to the north-east and south-east; it is possible that some loci underlying the Phase 4 plaster floor should be interpreted as earth fill contemporary with the stone platform. On one Phase 4 earth floor (14.1.11) was found a cache of pottery. There was some evidence for fire in the 'reception room/courtyard', bathroom and storage areas at the end of Phase 4, although there is some doubt whether this pre- or post-dates the structural alterations of Phase 5.

In Phase 5 the spaces were further subdivided and enclosed with several new walls with doorways, and at least some Phase 3 walls were rebuilt and bonded into the new walls. A series of new walls created a clear circulation pattern from the storage area through three doorways into Square C1, all along a stone-paved floor at the same absolute height, re-used from Phase 4. A long wall (Wall 5) perhaps divided off the storage areas from the bathroom and reception areas, but cut through the Phase 4 bath. Beyond the 'reception room/courtyard' a new structure was constructed, a piered gate leading to two narrow rooms, perhaps a gatehouse, although below the level of the raised complex. Nevertheless, the Phase 3 walls adjacent to the Phase 5 'gatehouse' continued in use. The minimum area covered by this Phase 5 complex was 1,015 square metres. Occupation associ-ated with these structural additions consisted of laid earth or plaster floors and possible associated occupation, ending in a fire perhaps limited to the 'reception room/courtyard' and the 'gatehouse' area (Phase 6). This appears to have been the end of occupation in the Area C complex, since the next phase (Phase 7) consisted of one or more episodes of collapse, perhaps interspersed by fire.

The structural sequence identified in the Area C complex can be summarised as follows: fragmentary evidence for early walls; a major structure raised on a stone platform, completely covering the earlier walls, creating luxurious living, storage and reception areas bounded by thick walls; additions to the structure consisting of several walls with new doorways and a possible 'gatehouse' entered by a piered gate; and finally collapse accompanied by fire.

Square C3

Location

This square was aligned north-west/south-east, positioned immediately north of the town wall on the west side of Area C (Plate 6.72; Figures 6.1–2). It was located over a wall (Wall 43), visible on the surface, which ran up to the perimeter wall, but the excavated square did not include the perimeter wall, so the stratigraphy of the structures in Square C3 cannot be related to it (Plate 6.73). Square C3 was excavated essentially in two parts: trenches 1–7 to the north-east, measuring 10 x 3 m., with trenches 1–2 slightly offset to the north-east; and trenches 20–21

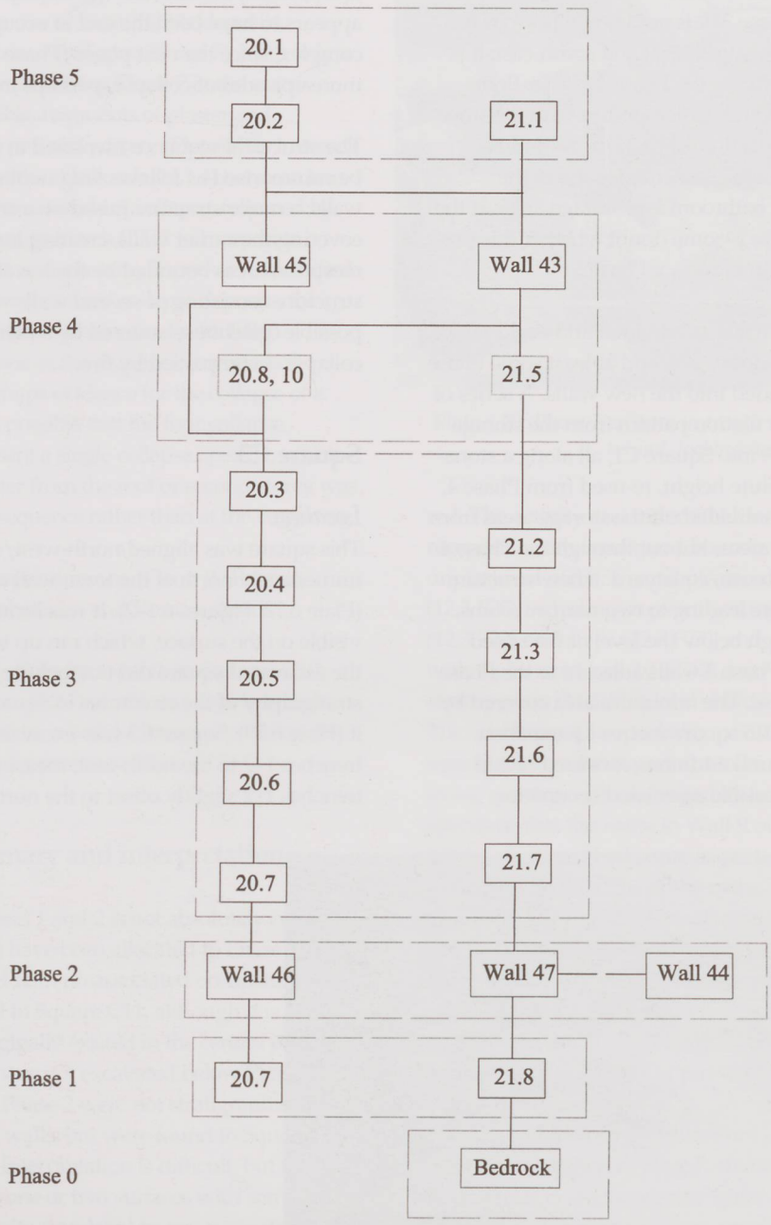


Plate 6.72: Square C3, looking south-easst, towards the modern village with the crest of the slope to the right



Plate 6.73: Square C3 showing Wall 43, looking south-west

Figure 6.17: Stratigraphic matrix of Square C3



almost against the perimeter wall, measuring 6 x 3 m. Square C3 was briefly mentioned in one preliminary report (Bennett 1977: 8).

Trenches C3.1–7 were excavated in the 1972 and 1980 seasons. Unfortunately, the reports in the site notebooks and the two existing section drawings are totally inadequate, and it is clear that the supervisors did not understand what they were excavating. Their notes make little sense and are ignored in this final report. Fortunately, the excavation of trenches C3.20 and 21 in the 1974 season was competent. Since the structural and occupational sequence of Square C3 can be reconstructed from the evidence of trenches C3.20 and 21 and the accompanying section drawing (Figure 6.23), the report and stratigraphic matrix (Figure 6.17) here are based solely on them. Bedrock was not reached in trench C3.20, so the correlation of Phases 1–3 with trench C3.21 is not conclusive.

Phase 0

The underlying bedrock was reached only in trench C3.21 (cf. Figure 6.23).

Phase 1

The first human activity in this square is represented by a deposit of very light brown clay with burnt patches, containing some pottery, lying directly on bedrock (3.21.8). This deposit did not extend over the whole trench, but appeared to be limited to hollows in the bedrock (cf. Figure 6.23), suggesting that it may have been a fill to create a level surface prior to the building of Wall 47 in Phase 2.

Bedrock was not reached in trench C3.20, so the earliest deposit cannot be conclusively identified. However, it is likely that a broken mudplaster surface (3.20.7) should be attributed to Phase 1 (not visible in Figure 6.23). 3.20.7 was in fact a series of



Plate 6.74: Trench C3.20, looking south-west, surface 3.20.7 and Walls 45 and 46 (right)

broken plaster surfaces with dark brown levelling fill in between them; it is clear that these surfaces must be attributed to more than one phase, since the earliest was described as running under Wall 46, while the latest ran up to the same wall (Plate 6.74). In the stratigraphic matrix (Figure 6.17), therefore, surface 3.20.7 appears both in Phase 1 and Phase 3, with Wall 46 in Phase 2.

Phase 2

The only wall which can be conclusively attributed to this structural phase is Wall 47, which lay directly on 3.21.8 from Phase 1 (Figure 6.18). This ran south-west/north-east across the entire width of trench C3.21, continuing into trenches C3.3–5, giving a total traced length of 6.50 m. and a width of 2.10 m.

Figure 6.18: Plan of Square C3 Phase 2



Wall 46

Only three courses of Wall 47 remained, constructed of rough hewn blocks with random snecking and no uniformity. Many stones were cracked and broken.

Wall 47 was bonded to Wall 44. The base of Wall 44 was lying on a thin layer of compact reddish soil (3.7.3) immediately above bedrock. Wall 44 ran north-west/south-east for an excavated distance of 3.90 m. It was at least 0.90 m. wide, but its north-east face was not found. It survived to 0.80 m. in height, and three courses are visible (Plate 6.75).

Wall 46 was built over the lowest mudplaster surface numbered 3.20.7, from Phase 1, and so has been attributed to Phase 2 (Plate 6.76). Wall 46 was a truncated wall in trench C3.20, running under Wall 45 of Phase 4. Little remained of it, and it may have been robbed when foundation trench 3.20.8, 10 was cut in Phase 4. Originally, Wall 46 ran north-west/south-east, and was only 0.75 m. wide.

In the small area excavated, the surviving Phase 2 structures do not make a comprehensible plan. Walls 47 and 44 form an approximate right angle, while Wall 46 may originally have continued to meet Wall 47.



Plate 6.75: Square C3, showing Wall 44 in foreground, looking north-east

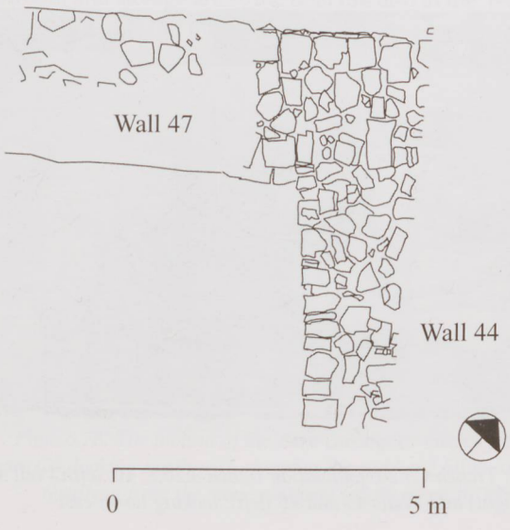




Plate 6.76: Trench C3.20, looking south-west, Walls 45 and 46 (right) and Wall 43 (left)

Phase 3

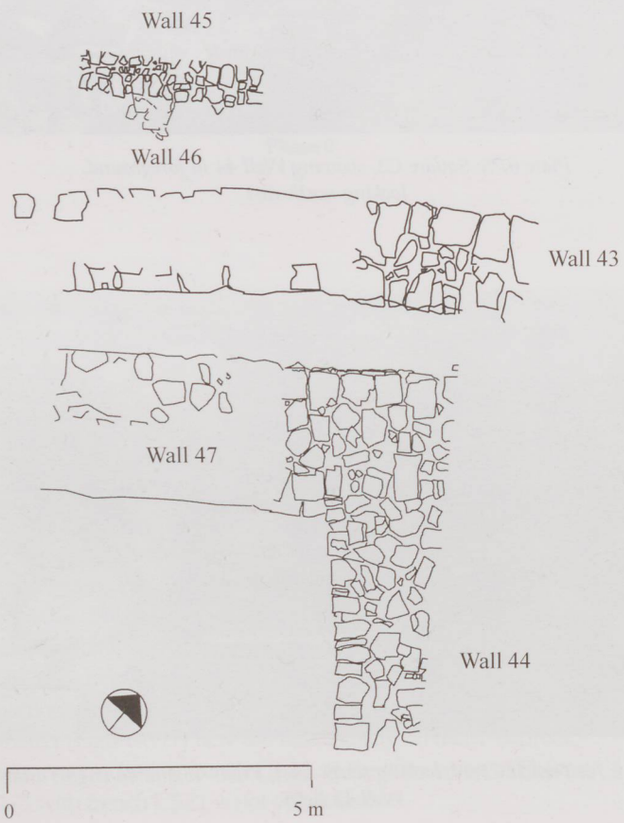
This was a phase of occupation associated with the Phase 2 structures. It is represented by a simple sequence of deposits visible in section C4 (Figure 6.23) on both sides of the later Wall 43. In trench C3.20, the latest of the series of mud plaster surfaces (3.20.7) ran up to Wall 46; it is not known how far it extended towards trench C3.21, since all these deposits were cut by the later foundation trench 3.20.8, 10 of Phase 4. It may be the same as 3.21.7, described as loose brown clay with many small and medium stones, which ran up to Wall 47. In both trenches C3.20 and 21, these deposits are overlain by a sequence of nearly identical layers (3.20.6–3; 3.21.6, 3–2), described as brown clay with small and medium stones, and occasional traces of burning. From the descriptions, it is impossible to judge whether these deposits were deliberately laid surfaces or were the result of trampling accumulated material: 3.21.3 was 0.50 m. deep, perhaps suggesting the deliberate laying down of a floor or fill. In Figure 6.23, 3.21.3 overlies the final visible course of Wall 47, but it is clear from the evidence of the south-west baulk of trench C3.21 that all the Phase 3 deposits ran up to Wall 47.

Somewhere within Phase 3 was cut a pit (3.20.9), later cut by foundation trench 3.20.8, 10 of Phase 4; however, the site notebook does not record what level the pit was cut from or precisely where it was located. There may have been a second pit (3.21.4), but it is possible that this was part of the later foundation trench 3.21.5.

Phase 4

The Phase 3 deposits, and probably Wall 46 from Phase 2, were all cut by a foundation trench (3.20.8, 10, 3.21.5) which reached bedrock. Wall 43 was constructed within this foundation trench, its base on bedrock (Figure 6.19; Plate 6.77). The foundation trench was filled with loose dark brown clay and stones, and a considerable amount of pottery.

Figure 6.19: Plan of Square C3 Phase 4



Wall 43 was aligned south-west/north-east. It was visible on the surface, and between trenches C3.20–21 and 1–2 was traced for a distance of 7.75 m. It was 1.50 m. wide and survived to a height of 2.40 m. in the south-west baulk of trench C3.21 (cf. Plates 6.73, 76–77).

In the north-west baulk of trench C3.20, Wall 45 ran parallel to Wall 43 across the 3-m. width of the trench. Its north-western face was hidden by the baulk. Wall 45 was a single-course wall lying directly on deposit 3.20.3 from Phase 3 (cf. Plates 6.74, 76–77). It is likely that it was contemporary with Wall 43, since layer 3.20.2 from Phase 5 ran up to Wall 45 and also directly overlay foundation trench 3.20.8, 10 of Phase 4 (see Figure 6.23).

It is not clear if the Phase 2 walls were still visible and in use when the Phase 4 walls were constructed. Wall 45 certainly ran over Wall 46. If the Phase 2 walls were visible, Square C3 would have been a dense mass of walls, with only 1.50 m. between Walls 45 and 43, and 1 m. between Walls 43 and 47. If the Phase 2 walls were no longer visible, the Phase 4 plan simply had two walls running parallel with a 1.50 m. gap between them.

Phase 5

Associated with Walls 43 and 45 in trench C3.20 was a deposit of very hard light brown clay and small stones (3.20.2). This was overlain by topsoil (3.20.1), similar but slightly softer. In trench C3.21, however, on the other side of Wall 43, there was a deep layer of large collapsed stones and soft brown clay (3.21.1). It is likely that these stones had fallen from Wall 43, which collapsed towards the south-east. If this is correct, it would explain why deposit 3.20.2 was undisturbed, since Wall 43 collapsed away from it; possibly it represented a surface associated with Walls 43 and 45, but it is impossible to judge its exact stratigraphic relationship with collapse layer 3.21.1. Any deposit associated with Wall 43 in trench C3.21 was destroyed by collapse 3.21.1.

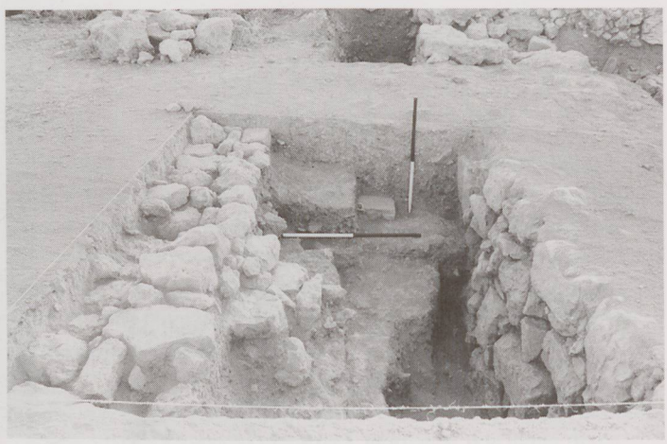


Plate 6.77: Trench C3.20, foundation trench 3.20.8, 10, with Wall 43 (right) and Walls 45 and 46 (left), looking north-east

Square C3: summary and interpretation

The earliest evidence of human activity (Phase 1) was a clay fill over hollows in the bedrock, and probably a broken mudplaster surface, although the attribution of this to Phase 1 is not conclusive. Walls 44, 46 and 47 (Phase 2) were built over the Phase 1 deposits. Wall 44 formed a right angle with Wall 47; only a stub remained of Wall 46. Associated with these walls was a series of mud and stone surfaces, with occasional traces of burning (Phase 3). The Phase 3 deposits were cut by a foundation trench for Wall 43 (Phase 4), a large structure contemporary with and parallel to Wall 45, a single-course wall. In the final phase in this square (Phase 5), a possible surface associated with the Phase 4 walls was probably more or less contemporary with the collapse of Wall 43.

The structural sequence in Square C3 shows two building phases. The small area of excavation did not allow a coherent plan to emerge, and no obvious structural or spatial connection between the two building phases can be discerned. All that can be concluded is that there were structures against the perimeter wall in this part of the site.

Area C: overall summary and interpretation

After an initial structural phase of which only three walls were identified, with no apparent relation to the later structural phases, the Area C complex revealed two phases of a major stone-built public building raised on a stone platform (like the Area A building), with a large plastered courtyard or reception room. The whole complex covered at least 624 square metres. It had rooms on at least one side, the other sides being unexcavated. These rooms had extensive plaster and stone-paved floors, a bathroom, and storage areas. In the later phase the spaces were subdivided and new doorways were added, and a possible gatehouse with a piered gate was built on the opposite side of the courtyard. Only part of the complex was excavated, and it is uncertain how far it originally extended; the artificially raised area seems to have continued for 8 m. to the south-east beyond the line of Wall 16. Certain walls were more than 2 m. thick, and some of these may have been the boundary walls of the complex, separating it from its surroundings. Both phases appear to have ended with at least a localised fire, the first in the 'reception room/courtyard', bathroom and storage areas, the final fire also in the 'reception room/courtyard' and in the 'gatehouse'.

This building was probably a palace or residence, and has parallels with buildings on the summit of Dhiban (Morton 1989: 244–5 and fig.13) and Amman Citadel, both dating to late Iron II. The Amman Citadel stratum 7 residence had a similar arrangement of rooms around a courtyard, paved areas, and toilets (Humbert and Zayadine 1992: 250 fig. 12, and pls XIIb and XIVa; cf. also toilets at Jerusalem in the City of David, Shiloh 1984: pls. 16 and 31). There are also parallels between the Busayra building and Neo-Assyrian palaces and residences, which were likewise raised on artificial platforms (in Assyria known as *tamlu*, 'fill', cf. Reich 1992: 218); Building 1369 at Megiddo stood on an artificial fill surrounded by sloping buttress walls, and consisted of a series of rooms around a large court, including a bathroom with a drainage system (Lamon and Shipton 1939: 70–1; Reich 1992: 218). The Busayra building can be considered in the light of the three basic elements in the reception suites of Neo-Assyrian palaces and residences: reception room, retiring room, and bathroom. The unplastered niche in the wall of the Busayra 'courtyard/reception room' may have been for the insertion of a stone slab, as in the principal reception suites of Neo-Assyrian residences and palaces; such slabs were occasionally located next to the throne dais (Turner 1970: 186–8). In Neo-Assyrian residences and palaces, bath-rooms were located close to throne rooms, as is the case at Busayra, and may have been used for both practical and ritual washing; however, the presence at Busayra of a toilet as well as a bath, unusual in Assyria, perhaps suggests a more practical use for these installations (Turner 1970: 193–4). The room in trench C12.4 leading from the bathroom may have been an ante-room, also common in Neo-Assyrian palaces. Since the full plan was not recovered, it is not possible to confidently identify a room as a retiring room, which in Neo-Assyrian palaces was accessed directly from the reception/throne room. Moreover, a major difference with the Busayra building is that the proposed reception room and the courtyard were in effect the same space rather than two connecting spaces. In Neo-Assyrian palaces, by contrast, the reception or throne room, normally a long narrow room, opened from the inner courtyard. Thus there appear to be elements in the Busayra building which are paralleled in Neo-Assyrian palaces and residences, but the actual plan of the building is unique and not a copy. Palaces with some of the same characteristics were constructed in each of the major centres of Edom, Moab and Ammon.

The structures in Square C3 against the line of the perimeter wall revealed no coherent plan, but it is likely that they were

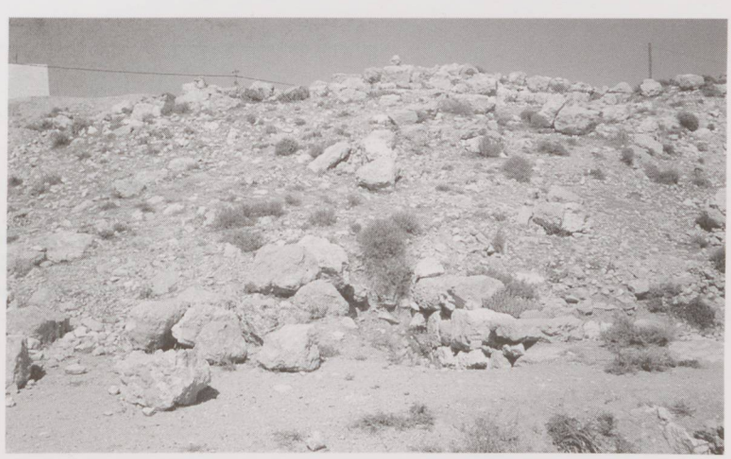
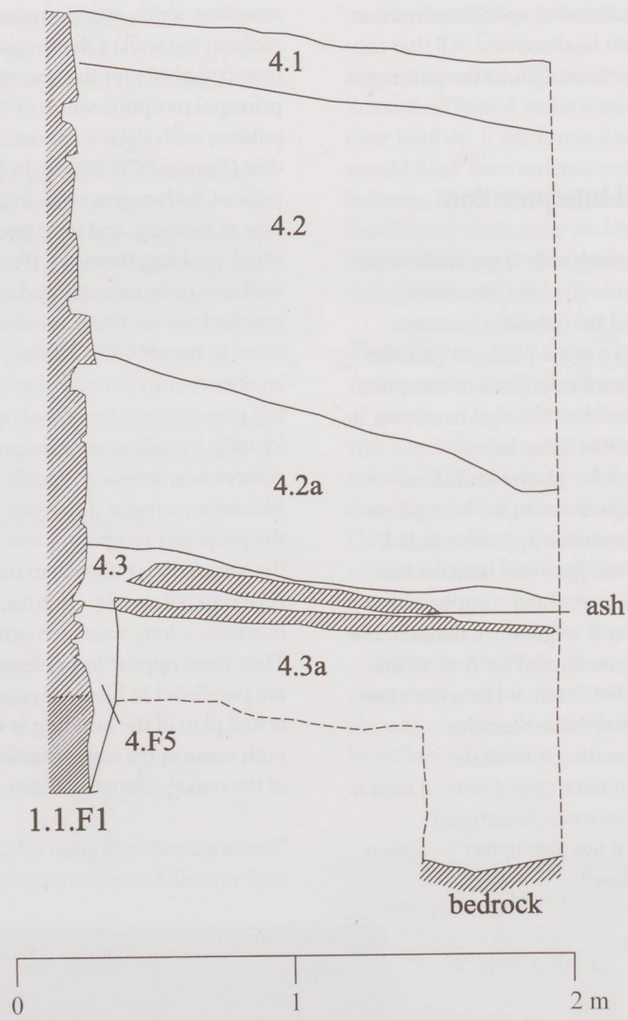


Plate 6.78: The mound of the Area C complex viewed from Square C3, looking north-east, showing the sudden 2.50 m. rise resulting from the stone platform (photo taken in 1999)

similar to the structures to the north-west along the edge of the mound in Squares B1–4: Walls 44 and 47 resemble the Phase 4 walls in Squares B1–4 against the line of the later perimeter wall (see Chapter 5). There was no structural or spatial connection between the two structural phases. There was no evidence for either of the phases ending with a fire.

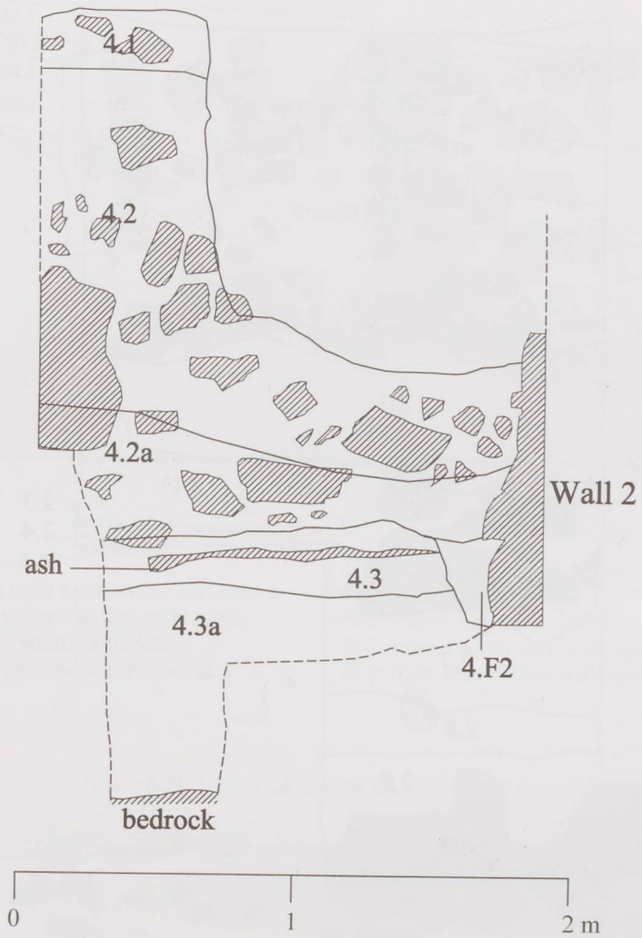
There is no evidence to allow correlation of the stratigraphy of the Area C complex with Square C3. We can only assume approximate contemporaneity between the two structural phases of C3 and the three of the Area C complex. The fragments of structures against the perimeter wall in C3 were 15 m. to the south-west of the complex, and there was a sudden 2.50 m. rise from Square C3 to the Area C complex which was raised on a stone platform (Plate 6.78). The structures in C3 were not a continuation of the Area C complex, thus there is no reason to infer a similar sequence of occupation. The construction of Walls 2 and 3 against the base of the stone platform (1.1.F1) suggests that some structures were built against the boundary of the palace or residence, and these appear to have been at the same absolute height as the Square C3 structures.

Figure 6.20: Section C1: Square C1, north-east facing



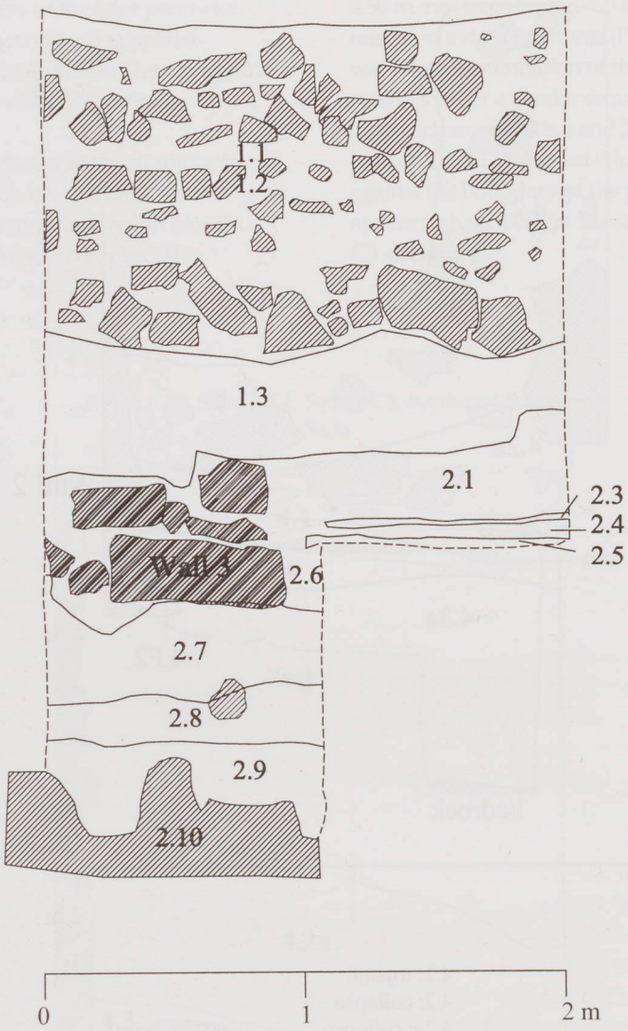
4.1: collapse
4.2: collapse
4.2a: collapse
4.3: earth with ash patches
4.3a: 'bricky' material
4.F5: foundation trench

Figure 6.21: Section C2: Square C1, south-east facing



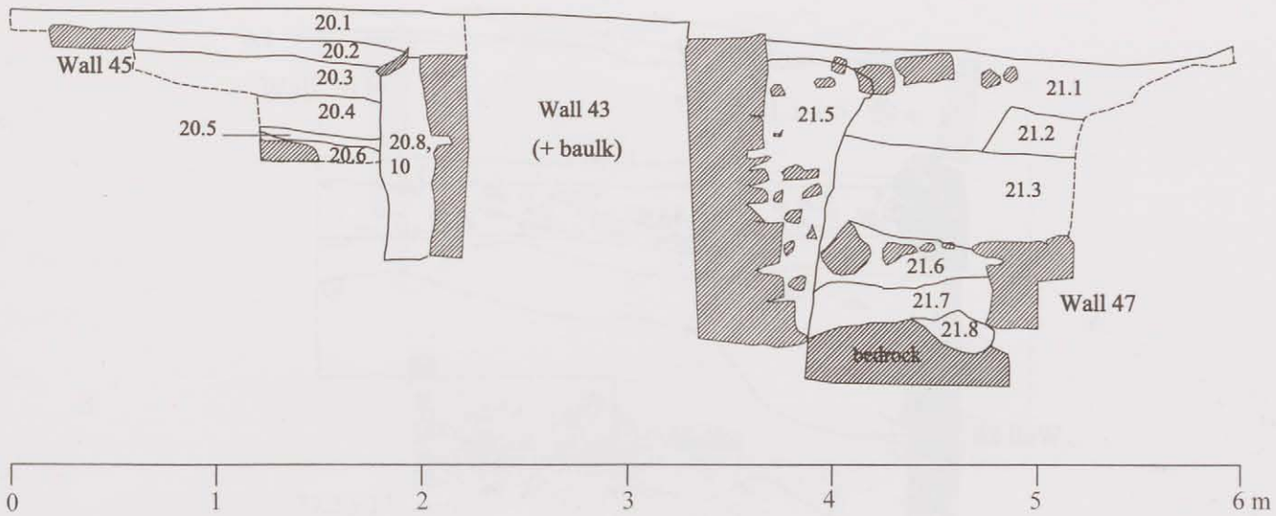
4.1: topsoil
4.2: collapse
4.2a: collapse
4.3: earth with ash patches
4.3a: 'bricky' material
4.F2: foundation trench

Figure 6.22: Section C3: Square C2, north-west facing



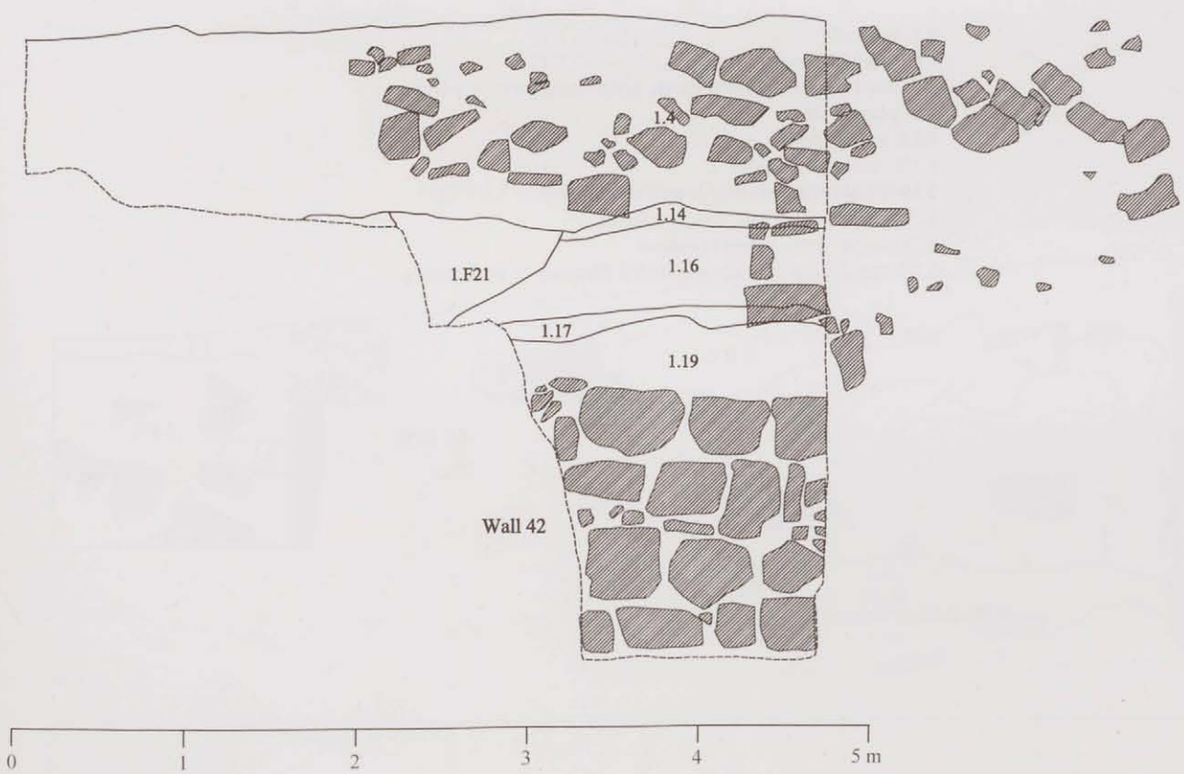
1.1, 1.2: collapse
1.3: earth and ash
2.1: yellow-brown earth
2.3: thin white compacted surface
2.4: yellow-brown earth
2.5: plaster floor
2.6: yellow-brown earth
2.7: mixed earth
2.8: hard clay
2.9: terra rossa
2.10 bedrock

Figure 6.23: Section C4: Square C3, south-west facing



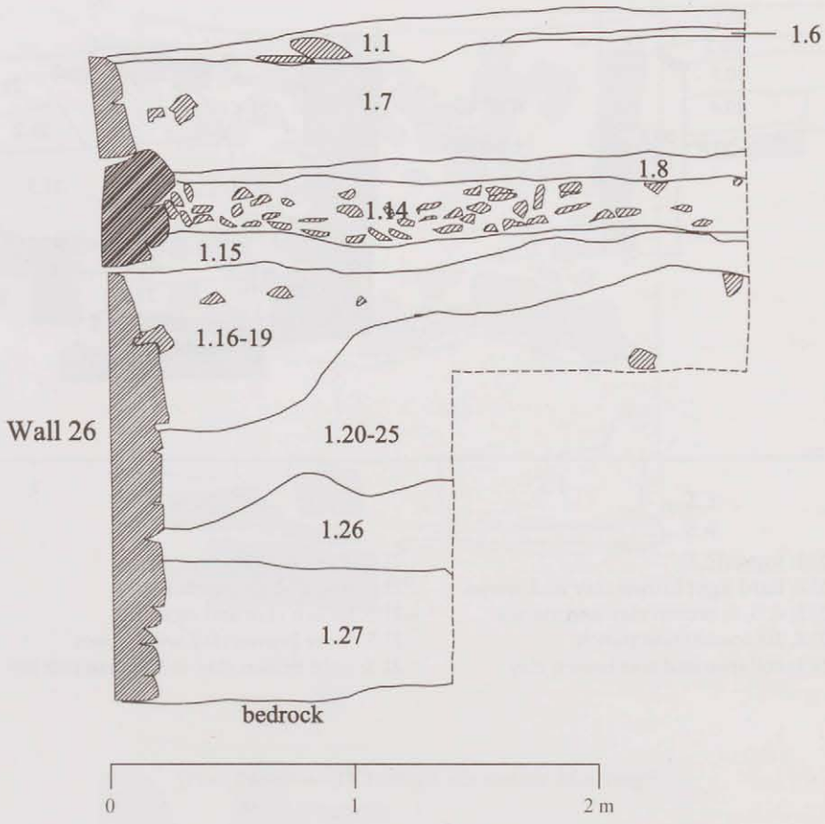
20.1: topsoil
20.2: hard light brown clay and stones
20.3, 4, 5, 6: brown clay and stones
20.8, 10: foundation trench
21.1: collapse and soft brown clay
21.2, 3: brown clay and stones
21.5: foundation trench
21.6: brown clay and stones
21.7: loose brown clay with stones
21.8: light brown clay with burnt patches

Figure 6.24: Section C5: Square C11, north-east facing



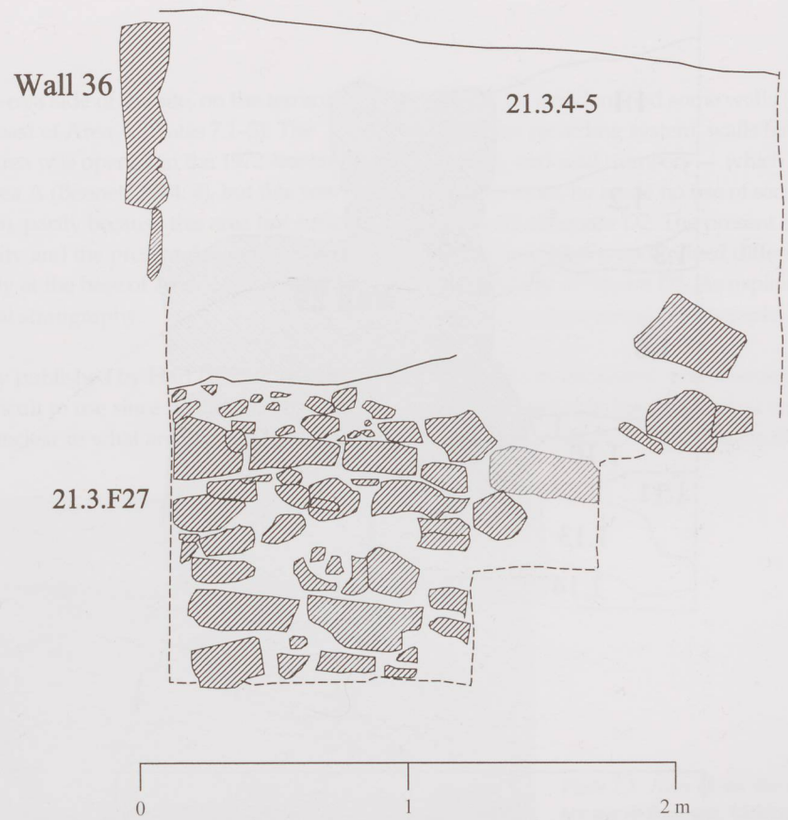
1.4: collapse
1.14: plaster floor
1.F21: pit
1.16: brown earth
1.17: ash
1.19: light sand, stones, charcoal, pottery, shell and bone

Figure 6.25: Section C6: Square C20, south-east facing



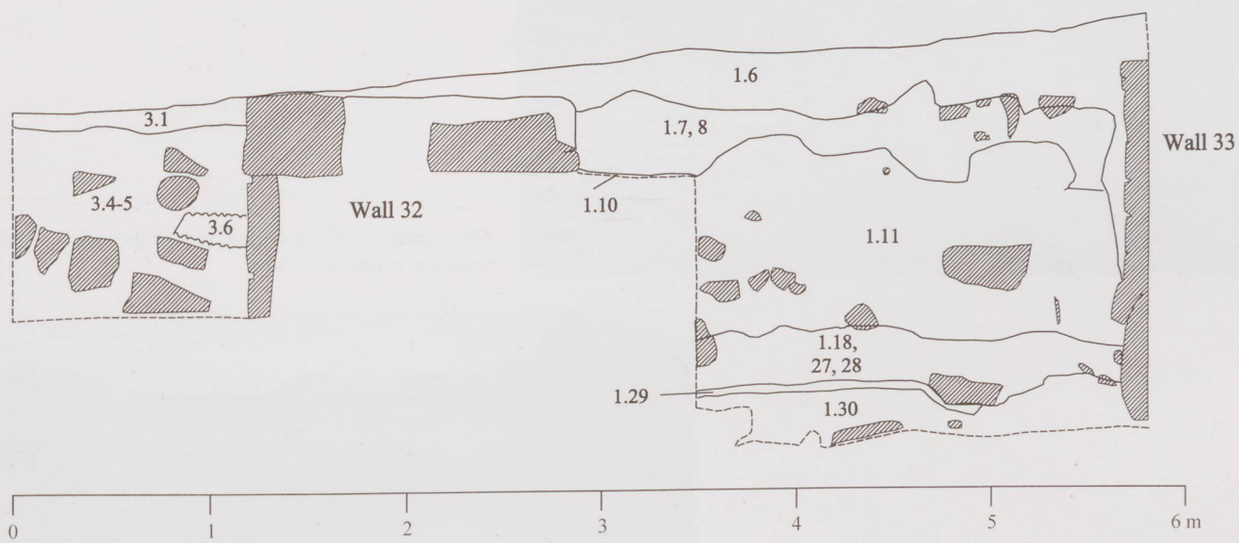
1.1: topsoil
1.6: flaky stone chips
1.7: hard packed brown earth, with limestone or plaster
1.8: plaster floor
1.14: small stones
1.15: corroded plaster
1.16-19: stones, mudbrick and red earth
1.20-25: red clay, mudbrick, plaster
1.26: hard earth, some charcoal
1.27: brown earth with mudbrick fragments and stones

Figure 6.26: Section C7: Square C21, south-west facing



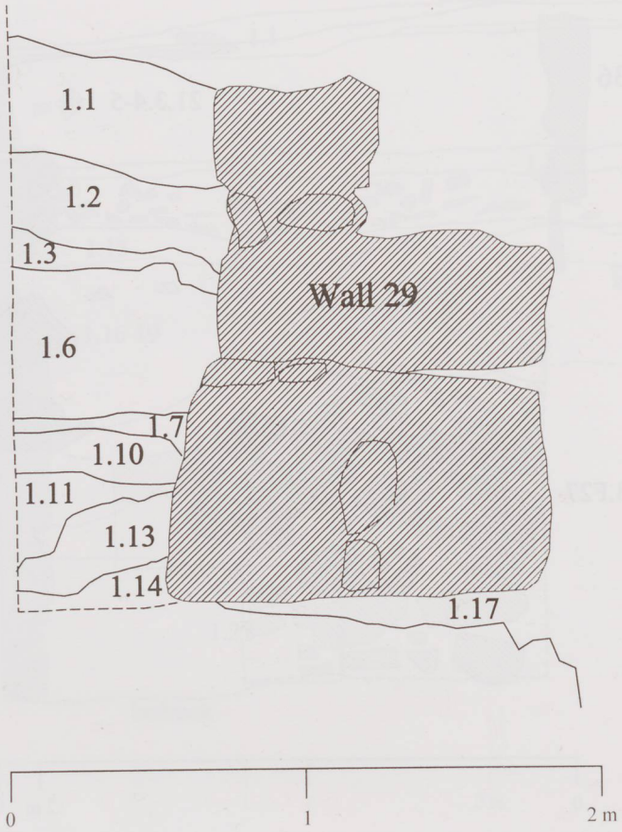
21.3.4: collapse
21.3.5: burnt soil and stones
21.3.F27: pit

Figure 6.27: Section C8: Square C21, north-west facing



3.1: topsoil
3.4–5: burnt soil and stones
3.6: plaster floor
1.6: topsoil
1.7, 8: ashy soil
1.10: plaster floor
1.11: collapse
1.18, 27, 28: ash and charcoal
1.29: plaster floor
1.30: yellow-brown clay with chalk

Figure 6.28: Section C9: Square C22, south-east facing



1.1: topsoil
1.2: soft dark grey-brown soil
1.3: dark grey-brown soil
1.6: loose grey soil
1.7: compressed dark soil
1.10: dark grey-brown soil
1.11: medium-dark grey-brown soil
1.13: fallen red mudbricks
1.14: fallen yellow mudbricks
1.17: plaster floor

7. AREA D

Piotr Bienkowski

Area D was on the north-east side of the site, on the terrace immediately below and east of Area A (Plates 7.1–3). The original aim, when this area was opened in the 1972 season, was to link it up with Area A (Bennett 1974: 8), but this was not achieved (Bennett 1977: 6), partly because this area has suffered spoliation both in antiquity and the present day, and because bedrock rises very rapidly at the base of Area A, providing little in the way of vertical stratigraphy.

Area D has been partially published by Hart (1995a), whose analysis, however, is difficult to use since he did not properly annotate his plans; it is unclear to what architectural features he refers; he misidentified some walls (according to Bennett's complex recording system, walls have three numbers — layer, feature and wall numbers — which Hart confused); furthermore, he made no use of section drawings for his analysis of Square D2. The present stratigraphic analysis does not follow Hart's, and indeed differs from his in the phasing, particularly of Square D3. As explained in Chapter 1, there are virtually no surviving photographs of Area D.

Area D was excavated in two squares, D2 (1972 season) and D3 (1973–4 seasons), but no physical link between them was ever excavated (Figures 7.1–2). The baulk between D3 and D2 was



Plate 7.1: Area D, on the right, situated at the eastern terrace of Busayra, looking north-west. Area A is off the picture to the right

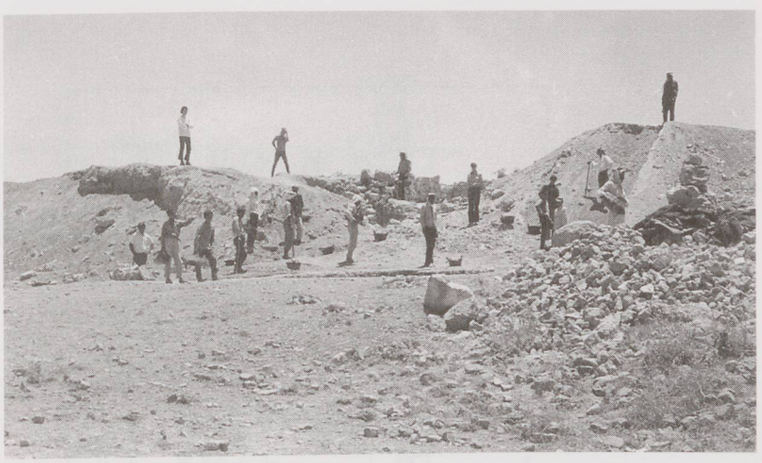


Plate 7.2: General view of Area D in 1973, looking south, with 1972 excavation dump



Plate 7.3: Square D2 (bottom right), looking south-west, showing its relationship with Area A beyond, where the partly excavated entrance through Wall 8 is visible

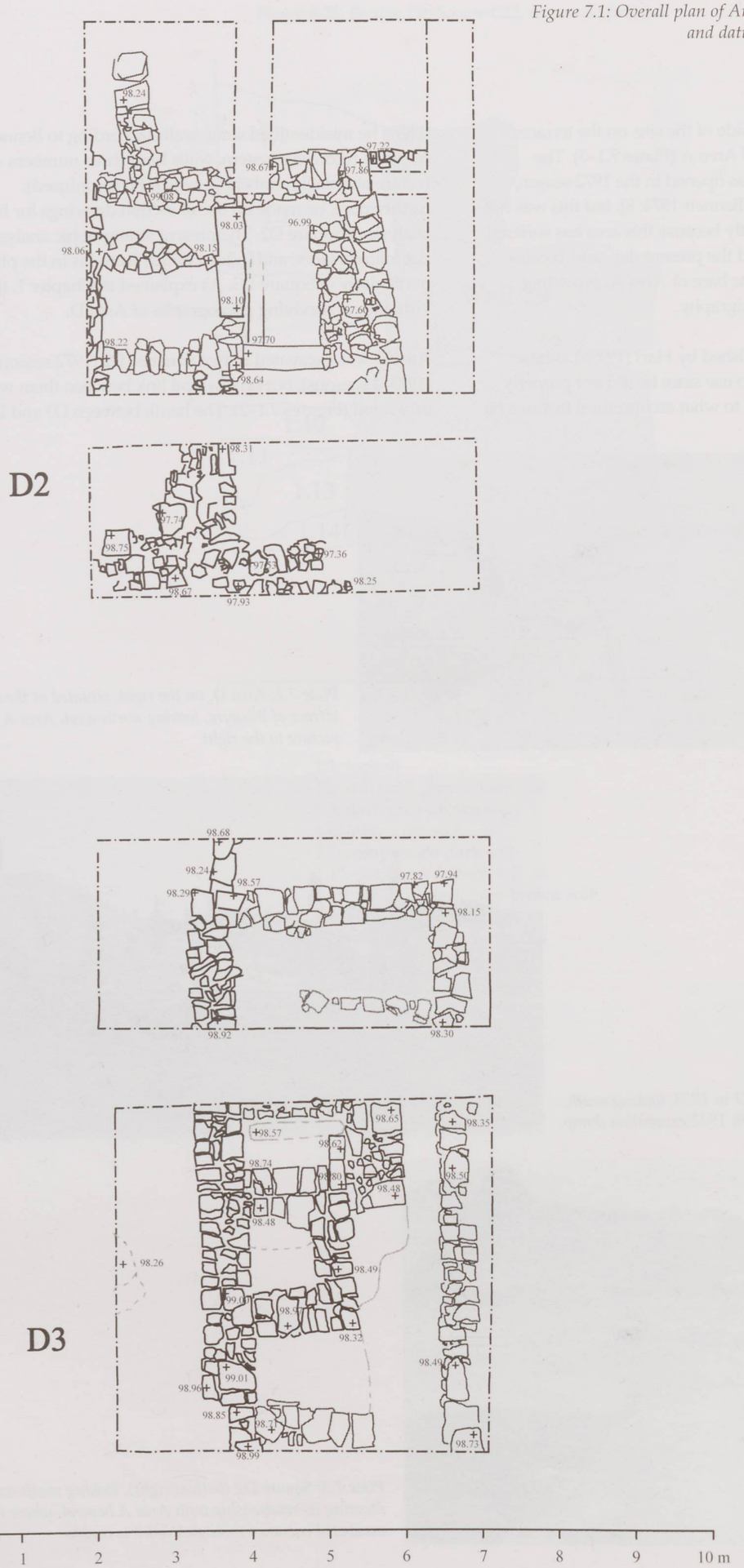


Figure 7.1: Overall plan of Area D, showing square numbers and datum points

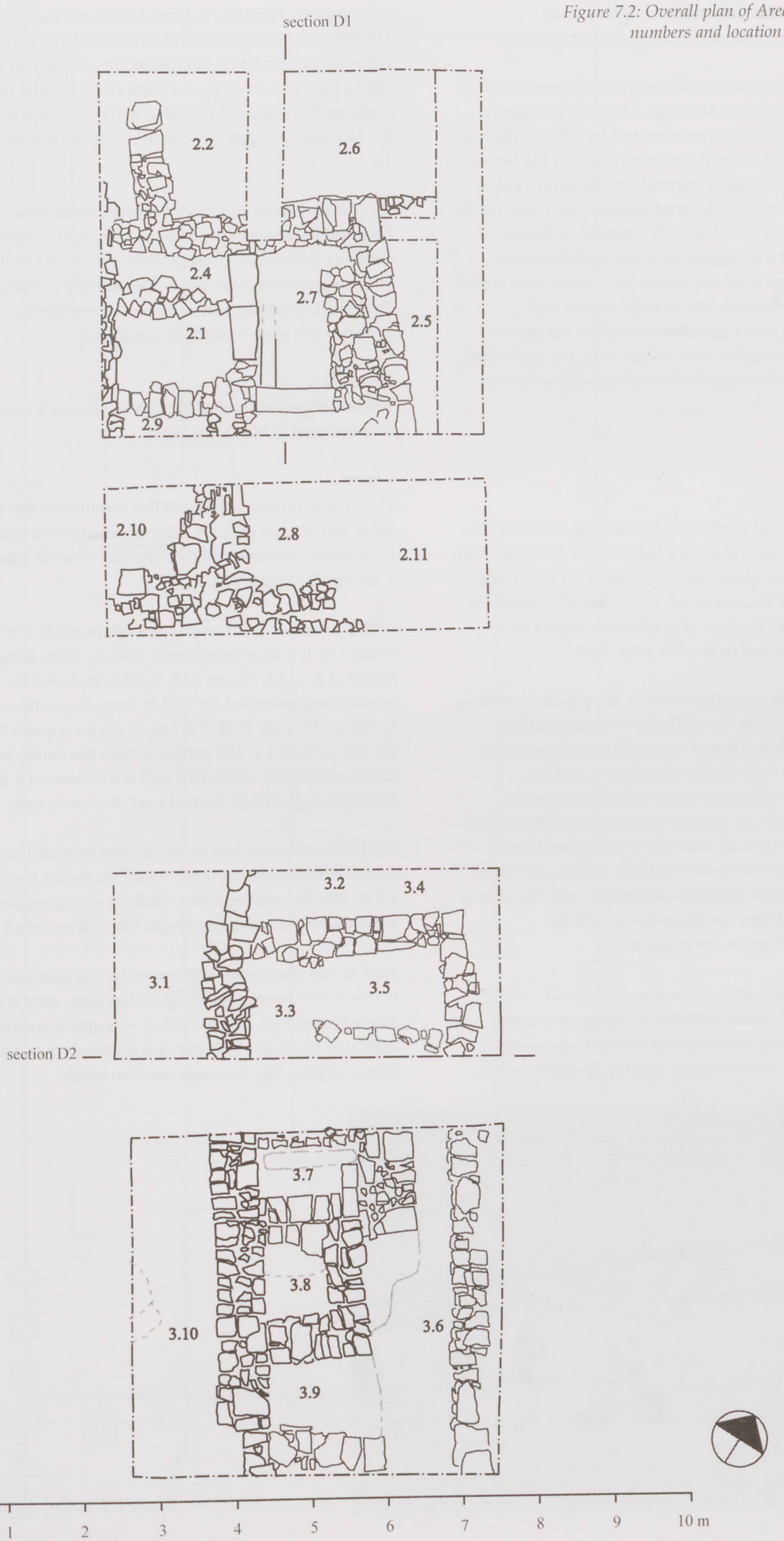


Figure 7.2: Overall plan of Area D, showing trench numbers and location of sections

never removed and it is impossible to demonstrate conclusively any correspondence between their phasing.

D1 was apparently not excavated; there is no reference to it in any of the site notebooks or drawings. D4 is not considered here in detail. It was a square measuring 4 by 2.50 m. aligned north-east/south-west, located 6 m. north-west of D2, between D2 and Area A, cut through a 'mound' on the terrace below Area A. It contained no architectural features and could not be tied to the stratigraphy of D2 and D3. Thirteen loci were excavated in D4, but the original excavators attempted no interpretation. The 'mound' appears to have been stone rubble, whose function is unknown. The pottery was all Iron II/Persian, with one sherd identified on site by Bennett as Byzantine. Within the square was also an ashy pit, apparently without any pottery. Nothing further can be said about D4.

Square D2

Location

This square was aligned north-west/south-east, on the north-eastern corner of the second terrace below Area A, immediately to the south of where a slight rise in ground level was visible (Plate 7.4). Originally laid out as a 5 x 5-m. square, Square D2 eventually measured 7.6 x 5 m. A preliminary report on its excavation was published in Bennett 1974: 8–13.

It is quite clear that the intended work in this square was never completed, which explains the difficulty of establishing a coherent sequence. Bedrock was reached in only one trench, some walls were not excavated to their bases, and the relationship of walls with occupation surfaces was never adequately established. Six sections were drawn, but only one was complete and to bedrock and that is published here (Figure 7.13); the others were incompletely drawn and either not annotated with locus numbers or patently with the wrong numbers, and indeed they are inconsistent with the information provided in the site notebook.

In principle, 11 trenches were excavated, numbered 1 to 11 (Figure 7.2). Trench 3 was an artificial designation and not used. Trench 9 had only one level and was not separately excavated. Trench 11 was not excavated to any depth and is meaningless. Trenches 1, 2 and 4 were not excavated to an identifiable surface, and all their loci could be explained as collapse, accumulation or erosion: this conclusion was reached after a joint review of the excavations by Crystal Bennett and Kathleen Kenyon, and recorded in the D2 site notebook. Hence the D2 matrix (Figure 7.3) consists only of trenches 5, 6, 7, 8 and 10.

Most walls can be allocated to a phase with some confidence. Four walls were not excavated to any depth and their bases were not uncovered: namely Walls 3, 6, 8, and 11. In the following phasing analysis, it is tentatively proposed where these walls might fit, but in the absence of stratigraphic evidence this is no more than conjecture.

Phase 0

The underlying natural colluvium and bedrock was reached in only one spot in trench 6 (6.10).

Phase 1

The earliest human activity in this square was the laying of a stone and clay fill (6.9, 7.4, 8.23) on which were built the first stone walls, all constructed of random coursed rubble: Walls 1, 5, 16 and ?2 (Figure 7.4).

Wall 1 ran north-east/south-west on the north-west side of D2 (Plate 7.5). It was approximately 0.60 m. wide. It survived to a height of 2 m. (cf. Figure 7.13, but this included the Phase 8 rebuild) and extended for 3.50 m. from the south-western baulk to the corner with Wall 5. A line of stones apparently continued the line of Wall 1 to the north-east into the baulk, but these stones were never excavated and it is unknown if they belonged to Wall 1 or formed part of another wall.

Wall 5 was more or less perpendicular to Wall 1 and formed a corner with it, running north-west/south-east for a distance of 2.5 m. into the south-eastern baulk. It was approximately 0.95 m. wide, but its surviving height was not recorded.

Wall 16 ran north-east/south-west on the south-east side of D2. It was never drawn separately on the plan, since it ran beneath Walls 12 and 4 (cf. Figure 7.13). It was approximately 0.50 m. high, 0.45 m. wide, and extended for nearly 3 m. from the corner of Wall 5 to the south-western baulk.



Plate 7.4: Laying out Square D2, looking north

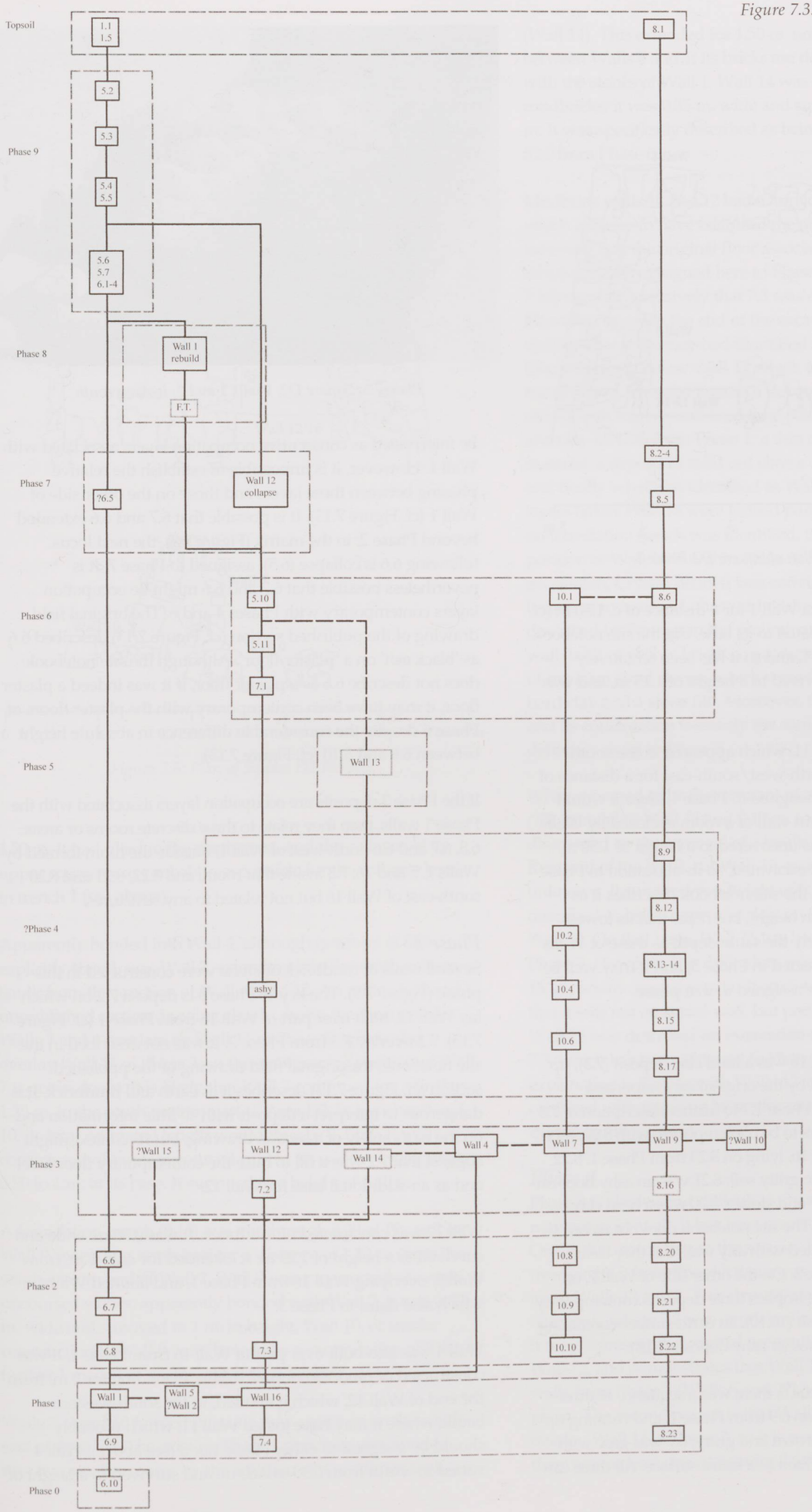


Figure 7.3: Stratigraphic matrix of Square D2

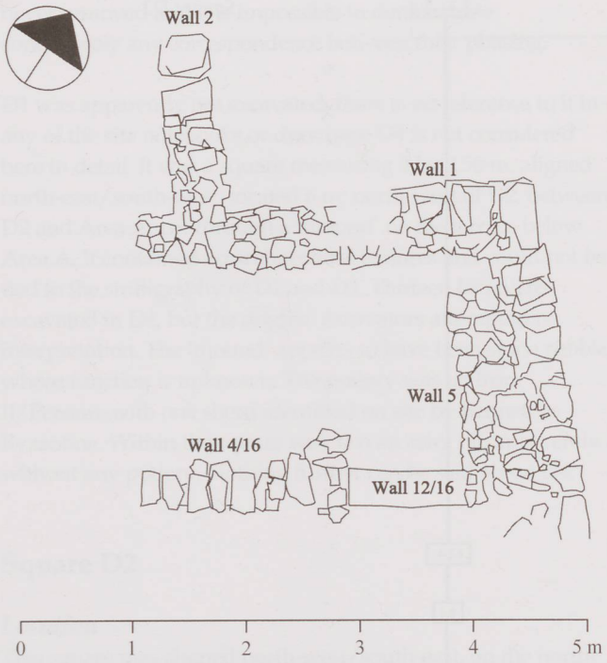


Figure 7.4: Plan of Square D2 Phase 1



Plate 7.5: Square D2, Walls 1 and 2, looking south

Wall 2 ran north-west from Wall 1 for a distance of c. 1.50 m (cf. Plate 7.5). It was not excavated to its base, but the site notebook records that it 'joins' Wall 1, and so it has been tentatively assigned to Phase 1. It survived to a height of 1.15 m. and was 0.50 m. wide.

It is conceivable that Wall 11, which appeared in the south-western baulk running north-west/south-east for a distance of nearly 3.50 m., should be assigned to Phase 1, since it would then form the south-western wall of a room enclosed by Walls 1, 5, 16 and 11. Wall 11 was uncovered to a height of 1.50 m. However, its base was not excavated, so its allocation to Phase 1 is conjectural; moreover, the site notebook describes it as surviving to four courses in height, but notes that its lowest course was at approximately the same depth as those of Walls 4 and 3. Wall 4 was constructed in Phase 3, and it may well be that Wall 11 should also be assigned to that phase.

Phase 2

Running up to Walls 1 and 16 was a hard clay deposit (7.3), up to c. 40 cm. deep, identified by the original excavators as a surface. 7.3 lay on 7.4 from Phase 1. No further description of 7.3 was recorded, but it appears to be contemporary with 8.22, 8.21 and 8.20 south-east of Wall 16, lying on 8.23 from Phase 1. 8.22 was an ashy deposit on pale gritty soil; 8.21 was an ashy floor on broken-up mudbricks, lime and stones; 8.20 was a hard clay deposit, possibly a surface. The site notebook does not record if these deposits were associated with any wall, but they clearly predated Wall 9 from Phase 3. On the other side of Wall 7, an incomplete section drawing implies three deposits contemporary with 8.20–22: an ashy deposit (10.10), an earth surface containing stones (10.9), overlain by another ashy deposit (10.8).

North-west of Wall 1, in locus 6, there was a sequence of three deposits (6.8, 6.7, 6.6) lying on 6.9 from Phase 1, and running up to Wall 1. 6.8 was greyish-brown and gritty; 6.7 was grey with some pottery; 6.6 was described as a burnt surface. All three can be interpreted as consecutive occupation layers associated with Wall 1. However, it is impossible to establish the relative phasing between these layers and those on the other side of Wall 1 (cf. Figure 7.13). It is possible that 6.7 and 6.6 extended beyond Phase 2; in the matrix (Figure 7.3), the next locus following 6.6 is collapse (6.5), assigned to Phase 7. It is nevertheless possible that 6.7 and 6.6 might be occupation layers contemporary with Phases 4 and 6. The original field drawing of the published section (cf. Figure 7.13) described 6.6 as 'black ash' on a 'plaster floor'. Although the site notebook does not describe 6.6 as a plaster floor, if it was indeed a plaster floor, it may have been contemporary with the plaster floors of Phase 6 despite the considerable difference in absolute height between 6.6 and 5.10 (cf. Figure 7.13).

If the Phase 2 deposits are occupation layers associated with the Phase 1 walls, then they relate to three discrete rooms or areas: 6.8, 6.7 and 6.6 north-west of Wall 1, outside the room formed by Walls 1, 5 and 16; 7.3 inside that room; and 8.22, 8.21 and 8.20 south-east of Wall 16 but not related to any structures.

Phase 3

Several walls of mudbrick or stone were constructed in this phase (Figure 7.5). The key to Phase 3 is deposit 7.2 on which lay Wall 12, built over part of Wall 16 from Phase 1 (cf. Figure 7.13). 7.2 overlay 7.3 from Phase 2. It was not described in the site notebook; the original field drawing of the published section (cf. Figure 7.13) describes it as earth and mudbrick. It is dangerous to interpret a deposit with so little information and on the basis solely of a section drawing, but its context might suggest that 7.2 was a fill to raise the contemporary floor level and as an additional base for Wall 12.

Wall 12 was constructed of mudbrick. It was 0.30 m. wide and survived to a height of 1.25 m. It extended for only 1 m. from Wall 5, overlying Wall 16 from Phase 1, and abutted Wall 4, which also dates to Phase 3.

Wall 4 was also built over part of Wall 16 from Phase 1. It was constructed of random coursed rubble, extending for 2 m. from the end of Wall 12, which it abutted, to the south-western baulk, where it may have joined Wall 11, which probably should be assigned to either Phase 1 or 3 (see above). Wall 4 varied in width from 0.30 to 0.60 m. and survived to a height of

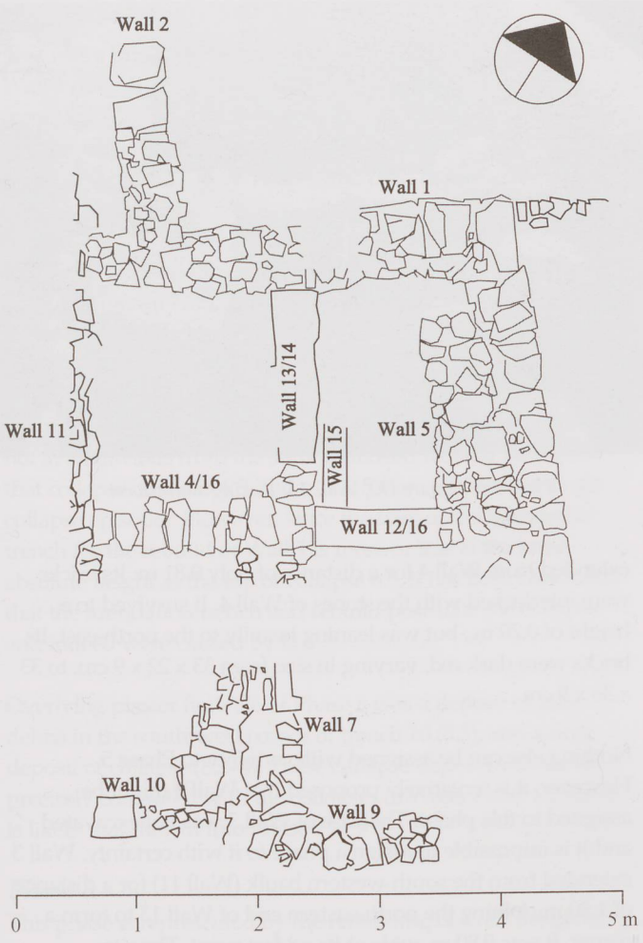


Figure 7.5: Plan of Square D2 Phase 3

1.50 m. It had tilted to the north-west, and the collapse of its upper courses was probably responsible for the collapse levels in trench 1 (see above).

Apparently bonded into Wall 4, although nowhere is this explicitly stated, was Wall 7, extending into the south-eastern baulk from the junction of Walls 4 and 12. An unfinished and unpublished section drawing clearly shows the junction of Walls 7 and 4 overlain by Wall 13 of Phase 5, which also overlay Wall 14 of Phase 3, so the stratigraphic position of Wall 7 is not in doubt. It is likely that Wall 7 continued for a further 1.25 m. in the south-eastern part of Area D2, in trenches 8 and 10; its total estimated length would thus be 2.25 m. It was constructed of random coursed rubble, its width varying from 0.50 to 1 m. at its base. It survived to a height of 0.60 m.

A foundation trench (8.16) was cut through 8.20 of Phase 2 for Wall 9, extending north-east for a distance of 1.10 m. from the south-eastern end of Wall 7. Wall 9 was constructed of rough uncoursed stones, apparently bonded with Wall 7; it was 0.40 m. wide and survived to 1 m. in height. Wall 10, of similar construction to Wall 9, may have been a continuation of it for a further 1 m. on the south-west side of Wall 7.

Walls 7, 9 and 10 formed part of a new structure on the south-east of Area D2. The existing Phase 1 structure was divided into two smaller rooms by the addition of a mudbrick wall (Wall 14). This extended for 1.50 m. north-west/south-east between Walls 4 and 1; its bricks are described as interlocking with the stones of Wall 1. Wall 14 was constructed of yellow mudbricks; it was 0.35 m. wide and survived to a height of 0.60 m. It was specifically described as being below plaster floor 5.10 from Phase 6.

Mudbrick walls 14 and 12 had a fairly complex construction, which appears to have confused the original excavators into believing that the original floor associated with them was 7.3, which has been assigned here to Phase 2. The section (Figure 7.13) shows conclusively that 7.3 was earlier than Wall 12. However, towards the end of the excavation, the excavators realised that what they had identified as part of 7.3 were in fact four sub-layers below Wall 14 which were probably part of its construction: from the bottom a deposit of chocolate-brown soil mixed with many small limestone pebbles, resting on the stone and clay fill (7.4) from Phase 1; a thin deposit of chalky white material; a deposit of solid red clay; a deposit of large stones; and finally what was identified as Wall 14. If the four sub-layers below Wall 14 were indeed part of its construction, and no foundation trench was identified, then the stratigraphic position of Wall 14 is within Phase 1. However, during excavation, Crystal Bennett was convinced that this wall belonged to a second phase of building: Wall 14 is the wall described by Bennett in the preliminary report (1974: 13) as a wall 'built of yellow bricks...constructed on a foundation wall of medium sized stones, which were themselves situated on hard clay and a stone fill'. Moreover, the description of Wall 14 and its construction is exactly the same as Wall 12, which definitely dates to Phase 3.

What appeared to be the remnant of another mudbrick wall (15), parallel to Wall 14 and 0.19 m. to its north-east, was discovered on the removal of a baulk between trenches 1 and 7. Removal of the baulk cut Wall 15, so its original extent is unknown. It survived to a height of 0.26 m., and its base was described as being approximately on the same level as that of Wall 14. On that basis, Wall 15 has been tentatively assigned to Phase 3. However, it is difficult to interpret the function of Wall 15, especially since it was built so close to Wall 14. It is possible that it was not an actual wall, but perhaps a mudbrick bench. Wall 15 was described on excavation as being found 'within' 7.3, which has been assigned to Phase 2. The most plausible explanation is that, as with Walls 12 and 14 (see above), 7.3 was confused with make-up layers for mudbrick walls, especially during baulk removal.

Phase 4

Phase 4 is elusive and difficult to characterise, and indeed it may not exist at all. It has been created here for two reasons. One is that, according to the section drawing (cf. Figure 7.13), overlying 7.2 from Phase 3 there was an ashy deposit running up to Walls 12 and 1. This deposit was not described in the site notebook, where 7.2 was overlain directly by 7.1. Nevertheless, it may represent the original occupation layer associated with Wall 12, and demonstrates that Wall 1, and presumably other walls from Phase 1 (Walls 5 and 2?), were still in use in this phase. The second reason is that Wall 13, assigned to Phase 5, overlay Wall 14 of Phase 3, so it is reasonable to assume that there was at least one occupation layer in between them. It is

therefore proposed that the ashy deposit overlying 7.2 is the occupation layer associated with the new structures of Phase 3.

A sequence of deposits in trench 8 should also be assigned to Phase 4. Immediately overlying foundation trench 8.16 and running up to Wall 9 of Phase 3 was a deposit of soft loose sand (8.17). This was overlain by three consecutive ashy deposits (8.15, 8.13–14, 8.12), which are interpreted as occupation layers associated with Wall 9 (and presumably with Walls 7 and 10). Over 8.12 was a soft deposit of 'debris and pottery' (8.9) which was not fully described by the excavators and cannot be interpreted with confidence. Either it is another occupation layer to be assigned to Phase 4, or conceivably it is make-up for plaster floor 8.6 of Phase 6 (and thus contemporary with 7.1 and 5.11: cf. Figure 7.3).

On the other side of Wall 7, an incomplete section drawing implies three deposits contemporary with the trench 8 Phase 4 deposits, and running up to Wall 7: an ashy deposit (10.6), an earth surface (10.4), and another ashy deposit (10.2), perhaps two occupation layers with a surface in between.

Phase 5

This phase is represented by mudbrick Wall 13, constructed on top of Wall 14 of Phase 3, but stopping short of Wall 1 to form a doorway 0.69 m. wide (Figure 7.6; Plate 7.6). Wall 13 thus

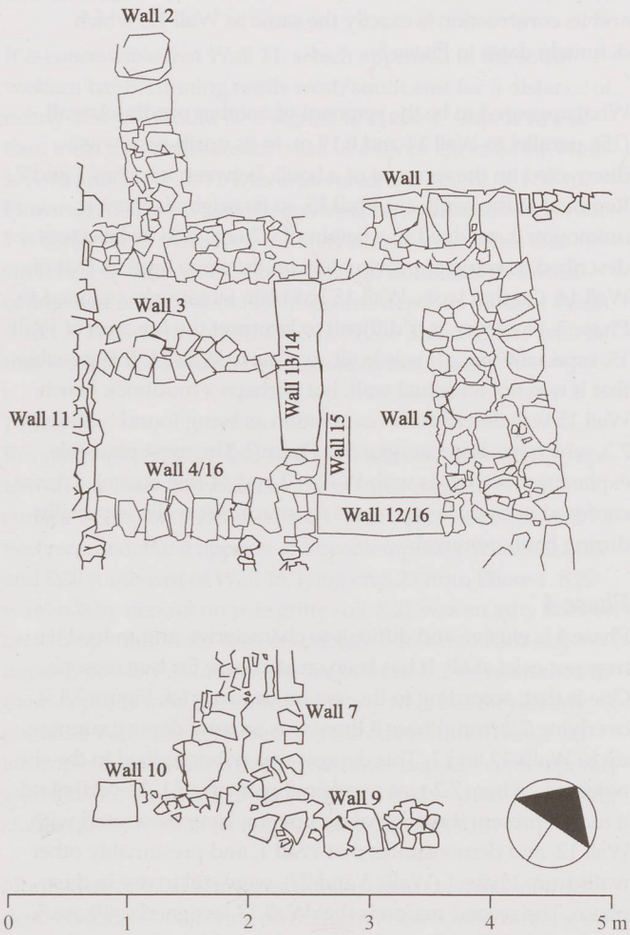


Figure 7.6: Plan of Square D2 Phase 5



Plate 7.6: Square D2, Wall 13, looking south-west

extended from Wall 4 for a distance of only 0.81 m. Its bricks were interlocked with the stones of Wall 4. It survived to a height of 0.70 m., but was leaning heavily to the north-east. Its bricks were dark red, varying in size from 33 x 22 x 9 cm. to 33 x 36 x 9 cm.

Nothing else can be assigned with certainty to Phase 5. However, it is tentatively proposed that Wall 3 might be assigned to this phase. The base of Wall 3 was not excavated and it is impossible to assign a phase to it with certainty. Wall 3 extended from the south-western baulk (Wall 11) for a distance of 1.50 m., joining the north-eastern end of Wall 13 to form a corner. It was 0.80 m. wide at its widest point. The site notebook records that it consisted of a single course of stones only, but with the considerable amount of collapse in this trench, perhaps this was all that remained of a higher wall. It is not visible in the photograph of Wall 13 (Plate 7.6).

If Walls 13 and 3 are both Phase 5, then the plan of the Phase 3 structure was further altered by the creation of three small rooms, one a very narrow corridor accessed through a doorway between Walls 13 and 1.

Phase 6

The occupation surface associated with Wall 13 of Phase 5 was a plaster floor (5.10) which ran up to Walls 13 and 12, and up to Wall 1 (although it was cut by a later foundation trench of Phase 8); this was the floor which ran through the doorway formed by Walls 13 and 1. Plaster floor 5.10 was equated with identical floors in trenches 8 and 10 (8.6, 10.1; see above, Phase 2, for possibility that 6.6 too was a plaster floor of Phase 6). 8.6 was associated with Wall 7, and 10.1 with Wall 10. In Phase 6, therefore, Walls 1, 12, 7 and 10 were certainly still in use, and probably also the other walls from Phases 1 and 3 which had not been replaced.

Two deposits (7.1, 5.11) immediately below plaster floor 5.10 directly overlay the ashy deposit of Phase 4, and in fact were probably artificially separated during excavation. 7.1/5.11 consisted of hard clay mixed with numerous small stones, and should probably be interpreted as make-up for the plaster floor 5.10. It is possible that they should be equated with 8.9 (see above, Phase 4).

Phase 7

This was a phase of collapse of Walls 1 and 12. The collapse of Wall 1 downslope to the north-west (6.5) lay directly on 6.6 from Phase 2, and was a deep deposit of tumbled stones and pockets of 'white fill', perhaps either wall plaster or roofing material. Mudbrick Wall 12 also collapsed to the north-west, cutting deposits 5.10, 5.11 and 7.1 (see Figure 7.13).

It must be admitted that from the evidence of the section drawing (Figure 7.13), it is not possible to correlate the collapses of Walls 1 and 12, and it is not certain that they are contemporary. The attribution of both of them together to Phase 7 is thus hypothetical. The key point is whether collapse 6.5 pre- or post-dates the rebuild of Wall 1 in Phase 8. This is not at all obvious from the section (indeed it could be argued that collapse deposits 6.5, and 6.1–4, 5.6 are all part of a single collapse episode). However, since the base of the foundation trench for the rebuild of Wall 1 is more or less at the same absolute height as the top of collapse 6.5, it has been concluded that the foundation trench and rebuild post-date the collapse and indeed were caused by it.

Overlying plaster floor 8.6 of Phase 6 was a deposit of ashy debris in the south-west corner of trench 10 (8.5), and a deep deposit of collapse (8.2–4). These collapse deposits cannot be precisely correlated with the collapses of Walls 1 and 12, but it is likely that they fit into Phase 7 or 9.

Phase 8

This phase is represented by the rebuilding of Wall 1 (Figure 7.7). Its foundation trench can be seen clearly in the section cutting through loci 5.10 and 5.11 of Phase 6 (Figure 7.13). The relative phasing of collapse and rebuild events in Phases 7 and 8 is complex and hypothetical (see above), but it can be argued that it was the collapse of Phase 7 (6.5) that was the reason for the rebuild of Phase 8.

The Wall 1 rebuild is the only structural activity that can safely be attributed to Phase 8, and it is the last structural activity in Square D2. This leaves two walls unaccounted for: Walls 6 and 8 (probably in fact one wall). These appear to be rebuilds of Walls 10 and 9 and are located along the south-eastern baulk (Figure 7.7). Walls 6 and 8 together were built of random coursed rubble and extended for 3.25 m. along the baulk. At its north-eastern end the wall simply stops without joining another wall. Walls 6 and 8 are clearly later than Walls 10 and 9 of Phase 3, which they overlay. They also appear to be later than Phase 6, since plaster floor 10.1 ran up to Wall 10 but not up to Wall 6. Therefore it is proposed that they be assigned to Phase 8, contemporary with the rebuild of Wall 1. Phase 8 would thus be a phase of rebuilds of Phase 1 and 3 walls.

Phase 9

No occupation layers associated with the rebuilds of Phase 8 have been identified. Phase 9 is a phase of several episodes of collapse, erosion and accumulation, best observed in the section (Figure 7.13). It is likely that any occupation layers associated with the Phase 8 rebuilds were buried in the collapse. It is tempting to conclude that any associated occupation layers must have been fairly sparse to disappear so completely, so perhaps the chronological interval between the rebuilds (Phase

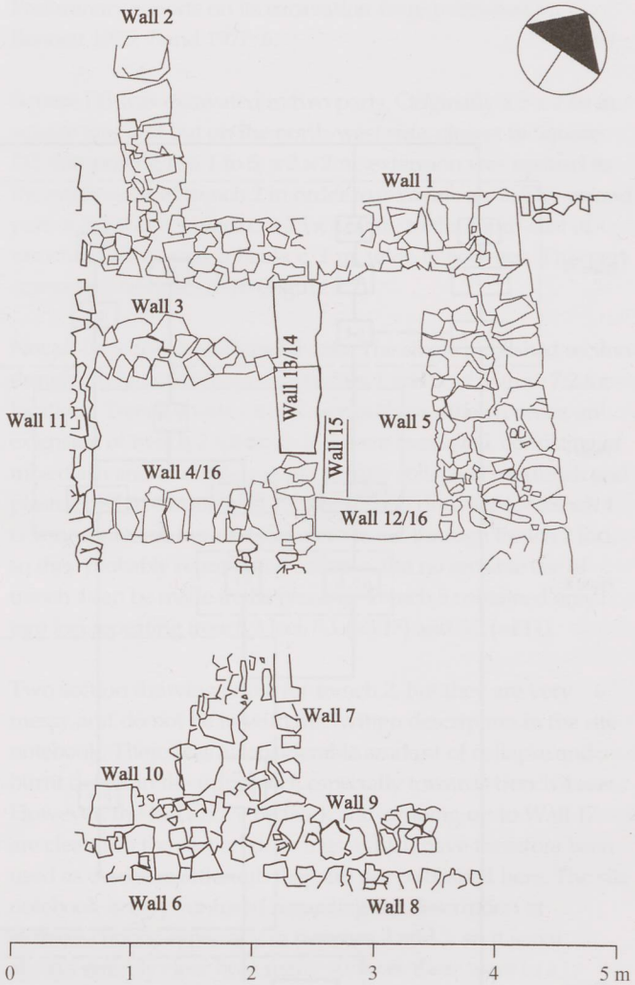


Figure 7.7: Plan of Square D2 Phase 8

8) and the final collapse (Phase 9) was not a long one, but this is conjecture.

Wall 1 collapsed for the second time (cf. Phase 7), represented by loci 5.6, 5.7, 6.1–4. The top of this collapse deposit is burnt, suggesting that a fire accompanied the collapse. The next episode is represented by loci 5.4–5, earth fill containing burnt debris, sloping to the north-west, perhaps representing erosion carrying collapsed debris and burnt material from other structures down the slope. The top of 5.4–5 has a burnt streak (cf. Figure 7.13), perhaps indicating that this episode also ended with a fire. This was overlain by 5.3, a deposit of light brown earth and stones, perhaps representing accumulation of soil and stones over the collapsed and eroded debris. Over this was 5.2, a deposit of red clay, probably also caused by accumulation or erosion.

These loci were overlain by topsoil.

Square D2: summary and interpretation

The earliest structural evidence (Phase 1) was the laying of a stone and clay fill on which were built the first stone walls (Walls 1, 5, 16 and possibly 2) forming a rectangular room, possibly closed by Wall 11 on its fourth side, measuring c. 4 x 2.75 m. Between one and three discrete occupation layers were associated with these walls (Phase 2). In Phase 3, mudbrick

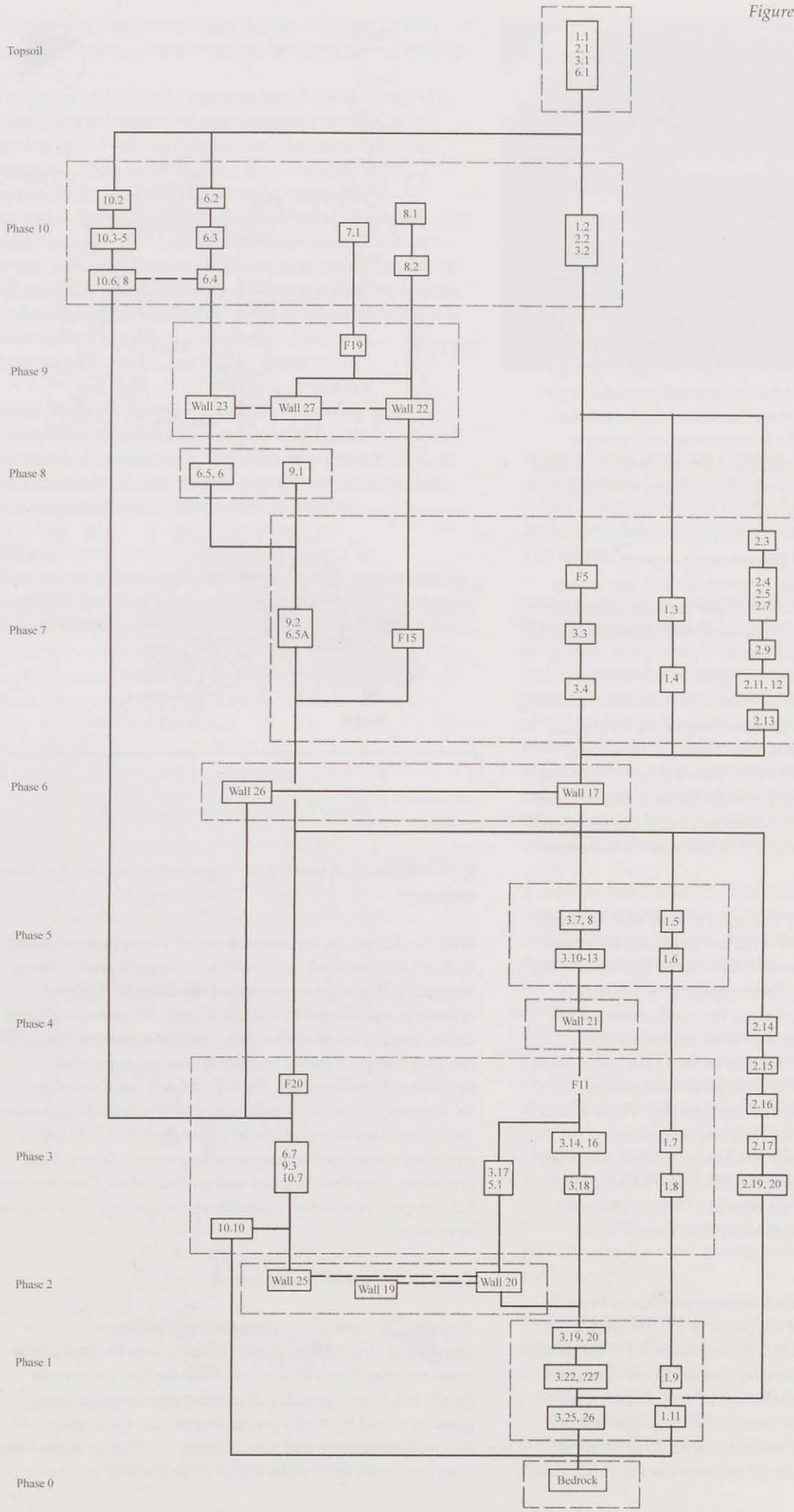


Figure 7.8: Stratigraphic matrix of Square D3

walls 12, 14 and ?15, and stone walls 4, 7, 9 and ?10 were constructed. The plan of the new structure formed by Walls 7, 9 and 10 was not properly elucidated. The plan of the existing Phase 1 structure was altered by the addition of a cross wall 14, which divided the area into two smaller rooms. The associated occupation in this room is patchy (Phase 4), but there are at least three occupation layers associated with Walls 7, 9 and 10. In Phase 5 the plan of the original structure was further altered by the addition of mudbrick wall 13, and possibly stone wall 3, to form three small rooms, one with a very narrow corridor accessed through a doorway between Walls 13 and 1. The occupation surface associated with these structural changes was a plaster floor (Phase 6) identified over a large part of Square D2, and also associated with Walls 7 and 10. It is clear that the original walls of Phases 1 and 3, except where rebuilt or superseded, were still in use. This was followed by the collapse of Walls 12 and 1 (Phase 7). Wall 1 was rebuilt (Phase 8), and perhaps at the same time Walls 6 and 8 were rebuilds of Walls 10 and 9 from Phase 3. No occupation layers associated with these rebuilds were identified, and Phase 9 consisted of several episodes of collapse, erosion and accumulation. The final collapse of Wall 1 was accompanied by burning, overlain by collapsed debris and burnt material from other structures carried down the slope.

Only one complete rectangular room was excavated in Square D2, formed originally in Phase 1 by Walls 1, 5 and 16, and an incomplete structure to the south-east, formed originally in Phase 3 by Walls 7, 9 and 10. Beyond Wall 1 to the north-west, it is not clear if this is still an internal or external space. The presence of Wall 2 extending to the north-west might suggest that there were further structures beyond the limits of the excavation which were connected to the excavated structures.

The structural sequence presented here more or less confirms that published in the preliminary report (Bennett 1974: 13): a phase of stone walls; a phase of mudbrick and stone walls; a later phase of mudbrick walls; rebuilds of existing stone walls; followed by collapse and burning.

Square D3

Location

This square was located 3.15 m. to the south-east of Square D2, on the same north-west/south-east alignment (Plate 7.7).

Preliminary reports on its excavation were published in Bennett 1975: 7 and 1977: 6.

Square D3 was excavated in two parts. Originally a 5 x 2.40 m. square was laid out on the north-west side, closest to Square D2, comprising loci 1 to 5; a 2 x 2 m. extension was opened to the north-west of trench 2 in order to excavate a pit. The second part of D3 was a square c. 4.75 x 4.50 m. to the south-east of trenches 1–5, leaving a baulk c. 1 m. wide in between. This part comprised trenches 6–10 (Figure 7.2).

Not all trenches yielded useful data. The single published section drawing (Figure 7.14) covers trenches 1 and 3 (cf. Figure 7.2 for location). Trench 4 was a small area in the northern corner, an extension of trench 2. Only six loci were excavated, consisting of mixed ash and crumbly soil, apparently collapsed mudbrick and plaster, perhaps from Wall 19. The section drawing for trench 4 is very confused; trench 4 loci seem to cut through trench 2 loci, so they probably represented collapse, but no sensible use of trench 4 can be made in the phasing. Trench 5 contained only two loci repeating trench 3 loci, 5.1 (=3.17) and 5.2 (=F11).

Two section drawings exist for trench 2, but they are very messy and do not tie in with the written description in the site notebook. There was a considerable amount of collapse and burnt debris in the upper loci, especially towards trench 4. However, the loci above bedrock and running up to Wall 17 are clearer in the section drawings, which have therefore been used as evidence although they are not published here. The site notebook is very confused regarding the description of surfaces/floors, especially in trenches 2 and 3, so it is not always entirely clear how many surfaces there were in a sequence: sometimes the same surface in a different part of the same trench was given a different number, but its relationship to other 'surfaces' and to walls was not made clear.

For trenches 6–10 to the south-east, only two sections were drawn, for trenches 6 and 10. These are not very useful since they are very shallow and do not indicate the bases of the walls, and so have not been published here. In this area, only trenches 9 and 10 were excavated to bedrock. The tops of the earliest walls (20 and 25) were encountered immediately below topsoil, with the latest deposits running up to them, indicating that they were probably still in use in the final phases. Most walls can be allocated to a phase, although the data in the site notebook was considerably worse than that for Square D2. Wall 24 is scarcely

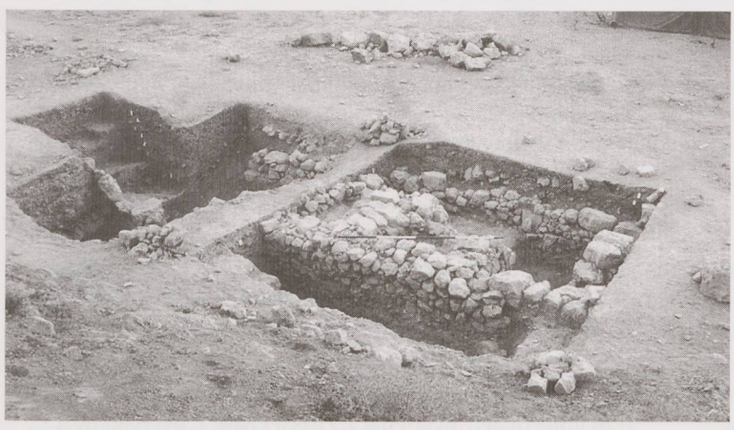


Plate 7.7: Square D3, looking north

mentioned in the site notebook, but in the following phasing analysis it is tentatively proposed where it might fit, based on the plan, but in the absence of stratigraphic evidence this is conjecture. Wall 18 is mentioned in the site notebook, but was never drawn on a plan; it actually appears to be Wall 19. It is possible that the massive wall collapse in the upper layers between Walls 17 and 20 led the excavators to tentatively 'create' another wall, which disappeared once the collapse was cleared.

Phase 0

The underlying natural colluvium and bedrock was reached in trenches 1, 2, 3, 9 and 10. The section drawing (Figure 7.14) shows bedrock rising steeply to the south-west, towards Area A. The topsoil in trench 10 was only 0.60 m. above bedrock.

Phase 1

The earliest evidence of human activity in D3 predates the building of the first walls in Phase 2. Immediately above bedrock in trenches 3 and 1 was a deposit of green clay mixed with loose light brown earth (3.25, 26, 1.11). This appeared to be deepest where bedrock sloped down most (cf. Figure 7.14). Overlying the green clay was a deposit of plaster (3.22, 27, 1.9). Where bedrock was higher, either the green clay deposit was very thin, or the plaster lay directly over bedrock. The descriptions and locus numbers in the notebook and section drawings are very confused here, but this might be interpreted as a clay fill where necessary over sloping bedrock, prior to the first surface. There was a thin deposit of grey ash on the plaster, which was not numbered separately, but which would represent the primary occupation on the surface. A second surface (3.19, 20) overlay the primary occupation in trench 3, variously described as a plaster floor or a hard clay surface.

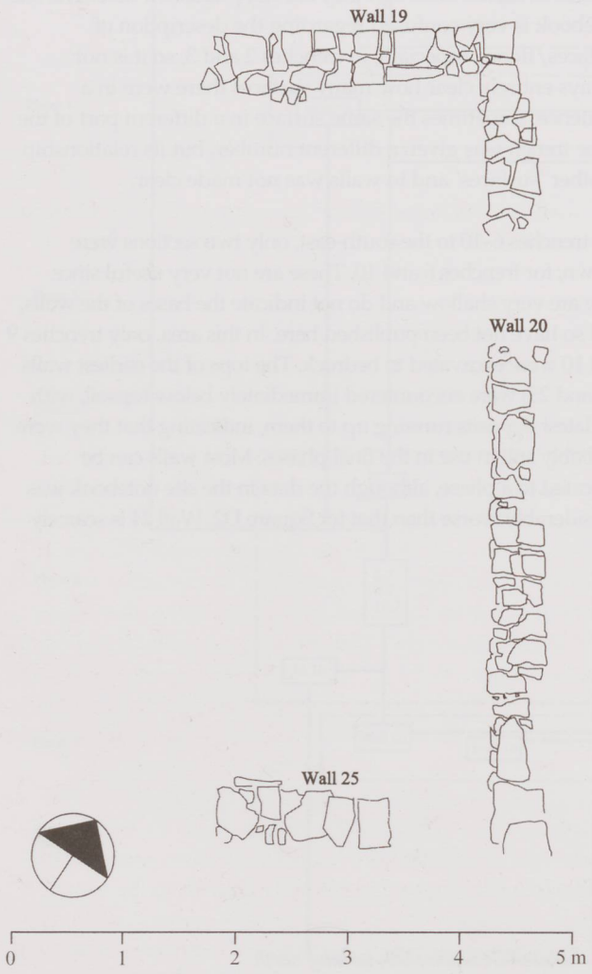


Figure 7.9: Plan of Square D3 Phase 2

The precise extent of these Phase 1 surfaces was not established. Furthermore, it was not possible to establish the exact relationship between the earliest layers in trench 2 and those in trench 3. Deposits 2.14–20 were certainly earlier than Phase 6, but it was impossible to establish their precise relationship with Phases 1, 3 and 5. In the stratigraphic matrix (Figure 7.8), they have therefore been placed prior to Phase 6, but no further phasing has been attempted.

Phase 2

This phase consisted of the building of the first walls in this square (Walls 19, 20 and 25) (Figure 7.9). Wall 20 appears in the section (Figure 7.14) resting on surface 3.20 from Phase 1. Wall 20 ran north-west/south-east along the north-eastern baulk of both parts of Square D3. Its total excavated length was 7.30 m. At its north-western end it was bonded into Wall 19. Its south-eastern end was not found. Wall 20 was not described in the site notebook. It was apparently constructed of coursed rubble, 0.50 m. wide, and survived to a height of at least 1 m. (three courses).

The base of Wall 19 was not excavated. However, it clearly dates to Phase 2, since plaster floor 3.8 from Phase 3 ran up to it. Wall 19 ran north-east/south-west from its bonded corner with Wall 20 for a distance of 2.75 m. (later, in Phase 6, it formed a bonded corner with Wall 17). It was 0.50 to 0.60 m. wide; no indication of its surviving height was recorded. There was some evidence that the upper courses at least of the northern corner formed by Walls 20 and 19 were of mudbrick, not stone.

The base of Wall 25 was not excavated. However, it clearly dates to Phase 2, since layer 6.7 from Phase 3 ran up to it on the unpublished section drawing from trench 6. Wall 25 ran north-east/south-west for 1.5 m. along the south-eastern baulk, parallel to Wall 19. It was 0.60 m. wide and survived to a height of at least 1 m. In Phase 6 it formed a corner with Wall 17, but in Phase 2 it did not join any wall.

The Phase 2 walls form the framework for a rectilinear structure, whose plan on its own does not appear to make much sense: one long wall (Wall 20), with two perpendicular walls at either end (Walls 19 and 25, although Wall 25 did not connect with Wall 20).

Phase 3

This was a phase of occupation associated with the Phase 2 walls. A series of surfaces was excavated in different trenches, but it was impossible to establish how they interconnected, or indeed how many consecutive surfaces there were. The sequence in trench 2 was particularly confused. The clearest sequences were in trenches 1, 3 and 9. 3.17 and 18 were hard limey surfaces overlying 3.19 and 20 from Phase 1, with 3.17 running up to Wall 20 (cf. Figure 7.14). 3.14, 16 was another hard limey surface, overlying 3.18. In trench 1, these probably corresponded to a deposit of brown clay with lumps of plaster (1.8) immediately overlying 1.9 from Phase 1, overlaid by a deposit of hard limey clay (1.7) (see Figure 7.14).

Surfaces 3.17 and 3.14, 16 were cut by an oven or pit (F11). This was not drawn on a plan, but was located in the middle of trench 5, with the later Wall 21 built over its south-eastern side. It was semi-circular in plan; it can be seen clearly in the section drawing (Figure 7.14). F11 was excavated as several loci (3.23, 24, 27, 28), but during excavation it was not understood that these were all part of the same construction, which only became clear when the section was drawn. It appears that there were at least three episodes of lining the oven with plaster, with layers of flat stones below the plaster, and a large number of pottery sherds in between the plaster layers.

In trench 9, a deposit of hard brown earth (10.10), lying on bedrock but probably running up to Wall 25 of Phase 2 (though this is unclear), was overlain by a deposit of green clay (9.3, 6.7, 10.7), perhaps a fill, in turn overlain by a plaster floor (F20). This floor ran under Wall 17 of Phase 6; it appears that the structural phase 4 and occupation phase 5 are not reflected in trench 9, and it is likely that the Phase 3 occupation here was contemporary with Phases 3–5 in trenches 1–5.

In the preliminary report, Bennett described the plaster of the floors in Trench D3 as 'rather coarse and brown in colour, quite unlike the white, even plaster of Area A' (1977: 6).

Phase 4

Immediately overlying oven F11 from Phase 3, on its south-eastern side, was Wall 21, which is the only construction to date to Phase 4 (Figure 7.10). Wall 21 was a small wall running from

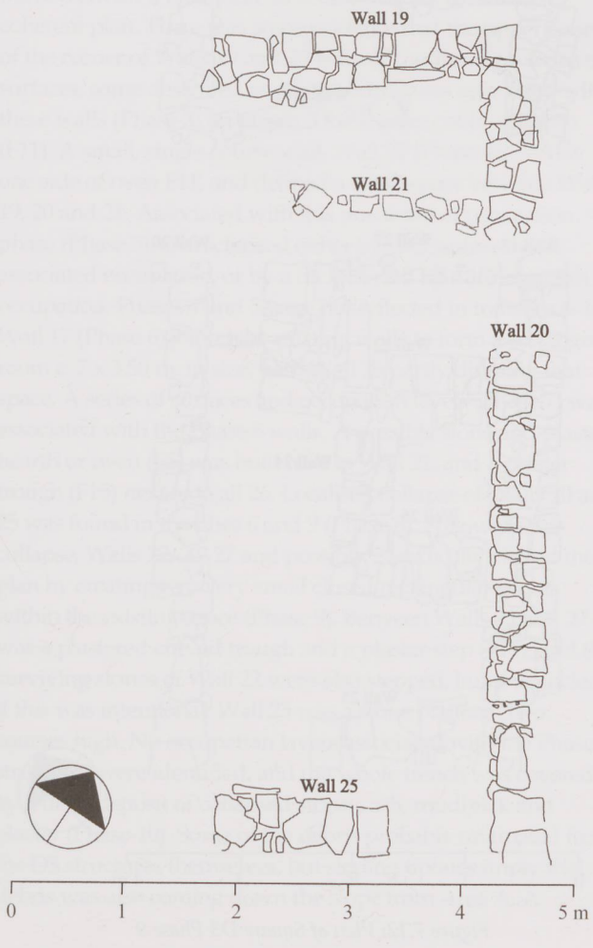


Figure 7.10: Plan of Square D3 Phase 4

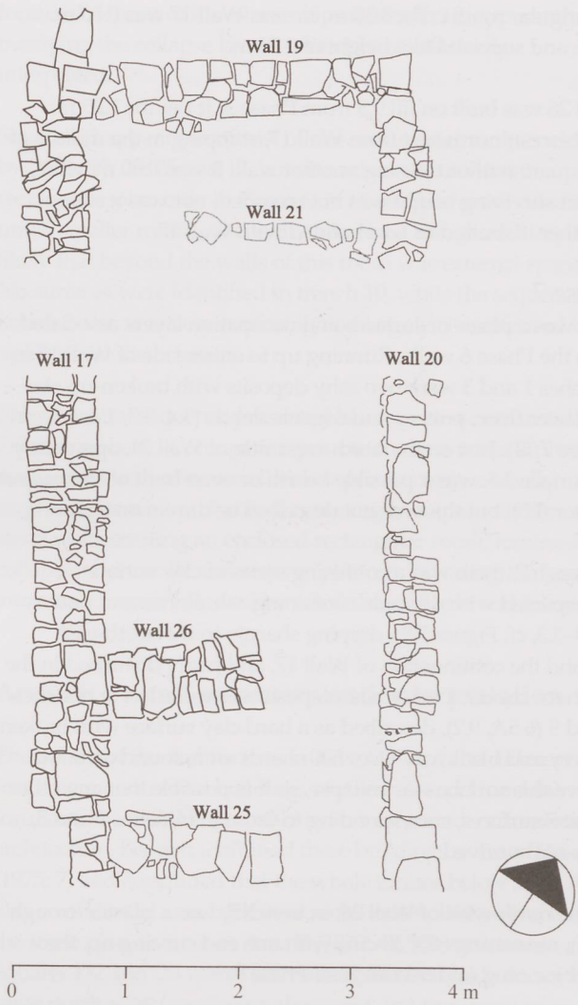


Figure 7.11: Plan of Square D3 Phase 6

Wall 20 for a distance of 1.60 m. parallel to Wall 19 and 1 m. to its south-east, ending abruptly in the middle of the square. Wall 21 was not properly described, but may well have been a single-course wall, only 0.25 m. wide. If so, it was not a structural wall, but perhaps a space divider, defining a small space 1 x 1.50 m. between Walls 19, 20 and 21.

Phase 5

Sealing F11 from Phase 5, and running up to Wall 20, was a deep deposit of hard gritty soil with thin ashy patches, mixed with clay and lumps of plaster (3.10–13, 1.6). Over this was a deposit of soft brown earth (3.7), associated with a small patch of plaster floor (3.8), c. 35 x 25 cm. in area, running up to Wall 19. It is likely that 1.5, a deposit of hard brown clay, also dates to this phase (cf. Figure 7.14). Interpretation of these deposits is slightly conjectural. Perhaps there are two consecutive surface/occupation layers, or a fill layer over oven F11 followed by a surface/occupation layer. Presumably they were also associated with Wall 21, but nowhere in the site notebook was this explicitly stated.

Phase 6

This was a structural phase, consisting of the construction of Walls 17 and 26 (Figure 7.11). Wall 17 appears in the section (Figure 7.14) clearly built on loci 3.7 and 1.5 from Phase 5. Wall 17 was oriented south-east/north-west, exactly parallel to Wall 20 and the same length, bonded to Walls 25 and 19 (which therefore must have been rebuilt), for the first time creating a

rectangular room c. 7 x 3.50 m. in size. Wall 17 was 0.60 m. wide and survived to a height of 0.70 m.

Wall 26 was built on fill 9.3 from Phase 3. It ran for 1.25 m. south-west/north-east from Wall 17, stopping in the middle of the square without joining another wall. It was 0.60 m. wide, but its surviving height was not recorded, nor was it stated whether it abutted or was bonded with Wall 17.

Phase 7

This was a phase of surfaces and occupation layers associated with the Phase 6 walls. Running up to either side of Wall 17 in trenches 1 and 3 were two ashy deposits with broken-up clay or plaster floor, pottery and organic debris (3.4, 3.3, 1.4, 1.3, cf. Figure 7.14). Just on the north-west side of Wall 21, apparently on surface 3.3, was a possible hearth or oven built of stones and plaster (F5), but this was not described or drawn on a plan.

In trench 2, there was a confusing series of clay surfaces interspersed with deposits containing ash, stones and pottery (2.13–2.3, cf. Figure 7.8), dipping sharply to the north-east beyond the continuation of Wall 17, and badly disturbed in the northern corner. One similar deposit was recorded in trenches 6 and 9 (6.5A, 9.2), described as a hard clay surface with broken pottery and black ash. Over 500 sherds were found on 6.5A. Above this surface was collapse, so it is possible that any other Phase 7 surfaces, corresponding to those in trenches 1 and 3, have not survived.

To the north-west of Wall 26, in trench 8, was a plaster 'trough' (F15), measuring 68 x 30 cm., with one end curving up, the other running under Wall 22 of Phase 9.

Phase 8

Overlying the Phase 7 surface in trenches 6 and 9 was a deep deposit of rubble (6.5, 6, 9.1), which can be interpreted as localised collapse of Walls 20 and 25.

Phase 9

This was a structural phase consisting of Walls 22, 23 and 27, and possibly 24 although that is conjectural (Figure 7.12). Wall 22 overlay one side of F15 from Phase 7. It ran south-west/north-east from Wall 17 for 1.25 m. and varied from 0.60 to 0.75 m. in width. Its surviving height was not recorded. However, the surviving stones were formed into two steps approximately 30 cm. wide, the lower step being to the north-west. It is not certain if this was the original construction, perhaps connected with the plaster step built against Wall 22 (see below). The lower step rose c. 10 cm. above the contemporary surface, the upper step rose a further 25 cm.

The base of Wall 27 was not recorded; however, F19 (see below), also from Phase 9, was constructed against it, so it is likely that Wall 27 dates to Phase 9. Wall 27 was visible in the north-west baulk of trench 7, so its total width was not revealed. It ran parallel to Wall 22 for 1.30 m. from Wall 17. Its surviving height was not recorded.

Wall 23 overlay 6.5 from Phase 8. Rather than a wall, it was a solid stone platform two courses high, measuring 1.36 x 0.75 m., positioned at the ends of Walls 22 and 27.

No information about Wall 24 was recorded in the site notebook. However, if Phase 9 can be characterised as a phase of creating very small rectangular rooms, Wall 24 would fit in very well, closing off the room between Walls 26 and 22. Wall 24 ran parallel to Wall 17 for 1.10 m. between Walls 26 and 22; it was 0.50 m. wide. Its surviving height was not recorded.

Associated with Walls 22 and 27 was a plaster feature (F19). Against the north-western side of Wall 22 was constructed a plaster step measuring 1.24 x 0.33 m. 10 cm. below this, against Wall 27, was a plastered curved trough, measuring 1.25 x 0.25 m. The plaster curved up on the north-west side and was not right up against the stones of the wall, but it is possible that it had contracted away.

The preliminary report mentions another plaster step below Wall 17 in locus 7 (Bennett 1977: 6), but there was no record of this in the site notebook. It is possible that a note in the notebook recording that the trough (or 'lower step', as it was referred to) was c. 38 cm. below Wall 17 caused confusion when the preliminary report was being prepared.

Phase 10

No occupation layers associated with the Phase 9 structures were identified. A deep deposit of collapsed stones, ash and

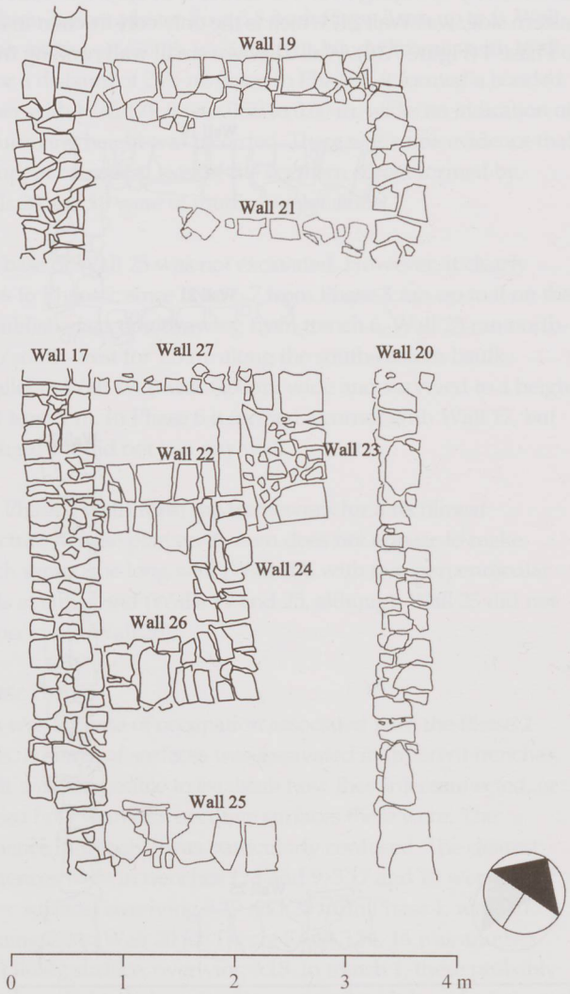


Figure 7.12: Plan of Square D3 Phase 9

fragments of mudbrick covered the whole square. Sometimes this was recorded as separate collapse layers, especially where there were deposits or lenses of very black ash (10.8, 10.5), which suggest that quite severe fire accompanied the collapse, but it is unclear if the collapse was a single episode or a series. Tiplines visible particularly in the upper loci of trenches 2, 6 and 10 imply debris coming down the slope from Area A. Fragments of mudbrick and mudplaster in the collapse layers may have come from ceilings or roofs; the plaster was grey in colour, usually with one smooth side.

Above the collapse layers in trench 10 was a deposit of limestone chips mixed with pottery (10.2), which does not appear to be a collapse layer. During excavation it was tentatively interpreted as a deposit dumped from an area of bedrock which was being levelled. However, it was very localised: it appears in the unpublished section drawing of the north-east facing baulk of trench 10, but not in the immediately adjoining north-west facing baulk, where in its position was a deposit of stone, mudbrick and ash collapse (10.3).

These deposits were overlain by topsoil.

Square D3: summary and interpretation

The earliest evidence of human activity (Phase 1) was the laying of a plaster floor either directly on bedrock or on a deposit of green clay fill. A thin deposit of grey ash on the plaster floor represented the primary occupation. In trench 3, this was overlain by a second surface. Walls 19, 20 and 25 (Phase 2) were built over the Phase 1 occupation, forming the framework for a rectilinear structure without revealing a coherent plan. There was some evidence that the upper courses of the corner of Walls 19 and 20 were of mudbrick. A series of surfaces, some described as plaster floors, was associated with these walls (Phase 3). In trench 3 these were cut by an oven (F11). A small, single-course wall, Wall 21 (Phase 4), overlay one side of oven F11, and defined a small space between Walls 19, 20 and 21. Associated with this was another occupation phase (Phase 5), characterised either by two surfaces with associated occupation, or by a fill followed by a surface with its occupation. Phases 4 and 5 were not reflected in trenches 6–10. Wall 17 (Phase 6) joined the existing walls to form a rectangular room c. 7 x 3.50 m. in size, with Wall 26 partly dividing that space. A series of surfaces and occupation levels (Phase 7) was associated with the Phase 6 walls. A possible stone and plaster hearth or oven (F5) was built next to Wall 21, and a plaster trough (F15) next to Wall 26. Localised collapse of Walls 20 and 25 was found in trenches 6 and 9 (Phase 8). Following this collapse, Walls 22, 23, 27 and possibly 24 radically altered the plan by creating two very small closed rectangular rooms within the existing space (Phase 9). Between Walls 22 and 27 was a plastered curved trough and a plaster step (F19), and the surviving stones of Wall 22 were also stepped, but it is unclear if this was intentional. Wall 23 was a stone platform two courses high. No occupation layers associated with the Phase 9 structures were identified, and the whole trench was covered by a deep deposit of collapsed stones, ash, mudbrick and plaster (Phase 10). Some of the debris probably originated from the D3 structures themselves, but sloping tiplines imply that debris was also coming down the slope from Area A. A localised deposit of limestone chips in trench 10, apparently overlying the collapse layers, cannot be satisfactorily interpreted.

Square D3 appears to consist of one rectangular room enclosed by Walls 19, 20, 25 and 17, but this achieved a coherent rectangular plan only in Phase 6. In Phase 9 it was divided into much smaller rooms, one with a plastered trough and step. It is likely that beyond the walls of this room was external space. No surfaces were identified in trench 10, while the sequence in trench 2 also was very confusing and largely characterised by tiplines and disturbance.

The structural sequence presented here can be summarised as follows: a phase of occupation prior to the first walls; a phase of stone walls with some mudbrick superstructure; a small, single-course wall probably functioning as a space divider; stone walls creating an enclosed rectangular room; localised collapse; short walls and a stone 'platform' dividing the space into small rooms; followed by wholesale collapse and burning.

Area D: overall summary and interpretation

The nature of the architecture in Area D was quite different from the monumental buildings of Areas A and C and the fortifications, and it is probably to be interpreted as domestic architecture. Bennett identified these buildings as Iron II houses (1975: 7) and concluded that the whole terrace below Area A was a residential area built over with houses, laid out on much the same plan as those in Area B (1977: 6). The structures in Squares D2 and D3 were both rectangular and laid out on the same north-west/south-east alignment, but they were quite different in size. The D2 room measured c. 4 x 2.75 m., while the D3 room measured c. 7 x 3.50 m. The overall development of the structures in both squares followed the same pattern of open rectangular spaces gradually being subdivided into smaller rooms. The sequences in both squares ended with collapse and fire, probably overlain with collapsed debris and burnt material carried down the slope from Area A. It is likely that these destruction layers were contemporary.

Insufficient was excavated to conclude whether the structures in the two squares were individual, separate houses, or rooms forming part of the same building complex. The considerable difference in size between the rooms is a factor suggesting the latter, since we might assume that it would be unusual to find two adjoining houses of such different dimensions. If that was the case, it is likely that the building was expanded over a period of time, since the trenches to the south-east were not initially built on.

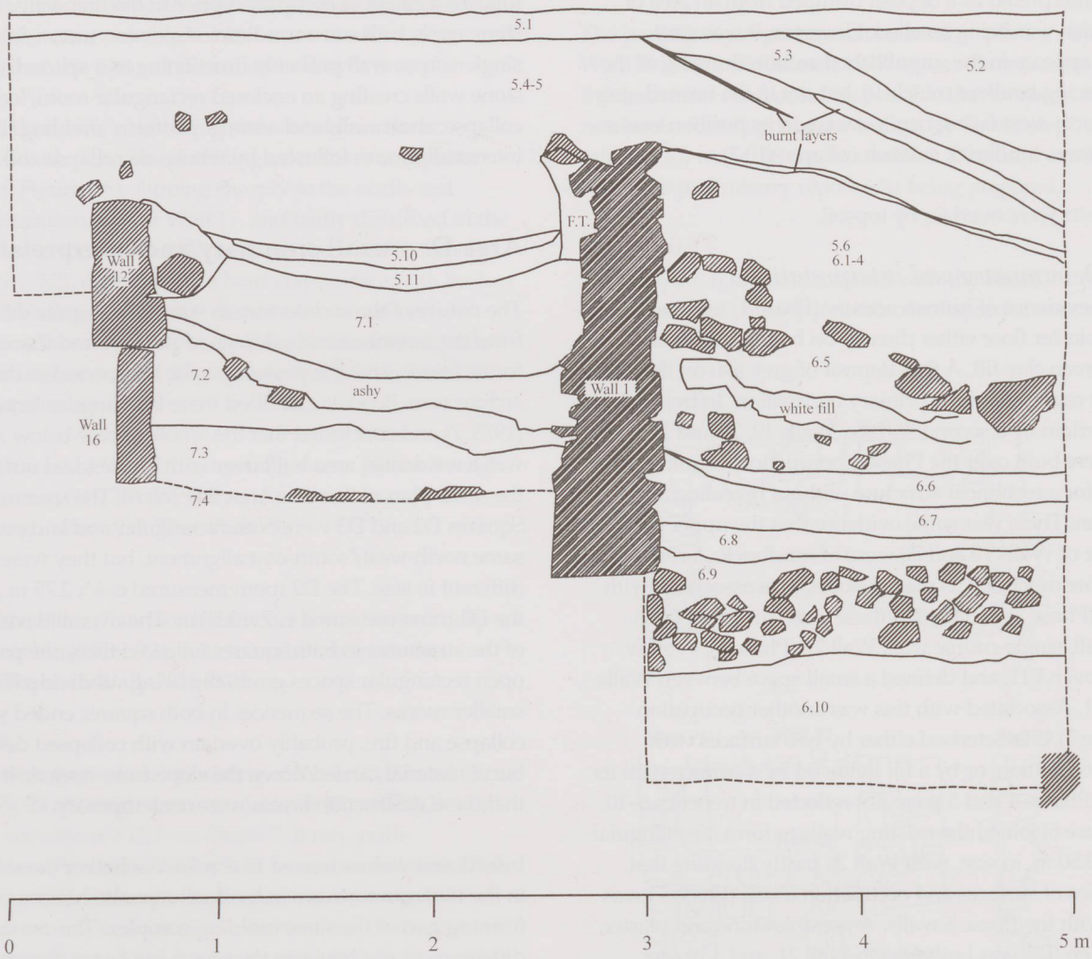
Although the evidence is not conclusive, it is likely that Phases 1 and 2 in D2 were contemporary with Phase 1 in D3. In both squares, the first human activity was the laying of a fill over bedrock. The sequence immediately above the Phase 1 fill in D2 trench 8 (Phase 2) was similar to that in D3 (Phase 1), just 3.20 m. to the south-east. The primary surface and occupation in both were unrelated to any walls, but were contemporary with the D2 Phase 1 structure. It is further possible that D2 Phases 3

and 4 were contemporary with D3 Phases 2 and 3, but after that it is impossible to correlate their phasing until the final collapse (D2 Phase 9, D3 Phase 10). Hart (1995a: 247) has commented that in residential areas like Areas B and D the process of building and rebuilding may have been continuous, and there is no reason to contemplate correspondence in the phasing between one building or one room and the next.

Very conjecturally, the Area D phasing can be correlated as follows:

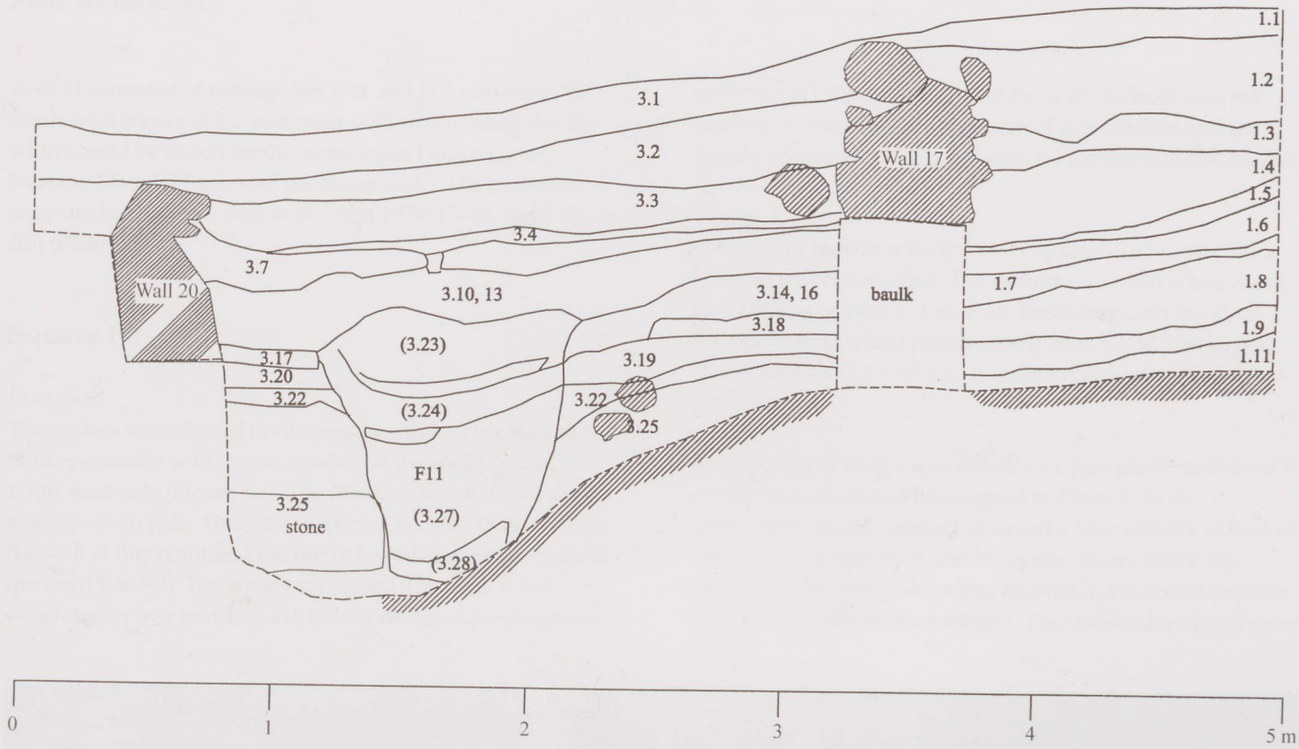
SQUARE D2	SQUARE D3
Phases 1–2	Phase 1
Phases 3–4	Phases 2–3
Phases 5–8	Phases 4–9
Phase 9	Phase 10

Figure 7.13: Section D1: Square D2, north-east facing



5.1: topsoil
5.2: red clay
5.3: light brown earth and stones
5.4–5: earth fill and burnt debris
5.10: plaster floor
7.1, 5.11: hard clay and stones
7.2: ?earth and mudbrick
7.3: hard clay
6.1–4, 5.6: collapse
6.5: collapse
6.6: burnt surface
6.7: grey with pottery
6.8: grey-brown gritty
6.9, 7.4: stone and clay fill
6.10: natural colluvium and bedrock

Figure 7.14: Section D2: Square D3, north-west facing



3.1, 1.1: topsoil
3.2, 1.2: collapse
3.4, 3.3, 1.4, 1.3: ashy deposits with clay or plaster, pottery and organic debris
1.5: hard brown clay
3.7: soft brown earth
3.10, 3.13, 1.6: hard gritty soil with ash, clay and plaster
F11: oven or pit
1.7: hard limy clay
1.8: brown clay with plaster
3.14, 3.16: hard lime surface
3.17, 3.18: hard lime surface
3.19, 3.20: surface
3.22, 1.9: plaster
3.25, 1.11: green clay and loose light brown earth

8. AREA H

Piotr Bienkowski

Area H consisted of two squares (H1 and H2) cut across the north-west corner of the perimeter wall surrounding the site, which could be traced on the surface (see Figure 1.2 for location; Plate 1.2 for line of perimeter wall). The area was excavated in the 1972 season (Bennett 1974: 13–18, figs 8–11, pl. IIB) (Plates 8.1–2).

Square H1

Location

This square was aligned north-west/south-east across a stretch of the perimeter wall, approximately at the mid-point of its north-west side (Figure 8.1). The objective was to test if there was a postern gate. This was suspected because of an offset in the wall at this point and the use of heavy and partly worked quoins (Plate 8.3). The square measured 8.5 x 3 m. It was excavated in two trenches, H1.1 east (inside) of the perimeter wall, and H1.2 west (outside) of the wall. Bedrock was not reached, so the complete sequence of construction and use cannot be reconstructed (cf. Figure 8.2 for stratigraphic matrix).

Phase 1

The earliest human activity in this square is unknown, since bedrock was not reached. The earliest excavated activity was the building of Wall 1, 4 m. wide (including both faces), of coursed rubble with a rubble core (Plates 8.3–5). The largest stones measured 1 x 0.75 m. It is not known what Wall 1 was built on.

It is not clear if Wall 1 was rebuilt in a later phase, or if all of the surviving wall should be assigned to Phase 1. In the preliminary report, Bennett assumed a later rebuild, at least of the inner face, narrower and of smaller stones (1974: 13). However, the section drawings and notebook do not provide conclusive evidence for a rebuild. The section drawing (Figure

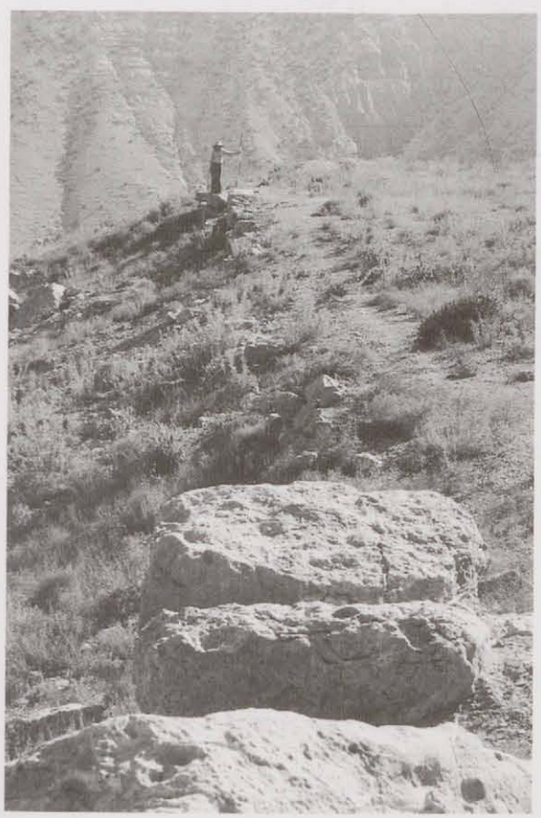


Plate 8.1: General view of Area H, looking north-east, along north-west perimeter wall

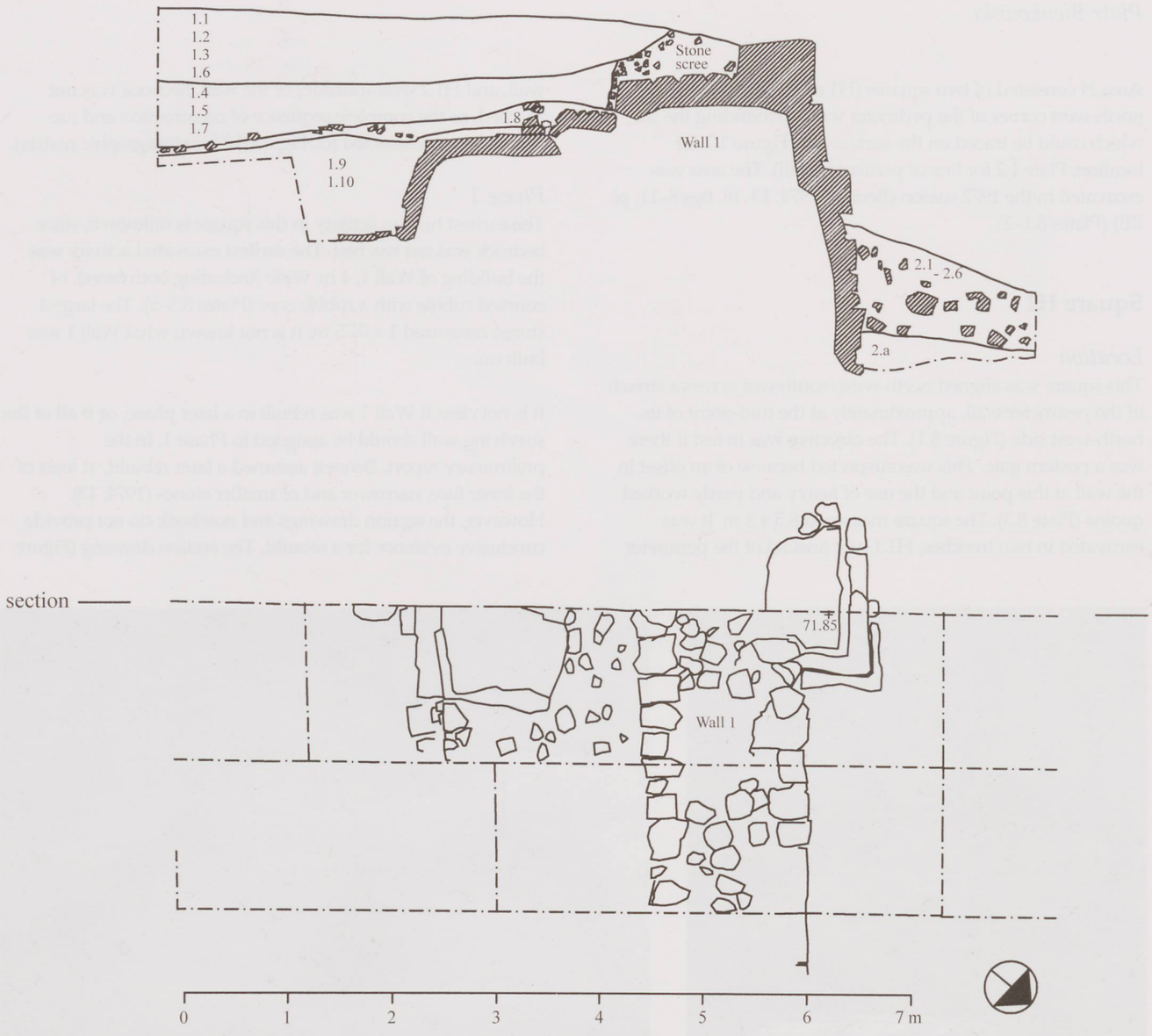


Plate 8.2: View from Square H1, looking north-west



Plate 8.3: H1 Wall 1 looking east, with offset on right

Figure 8.1: Plan and north-east facing section of Square H1



1.1, 1.2, 1.3, 1.6: topsoil
1.4, 1.5, 1.7: stony earth
1.8: grey earth
1.9, 1.10: hard white gritty
2.1, 2.6: stone collapse
2.a: white material (?plaster)

Figure 8.2: Stratigraphic matrix of Square H1

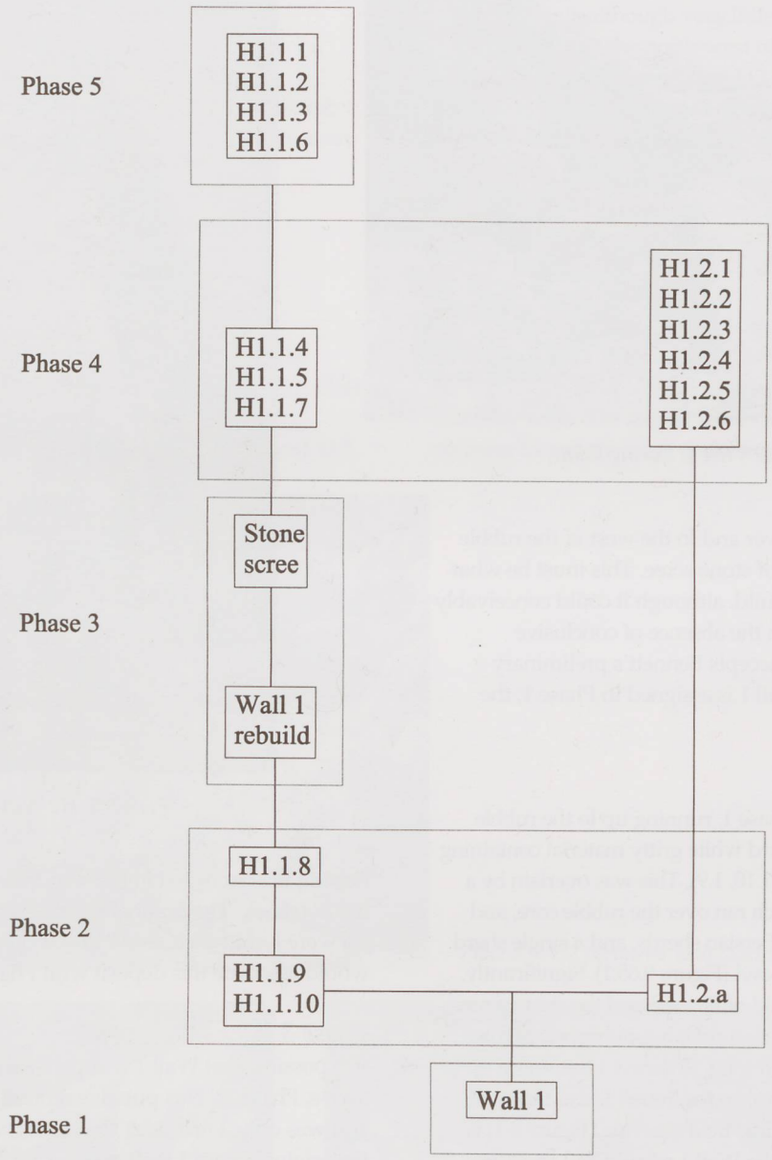




Plate 8.4: H1 Wall 1, looking south



Plate 8.5: H1 Wall 1, looking north

8.1) shows a course of wall over and to the west of the rubble core, covered with a deposit of stone scree. This must be what Bennett referred to as the rebuild, although it could conceivably be part of the original wall. In the absence of conclusive evidence, the present writer accepts Bennett's preliminary phasing: thus the original Wall 1 is assigned to Phase 1, the rebuild to Phase 3.

Phase 2

Against and over Wall 1 of Phase 1, running up to the rubble core, was a deep deposit of hard white gritty material containing many Iron II/Persian sherds (1.10, 1.9). This was overlain by a thinner grey deposit (1.8) which ran over the rubble core, and which also contained Iron II/Persian sherds, and a single sherd from a Nabataean fine ware bowl (Figure 9.65:1). Significantly, 1.8 ran under the Wall 1 rebuild of Phase 3 and the stone scree: note that the version of the section drawing published in the preliminary report (Bennett 1974: fig. 9) shows 1.8 running up to the stone scree, which would make the 'rebuild' and the stone scree earlier than 1.8. The original field drawing (Figure 8.1) is quite clear that 1.8 ran under the Wall 1 rebuild and the stone scree, which makes them later. It is likely that the section published in the preliminary report was altered in order to accommodate the presence in 1.8 of a Nabataean sherd. Nevertheless, it is possible that the single Nabataean sherd was associated with the Phase 3 scree and the rebuild, or was a stray from Phase 4 deposit 1.7, since otherwise all the evidence for the Phase 2 use of Wall 1 suggests that it is Iron II/Persian.

It is conceivable that 1.10 and 1.9 were surface make-up, and 1.8 an occupation deposit on the surface. However, this does not explain why 1.10 and 1.9 ran over Wall 1, or why 1.8 ran over the rubble core. If the course of Wall 1 above the rubble core is a later Phase 3 rebuild, then there is no surviving part of the Phase 1 wall which 1.8 could have run up to. It is possible that the Phase 3 rebuild removed parts of the Phase 1 wall.

West of Wall 1, a deposit of white material (2.a) sloped down the hill from the outer face of the wall. This deposit contained no pottery, but was described in the preliminary report as 'two successive plaster surfaces associated with the wall' (Bennett 1974: 13). It is not clear if this material was plaster, and only one deposit was recorded in the section drawing (Figure 8.1) and the notebook. The original records note that on the surface of 2.a were found exclusively Iron II/Persian sherds, which would associate this deposit with Phase 2.

Phase 3

It is possible that Wall 1 was partly rebuilt on its inner face (see above, Phase 1). This putative rebuild lay on 1.8 from Phase 2 and was only 2 m. wide. The stones were smaller than those of the original Phase 1 wall, measuring on average 0.25 x 0.25 m. They were covered by a deposit of small loose stones, described in the records as 'stone scree', whose function is unknown.

The Phase 3 rebuild cannot be precisely dated: it lies between Phase 2 (probably Iron II/Persian, although cf. the Nabataean sherd in 1.8) and Phase 4 (mixture of Iron II/Persian and Roman), and so it can be dated only broadly between the Iron II/Persian and Roman periods.

Phase 4

Over 1.8 from Phase 2, and against the stone scree of Phase 3 was a deposit of stony earth (1.7, 1.5, 1.4), containing a mixture of Iron II/Persian, Nabataean and Early Roman pottery. This is interpreted as an accumulation against the Phase 3 wall, probably mixed with collapse from the wall.

West of Wall 1, there is a deeper deposit of larger stones collapsed from the wall (2.6–2.1), also containing a mixture of Iron II/Persian and Roman pottery, which should probably be associated with Phase 4.

The Early Roman pottery from Phase 4 dates to the first-second centuries AD (cf. Bennett 1974: 13). None of this Phase 4 pottery was drawn, and it is not illustrated in Figure 9.65.

Phase 5

Overlying Phase 4 was a deep deposit of topsoil (1.6, 1.3, 1.2, 1.1). This contained a mixture of Iron II/Persian, Early Roman and Late Roman pottery.

Square H2

Location

This square was aligned south-west/north-east across the extreme northern corner of the perimeter wall (Figure 8.3; Plate 8.6). The objective was to examine the massive wall at its corner, to test if it might be a tower. The square measured 13.5 x 6.25 m. It was excavated in three trenches: H2.1 at the actual corner, inside the wall; H2.2 to the south-west of H2.1, also inside the wall, although very little data was recorded from here; and H2.3 to the north-west of the corner of the wall and outside it. Only one deposit of H2.3 was excavated, H2.3.1, corresponding to stones fallen from the wall. Bedrock was not reached in H2, so as with H1 the complete sequence of construction and use cannot be reconstructed (cf. Figure 8.4 for stratigraphic matrix).

Phase 1

As in H1, the earliest human activity in H2 is unknown, since bedrock was not reached. The earliest excavated activity was the building of Wall 2, of coursed rubble with a rubble core (8.7–9a, b). The wall proper was 2.5 m. wide; including the rubble core it was 5 m. wide. The largest stones measured 1 x 1 m. Unlike H1, no inner face of the wall, enclosing the rubble core, was found,

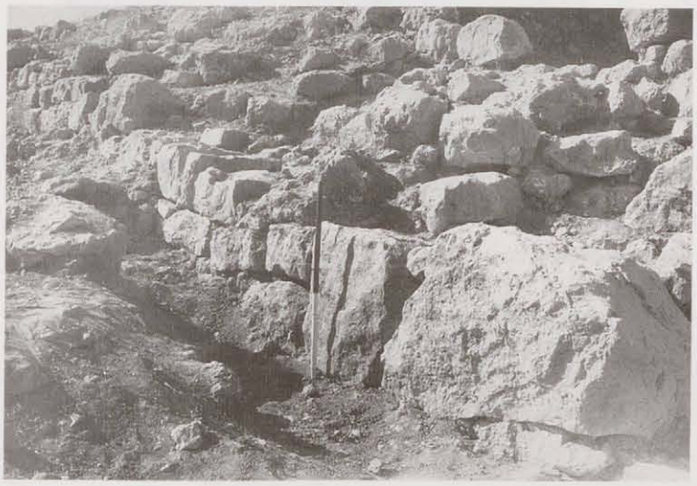


Plate 8.6: H2 perimeter wall looking south-east

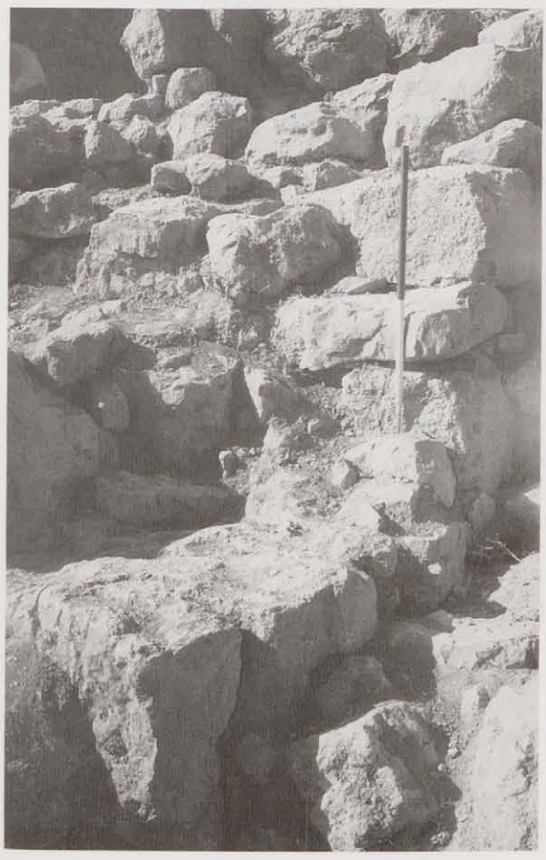
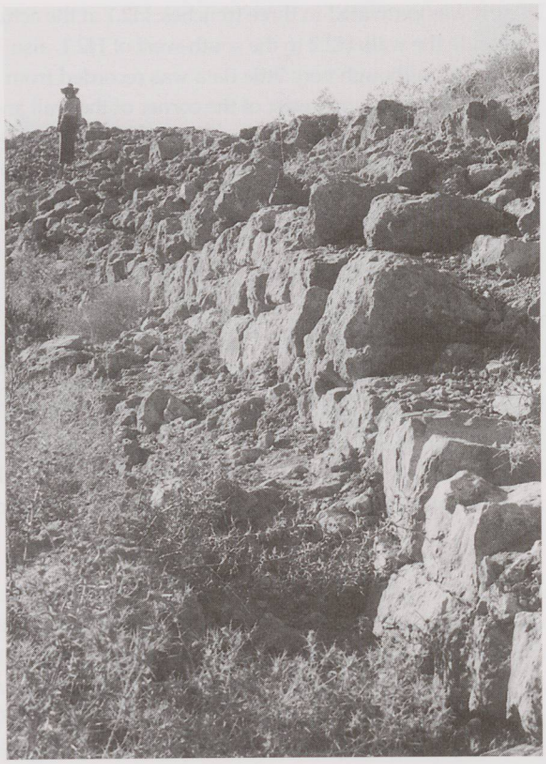


Plate 8.7: H2 Wall 2, north corner, looking south



Plate 8.8: H2 Wall 2, looking north





Plates 8.9a, b: H2 Wall 2, looking south-east towards Area A

but it is possible that this remains hidden in the unexcavated portion of H1.1. It is not known what Wall 2 was built on. Seven courses of the wall were revealed, to a depth of 2.40 m. (not 3.40 m. as in the preliminary report, Bennett 1974: 13). Unlike Wall 1 in H1, no evidence was found of a rebuild in a later phase.

Phase 2

Against and over Wall 2, running over the rubble core, was a deep deposit of hard white gritty material (1.11, 1.10, 1.7), containing only Early Roman sherds. Bennett identified this as a floor surface (1974: 13). Stratigraphically, and in terms of the description of the deposits, this apparently corresponds to Phase 2 in H1; however, H1 Phase 2 contained mainly Iron II/Persian sherds, with a single Nabataean sherd, while H2 Phase 2 contained only Early Roman sherds.

If Phase 2 is a surface, or surface make-up, then there is no occupation deposit that can be associated with that surface.

Phase 3

Wall 3, a transverse wall of small stones, only 0.5 m. wide, was apparently built on 1.7 from Phase 2. Only a 1.5-m. length of Wall 3 was excavated. However, the base of Wall 3 was not excavated, and in fact it remains unclear to which phase it belongs. It is just possible that the stones of Wall 3 continue below 1.7 to the unexcavated portion of H1 (see section, Figure 8.3).

Phase 4

No occupation deposit appears to be associated with Wall 3 of Phase 3. Overlying Wall 3 is a white stony deposit (1.6), apparently similar to the material of Phase 2. To the south-west, a deposit of similar material (2.6) probably corresponds to this phase (H2.2 was not excavated below H2.2.6, so its precise relationship with Wall 2 is uncertain). However, the function of these Phase 4 deposits is unclear. The only sherds associated with them were Early Roman.

Phase 5

Towards the northern corner of Wall 2, a deposit of stone collapse (1.8, 1.9) overlay 1.6 from Phase 4. To the south-west, a deposit of stone collapse (2.4, 2.5) overlying 2.6 probably corresponds to this phase. The collapsed stones came either from Wall 2, which may still have been standing at this time, or from Wall 3. The only sherds found within Phase 5 were Early Roman and Nabataean.

Phase 6

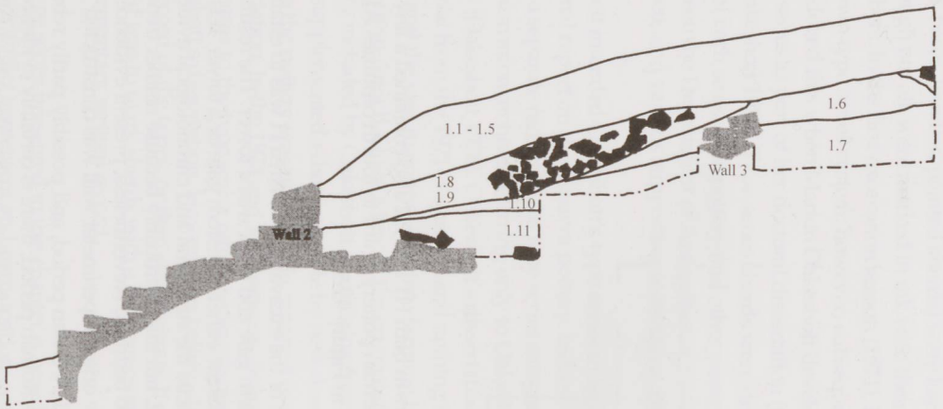
Overlying Phase 5, and directly over 1.6 from Phase 4, was a deep deposit of topsoil (1.5–1.1, 2.3–2.1). This contained a mixture of Iron II/Persian, Nabataean, Early Roman and Late Roman pottery.

The excavation notebooks also refer to loci 1.12, 1.13 and 1.14, which cannot be precisely located using the existing records, but seem to have been localised and were probably part of the topsoil deposits.

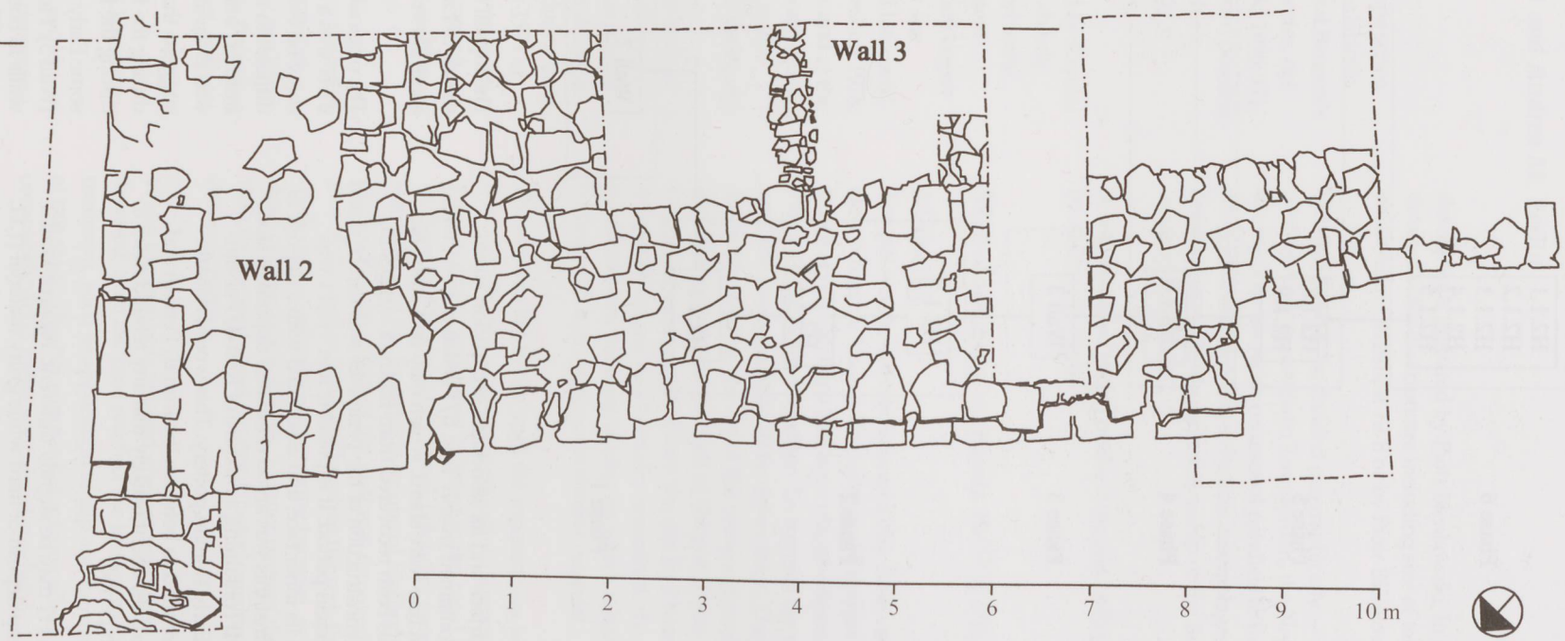
Area H: overall summary and interpretation

Bedrock was not reached in either H1 or H2, so the complete sequence of structural activity is unknown. In both squares, the earliest excavated evidence was the building of the perimeter wall (H1 Wall 1, H2 Wall 2), of coursed rubble with a rubble core. In H1, against Wall 1 was a deposit of hard white gritty material (1.10, 1.9) overlain by a thin grey deposit (1.8), possibly

Figure 8.3: Plan and north-west facing section of Square H2

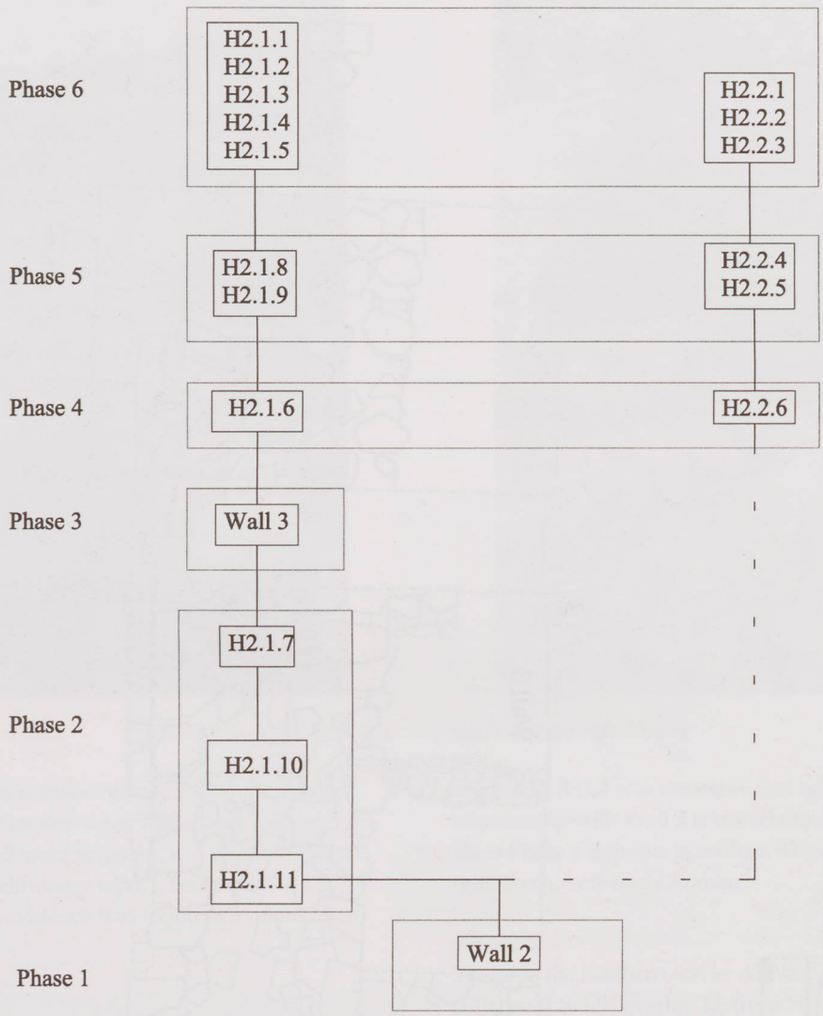


section ——



1.1–1.5: topsoil
1.8, 1.9: stone collapse
1.6: white stony
1.7, 1.10, 1.11: hard white gritty

Figure 8.4: Stratigraphic matrix of Square H2



representing a surface and its associated occupation layer. These deposits contained mainly Iron II/Persian pottery, with a single Nabataean fine ware sherd, which may be a stray. No earlier pottery has been recovered from Busayra, suggesting that the original construction of the perimeter wall can be dated to the Iron II/Persian period. It is possible that Wall 1 was partly rebuilt on its inner face, and associated with a deposit of stone scree. Against this was an accumulated deposit of stony earth (1.7, 1.5, 1.4) containing a mixture of Iron II/Persian, Nabataean and Early Roman pottery. This would date the putative Wall 1 rebuild to between the Iron II/Persian and Early Roman periods, and it is likely that any rebuild dates to the Early Roman period.

The sequence in H2 may be slightly different. Against Wall 2 was a similar deep deposit of hard white gritty material (1.11, 1.10, 1.7), but containing exclusively Early Roman sherds. Wall 3, a small transverse wall, was built on 1.7. Wall 3 was overlain by another white stony deposit (1.6, 2.6), whose function is unclear. This was overlain by a deposit of stone collapse (1.8, 1.9, 2.4, 2.5). These deposits contained exclusively Early Roman and Nabataean pottery.

The topsoil layers in both H1 and H2 also contained a few sherds of Late Roman pottery (third to fourth centuries AD), some illustrated in Figure 9.65.

The original aim of the excavations in Area H was to establish if H1 was a postern gate and if H2 was a tower. The results show no evidence for either a postern gate or a tower. It is difficult to reconcile the structural and chronological evidence from H1 and H2, but this is probably because neither trench was excavated to bedrock. Nevertheless, present evidence suggests that the original perimeter wall was constructed during the Iron II/Persian period, and possibly partly rebuilt during the Early Roman period; there is certainly evidence for some Early Roman-period building activity along the wall line (Wall 3). However, it cannot be discounted that the earliest walls in both H1 and H2 date to the Nabataean/Early Roman period, taking into account the single Nabataean sherd in H1 Phase 2.

A few Late Roman sherds in topsoil layers indicate some use of the area in that period, but are not evidence of any new construction.

9. THE POTTERY

Piotr Bienkowski
with contributions by Marion F. Oakeshott and Andrea M. Berlin

Introduction

This chapter presents the Iron II/Persian pottery type series, and a small amount of Nabataean, Roman and Late Islamic pottery found mostly in unstratified contexts. Crystal Bennett's plan was to publish the Busayra pottery as a type series, not contextually, as at Tawilan (Bennett and Bienkowski 1995: 17). Nevertheless, in addition to the type series, it has been possible to produce phased assemblages from Area C, which are published in Chapter 6 alongside the stratigraphy (cf. comments in Chapter 1).

During the excavations, all the pottery was checked by Crystal Bennett (and/or by Marion Oakeshott). Diagnostic sherds (rims, bases, handles, painted sherds) were kept, and some, although not all, were marked in ink with their context numbers. In the first excavation season (1971), Bennett began her own type series system; however, subsequently she abandoned this when Marion Oakeshott developed her own type series as part of her doctoral dissertation (Oakeshott 1978; cf. Oakeshott 1983). Type series sherds were drawn, and at the end of each season the pottery and other material were divided between the Department of Antiquities of Jordan, Crystal Bennett, and various supporting institutions all over the world.

Bennett intended Oakeshott's type series to form the basis of the final report on the Busayra pottery. Indeed, she did not keep a separate record of the type series categories as part of the excavation archive, referring only to Oakeshott's doctoral thesis (Oakeshott 1978). Oakeshott's dissertation included only material from the 1971–3 seasons, and nothing from 1974 or 1980, and the vast majority of pottery forming her type series came from Area B. Quite a few of the original drawings of pottery included by Oakeshott are missing from the archive, now supplemented where possible by new drawings, or, where the pottery was unavailable, scanned from her dissertation. In the 1974 and 1980 seasons, Bennett continued to add forms to the type series which were not represented in Oakeshott's dissertation. However, as before, she did not keep any record of the types, or their descriptions. It seems that all she did was to mark sherds with a type series number, with no supplementary written record.

The type series presented in this chapter is based on Oakeshott (1978), with her agreement and participation, with modifications, parallels and discussion by Piotr Bienkowski. Sections on manufacturing methods, ware types and decorative motifs are taken from Oakeshott 1978, with some modification by Piotr Bienkowski. Ware descriptions of pottery illustrated by Oakeshott have been adapted from Oakeshott 1978. Certain illustrated sherds have no associated ware descriptions, in cases where drawings not previously published by Oakeshott were found in the excavation archive with no written description. Other ware descriptions are taken from the finds register, but usually these are not very detailed. New drawings have ware descriptions prepared by Piotr Bienkowski. In general, any detailed ware descriptions, including size of temper grits, are either from Oakeshott 1978 or by Piotr Bienkowski.

Parallels have been divided geographically – northern Edom, southern Edom, northern Transjordan, the Negev, and southern Judah (with occasional parallels to the well-stratified and published Iron II and Persian assemblages at Gezer) – in order to show clearly the relationship of the Busayra pottery to neighbouring areas.

A self-contained report on the Attic and Hellenistic pottery is by Andrea M. Berlin.

Manufacturing methods (MFO/PB)

Method A

The pot was built in sections on a clay base, on a turntable (or slow wheel; cf. Homès-Fredericq and Franken 1986: 169–70). When several sections had been placed one on top of the other they were smoothed together. To support the weight of the wall, the lower part had to be rather thick. The rim was then shaped by folding the top of the section inwards and smoothing it against the wall of the pot; it was then often folded outwards again. When the rim had been shaped and the interior of the pot had been dry-smoothed, the pot was removed from the lump of clay on which it had been built by cutting with a string or some similar material.

The pot was left to dry until the top part was leather-hard. At this stage the rim was strong enough to support the weight of the pot, which was either inverted in the hand in order to finish the base by Method 1 (see Bases, below) or inverted on the turntable and the base made by one of Methods 2–5. Excess clay on the lower part of the wall was removed by turning. If part of the wall is much thicker than the rest, the pot is liable to crack during either drying or firing because, as the damp clay dries out, the fabric shrinks. Thinner parts of the wall dry faster than thicker parts, and so shrink faster, causing stress on the different parts.

When the base was finished, the pot was left to dry, still inverted, until the base reached the leather-hard state. Surface treatment, such as application of slip and burnishing, was done at this stage. The pot was ready for firing when it had completely dried to the white hard condition.

Method A was used for all types of vessels with the exception of cooking pots A and B and possibly D, and jugs A and E. The possibility should be noted that the thin-walled bowls (bowls J and K) were made or re-shaped using a heavy and fast wheel, which would suggest a transition from turning pottery to the general use of the true fast wheel (Homès-Fredericq and Franken 1986: 169).

Method B

The lower part of the pot was moulded. A sheet of clay was rolled out to an even thickness and then pressed into a hollow mould or over a hump mould. When this part of the pot was sufficiently dry it was removed from the mould, the top of the pot was added to it in sections and the rim was shaped. This method was used for cooking pots A and B and possibly D.

Method C

Some small vessels, notably juglets, were made by a method that amounts to throwing. The clay used at Busayra was too lean for true throwing, and it is unlikely that the type of wheel used was suitable for throwing large vessels that were not cylindrical. However, it is possible to produce narrow vessels by a throwing technique, as this shape of vessel does not induce much outward stress on the clay. The potter would probably make several pots in succession from one lump of clay centred on the wheel. After each pot was made it was left to dry to the leather-hard state and returned, inverted, to the wheel for surface treatment. This method was used for jars E and jugs A and E.

Bases

The following methods of shaping bases were used at Busayra:

1. The pot was cut free below the inside of the base. While the vessel was held upside down in the hand, the outside of the base was adjusted by scraping and dry-smoothing. This method is appropriate only for small vessels, and was used for bowls L and lamps.

2. The pot was cut free below the inside of the base. It was then either returned to the wheel, inverted and the base turned, or the base was left rough. This method was used for smaller bowls (A, J, K, O, P, Q and S), jars E, smaller jugs (A and H), and lids.

3. The pot was cut free, leaving the base open (perhaps accidentally). The pot was then inverted on the wheel and a coil of clay was added to make the opening in the base smaller. The pot was then turned the right way up and a piece of clay was pressed over the hole on the inside. Finally a piece of clay was smoothed over the outside. This method has been identified only on one example, a jar (Oakeshott 1978: pl. 38:21).

4. The pot with open base was inverted on the wheel. A coil of clay was added and then grasped and twisted, thus sealing the base. The exterior of the base was then smoothed but a small hollow remained on the inside. This method is most suitable for cylindrical vessels and was used for jugs E.

5. The pot with open base was inverted on the wheel. A coil of clay was added, as in Method 4, and twisted and pushed down at the same time. The base exterior was then smoothed. Unless the interior of the base is subsequently smoothed, an umbilicus remains on the inside of the pot. This method was used for larger vessels: bowls B, C, D, E, F and N and jugs B, and would probably have been used for bowls M and R, for which no bases are extant.

6. The pot was pinched off the cone of clay while the wheel was turning, producing a closed base. The pot was later inverted on the wheel and turned. This method can only be used for small jugs and similar narrow-based vessels and is the complement to manufacturing Method C (above).

Ring bases: Any of these bases can have a ring base attached. Where there was surplus clay at the base of a vessel, the ring was usually made from this by trimming away clay from inside and outside the ring to be formed. A separate coil of clay can also be added.

Turned bases: Bowl bases made by Method 2 are frequently turned with considerable care, producing a very smooth, lustrous surface. This treatment of the base is generally associated with similar treatment of the whole of the exterior and interior of the bowl. The technique is a diagnostic criterion of bowls A3a, B4, J, K and O.

Rims

The normal method of manufacturing rims was to make a single inward fold followed by smoothing and frequently by one or more outward or inward folds and subsequent surface treatment.

Ware types (MFO/PB)

The clay used for most of the Busayra pottery contains a high proportion of iron, which gives the pottery its red colour when oxidised; it also contains a considerable quantity of calcareous material. The presence of calcite lowers the maturing range and melting point of the pottery. The maximum temperature to which pottery of this kind can be fired is c. 850–900 degrees C. If the temperature rises to near 1,000 degrees C. the fabric changes colour to a greenish white, and can show signs of vitrification. During firing, the calcite molecule loses water up to 250 degrees C., but thereafter as the temperature rises it absorbs water and oxygen, and will eventually explode. If there is a substantial quantity of large pieces of calcite in the clay, the pot may be broken as a result of this reaction. More commonly, 'popping' occurs at the surface, leaving pits in the surface of the fired pot. The available materials used for firing the kiln, mainly brushwood, minimised the possibility of high temperatures being reached. The maximum kiln temperature was reached quickly and maintained for a fairly short time. Thicker pot walls (5 mm. and above) almost always have a grey or black unoxidised core as a result. Firing was somewhat uncontrolled, as evident in the wide range of colours frequently present on a single pot.

Ware 1

This is the fabric most commonly used at Busayra, and all vessels were made from it except where specified below. The surface colour ranges through red, pink, buff, brown, orange, yellow and grey. The core is usually grey, but sometimes one or more of the surface colours. The temper is usually about 2 mm. in size, but is frequently 0.25 mm. or smaller, or as large as 5 mm. The most common inclusion is calcite, followed by basalt, quartz and grog; mica, vegetable matter (chaff or perhaps dung) and shale were also used. In general, the particle size of inclusions in any pot is variable within the limits given above, and would thus seem not to have been sieved.

The 'fine ware' of bowls J and K is ware 1, always well levigated. Inclusions are in the smallest size range, rarely larger than 1.5 mm., and were almost certainly sieved.

Ware 2

This clay contains little calcite and much basalt.

Ware 2a: with quartz: Surface firing colour ranges from pink to buff, white to green, pink to grey. The core is pink, yellow, brown or grey. This ware is used principally for jugs B (which are also found in ware 2b), and occasionally for bowls. The temper is usually c. 3 mm. in size.

Ware 2b: without quartz: The surface firing colour ranges through cream, pink, white, green and grey; the core may be cream, white, green, pink or grey. This ware is used principally for jugs B, and for some bowls. The temper size is c. 3 mm.

Ware 3

Clays with high silica content. All these wares are rather lean and unsuitable for throwing, and plasticity is further reduced by the addition of temper. They are strongly adhesive, so that handles do not easily become detached. The slip applied before firing also adheres well.

Ware 3a: calcite is rare; quartz predominates: The surface colour ranges from pink to cream to yellow; the core is pink, cream or grey. Temper is generally small, up to 2 mm., mainly quartz, with smaller quantities of mica, occasionally grog, and some calcite. This ware is uncommon, and restricted to bowls.

Ware 3b: 'white ware'; usually with lime: The surface colour ranges from white to cream to buff; the core is white, brown, cream, pink or pale grey. The temper is predominantly quartz; calcite, basalt, vegetable matter and mica also occur, the latter frequently in profusion. The temper is usually fine, from 0.25 mm. and smaller up to 2 mm. Bowls S, jugs D and most lids are made only from this fabric. Instrumental neutron activation analysis of one sample of this ware indicated that it originated in the Wadi Arabah, and not at Busayra (see Appendix 1: BUS 5).

Ware 3c: 'cooking pot ware'; highly siliceous: The surface is fired red, black, brown, orange, grey or pink; the core is orange, grey, black, brown or pink. The temper consists mainly of quartz; other inclusions are calcite, basalt and grog. Temper size is normally in the range 0.5 to 3 mm., but occasional large pieces up to 6 mm. occur.

Black-burnished ware

Visually this appears to be a variation of Ware 1, but fired uniformly black or dark grey, and always burnished. Black-burnished ware is found at many sites throughout Jordan, for example at Tawilan (Hart 1995b: 59–60), Tall al-'Umayri (London, Plint and Smith 1991: 437), Tall Jawa (Daviau 1997a: 28) and Tall Jalul (personal communication R.W. Younker and J. Groves). Hart (1995b: 59) considered it to be 'non-Edomite', while London, Plint and Smith (1991: 437) compared some examples from Tall al-'Umayri with Assyrian 'palace ware', but thought another example was locally produced. Daviau (1997a: 31 n. 30) argues for local production of this ware in Ammon. Examination of many examples from Busayra and Tall Jalul by one of the writers (PB)[1] suggests that in most cases it is a variation of a local ware. The pottery types produced from black-burnished ware are identical to those produced in other wares, and examination of the fabric under magnification shows that the clay and inclusions are identical to local wares, the only difference being the firing in a reducing atmosphere (without oxygen), and the burnishing. Nevertheless, instrumental neutron activation analysis of one sample of black-burnished ware found at Busayra indicates that it originated in the Petra area, in the vicinity of Umm al-Biyara and Tawilan (see Appendix 1: BUS 10). Thus, while it does appear to be a ware local to Edom, it is not local to Busayra. Figure 9.64 illustrates a group of black-burnished ware bowls from Busayra, but other examples are also included among the type series, in Figures 9.15: 5, 10, 11, 15; 9.18: 7–9; 9.19: 4; and 9.35: 18. At Busayra, black-burnished ware seems to have been restricted to bowls, which were also made in other wares.

The Iron Age II/Persian pottery (type series adapted from Oakeshott 1978: 28–58)

Note that Oakeshott included theoretical categories that were not actually found at Busayra, e.g. Bowls A3b, 'platters with turned base and grooved rim' (Oakeshott 1978: 30). In these instances, the category has been omitted from the type series, but her type series numbers have been retained; so, in this example, there is a gap between Bowls A3a and Bowls A3c.

Bowls

Bowls Type A: Platters

Made by Method A with Base type 2.

A1: PLATTERS WITH RING BASE

The ring base is normally shaped from the excess clay of the untrimmed base of the platter. When the ring has been pinched into shape the interior of the ring and the wall outside the ring are turned. A1 platters are usually decorated.

A1a: platter with ring base and straight, rounded rim
The rim was folded inwards to neaten the edge, and smoothed off. The rim diameter is between 16 and 22 cm., average 18 cm. Many A1a platters are decorated with simple linear designs in slip, usually red and black. A small proportion is ring-burnished.

A1b: platter with ring base and straight, grooved rim
The rim was folded first inwards, then outwards, smoothed off, and a groove was made on the outer edge with a pointed implement. Other details as A1a.

A1c: platter with ring base and rim turned down
After the rim edge had been folded back, the tip was drawn

[1] Thanks to Randall Younker and Jennifer Groves for making available the pottery from Tall Jalul for study prior to its publication: the pottery was studied at Andrews University, Berrien Springs, MI, in November 2000.

Figure 9.1: Bowls A1a, A1b

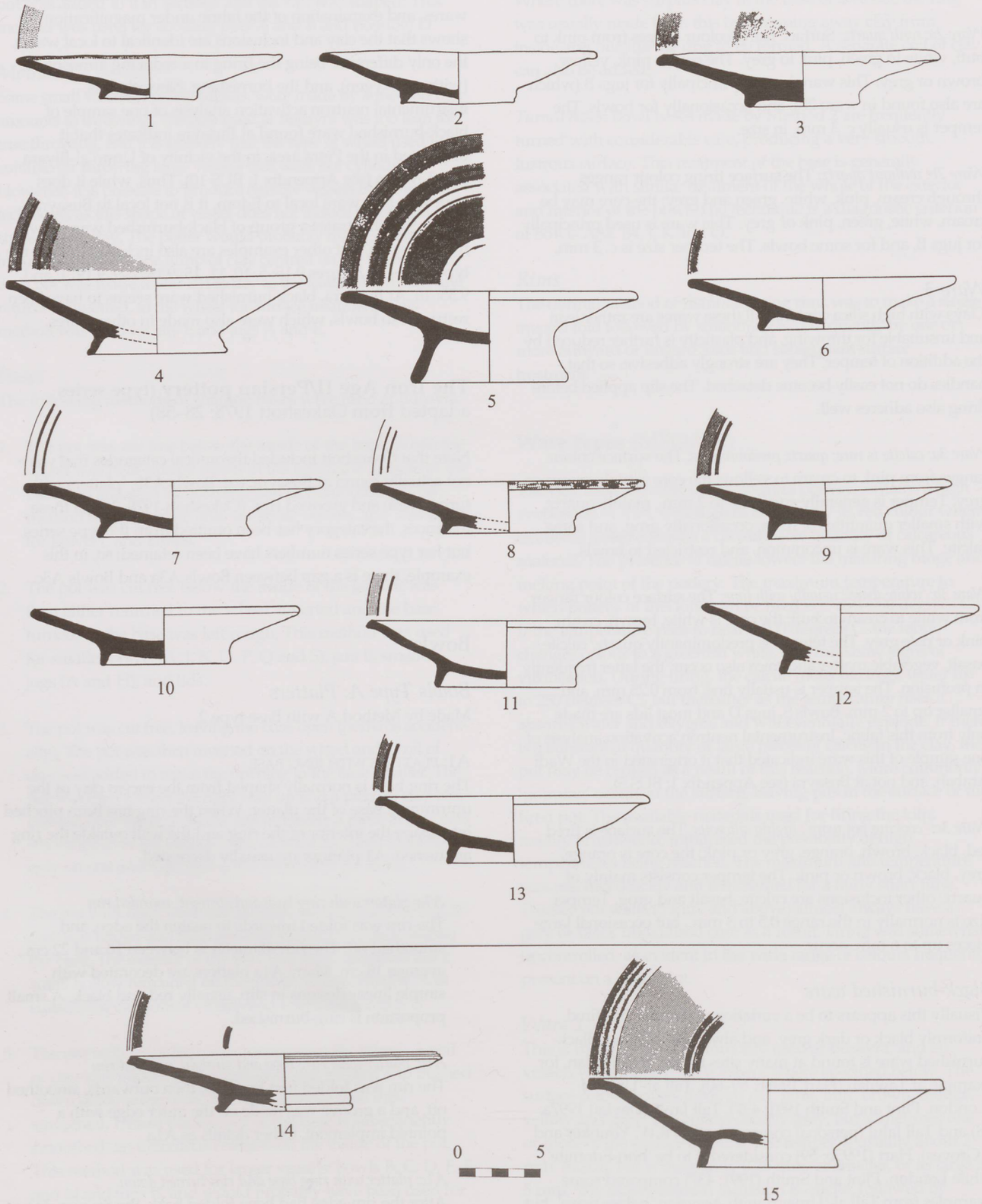


Figure no.	Type	Register/TS no.	Locus	Description
1	A1a	R1222	A8.1a.6	Fired buff-orange; lime and grog temper. Black patch on interior; rim painted with red band inside.
2	A1a	R1223	A8.1a.6	Fired buff-pink; interior lime encrusted; large lime temper.
3	A1a	R246	B3.2.6	Fired yellow; core pink. Temper up to 4 mm., including lime. Some pitting. Dry-smoothed in and out. Inside burnished in bands c. 4 mm. broad: not shiny. Bands of red on rim and centre inside.
4	A1a	R713	B2.7.2	Fired red; core pink. Temper up to 2 mm.: grog, quartz; some lime and vegetable. Bands and lines of red and black.
5	A1a	R901	B7.4.2	Fired buff. Lime temper. Rim painted in red and black bands; interior painted with red and black lines.
6	A1a	R914	B7.4.5	Fired pink-buff. Rim shows red slip.
7	A1a	R924	B7.4.6	Fired grey. Lime and ?basalt temper. Interior painted white, two black lines on rim. Broken in antiquity and repaired.
8	A1a	R964	B5.1.2	Fired buff. Large grey grits on interior. Rim painted with orange band and two black lines.
9	A1a	R977	B7.3.6	Fired pink. Lime temper. Rim painted red; two black bands on interior.
10	A1a	R982	B3.6.+	Fired creamy buff. Lime and ?basalt temper. Faint traces of red paint on rim and ring of red paint just visible halfway down interior.
11	A1a	R984	B3.6.+	Fired buff. Lime and ?basalt temper. Rim painted with orange band, two black lines on interior.
12	A1a	R986	B3.6.+	Fired orange-buff. Lime temper. Faint traces of red paint on interior rim.
13	A1a	R988	B3.6.+	Fired buff. Lime temper. Rim painted on interior with orange band and two black lines.
14	A1b	R1059	B10.3.8	Fired pink. Lime temper. Folded rim with red paint in fold; traces of red paint on interior of rim; traces of black paint near base.
15	A1b	R514	B3.4.3	Fired cream. Temper up to 2 mm.: lime, basalt. Upper part inside burnished over brown slip; lower part inside uneven. Black lines on rim and inside.

Figure 9.2: Bowls A1c, A1d, A1e

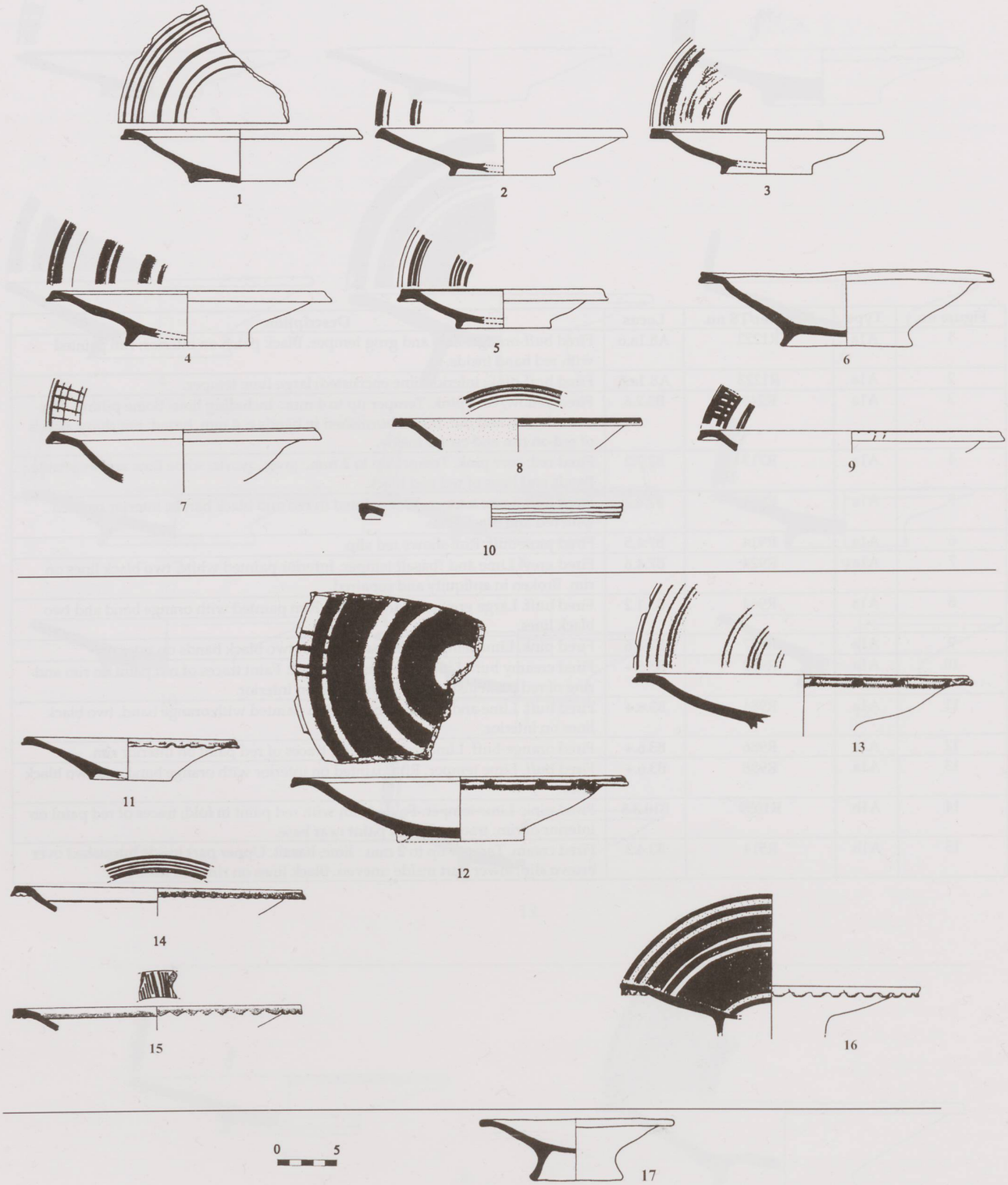


Figure no.	Type	Register/TS no.	Locus	Description
1	A1c	R145	B1.2.2c	Fired yellow. Temper up to 2 mm.: a few grits 4 mm.; many fine. Dry-smoothed inside; traces of burnishing. Outside wet-smoothed and turned. Bands of dark brown, red and white on rim and upper part of wall inside.
2	A1c	R325	D2.5.5	Fired red. Temper up to 2 mm.: lime. Handmade. Wet-smoothed while turning, in and out. Red and black paint on and over rim.
3	A1c	R579	B3.4.3	Fired red. Temper up to 3 mm.: lime, basalt, quartz. Inside dry-smoothed. Burnish effect on bend of rim and inside. Black lines.
4	A1c	R596	B3.6.2	Fired yellow. Temper up to 1 mm.: grog, basalt. Inside partially dry-smoothed. Bands of brown slip inside.
5	A1c	R653	B3.4.7	Fired pink; core grey. Temper up to 3 mm.: lime, small basalt. Inside dry-smoothed. Black lines.
6	A1c	R753	B2.7.4	Fired whitish buff; core grey. Temper up to 5 mm. (basalt) and 6 mm. (lime). Dry-smoothed in and out.
7	A1c	TS120	B3.2.18	Fired pink; core grey. Temper up to 3 mm.: lime, basalt, grog. Black check pattern on rim.
8	A1c	TS121	B1.2.2c	Fired pale pink. Temper up to 3 mm.: lime, grog, basalt. Black lines on rim; white slip inside.
9	A1c	TS122	B1.1.1-3	Fired pink; core grey. Temper up to 3 mm.: quartz, basalt, lime. Black slip on rim, including five strokes.
10	A1c variant	TS209	B2.7.2	Fired orange/yellow. Temper up to 2 mm.: lime; otherwise very fine quartz. Upper surface turned, almost burnished.
11	A1d		B3.2.6	Fired pink; core yellow.
12	A1d	R184	B3.2.6	Fired pink; core yellow. Bands of red and black, and black strokes on rim.
13	A1d	R228	B3.2.11	Fired pink; core grey. Temper up to 1 mm.: silica, lime. Dry-smoothed in and out. Lines of black and red inside, and red on denticulations.
14	A1d	TS119	B1.2.2c	Fired pink; core grey. Temper up to 4 mm. Black line inside; red and black on rim, and red on outside of rim.
15	A1d	TS123	B1.2.2c	Fired pink; core brown. Temper up to 1 mm.: many very fine quartz grits. Red slip inside, and outside over denticulations. Rim top decorated with black strokes.
16	A1d	TS132a	B1.1.1-3	Fired pink; core grey. Temper 0.5-1 mm.: silica, lime. Inside turned and dry-smoothed; inside base turned.
17	A1e	R1234	C21.3.10	Fired buff-pink. Lime temper.

down to make a flange, which is usually grooved. The flattened border was shaped with a rib. The rim diameter is generally larger than A1a and A1b, varying between 19 and 28 cm., average 23 cm. The decoration on the flattened border is often more elaborate, with radial lines crossing horizontal lines to form a check pattern.

A1d: platter with ring base and denticulated rim
The rim was cut with a knife to form denticulations. A1d platters often have a pedestal base, which was separately made. Rim diameters vary between 18 and 31 cm. Linear decoration, radial lines and check patterns are common.

A1e: platter with pedestal base
The single example has a straight, rounded rim.

A2: PLATTERS WITH BASE LEFT ROUGH
As well as a rough base, A2 platters frequently have a rather poor finish in general and are often heavily pitted inside and outside. Some have been finished with more care, and a few are decorated. The base is cut either with string or with a needle (which sometimes drags the clay).

A2a: platter with rough base and straight, rounded rim
Rim made as A1a rims. A few A2a platters have parallel rough grooves on the exterior. Rim diameters are similar to A1a, but smaller platters occur more often. Diameters vary between 11 and 23.5 cm. A few have linear decoration, and some are burnished.

A2b: platter with rough base and straight, grooved rim
Rim as A1b rims. Rim diameters average 18 cm.

A2c: platter with rough base and rim turned down
Rim as A1c. A2c rims are rarely grooved. Rim diameters vary between 16 and 22 cm., average 18 cm. A2c platters are rarely decorated.

A3: PLATTERS WITH TURNED BASE
A3 platters are usually carefully finished, with the base and interior turned. The interior is often smoothed to a gloss by pressure with a blunt implement, producing continuous bands, c. 2–4 mm. wide, in a spiral. This is a process similar to burnishing, but there is no attempt to polish the surface to an even smoothness, and the result is rather different in appearance. Each band is separated from its neighbours by a small ridge on either side, and the overall effect is far less shiny than that produced by burnishing.

A3a: platter with turned base and straight, rounded rim
Rims as A1a. Rim diameters are between 19 and 22 cm. A3a platters are not decorated.

A3c: platter with turned base and rim turned down
Rims as A1c, but rarely grooved. Rim diameters are between 17 and 25 cm., average 20 cm. A3c platters are virtually never decorated, but are burnished in the same way as Bowls A3a.

MISCELLANEOUS PLATTERS
Platter of A3 type, with rim folded outwards to neaten it, as A3a, but then flattened with a rib to form a border (Figure 9.4:14).

Platter of A type, with ring base. The rim was folded twice, once outwards to neaten the edge, then inwards (Figure 9.4:15).

Platter of A type, base missing (Figure 9.4:16), made as Figure 9.4:15 above.

BOWLS A: PARALLELS
Many parallels for the basic platter shape are found in neighbouring areas, but parallels for the decoration, downturned rim and denticulation are limited to Edom and the Negev.

Northern Edom: Khirbat an-Nahas (Fritz 1996: fig. 3:1 — unpainted, ninth century BC?)
Southern Edom: Tawilan (Bennett and Bienkowski 1995: figs 6.1–6.2), Umm al-Biyara (Oakeshott 1978: pl. 57:1), as-Sadeh (Zeitler 1992: fig. 14.3A:13), Ghrareh (Hart 1989: pl. 1:1–3), Tall al-Khalayfi (Pratico 1993: pls 36:8–10; 37:11)
Northern Transjordan: Balu'a (Worschech, Rosenthal and Zayadine 1986: fig. 12:1), Dhiban (Tushingham 1972: figs 2:22–32; 18:7, 10, 12; 23:12, 13; 24:9), Hisban (Lugenbeal and Sauer 1972: nos 504–512), Tall al-'Umayri (Herr 1989: figs 19.10:11–17, seventh century BC; 19.16:21, 22, late Iron II/Persian)
Negev: Horvat Qitmit (Freud and Beit-Arieh 1995: figs 4.1:3, 4, 8–12; 4.8:1; 4.9:1–4; 4.11:1–4, including examples with downturned rim and denticulation), Tel 'Ira (Freud 1999a: 194–95, and, e.g., figs 6.69:6; 6.83:5; 6.84:4; 6.90:4; 6.97:1), Arad (Herzog *et al.* 1984: fig. 25:1, Stratum VII, seventh century BC), Tel Masos (Fritz and Kempinski 1983: pl. 163:4, 5), Horvat Teiman (Ayalon 1995: fig. 3:1–6)
Southern Judah: Tell Beit Mirsim (Albright 1943: pl. 21:4–6), Lachish (Zimhoni 1990: fig. 4:7, 10, Level III), Jerusalem (Eshel 1995: figs 1; 9, seventh century BC), Tel Goren (Mazar, Dothan and Dunayevsky 1966: fig. 15:3, 4, seventh–sixth century BC)

Bowls Type B: Carinated Bowls
Usually carinated bowls with the rim folded outwards, horizontally. Made by Method A, Base type 2.

B1: CHALICES
Rim tip turned down; pedestal base made separately and applied when both bowl and base were leather hard. The rim was folded inwards, then outwards, and pinched down. B1 bowls are virtually always decorated, usually in the standard elaborate style. The range of rim types is similar to that of Bowls A, though fewer variants are found. B1 bowls were not common.

B1a: rim simply pinched downwards
Single example, made from white-firing clay. The base is missing.

B1b: rim pinched down and grooved
After the rim had been pinched down, a pointed tool was used to decorate the turned-down part with one or two horizontal grooves. B1b chalices have widely differing sizes. Most are decorated quite elaborately with linear decoration in red and black. Continuous shiny ring-burnishing is frequent.

B1c: rim pinched down and denticulated
The denticulations were made by cutting with a knife. The decoration in black and red or dark brown is quite elaborate, although exclusively linear.

Figure 9.3: Bowls A2a, A2b, A2c

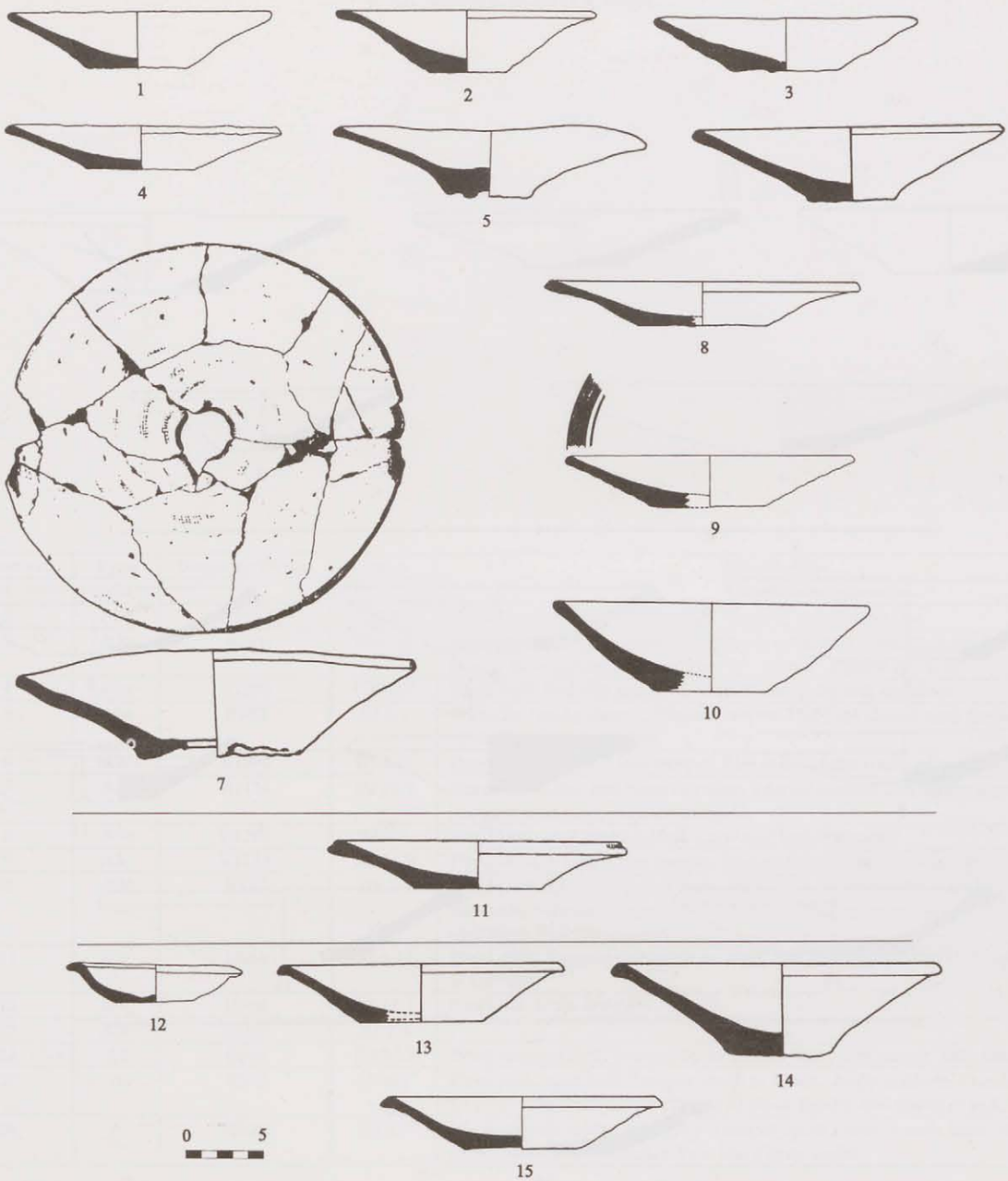


Figure no.	Type	Register/TS no.	Locus	Description
1	A2a	R1004	D3.6.6	Fired pink. Lime and ?basalt temper. Broken in antiquity and repaired.
2	A2a	R1167	B3.20.4	Fired buff. Lime and ?grog temper. Flat base very uneven with hole in centre.
3	A2a	R1221	A8.1a.6	Fired buff. Lime temper. Broken in antiquity.
4	A2a	R1224	A8.1a.6	Fired pink. Lime, grog and ?basalt temper. Lime encrusted interior.
5	A2a	R1230	A8.1a.9	Fired buff. Lime temper. Broken in antiquity and repaired. Uneven disc base with knob of pottery in centre.
6	A2a	R426	D2.8.12	Fired pink; core grey. Temper up to 5 mm.: large pieces of lime frequent; fine silica. Dry-smoothed in and out. Knife-cut base.
7	A2a	R1274	C21.3.12	Fired orange-pink; core black. Base has deliberate hole.
8	A2a	R536	D3.2.3	Fired buff/pink. Temper up to 3 mm.: grog, lime, basalt. Inside wet-smoothed. Base string-cut and left rough.
9	A2a	R706	B2.7.2	Fired buff. Temper up to 1 mm.: lime, basalt; one lump of lime 5 mm. Inside dry-smoothed. Red and black on rim.
10	A2a	R899	D2.8.+	Fired grey. Lime temper. Signs of burning inside and out. Broken in antiquity and repaired.
11	A2b	R595	B3.4.13	Fired pink; core pale pink. Temper up to 2 mm.: basalt, grog, quartz, some lime. String-cut base partially smoothed.
12	A2c		D2.2.1	
13	A2c	R427	D2.8.9a	Fired buff. Temper up to 4 mm.: fine silica, much lime. Dry-smoothed in and out.
14	A2c	R431	D2.8.9a	Fired pink; core grey. Temper up to 3 mm.: quartz, lime, basalt. Inside and upper part of outside dry-smoothed.
15	A2c	R615	B3.7.6	Fired pink; core pinkish-grey. Temper mainly very fine quartz; some lime up to 2 mm. Inside turned; polished in places. Base string-cut. Edge of rim burnished.

Figure 9.4: Bowls A3a, A3c, A3, A

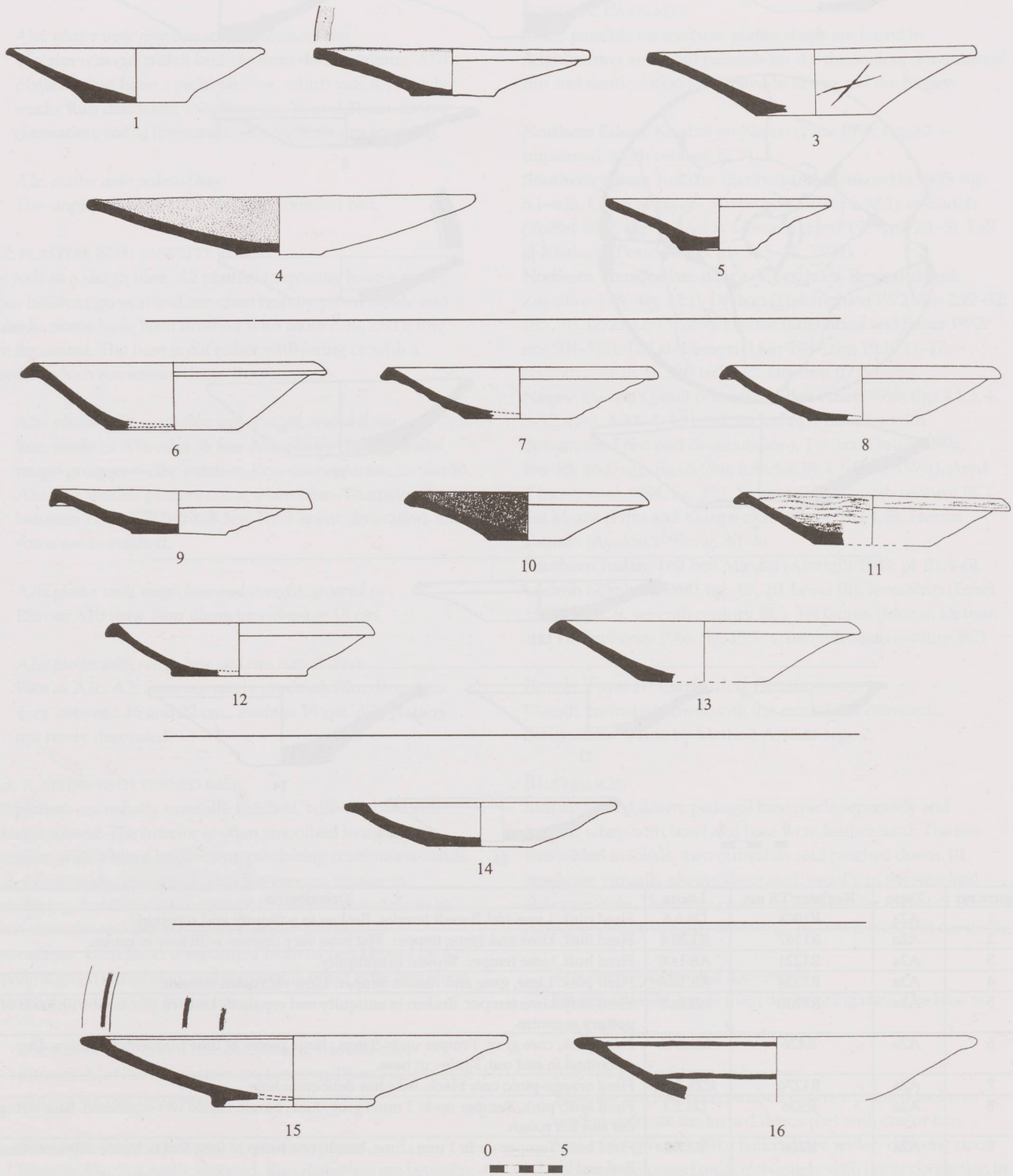


Figure no.	Type	Register/TS no.	Locus	Description
1	A3a		B3.20.m	
2	A3a	R1242	C21.3.12	Fired orange-buff. Lime temper. Signs of burning on rim.
3	A3a	R721	B3.6.22	Fired pink; core pale pink. Temper up to 0.5 mm.: quartz; some lime and basalt. Base turned after cutting. 'X' potter' s mark on wall.
4	A3a	R1283	C23.2.7	Fired buff. Red slip inside. Broken in antiquity and repaired.
5	A3a	R983	B3.6.+	Ware 3b, 'white ware' . ?Basalt temper. Flat base shows pink tinge. Interior smooth, exterior rougher.
6	A3c	R1094	B3.2.m	Fired yellow-buff. Lime temper. Rim shows faint traces of paint.
7	A3c	R1124	B2.10.5	Fired buff. Lime and basalt temper. Interior smooth but shows signs of burning near base; exterior rougher.
8	A3c	R1203	B3.6.+	Fired buff; core pinkish-buff. Lime and basalt temper.
9	A3c	R1214	A8.1a.9	Fired orange-buff. Lime temper. Broken in antiquity and repaired.
10	A3c	R523	D3.1.4	Fired pink. Temper up to 1 mm.: mainly very fine basalt; some lime. Inside turned to a sheen. Under base turned, but cutting marks not entirely obscured. Red slip inside.
11	A3c	R844	B3.6.12	Fired pink. Temper up to 3 mm.: lime, and fine quartz. Inside dry-smoothed to burnish.
12	A3c	R900	A1.10.+	Fired red. Lime temper.
13	A3c	TS530	B1.1.3	
14	A3	R846	B3.6.13	Fired orange/buff. Temper up to 2 mm.: lime, fine quartz. Base turned.
15	A	R362	D2.6.1	Fired pink; core buff. Temper small to 1 mm.: fairly uniform. Outside turned. Dry-smoothed in and out. Bands of black inside, and traces of red.
16	A	TS296	D4.1.7	Fired greyish-white; core grey. Temper up to 2 mm.: basalt, lime. Wet-smoothed (grits protrude). Two black lines inside.

Figure 9.5: Bowls B1a, B1b, B1c, B2, B miscellaneous, B

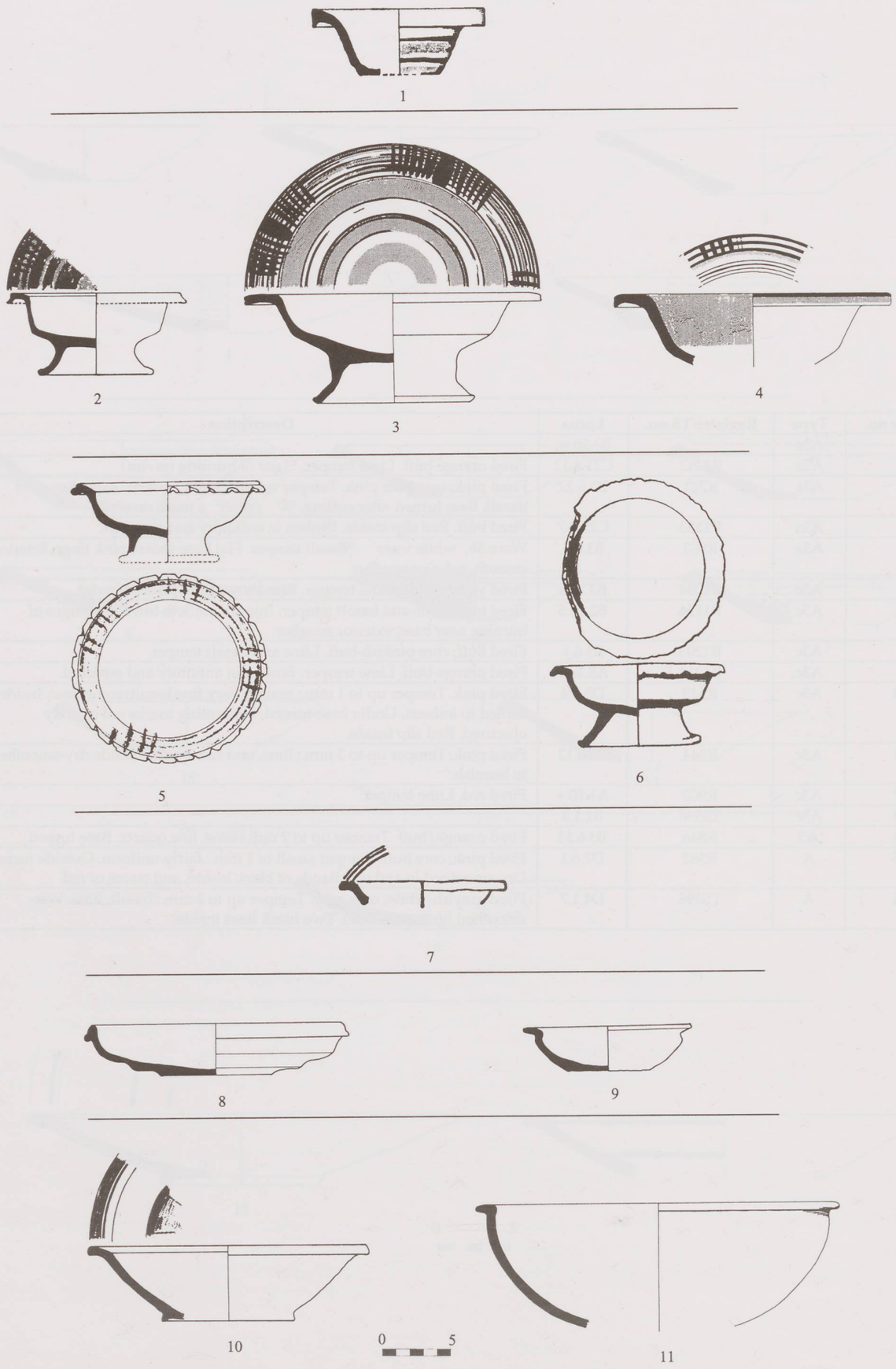


Figure no.	Type	Register/TS no.	Locus	Description
1	B1a	TS307	D2.11.1	Fired cream outside, orange inside; core brown. Temper up to 2 mm.: basalt, quartz, lime. Base turned. Bands of black and red.
2	B1b	R1016	B3.2.11	Fired buff. Lime temper. Rim painted with a red band, horizontal and vertical black lines and white paint. Interior painted with bands of red.
3	B1b	R659	B2.7.3	Fired pink; core grey. Temper up to 3 mm.: quartz, lime; some lime up to 5 mm. Dry-smoothed in and out. Ring burnish inside. Red and black decoration.
4	B1b	TS127	B1.1.1-3	Fired yellow; core yellow/grey. Temper up to 1 mm.: grog, quartz, lime. Outside turned. Red and black decoration, including a group of five black strokes on rim.
5	B1c	R257	B3.2.4-6	Fired pink. Temper up to 1.5 mm.: silica, lime. Turned below carination. Dry-smoothed inside and out. Burnish inside, not shiny. Red and black slip, including three groups of four strokes, and one group of five strokes in black.
6	B1c	R78	B1.1.3	Fired red/yellow; core yellow. Temper: much very fine silica and lime; up to 3 mm.: lime, basalt. Inside dry-smoothed. Outside turned. Base wet-smoothed. Dark brown slip.
7	B2	TS125	B1.1.1-3	Fired yellow to grey; core grey. Temper up to 0.5 mm.: silica, lime. Inside dry-smoothed. Red and black on rim.
8	B misc?	R1211	C14.3.6	Fired orange; core buff. Red slip inside and out, burnished outside.
9	B misc	R704	B2.7.2	Fired pink outside, buff inside; core buff. Temper up to 2 mm.: basalt, lime, quartz, vegetable. Base knife-cut.
10	B	R715	B2.7.2	Ware 3b: 'white ware' . Temper up to 2 mm.: basalt and some lime. Inside dry-smoothed. Red and black decoration.
11	B	TS286	D2.8.14	Fired pale grey; core darker grey. Temper up to 2 mm.: lime, fine quartz.

Figure 9.6: Bowls B3a

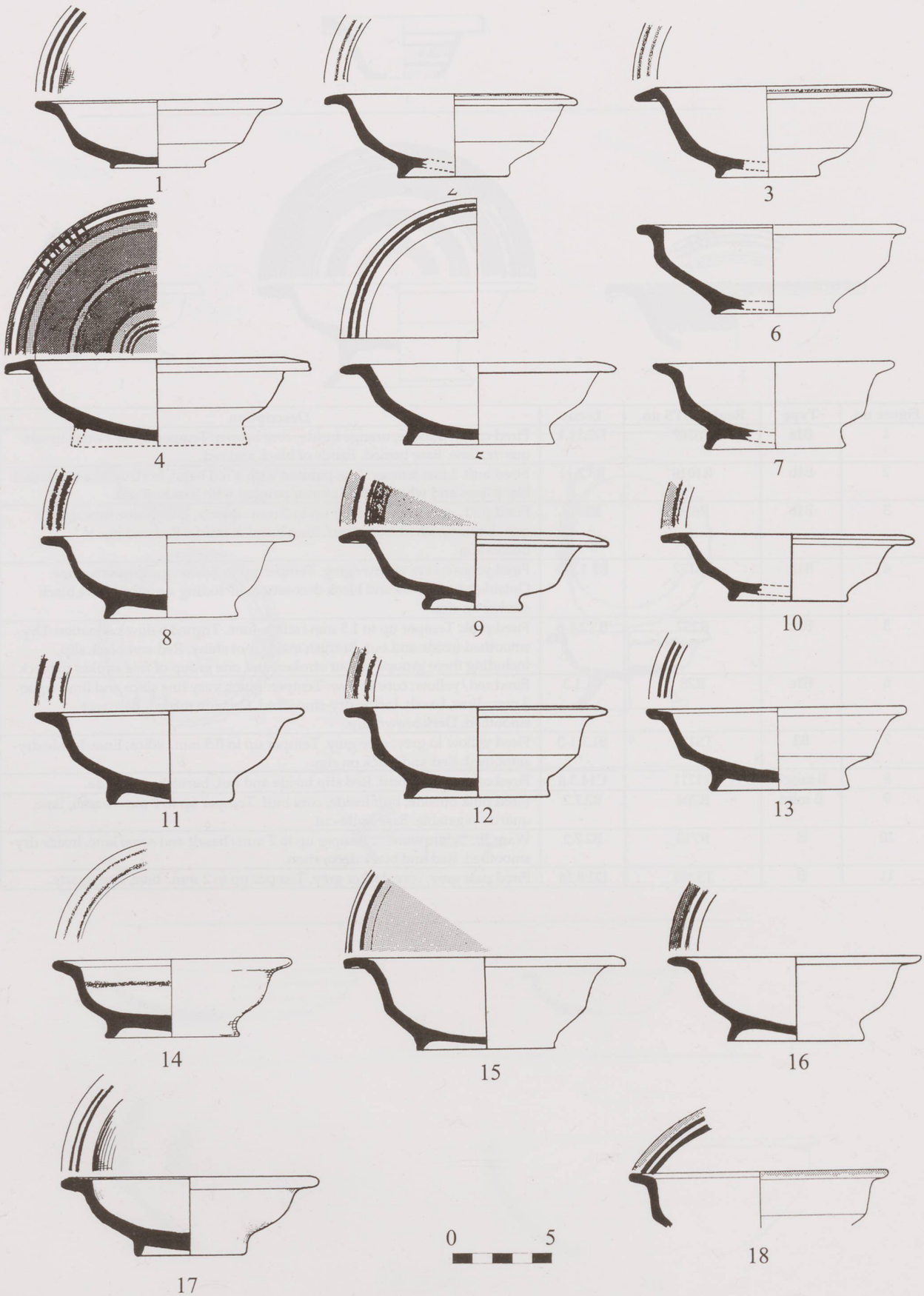


Figure no.	Type	Register/TS no.	Locus	Description
1	B3a	R115	B1.2.2c	Fired yellow; core grey/brown. Temper up to 0.5 mm.: mica, quartz; some 1 mm.: calcite, quartz. Inside dry-smoothed; outside wet-smoothed. Dark brown decoration.
2	B3a	R1204	B3 baulk 3-6.1	Fired orange-pink. Lime temper. Buff-orange slip on rim, two brown lines.
3	B3a	R1209	B3.6.+	Fired pinkish-orange; greyish-yellow core. Lime temper. Two black lines on rim.
4	B3a	R987	B3.6.+	Fired grey. Lime temper. Rim painted with white, red and black bands and eight strokes. Interior painted red and at centre of base white with black lines.
5	B3a	R200	B3.2.9	Fired brown. Temper up to 3 mm.: quartz, lime, basalt, grog. Turned below carination outside. Dry-smoothed in and out. Red and black decoration.
6	B3a	R201	B3.1.3	Fired pinkish-buff; core pinkish-grey. Temper up to 1 mm.: quartz, lime. Dry-smoothed in and out. Traces of red and black linear decoration.
7	B3a	R202	B3.1.3	Fired pink. Temper up to 0.5 mm.: silica, calcite.
8	B3a	R303	B2.4.2	Fired red; core brown. Temper up to 1 mm.: quartz, lime; some lime 2 mm. Dry-smoothed in and out. Ring-burnish inside –shiny. Red and black decoration.
9	B3a	R378	B2.4.2	Fired yellow; core brown. Temper up to 1.5 mm.: grog, lime. Turned outside below carination. Dry-smoothed in and out. Red, black and white decoration.
10	B3a	R379	B3.2.18	Fired pink. Temper up to 2 mm.: lime, basalt. Dry-smoothed in and out. Inside and edge of rim lightly burnished: not completely smoothed, and not shiny. Red and black decoration.
11	B3a	R380	B3.2.18	Fired pink. Temper up to 2 mm.: quartz, lime, basalt. Dry-smoothed in and out. Black decoration.
12	B3a	R381	B3.2.18	Fired pink; core yellow. Temper up to 2 mm.: lime, quartz, grog; one piece of quartz 5 mm. Dry-smoothed in and out. Red and black decoration.
13	B3a	R739	B2.7.2	Fired pink; core creamy yellow. Temper up to 4 mm.: lime, grog. Inside continuously burnished, darkening surface to red. Turned below carination outside. White and black decoration on rim.
14	B3a	R888	B10.2.9	Fired pink. Temper up to 3 mm.: quart, grog. Black decoration.
15	B3a	R925	B7.4.6	Fired pinkish-grey. Grog temper. Rim painted in black lines and a white band between. White slip.
16	B3a	R963	B3.6.+	Fired pinkish-grey. Lime temper. Rim painted with two black bands; underside of rim painted with red band.
17	B3a	R143	B1.2.2c	Fired pink; core grey. Temper up to 2 mm.: quartz, basalt, lime. Inside dry-smoothed. Dark brown decoration.
18	B3a	TS128	B1.1.1-3	Fired pink; core grey. Temper up to 3 mm.: lime quartz, vegetable. Black and red decoration.

Figure 9.7: Bowls B3b, B3c, B4a, B4b

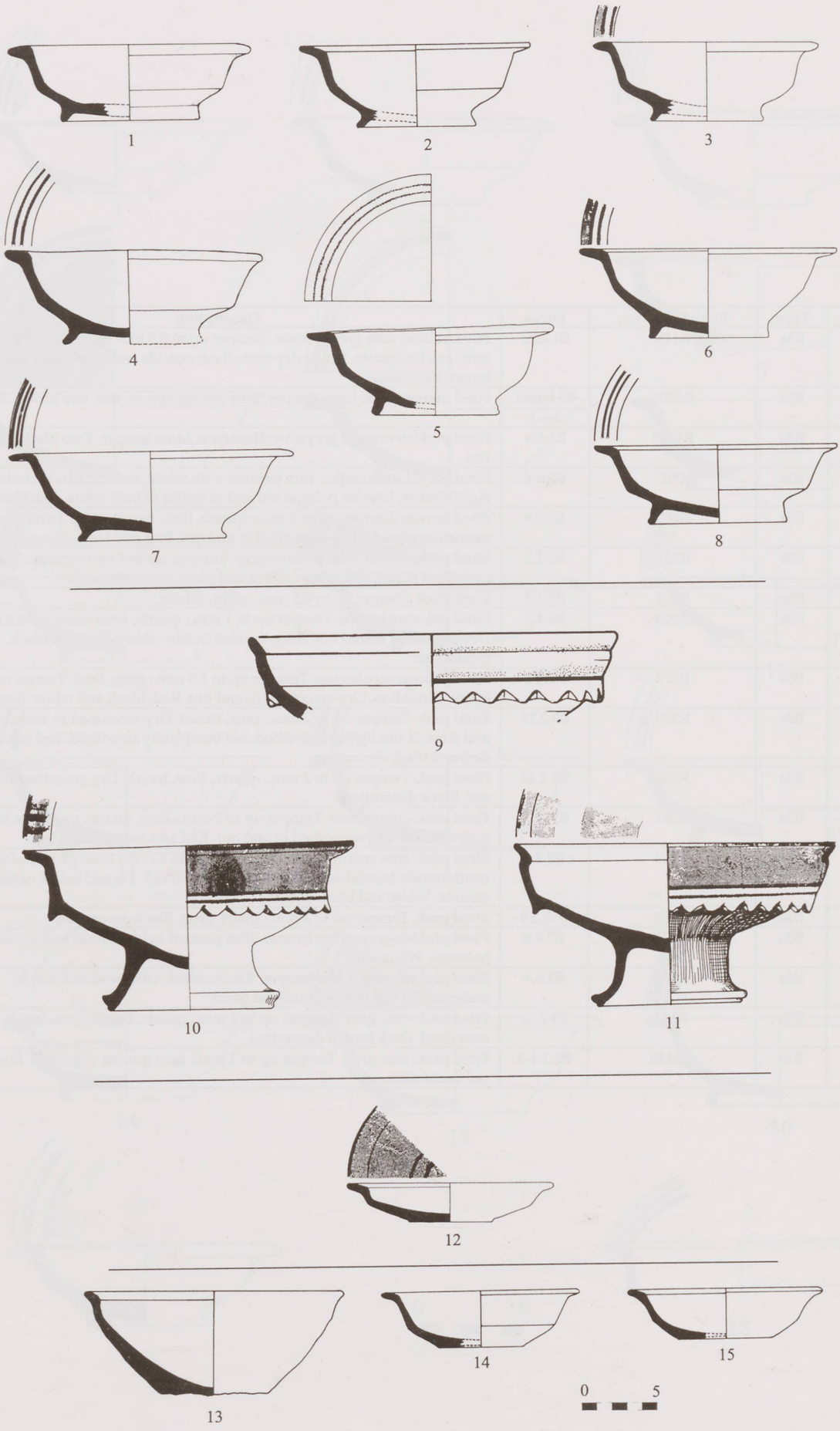


Figure no.	Type	Register/TS no.	Locus	Description
1	B3b	R102	B1.2.2c	Fired yellow. Temper 0.5-3 mm.: quartz, lime. Inside wet-smoothed after turning; outside roughly dry-smoothed.
2	B3b	R985	B3.6.+	Fired reddish-brown. Heavily burnt.
3	B3b	R198	B3.2.4	Fired pink. Temper up to 2 mm.: lime, basalt, quartz. Inside burnished and slightly shiny. Red and black decoration.
4	B3b	R146	B1.2.2c	Fired yellow; core yellow/grey. Temper up to 2 mm.: quartz, lime. Inside turned and burnished; outside roughly turned. Dark brown decoration.
5	B3b	R199	B3.1.3	Fired buff; core brown. Temper up to 2 mm.: lime, quartz, basalt. Turned below carination outside. Dry-smoothed in and out. Ring-burnished inside above carination. Black decoration.
6	B3b	R310	B3.3.3	Fired pink; core pink-grey. Temper up to 3 mm.: lime, basalt. Turned below carination outside; dry-smoothed in and out. Black and red decoration.
7	B3b	R647	B2.7.4	Fired yellow. Temper up to 3 mm.: grog, lime, quartz. Upper part inside burnished. Black and brown decoration.
8	B3b	R1021	B10.3.7	Fired pinkish-buff. Lime and basalt temper. Rim painted with two black lines.
9	B3c		B3.2.m	Fired yellowish-buff; core greyish-buff. Temper up to 4 mm.: grog, lime, basalt. Red slip in and out. Black lines outside.
10	B3c	R331	B3.2.12	Fired buff/pink; core pink/brown. Temper up to 1 mm.: quartz, lime, basalt. Turned below carination inside and out. Red and black decoration.
11	B3c	R408	B3.2.18	Fired pink; core grey. Temper up to 3 mm.: quartz, lime; some up to 5 mm.: lime. Dry-smoothed in and out. Ring-burnish inside. Red and black decoration.
12	B4a	R261	B2.2.5	Fired pinkish-buff; core buff. Temper up to 1 mm.: calcite, basalt. Outside below carination turned. Red and black decoration. Continuous ring-burnish over whole surface, except under base.
13	B4b?	R1020	B2.10.1	Fired buff. Lime temper.
14	B4b	R1038	D3.10.4	Fired cream. Basalt temper. Faint traces of orange paint on rim.
15	B4b	R1185	D3.10.6	Fired red. Lime temper.

Figure 9.8: Bowls B4b, B4c, B4d

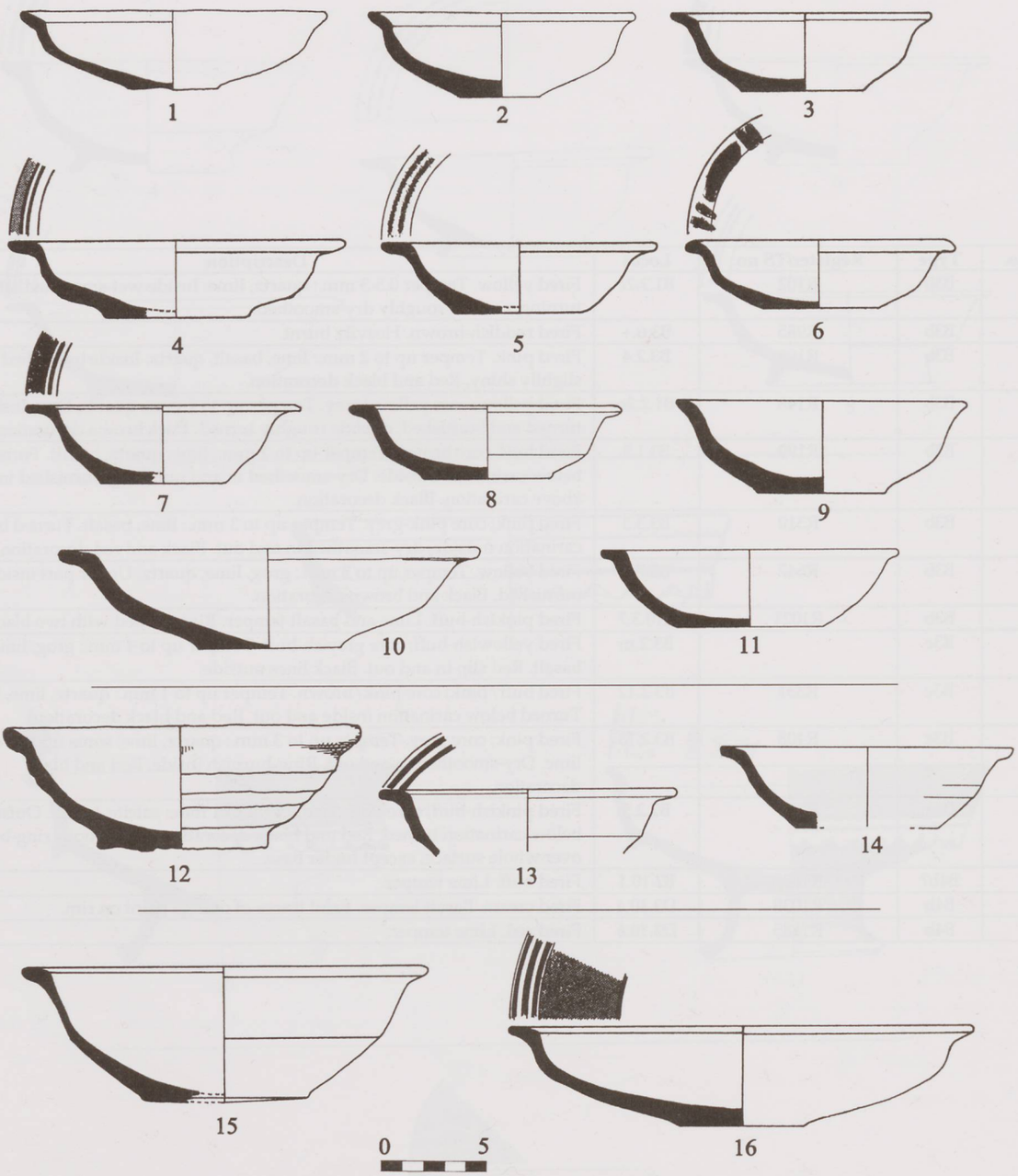


Figure no.	Type	Register/TS no.	Locus	Description
1	B4b	R1301	C11.4.10	Fired buff-orange.
2	B4b	R180	A26.1.5	Fired buff. Temper up to 3 mm.: basalt, lime, quartz. Wet-smoothed inside.
3	B4b	R443	D2.10.2	Fired buff. Temper up to 3 mm.: lime, quartz, basalt. Dry-smoothed in and out. Wall below carination outside turned.
4	B4b	R489	B3.4.3	Fired yellow; core brown. Temper up to 3 mm.: basalt, some lime and grog. Inside turned; base turned smooth. Red and black decoration.
5	B4b	R510/524	B3.4.3/B3.7.1	Fired buff. Temper up to 3 mm.: lime, grog, basalt. String-cut base, partly smoothed. Inside dry-smoothed and burnished above carination. Brown decoration.
6	B4b	R522	D3.1.4	Fired pink; core brown. Temper up to 3 mm.: lime, grog, basalt. Lower part outside, and base, turned. White slip inside and out. Black decoration on rim top.
7	B4b	R722	B2.7.2	Fired buff; core greyish-buff. Temper up to 2 mm.: basalt and lime. Base turned after cutting with knife. Red and black decoration.
8	B4b	R744	B3.6.21	Fired pink-cream; core cream. Temper up to 2 mm.: lime, quartz. Below carination and under base turned.
9	B4b	R897	D2.8.+	Fired buff. Lime and basalt temper.
10	B4b	R879	B3.6.2	Fired cream. Temper up to 3 mm.: lime, grog, quartz, basalt. Inside dry-smoothed. Base knife-cut and turned; wall above base turned.
11	B4b	TS132	A9.7.4	Fired buff. Temper up to 3 mm.: lime, basalt.
12	B4c	R1012	D3.6.6	Fired cream. Lime and grog temper.
13	B4c	TS129	B1.1.1-3	Fired pink; core brown. Temper up to 2 mm.: lime, quartz. Black decoration.
14	B4c	TS130	A9.7.4	Fired pink; core grey. Temper up to 1.5 mm.: grog, lime, quartz, many 1 mm. Grooves and ridges made by turning.
15	B4d	R1034	D3.10.5a	Fired yellow-buff. Lime temper.
16	B4d	R1035	A60.6.5	Fired red. Lime and basalt temper. Rim painted white, traces of three black lines. Faint patch of three vertical strokes.

Figure 9.9: Bowls B4d, B5, B5ai

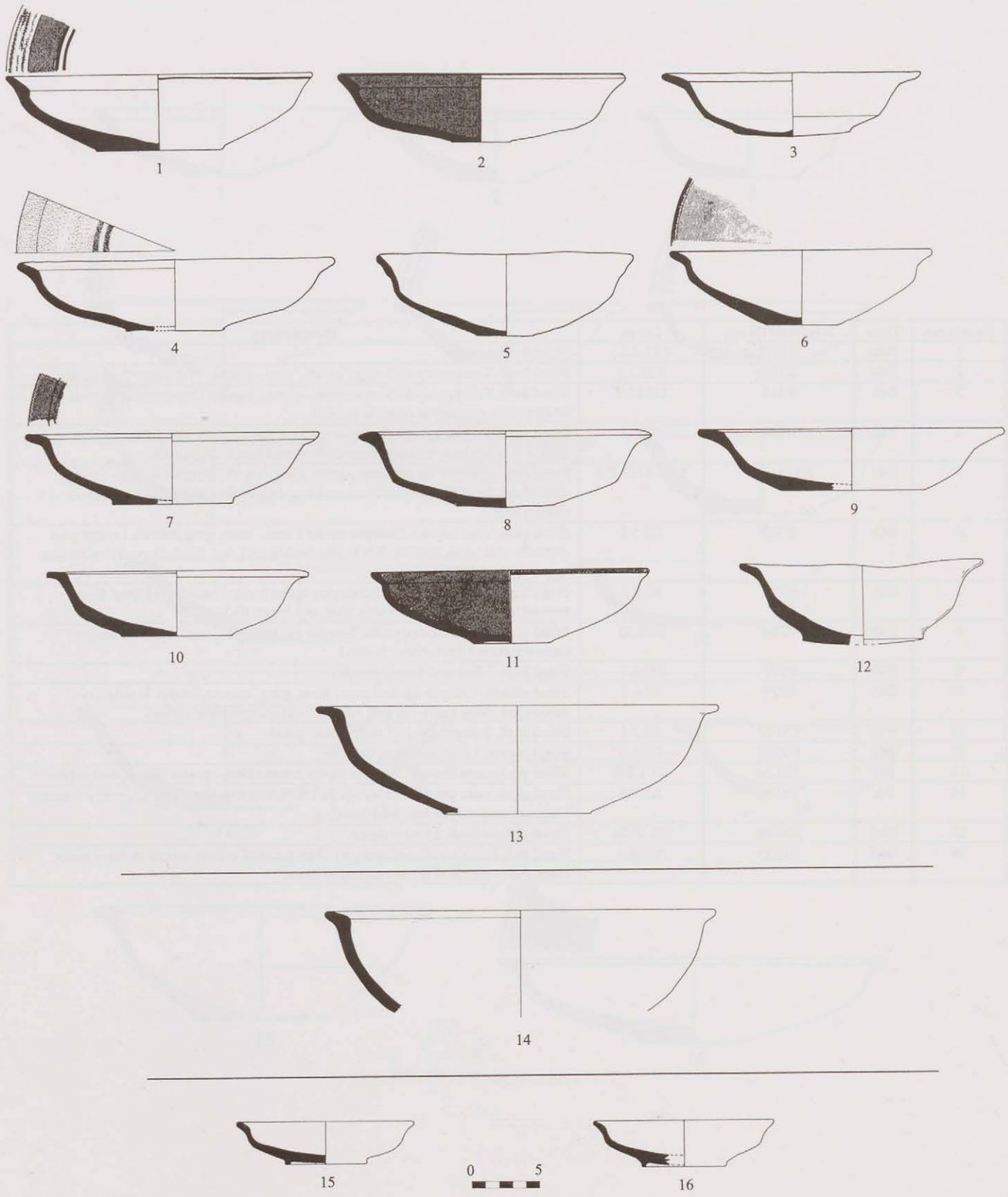


Figure no.	Type	Register/TS no.	Locus	Description
1	B4d	R1095	B3.2.m	Lime temper. Rim painted in red lines. Red slip inside below rim, and black lines.
2	B4d	R1186	D3.10.6	Fired red. Traces of red slip throughout. Traces of black line on rim edge.
3	B4d	R1229	A8.1a.9	Fired buff-pink. Lime temper.
4	B4d	R1275	C30.3.2	Fired buff-pink. Originally slipped. Two bands of black on inside.
5	B4d	R1278	C10.6.2	Fired buff. Reddish slip; traces of burnishing inside.
6	B4d	R326	B2.1.3	Fired brown. Temper up to 3 mm.: grog, lime, quartz. Dry-smoothed in and out. Red and black decoration.
7	B4d	R519	A1.11.7	Fired red; core grey. Temper mainly quartz and mica up to 0.25 mm.; lime up to 2 mm. Inside dry-smoothed. Red decoration.
8	B4d	R521	A1.11.8	Fired yellow; core orange. Temper up to 2 m.: lime, grog, basalt –much very small basalt. Under base turned.
9	B4d	R634	A1.10.6	Fired yellow-buff; core yellow. Temper up to 2 mm.: lime, basalt, small quartz.
10	B4d	R640	B2.4.13	Fired pinkish-white, lower part grey; core pinkish grey. Temper up to 3 mm.: basalt, quartz, grog, lime, and very small mica. Lower part outside and under base turned.
11	B4d	R784	A5.7.6	Fired pale pink, lower part underneath purplish; core pale pink. Temper up to 2 mm.: lime; up to 1 mm.: basalt. Under base turned. Brown slip inside.
12	B4d	R876	B3.6.12	Lower part outside fired red; inside and upper part outside fired yellow; core grey. Temper up to 3 mm.: lime, quartz. Knife-trimmed above base outside.
13	B4d	R883	B2.7.26	Fired pink; core yellow. Temper up to 3 mm.: lime, basalt, quartz, vegetable.
14	B5	TS131	B1.1.1-3	Fired pink; core yellow and grey. Temper up to 3 mm.: quartz, basalt, lime. Dry-smoothed inside and out.
15	B5ai	R197	B3.2.6	Fired black. Temper up to 4 mm.: grog, lime, quartz. Turned below carination outside. Dry-smoothed in and out.
16	B5ai	R230	B3.2.4	Fired buff; core grey. Temper up to 3 mm.: quartz, lime.

Figure 9.10: Bowls B5a, B5b, B6

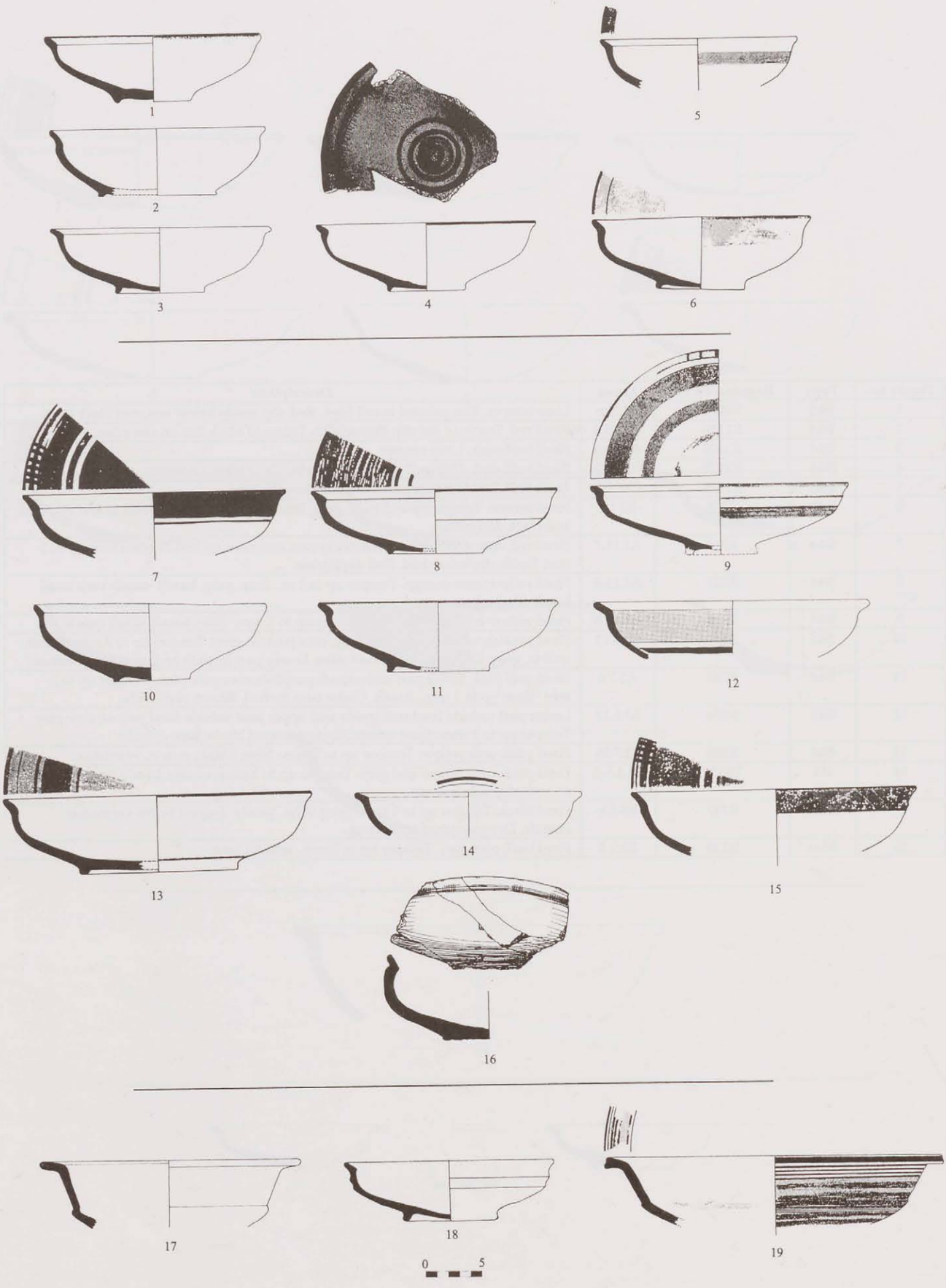


Figure no.	Type	Register/TS no.	Locus	Description
1	B5a	R176	B3.2.2	Fired pink. Temper up to 2 mm.: lime, quartz. Brown decoration.
2	B5a	R213	B3.2.6	Fired pink; core grey. Temper up to 2 m.: lime, silica. Lower part outside turned.
3	B5a	R196	B3.2.6	Fired buff. Temper up to 3 mm.: quartz, lime.
4	B5a	R194	B3.2.1	Fired pink/buff; core buff. Temper up to 2 mm.: quartz, basalt, lime. Brown and red decoration.
5	B5a	TS133	B3.1.2	Fired buff. Temper up to 3 mm.: lime, quartz. Red and black decoration.
6	B5a	R419	B3.2.18	Fired orange; core buff. Temper up to 2 mm.: lime, quartz. Red and black decoration.
7	B5b		B3.20.4	
8	B5b	R1103	B3.2.m	Fired buff. Lime and basalt temper. Rim painted with black lines. Red slip continues to centre; inside are three black lines. Outside has brown slip near rim and appears to be slightly burnished.
9	B5b	R203	B3.2.6	Fired pink; core grey. Temper up to 1 mm.: quartz, lime, basalt. Turned below carination outside. Dry-smoothed inside and out. Red and black decoration.
10	B5b	R223	B3.2.2	Fired pink; core buff. Temper up to 2 mm.: lime, silica. Lower part outside turned. Dull burnish inside near base.
11	B5b	R309	B3.2.3	Fired pink/buff; core grey. Temper up to 1 mm.: quartz. Lower part outside turned, as is centre inside. Black decoration on rim.
12	B5b	TS140	C1.3.1	Fired red/cream; core cream. Temper up to 1 mm.: quartz, some lime. Lower part outside turned. Red and black decoration.
13	B5b	R416	B3.2.18	Fired buff; core pink. Temper up to 2 mm.: lime, quartz, basalt. Red and black decoration.
14	B5b	TS137	C1.3.1	Fired red; core brown. Temper up to 3 mm.: lime, silica, basalt. Black decoration on rim.
15	B5b	R336	B3.2.12	Fired cream; core brown. Temper up to 4 mm.: quartz, lime. Dry-smoothed in and out. Red and black decoration. Dull burnish inside.
16	B5b? waster	R981	A60.6.2	Fired pink/buff. Lime temper.
17	B6	TS280	B3.1.15	Fired pink; inside almost white; core grey. Temper up to 2 mm.: lime; fine silica; basalt up to 3 mm. Continuous smooth ring-burnish in and out.
18	B6?	TS543	B3.2.+	
19	B6	TS559	B3.3.7	

B2: CARINATED BOWL WITH RIM SQUARE TRIMMED
A single, incomplete example, perhaps a B1 bowl.

B3: FAIRLY DEEP CARINATED BOWL, TAPERING RIM, RING BASE OR PEDESTAL
The rim was folded in and then bent to a near-horizontal position. Shrinkage affects the final angle.

B3a: smaller forms
Rim diameters between 12.5 and 15 cm. Normally decorated with red and black simple linear decoration.

B3b: larger forms with ring base
Rim diameters between 16.5 and 19 cm. Normally decorated with red and black simple linear decoration.

B3c: larger forms with pedestal bases
Three examples only, with denticulations at the carination. The denticulations are cut from a coil which was applied separately to the bowl. Two are decorated, one in elaborate style.

B4: CARINATED BOWLS WITH TAPERING RIM AND TURNED BASE
These bowls were returned to the wheel when leather-hard, and the base as well as the lower part of the wall were turned. The finish is often very careful, turning imparting a lustre to the whole surface of the vessel.

B4a: shallow carinated bowl
Single example only, closer in general shape to B5 bowls than to other flat-bottomed bowls.

B4b: fairly deep carinated bowl
Closely resembles Bowls B3 in body shape. Decoration occurs frequently. Rim diameters between 11.5 and 16 cm., most common 13 cm.

B4c: fairly deep bowl with ridged walls
Similar to B4b bowls, but with ridges on the exterior, formed during turning. Rim diameters c. 16 cm. Sometimes decorated with simple linear decoration.

B4d: larger bowl with turned base: miscellaneous
Various bowls of B4 type with the rim diameter greater than 18 cm. have been grouped together under B4d. Some are decorated with simple linear decoration or extensive application of slip.

B5: BOWLS WITH TAPERING RIM AND RING BASE; ROUNDED CARINATION
Bowls made in the same way as B3 bowls. The carination is not usually very marked, although the lower part of the wall was turned.

B5ai: shallow bowl
Cf. B4a. Two examples only, undecorated. These differ from B5a standard bowls in their proportions. Rim diameters 18–19 cm.

B5a: smaller examples of B5
Rim diameters 18–19 cm. B5a bowls are frequently decorated with linear bands.

B5b: larger examples of B5
Rim diameters 21–25 cm., usually 22 cm. B5b bowls are normally decorated, some in elaborate style.

B5 miscellaneous bowls
One example, rim diameter 32 cm.

B6: BOWLS WITH S-SHAPED CARINATION

B MISCELLANEOUS
Figure 9.5:9 is the only example of a B bowl with a rough base.

Figure 9.5:10 has affinities with Bowls A but is far deeper. It is made from white-firing clay.

Figure 9.5:11 is also made from white-firing clay.

BOWLS B: PARALLELS
Parallels for the basic shape are common in neighbouring areas, but parallels for the decoration, downturned rim, pedestal base and denticulation are rare.

Northern Edom: Khirbat an-Nahas (Fritz 1996: fig. 3:3 – ninth century BC?), Feifa (Lapp 1994: fig. 13–2:1, 2)
Southern Edom: Tawilan (Bennett and Bienkowski 1995: fig. 6.3:1–12 – note that no parallels at Tawilan for Bowls B1, B3c, B5 or B6, although cf. *ibid.* fig. 6.37:2, 4, a pedestal and a tripod base), Umm al-Biyara (Bennett 1966: fig. 2:16; Oakeshott 1978: pl. 57:2–4), Ghrareh (Hart 1987: fig. 9:1–2; 1988: fig. 7:3; 1989: pls 1:4–10; 2; 3:1–6), as-Sadeh (Zeitler 1992: figs 14.3B:1–2; 14.4A:1–6, 8–10; 14.6:12–16), Khirbat al-Mu'allaq (Lindner, Knauf and Zeitler 1996: figs 27:8; 28:1), Jabal al-Qseir (Lindner *et al.* 1996: fig. 25:6), Tall al-Khalayfi (Pratico 1993: pls 35:7–12; 36:1–7; 37:1–3 — like Tawilan, Khalayfi also lacks Bowls B1 and B6)
Northern Transjordan: Aro'er (Olávarri 1965: fig. 2:9), Dhiban (Winnett and Reed 1964: pl. 73:7; Tushingham 1972: figs 2:17, 40, 41; 23:6; 24:11, decorated), Hisban (Lugenbeal and Sauer 1972: nos 1–101), Tall al-'Umayri (Herr 1989: figs 19.4:23, late eighth–early seventh centuries BC; 19.7:13–23, seventh century BC; Herr *et al.* 1991: fig. 3.25:24, 25, early Persian), Tall Jawa (Daviau 1997a: fig. 7: 10, 11, late eighth–seventh centuries BC), Tall Nimrin (Flanagan, McCreery and Yassine 1994: fig. 19:1, Persian)
Negev: Horvat Qitmit (Freud and Beit-Arieh 1995: figs 4.1:1, 9, 57; 4.2:17; 4.5:7; 4.14:13), Tel 'Ira (Freud 1999a: figs 6.63:22; 6.70:2; 6.100:1, 3), Tel Masos (Fritz and Kempinski 1983: pl. 163:15, 16), 'En Hazeva (Cohen and Yisrael 1995b: 27 — chalices with denticulation)
Southern Judah: Tell Beit Mirsim (Albright 1943: pl. 21:7–8, 10–12, 15), Lachish (Zimhoni 1990: fig. 4:14, 15, Level III), Jerusalem (Eshel 1995: figs 3:20, 21; 13:3, seventh century BC), Tel Goren (Mazar, Dothan and Dunayevsky 1966: fig. 15:1, seventh–sixth century BC)

Bowls type C: Straight-rimmed carinated bowls
Usually carinated bowls with straight rim, either rounded or tapering. Made by Method A, Base type 5. When the wall had been built up to the desired height, the rim was finished by an inward fold and smoothed with the fingers.

C1: BOWLS WITH RING BASE
The base ring was made from a separate coil which was smoothed on to the base of the bowl.

C1a: rim diameter 13–18 cm.
C1a bowls are usually decorated with simple linear bands. A number are burnished, quite frequently on the unslipped surface, but the burnish is rarely shiny. The ring base of Figure 9.11:5 was not separately added but shaped from surplus clay at the base of the bowl. In a few cases where the normal method of adding a separate base ring has been used, the ring did not adhere well to the body and has shrunk away (e.g. Figure 9.12:3).

C1b: rim diameter 19–25 cm.
Rim diameter is usually c. 20 cm. Otherwise similar to C1a bowls.

C1c: rim diameter greater than 25 cm.
Details as for C1a.

C1 miscellaneous
Figure 9.13:3 is unusually shallow, and is close to type C3a apart from the base. This could be the result of sagging while the clay was wet.

Figure 9.13:4 may be a degeneration of type C5. The finish and decoration are very good, and the temper is very fine and may have been sieved.

Figure 9.13:5 has an unusually vertical wall. The temper may have been sieved.

Figure 9.13:7 has a faceted profile caused by turning.

C2: DENTICULATED CARINATION AND RING BASE
C2
The only type within this group. Rim diameter c. 22 cm. Usually decorated with simple linear bands.

C3: PEDESTAL BASE
Usually decorated with simple linear bands.

C4: BOWLS WITH FLAT (DISC) BASE (BASE TYPE 2)
Rim diameter 14–15 cm. C4 bowls are rarely decorated, and the finish is sometimes rough. The base is often simply string- or wire-cut and not turned.

C5: BOWLS WITH S-SHAPED CARINATION
C5 bowls are linked solely by the distinctive carination, the forms differing in other respects. Figure 9.14:3–4 are made from white-firing clay. The latter is well finished, with the outer surface polished by burnishing. The temper was probably sieved. Figure 9.14:4–5 have a degenerated carination, and are decorated.

C MISCELLANEOUS
Figure 9.14:8–9 are rather plain bowls with profuse temper.

Figure 9.14:10 is a unique variant of type C.

BOWLS C: PARALLELS
The basic shape is common in Palestine and Transjordan in Iron II, but decorated examples are rare outside Edom.

Southern Edom: Bowls C1a: Tawilan (Bennett and Bienkowski 1995: fig. 6.3:13), Tall al-Khalayfi (Pratico 1993: pl. 37:8, 10)
Northern Transjordan: Dhiban (Winnett and Reed 1964: pl. 75:11; Tushingham 1972: figs 2:18–21; 18:4, 11), Tall al-ʿUmayri (Herr 1989: fig. 19.9:6–9, seventh century BC)
Negev: Horvat Qitmit (Freud and Beit-Arieh 1995: figs 4.1:24; 4.2:8; 4.11:5, but very rare; cf. figs 4.8:9; 4.9:30 and p. 213 for pedestal bases), Tel ʿIra (Freud 1999a: fig. 6.87:3), Beersheba (Singer-Avitz 1999: fig. 9:16; Aharoni 1973: pl. 59:46–57, Stratum II), Horvat Teiman (Ayalon 1995: fig. 3:11–14, 19, 20)
Southern Judah: Tell Beit Mirsim (Albright 1943: pls 24–25), Jerusalem (Eshel 1995: fig. 2:19, 20, 22, seventh century BC)

Bowls type D: Bowls with triangular-section rims

Virtually no two vessels of types D (or E) are identical. Oakeshott's detailed subdivision (1978: 36–7), using criteria of size, general conformation, rim shape and rim slope, has not been applied here since it is too unwieldy to be effective and useful (cf. also Hart 1995a: 253). A simpler system is used to distinguish size and basic conformation, since these criteria are more likely to relate to differential use than differences in rim shape and rim slope.

SIZE
1 small bowls: less than 15 cm. diameter
2 medium bowls: 15–20 cm. diameter
3 large bowls: 20–25 cm. diameter
4 very large bowls: diameter greater than 25 cm.
5 bowls with denticulation
6 bowls with tripod base

CONFORMATION
a curved-sided
b carinated
c other
d shallow

Bowls type D were made by Method A with Base type 5. The rim was made by folding twice, once inwards and once outwards. The join of the second, outward, fold was smoothed in to the wall. The bowls are usually painted with horizontal bands and lines of slip in red, brown and black. The broad rim top frequently has paint strokes at right angles to the horizontal lines: these are invariably in black or dark brown. Denticulations are sometimes added at the carination. Bases are normally applied ring or pedestal bases, occasionally tripod feet or flat turned bases of type 2. The fabric is normally fired within the range buff to red. A few vessels are made of black-burnished ware. Tripod and turned bases appear invariably on black-burnished ware bowls. Bowls type D with pedestal bases are likely to be decorated in more elaborate style.

BOWLS D: PARALLELS
Northern Edom: Faynan (Barker *et al.* 1999: fig. 27:1, though larger)

Figure 9.11: Bowls C1a

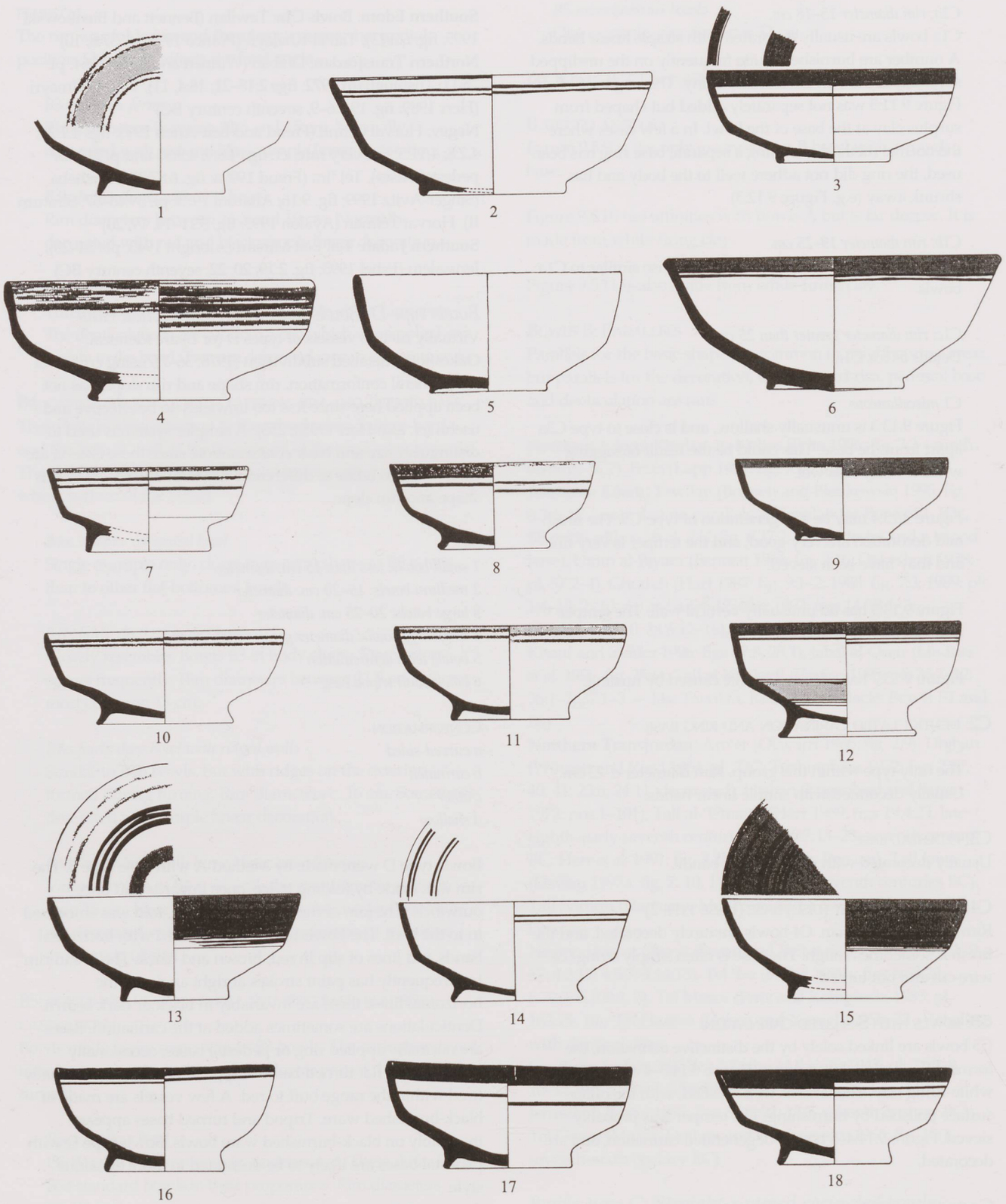


Figure no.	Type	Register/TS no.	Locus	Description
1	C1a		B1.1.1-3	
2	C1a	R1096	B3.2.m	Fired buff. Basalt temper. Rim painted black; two black lines below rim in and out.
3	C1a	R1100	B3.2.m	Fired dark buff. Lime temper. Interior rim painted red, with black line; traces of another line below. Band of red paint edged by black lines in centre. Exterior rim painted red, with black line. Traces of white slip and black line immediately below.
4	C1a	R1123	B2.10.4	Fired buff. Basalt temper. Exterior rim painted with two black lines on red slip. Interior rim has red slip.
5	C1a	R296	B3.3.4	Fired buff; core brown. Temper up to 1 mm.: quartz, lime.
6	C1a	R1156	B3.20.4	Fired yellow-buff. Lime temper. Two black lines below rim in and out, and faint traces of red slip.
7	C1a	R205	B3.1.3	Fired pink; core buff. Temper up to 3 mm.: quartz, lime, basalt. Outside turned below carination. Ring-burnish inside over unslipped surface. Red, black and white decoration.
8	C1a	R219	B3.2.4	Fired pink. Temper up to 2 mm.: quartz, lime. Red and black decoration.
9	C1a	R1127	B3.20.4	Fired pink. Lime and basalt temper. Rim painted red in and out.
10	C1a	R346	B2.4.2	Fired pink. Temper up to 1.5 mm.: lime, quartz, grog (profuse). Broad discontinuous dull ring-burnish inside above carination. Black decoration.
11	C1a	R388	B3.2.18	Fired pink/yellow; core brown. Temper up to 3 mm.: quartz, lime, profuse grog. Red and black decoration.
12	C1a	R520	B3.7.1	Fired cream; core brown. Temper up to 3 mm.: basalt, lime. Inside below carination dry-smoothed, above carination wet-smoothed. Outside below carination and within base-ring turned. Red and black decoration.
13	C1a	R509	B3.4.3	Fired pink inside, pink/buff outside; complete. Temper up to 3 mm.: basalt, lime. Upper part inside burnished. Red and dark brown decoration.
14	C1a	R493	B3.4.3	Fired pink; core grey. Temper up to 3 mm.: lime, basalt, some grog, quartz. Upper part inside lightly ring-burnished. Black and brown decoration.
15	C1a	R566	B3.4.3	Fired red/white; core pink. Temper up to 3 mm.: grog, lime, basalt. Broad burnish marks inside. Red and black decoration.
16	C1a	R58	B1.1.3	Fired pink; core dark grey. Temper up to 2 mm.: quartz, lime, grog. Discontinuous dull ring-burnish inside above carination. Red and dark brown decoration.
17	C1a	R59	B1.1.3	Fired yellow. Temper up to 2 mm.: quartz, mica; lime up to 3 mm.
18	C1a	R60	B1.1.1-3	Fired grey-brown/pink; core grey. Temper up to 3 mm.: quartz, lime, grog. Inside wet-smoothed. Base splitting from bowl. Dark brown and red decoration.

Figure 9.12: Bowls C1a, C1b, C1c

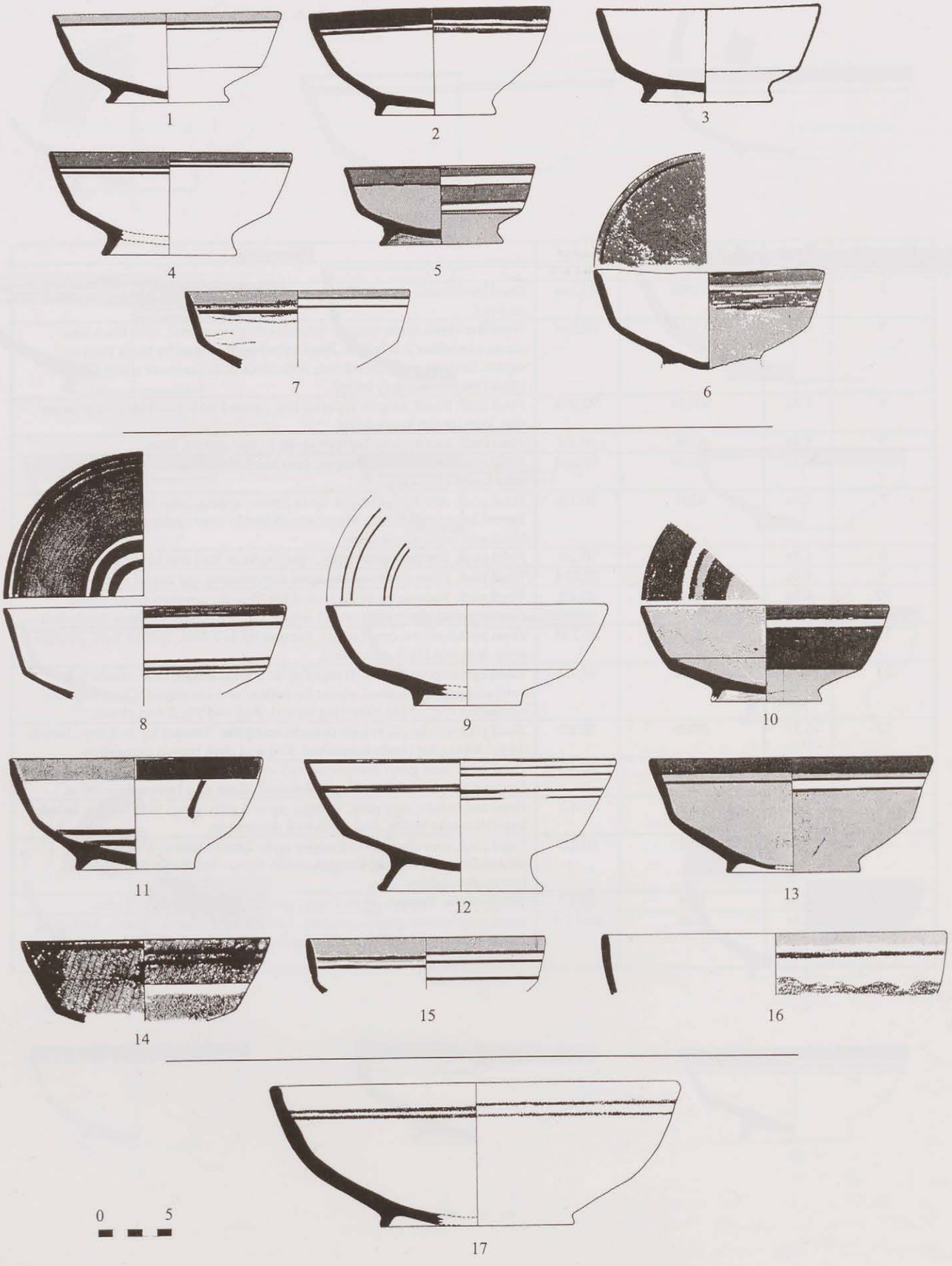


Figure no.	Type	Register/TS no.	Locus	Description
1	C1a	R600	B3.6.2	Fired red; core yellow. Temper up to 2 mm.: grog, basalt. Red and black decoration.
2	C1a	R62	B1.1.3	Fired pink/yellow. Temper up to 1 mm.: quartz, mica, calcite. Base splitting from bowl. Purple and dark brown decoration.
3	C1a	R72	B1.1.3	Fired pink. Temper up to 3 mm.: quartz, calcite. Base splitting from bowl. Traces of two dark brown lines below rim in and out.
4	C1a	R724	B2.7.2	Fired red. Temper up to 1 mm.: quartz, basalt. Red and black decoration.
5	C1a	R760	B2.7.2	Fired pink; core grey. Temper up to 3 mm.: lime, quartz, profuse mica. Red, black and white decoration.
6	C1a	R905	B7.4.4	Fired buff-pink. Lime temper. Black, red and white decoration. Burnished in and out.
7	C1a	TS141	B1.1.1-3	Fired brown; core grey. Temper up to 1 mm.: quartz, lime. Outside turned below carination. Inside irregularly ring-burnished over unslipped surface. Red and black decoration.
8	C1b	R116	B1.2.2	Fired pink/grey; core grey. Temper up to 0.5 mm.: quartz, lime. Red and dark brown decoration. Ring burnish inside.
9	C1b	R494	B3.4.3	Fired pink inside, buff outside; core red-brown. Temper up to 2 mm.: basalt, quartz, rare lime. Black decoration.
10	C1b	R742	B2.7.2	Fired red; core pink/yellow; under base yellow. Temper up to 2 mm.: lime, basalt. Lower part outside turned. Red and black decoration. Ring-burnish inside over red slip.
11	C1b	R57	B1.1.3	Fired red/yellow; core grey. Temper up to 2 mm.: quartz, lime. Discontinuous ring-burnish inside below carination. Red decoration.
12	C1b	R645	B2.7.4	Fired buff/pink; core brown. Temper up to 1 mm.: lime, basalt. Wall above carination outside ring-burnished. Red and black decoration.
13	C1b	R533	B3.4.3	Fired red. Temper up to 2 mm.: basalt, lime, grog. Dark brown and red decoration.
14	C1b	TS134	B1.1.1-3	Fired pink; core buff. Temper up to 2 mm.: lime, quartz; up to 3 mm.: grog. Red slip inside and out, with reserve band, unslipped, outside. Black lines in and out.
15	C1b	TS144	B1.1.1-3	Fired red; core red/grey; grey where thickest. Temper up to 1 mm.: quartz, lime. Well finished, to give smooth surfaces inside and out. Red and black decoration.
16	C1b	TS312	B2.7.1	Fired pink/white; core white. Temper up to 1 mm.: lime, silica; up to 3 mm.: grog, basalt. Red and blue-grey slip.
17	C1c	R508	B3.4.2	Fired red; core red/grey. Temper up to 1.5 mm.: lime, basalt; one piece of lime 5 mm. Black decoration.

Figure 9.13: Bowls C1, C2, C3, C4

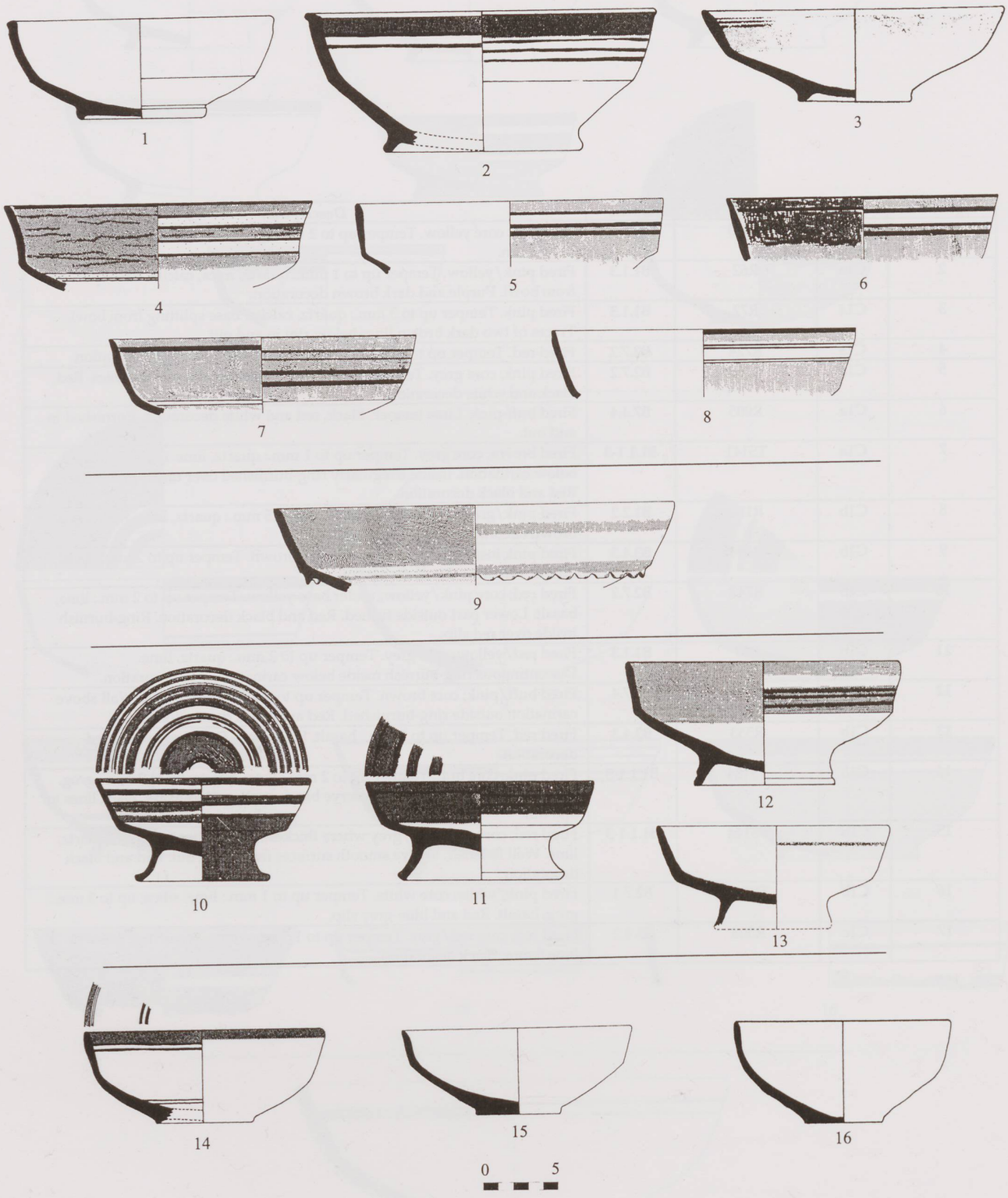


Figure no.	Type	Register/TS no.	Locus	Description
1	C1	R1099	B3.2.m	Fired grey-buff. Lime and basalt temper.
2	C1	R1101	B3.2.m	Fired red. Lime and basalt temper. Red, white and black decoration.
3	C1	R420	B3.2.18	Fired pink. Temper up to 3 mm.: quartz, lime; up to 5 mm.: profuse grog. Red and black decoration.
4	C1	TS135	B1.1.1-3	Fired pink; core grey. Temper up to 1 mm.: quartz, lime. Turned inside and out. Red, black and white decoration. Irregular ring-burnish mainly on red slip.
5	C1	TS136	B1.2.2c	Fired pink; core grey. Temper up to 1 mm.: quartz, lime. Red and black decoration.
6	C1	TS138	B1.1.1-3	Fired red; core brown. Temper up to 2 mm.: quartz, grog, lime. Dark red, pink and black decoration.
7	C1	TS139	B1.2.2c	Fired pink; core grey. Temper up to 2 mm.: quartz, lime, basalt. Turned inside and out. Red and black decoration.
8	C1	TS143	B1.2.2c	Fired red; core grey. Temper up to 1 mm.: quartz, lime. Red and black decoration.
9	C2	TS142	B1.1.1-3	Fired pink; core grey. Temper up to 0.5 mm. Denticulations added as clay coil, cut by knife. Red and white decoration.
10	C3	R1076	B3.20.4	Fired dark buff. Lime temper. Entirely covered with white, red and black bands; outside base red.
11	C3	R1171	B3.20.4	Fired red. Lime temper. Black and red decoration.
12	C3	R915	B7.4.6	Fired grey. Lime temper. Red and white decoration.
13	C3	R250	B3.2.12	Fired pink; core yellow/grey. Temper up to 3.5 mm.: lime, quartz, grog, vegetable. Lower part outside turned. Red decoration.
14	C4	R1092	B3.2.m	Fired grey. Lime and basalt temper. Black and red decoration.
15	C4	R226	B3.2.2	Fired pink; core pink/yellow. Temper up to 2 mm.: lime, silica. Outside turned below carination.
16	C4	R387	B3.2.18	Fired pink; core grey. Temper up to 2 mm.: silica, lime; up to 3 mm.: some lime. String-cut base, left rough. Finish rough.

Figure 9.14: Bowls C5, C

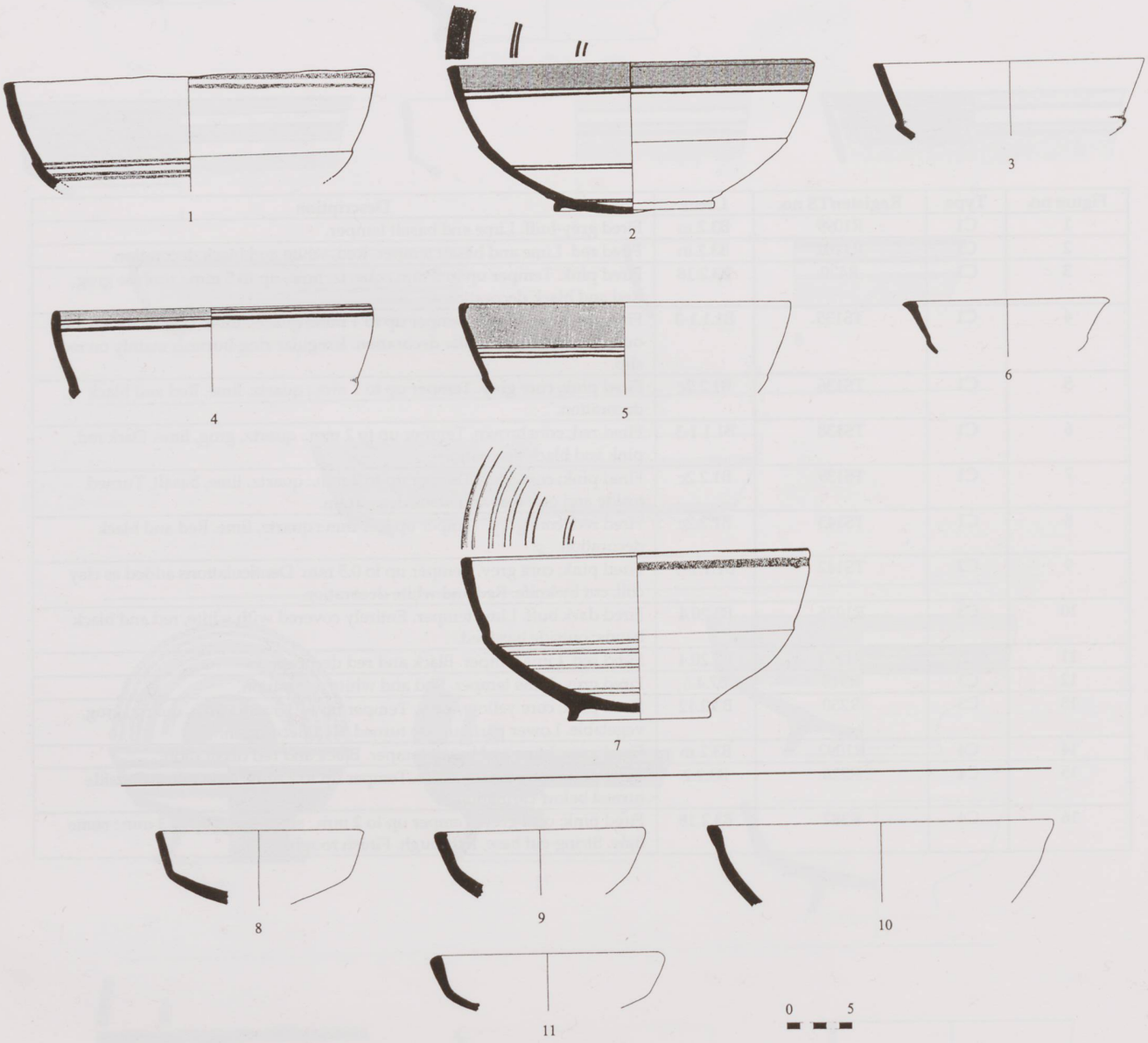


Figure no.	Type	Register/TS no.	Locus	Description
1	C5		A8.1a.6	
2	C5	R1058	B3.2.m	Fired green-grey. Basalt and lime temper. Rim painted yellow-brown in and out; black lines in and out.
3	C5	TS257a	B4.6.21	Fired white outside, pink inside; core pink. Temper mainly minuscule quartz; two pieces of basalt c. 2 mm. Outside turned to a sheen.
4	C5	TS200	B2.7.2	Fired yellowish cream; core pink. Temper up to 2 mm.: quartz, grog, mica. Black decoration.
5	C5	TS214	B2.7.2	Fired yellow. Temper up to 2 mm.: lime, shale, quartz. Red and black decoration.
6	C5?	TS236	A1.11.6	Fired pinkish buff outside, buff inside; core buff. Temper up to 2 mm.: basalt, lime, quartz, grog, vegetable. Traces of two lines of black slip on rim.
7	C5	R1220	A8.1a.6	Fired buff-pink. Lime and basalt temper. Black decoration.
8	C	TS247	A1.11.15	Fired pink/grey; core grey. Temper up to 1 mm.: lime, profuse quartz. Turned below carination.
9	C	TS250	A1.11.6	Fired brown inside, cream outside; core red/black. Temper up to 2.5 mm.: profuse lime, basalt, vegetable.
10	C	TS285	D2.5.15	Fired pink inside, buff outside; core pink. Temper up to 2 mm.: grog, basalt.
11	C	TS531	A6.1.21	

Figure 9.15: Bowls D1, D2

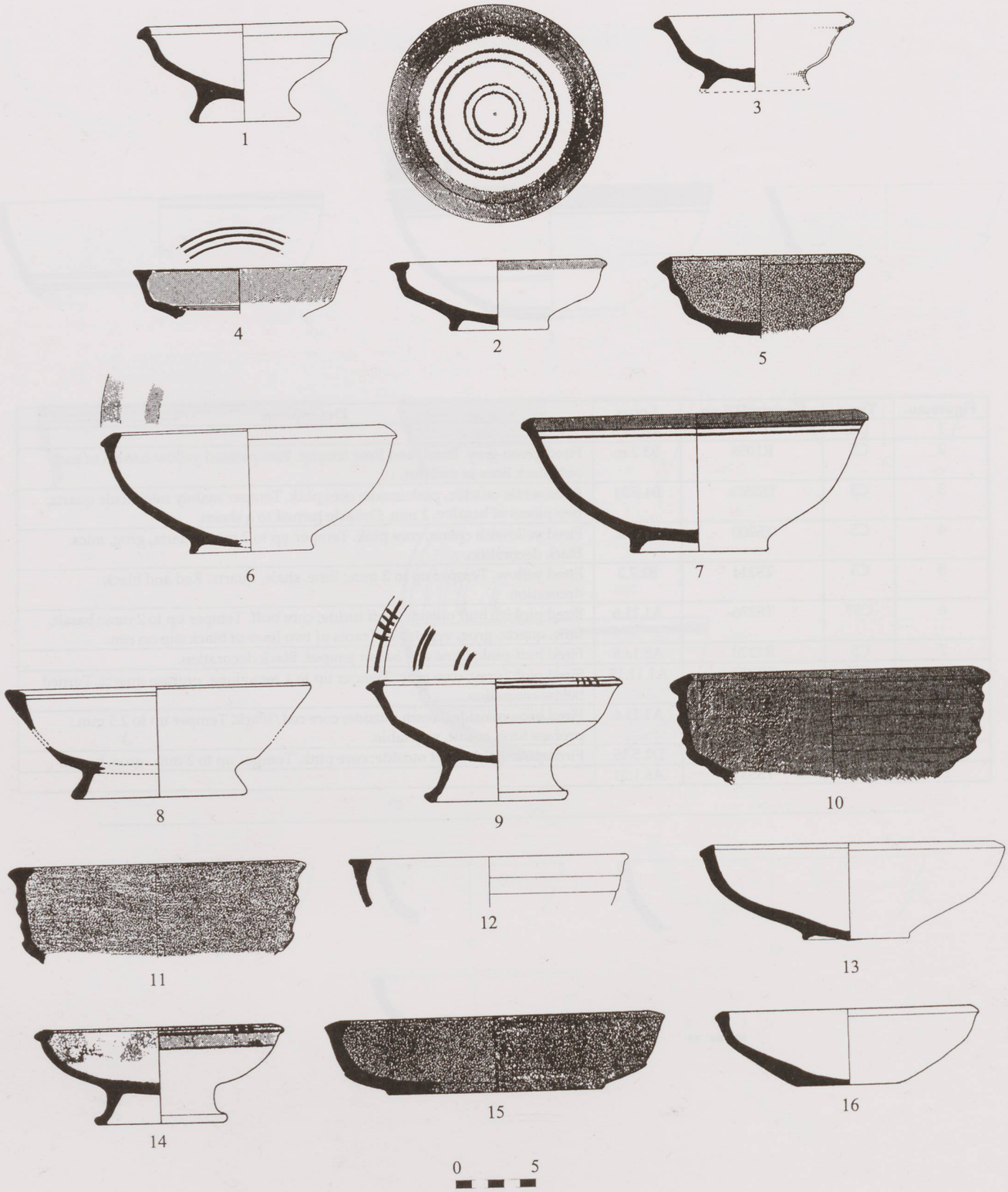


Figure no.	Type	Register/TS no.	Locus	Description
1	D1b	R186	B3.2.5	Fired buff. Temper up to 2 mm.: lime, quartz, basalt.
2	D1b	R264	B3.2.4	Fired buff/pink; core grey. Temper up to 3 mm.: lime, quartz. Red and black decoration.
3	D1b	R886	B7.1.5	Fired white inside; outside white/pale pink; core pale pink. Temper up to 0.1 mm.: profuse lime; up to 3 mm.: lime, basalt, quartz, vegetable. Dry-smoothed above carination inside.
4	D1b	TS430	B1.1.1-3	Fired pink; core grey. Temper up to 1 mm.: quartz, lime, basalt. Black and brown decoration.
5	D1c	R1037	B3.2.m	Black burnished ware. Lime temper.
6	D2a	R267	B3.2.6	Fired red; core brown. Temper up to 2 mm.: quartz, lime, basalt, grog. Sporadic discontinuous glossy ring-burnish inside and out. Red decoration.
7	D2a	R703	B2.7.4	Fired pink. Temper up to 4 mm.: lime, grog. Red and black decoration.
8	D2b		D3.10.10	
9	D2b	R1077	B3.20.4	Fired buff. Lime and basalt temper. Black decoration.
10	D2c	R1202	B3 baulk 3-6.1	Black burnished ware.
11	D2c	TS196	B2.6.2	Black burnished ware. Temper up to 1 mm.: basalt, rare lime.
12	D2c	TS506	B1.2.2c	
13	D2d	R229	B3.2.6	Fired grey-brown; core dark grey. Temper up to 2 mm.: quartz, lime.
14	D2d	R409	B3.2.18	Fired pink; core grey. Temper up to 3 mm.: lime, basalt, grog. Dry-smoothed in and out. Red and black decoration.
15	D2d	R541	B3.4.2	Black burnished ware. Temper up to 1.5 mm.: basalt, lime. Under base turned.
16	D2d	R559	A1.11.16	Fired dark grey. Temper up to 4 mm.: lime, basalt. Base turned.

Figure 9.16: Bowls D3

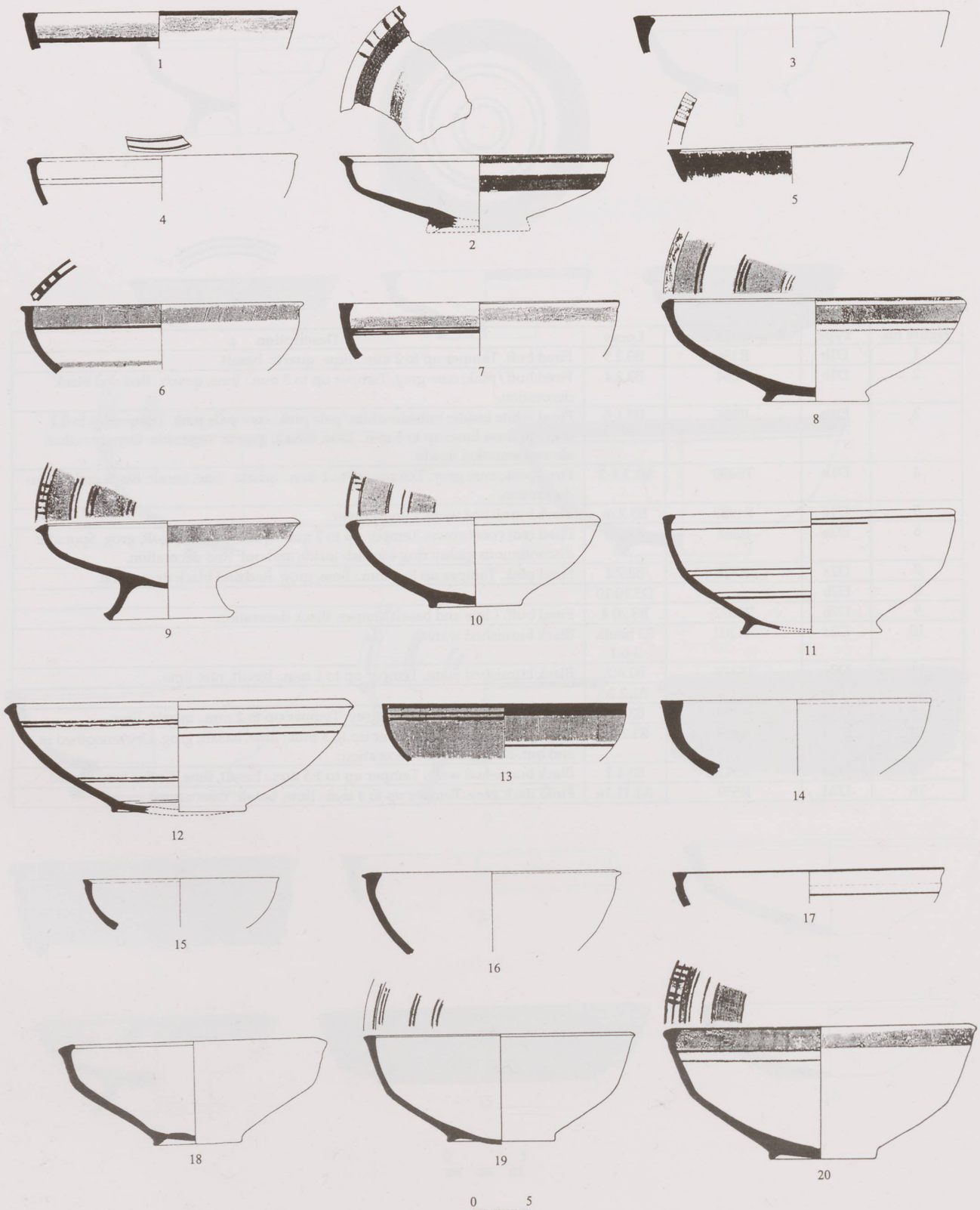


Figure no.	Type	Register/TS no.	Locus	Description
1	D3		B1.1.1-3	
2	D3	R248	B3.2.6	Fired buff; core grey. Temper up to 2 mm.: quartz, lime, grog. Outside below carination turned. Dry-smoothed in and out. Red and black decoration.
3	D3	TS223	B10.2.9	Fired pink; core grey. Temper up to 1 mm.: basalt; mainly up to 0.25 mm.: quartz.
4	D3a		B1.1.1-3	
5	D3a		B1.1.1-3	
6	D3a		B1.1.1-3	
7	D3a		B1.1.1-3	
8	D3a	R236	B3.2.6	Fired pink; core grey. Temper up to 3 mm.: quartz, lime. Dull discontinuous ring-burnish inside. Red and black decoration.
9	D3a	R358	B3.2.12	Fired buff; core grey. Temper up to 4 mm.: profuse lime, quartz. Red and black decoration. Discontinuous dull ring-burnish on red bands inside.
10	D3a	R417	B3.2.18	Fired buff; core brown. Temper up to 4 mm.: quartz, basalt; up to 6 mm.: profuse lime. Red and black decoration.
11	D3a	R64	B1.1.3	Fired red; core grey. Temper up to 2 mm.: quartz, mica, lime. Red and dark brown decoration. Dull continuous ring-burnish below rim inside and out.
12	D3a	R646	B2.7.2	Fired pink; core brown. Temper up to 3 mm.: lime, basalt, grog. Black decoration.
13	D3a	TS151	B1.1.1-3	Fired pink; core grey. Temper up to 1 mm.: quartz, lime. Red and black decoration.
14	D3a	TS154	A9.9.2	Fired buff; core grey. Temper up to 2 mm.: quartz, lime.
15	D3a	TS158	B1.1.1-3	Fired pink. Temper up to 0.5 mm.: mica, quartz; up to 4 mm.: lime.
16	D3a	TS166	A4.1.2	Fired pink; core grey. Temper up to 2 mm.: quartz, lime.
17	D3b		B1.1.1-3	
18	D3b	R179	B3.2.2	Fired pink. Temper up to 1 mm.: lime, quartz.
19	D3b	R356	B2.4.2	Fired orange; core dark grey. Temper up to 3 mm.: lime, quartz, grog. Black decoration.
20	D3b	R412	B3.2.18	Fired pink; core grey. Temper up to 2 mm.: quartz; up to 3 mm.: lime. Red and black decoration.

Figure 9.17: Bowls D3, D4

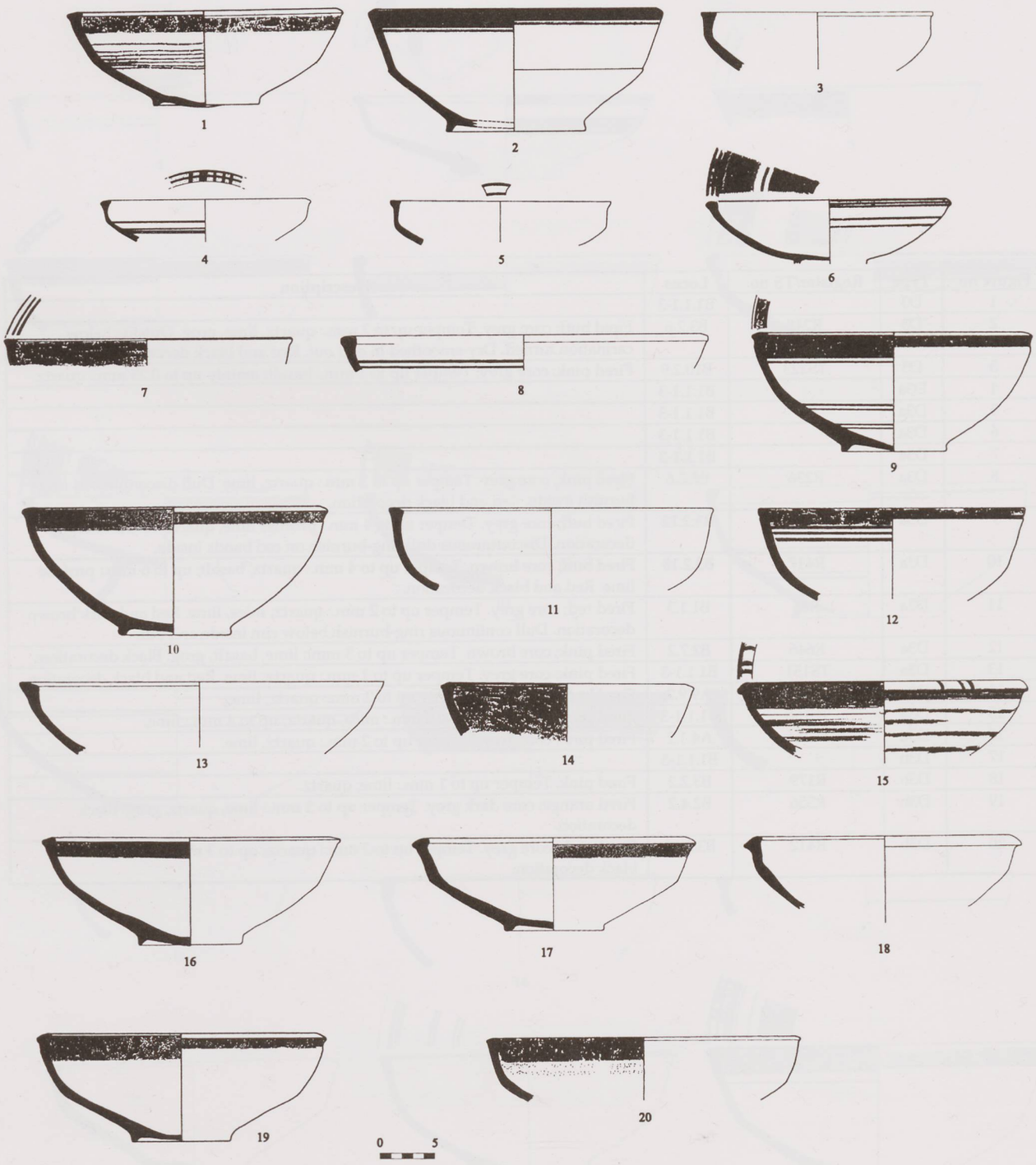


Figure no.	Type	Register/TS no.	Locus	Description
1	D3b	R421	B3.2.18	Fired pink. Temper up to 5 mm.: quartz, profuse lime and grog. Red decoration. Discontinuous shiny ring-burnish inside.
2	D3b	R710	B2.7.2	Fired pink; core brown. Temper up to 1 mm.: basalt, grog, rare lime. Red and black decoration.
3	D3b	TS153	A5.5.2	Fired yellow; core grey. Temper up to 1 mm.: quartz, lime.
4	D3b	TS174	B1.2.2c	Fired pink; core brown. Temper up to 3 mm.: quartz, lime, grog. Black decoration.
5	D3b	TS507	B1.2.2c	
6	D3d	R411	B3.2.18	Fired pinkish-buff; core grey. Temper up to 2 mm.: quartz; up to 4 mm.: lime. Red and black decoration.
7	D4		B1.1.1-3	Decorated with brown lines on red. Burnished.
8	D4	TS485	B1.2.2c	
9	D4a	R1023	B3.2.m	Fired pink. Lime temper. Red and black decoration.
10	D4a	R410	B3.2.18	Fired pinkish-buff; core grey. Temper up to 3 mm.: quartz, lime, grog. Red decoration.
11	D4a	TS155	B1.2.2c	Fired yellow; core grey. Temper up to 1.5 mm.: quartz, lime.
12	D4a	TS157	B1.1.1-3	Fired pink; core brown. Temper up to 2 mm.: lime, quartz, grog. Red and black decoration.
13	D4a	TS159	A30.2.3	Fired pink/white; core grey. Temper up to 0.5 mm.: quartz, lime.
14	D4a	TS23	B+	Fired red; core grey. Temper up to 3 mm.: quartz, lime, grog. Red and black decoration. Discontinuous shiny ring-burnish inside.
15	D4a	TS510	D7.1.2	
16	D4b	R222	B3.2.4	Fired yellow. Temper up to 3 mm.: quartz, lime. Red decoration.
17	D4b	R224	B3.2.9	Fired pink. Temper up to 2 mm.: lime, quartz, basalt. Red decoration.
18	D4b	R225	B3.2.2	Fired pink; core grey. Temper up to 1 mm.: quartz, lime.
19	D4b	R390	B2.4.2	Fired pink; core yellow. Temper up to 3 mm.: lime, basalt, grog. Red decoration.
20	D4b	TS146	B1.1.1-3	Fired pink; core brown/grey. Temper up to 2 mm.: grog, quartz; up to 4 mm.: lime, vegetable. Red and yellow decoration.

Figure 9.18: Bowls D5, D6, D

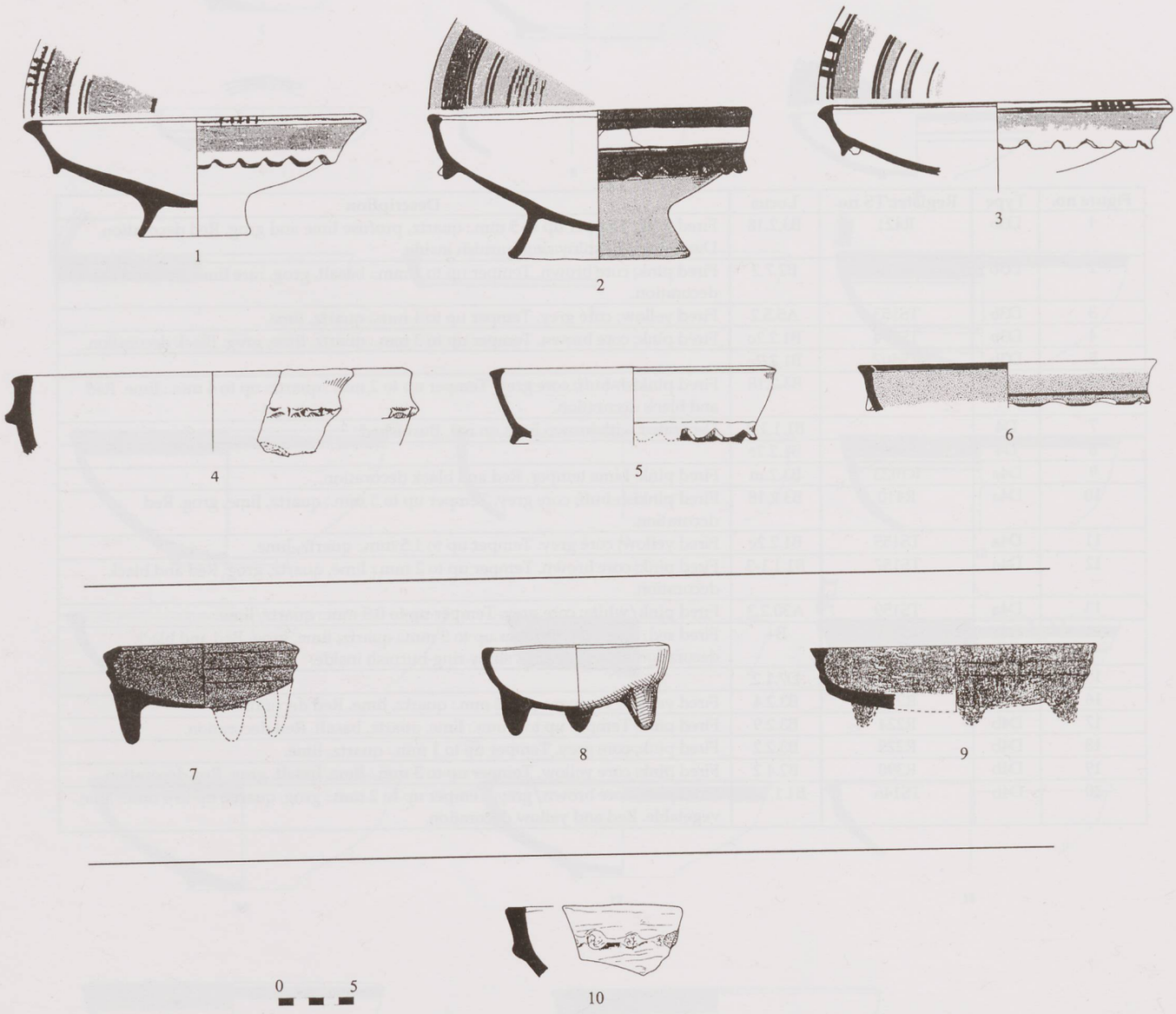


Figure no.	Type	Register/TS no.	Locus	Description
1	D5	R359	B3.2.11-12	Fired pink; core greyish-buff. Temper up to 4 mm.: quartz, lime, grog. Red and black decoration.
2	D5	R1079	B7.4.9	Fired buff. Lime temper. Inside has red slip throughout, two series of black lines; traces of two red lines near base. Outside has two series of black lines divided by white band. Rim and denticulation painted red.
3	D5	R1093	B3.2.m	Fired buff. Lime and basalt temper. Red and black decoration.
4	D5		A60.+	
5	D5	TS110	?	
6	D5	TS431	C1.3.3a	Fired pink. Temper up to 1 mm.: quartz, lime. Red and black decoration.
7	D6	R1033	B3.2.m	Black burnished ware.
8	D6	R114	B1.2.2c	Black burnished ware. Temper up to 0.25 mm.: mica, lime.
9	D6	TS113	B3.4.3	Black burnished ware. Temper up to 1 mm.: lime, silica.
10	D?	TS116	B6.2.3	Fired pink; core grey. Temper up to 1 mm.: quartz, lime. Wet-smoothed outside.

Figure 9.19: Bowls E

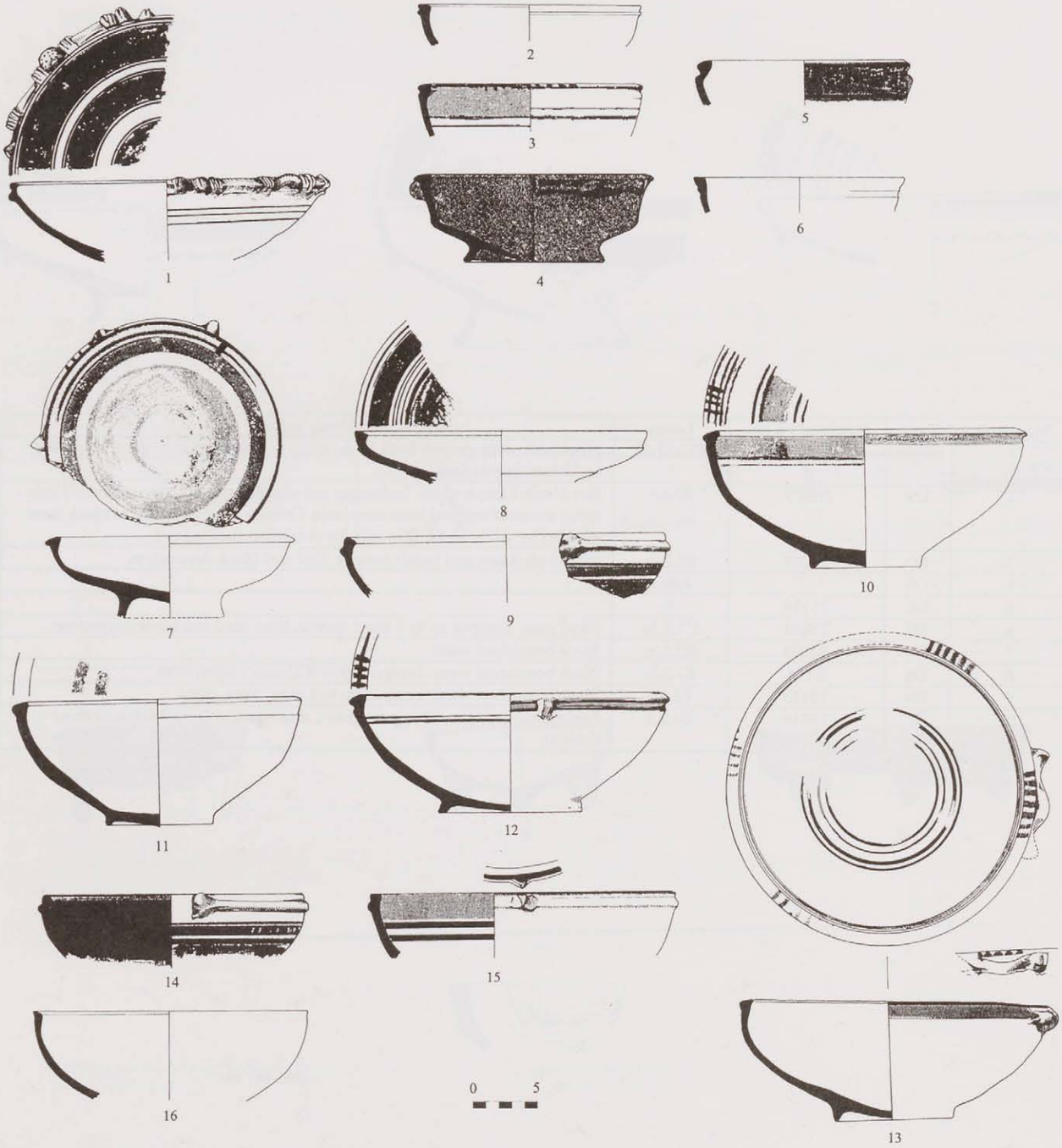


Figure no.	Type	Register/TS no.	Locus	Description
1	E2a	R794	B2.7.2	Fired cream on surface; pink immediately below surface; core grey. Temper up to 1.5 mm.: lime, basalt, quartz, vegetable. Red and black decoration.
2	E2a	TS164	B1.1.1-3	Fired pink; core grey. Temper up to 1 mm.: quartz, lime.
3	E2a	TS58	B1.1.1-3	Fired buff. Temper up to 2 mm.: lime, grog, quartz, shale. Red and black decoration.
4	E2b	R495	B3.4.3	Black burnished ware. Temper up to 2 mm.: lime, profuse basalt.
5	E2b	TS162	B1.1.1-3	Fired grey. Temper up to 2 mm.: quartz, lime. Wet-smoothed inside and out. Red and black decoration.
6	E2c	TS165	A9.9.2	Fired pink. Temper up to 1.5 mm.: quartz, lime.
7	E2d	R332	B3.2.7	Fired pink/yellow; core yellow. Temper up to 1 mm.: lime; up to 0.5 mm.: mica, quartz. Red and black decoration.
8	E2d	R471	D3.1.2	Fired cream/orange; core pink/grey. Temper up to 0.25 mm.: quartz, mica, rare lime, grog, shale. Inside turned. Red and black decoration.
9	E3a		B3.2.9	
10	E3a	R335	B3.2.12-13	Fired pink; core brown. Temper up to 3 mm.: quartz, lime. Red and black decoration.
11	E3a	R436	B3.2.18	Fired buff. Temper up to 3 mm.: quartz, lime, grog. Red decoration.
12	E3a	R610	B3.6.2	Fired pink/grey; core brown. Temper up to 2 mm.: grog, lime, basalt. Brown slip line inside. Black paint on rim.
13	E3a	R67	B1.1.1-3	Fired pink; core grey. Temper up to 3 mm.: quartz, lime. Red and dark brown decoration.
14	E3a	TS150	B3.2.9	Fired pink; core grey. Temper up to 2 mm.: lime, quartz. Red and black decoration. Discontinuous shiny ring-burnish over red slip inside.
15	E3a	TS152	B1.1.1-3	Fired red; core dark grey. Temper up to 3 mm.: lime, quartz, rare basalt. Red and black decoration.
16	E3a	TS156	B1.1.1-3	Fired red; core grey. Temper up to 3 mm.: quartz, lime, basalt.

Southern Edom: Tawilan (Bennett and Bienkowski 1995: figs 6.4–6.7), Umm al-Biyara (Bennett 1966: figs 2:6; 3:2, 4, 15; 4:1; Oakeshott 1978: pl. 56:3–6), as-Sadeh (Zeitler 1992: figs 14.3A:10; 14.5:14–18), Khirbat al-Mu'allaq (Lindner, Knauf and Zeitler 1996: figs 27:10; 28:3, 8, 10, 12), Jabal al-Qseir (Lindner *et al.* 1996: fig. 27: 3–6), Ghrareh (Hart 1988: fig. 7:7; 1989: pls 3:7–13; 4, 5), Tall al-Khalayfi (Pratico 1993: pls 33:3–15; 34; 35:1–6)
Northern Transjordan: Balu'a (Worschech, Rosenthal and Zayadine 1986: fig. 12:6; Worschech 1990: fig. 21:6), Dhiban (Tushingham 1972: fig. 1:62–65), Tall al-'Umayri (Herr 1989: figs 19.8:26, seventh century BC; 19.15:17–22, late Iron II/Persian), Tall Nimrin (Flanagan, McCreery and Yassine 1994: figs 19:2, Persian; 20:3, Iron II)
Negev: Horvat Qitmit (Freud and Beit-Arieh 1995: figs 4.1:25, 50, 56; 4.2:4–7), Tel 'Ira (Freud 1999a: figs 6.83:4; 6.84:3; 6.87:2), Tel Masos (Fritz and Kempinski 1983: pl. 163:8–11), Beersheba (Aharoni 1973: pl. 59:58, 63–71, Stratum II), Horvat Teiman (Ayalon 1995: fig. 3:8–10)
Southern Judah: Tell Beit Mirsim (Albright 1943: pls 21:1–2; 22; 23), Jerusalem (Eshel 1995: fig. 13:10–19, seventh century BC)

Bowls Type E: Bowls with Triangular-section Rims with Bar Handle or Ridge below Rim

These bowls are a variant of Bowls type D. The same comments and techniques apply as to Bowls type D, and the same subdivision system has been used. In Bowls type E, the join of the second, outward, fold was left projecting as a ridge. These bowls show some degeneration with regard to this rim technique: the ridge is frequently much reduced, and in some cases has been shaped by a secondary process after the rim fold had been smoothed in to the wall. The ridge is probably functional in origin, serving as a handle. The bar handle is a more elaborate form of the same idea. Bar handles are sometimes reduced to a pair of knobs. Figure 9.19:1 has an elaborate type of bar handle, adorned with vertical grooved loops, and the horizontal loop decorated with impressed dots.

BOWLS E: PARALLELS
Northern Edom: Ash-Shorabat (Bienkowski and Adams 1999: fig. 1:14)
Southern Edom: Tawilan (Bennett and Bienkowski 1995: figs 6.4:2; 6.5:1; 6.7:5–7), Ghrareh (Hart 1989: pl. 4:17), Tall al-Khalayfi (Pratico 1993: pls 33:5; 34:5, 6)
Northern Transjordan: Tall al-'Umayri (Herr 1989: figs 19.8:25, seventh century BC; 19.15:12, late Iron II/Persian; Herr *et al.* 1991: figs 3.13:28; 3.14:3–4, late Iron II/early Persian)
Negev: Horvat Qitmit (Freud and Beit-Arieh 1995: figs 4.10:12; 4.17:4?; cf. also fig. 4.12:11), Tel 'Ira (Freud 1999a: figs 6.65:1; 6.84:5; 6.102:8)
Southern Judah: Tell Beit Mirsim (Albright 1943: pl. 26A:2), Jerusalem (Eshel 1995: fig. 4:9, seventh century BC)

Bowls Type F: Deep Bowls with Handles, Thickened Rim and Ring Base (Kraters)

Large bowls, with two or more handles, always with a ring base. Made by Method A, with Base type 5. The handles are applied before the base is closed, and so cannot project above the rim. The handles are pulled. The rim is made with one inward and two outward folds.

F1: BOWLS WITH A LONG SECOND RIM FOLD

F2: BOWLS WITH A SHORTER SECOND RIM FOLD
F2a: handles from rim to shoulder

F2b: handles on wall below rim

BOWLS F: PARALLELS
Northern Edom: Ash-Shorabat (Bienkowski and Adams 1999: figs 2:8, 9; 3:2, 8), Khirbat an-Nahas (Fritz 1996: fig. 3:9 — ninth century BC?), Feifa (Lapp 1994: fig. 13–2: 3–5)
Southern Edom: Tawilan (Bennett and Bienkowski 1995: figs 6.15–6.17), Umm al-Biyara (Bennett 1966: figs 2:7; 3:10; Oakeshott 1978: pl. 56:1), as-Sadeh (Zeitler 1992: fig. 14.5:13), Jabal al-Qseir (Lindner *et al.* 1996: fig. 25:2–3), Ghrareh (Hart 1988: fig. 7:11; 1989: pls 13, 17), Tall al-Khalayfi (Pratico 1993: pls 22–24)
Northern Transjordan: Balu'a (Worschech, Rosenthal and Zayadine 1986: fig. 12:13–15; Worschech 1990: fig. 24:47), Aro'er (Olávarri 1965: fig. 2:4), Dhiban (Winnett and Reed 1964: pl. 74:7; Tushingham 1972: fig. 1:41–45), Tall al-'Umayri (Herr 1989: fig. 19.4:19, late eighth–early seventh centuries BC)
Negev: Horvat Qitmit (Freud and Beit-Arieh 1995: fig. 4.2:27, 30–32), Tel 'Ira (Freud 1999a: figs 6.59:12; 6.67:11), Tel Masos (Fritz and Kempinski 1983: pl. 164:5, 6), Arad (Herzog *et al.* 1984: fig. 25:6, Stratum VII, seventh century BC), Beersheba (Aharoni 1973: pl. 66: 8, Stratum II)
Southern Judah: Tell Beit Mirsim (Albright 1943: pl. 20:16), Jerusalem (Eshel 1995: fig. 16:5–10, seventh century BC), Tel Goren (Mazar, Dothan and Dunayevsky 1966: fig. 16:3–6, seventh–sixth centuries BC)

Bowls Type G: 'Negev Ware'

Coarse, handmade pottery, unevenly fired. The clay contains a great deal of temper, some of which is slag. There is only one complete example from Busayra, unlike Tall al-Khalayfi (see Pratico 1993: pls 11–15). Instrumental neutron activation analysis of one sample of 'Negev Ware' from Busayra indicates that it originated locally (see Appendix 1: BUS 18).

BOWLS G: PARALLELS
Northern Edom: Khirbat an-Nahas (Fritz 1996: fig. 4:1–8 — ninth century BC?), Barqa al-Hetiye (Fritz 1994: fig. 13 — ninth century BC?), Feifa (Lapp 1994: fig. 13–2:6)
Southern Edom: Tawilan (Bennett and Bienkowski 1995: fig. 6.36; for Figure 9.23:1, cf. *ibid.* fig. 6.37:14), Ghrareh (Hart 1989: pls 24; 28:7–17), Tall al-Khalayfi (Pratico 1993: pls 11–15)
Negev: Horvat Qitmit (Freud and Beit-Arieh 1995: figs 4.5:24; 4.7:3–5; 4.12:18, 20 — these are published as 'clay basins', but the shapes, fabric and manufacturing technique suggest they are 'Negev Ware'), Kadesh-barnea (Cohen 1983: xvii and figs 25, 27)

Bowls Type H: Thin-walled Bowls

These bowls are not grouped with type J as the walls are not thin enough to qualify as 'fine ware'. At Tawilan, Hart (1995b: 54) equated type H with type J since he found the distinction subjective and difficult to define, but at Busayra the distinction seems clear-cut. No parallels to the Busayra Bowls H were found at Tawilan. Bowls H were made by Method A and then turned. No examples survive with bases. The rim is made with a single inward fold. Rim diameters are between 14 and 16 cm.

Figure 9.20: Bowls E (continued)

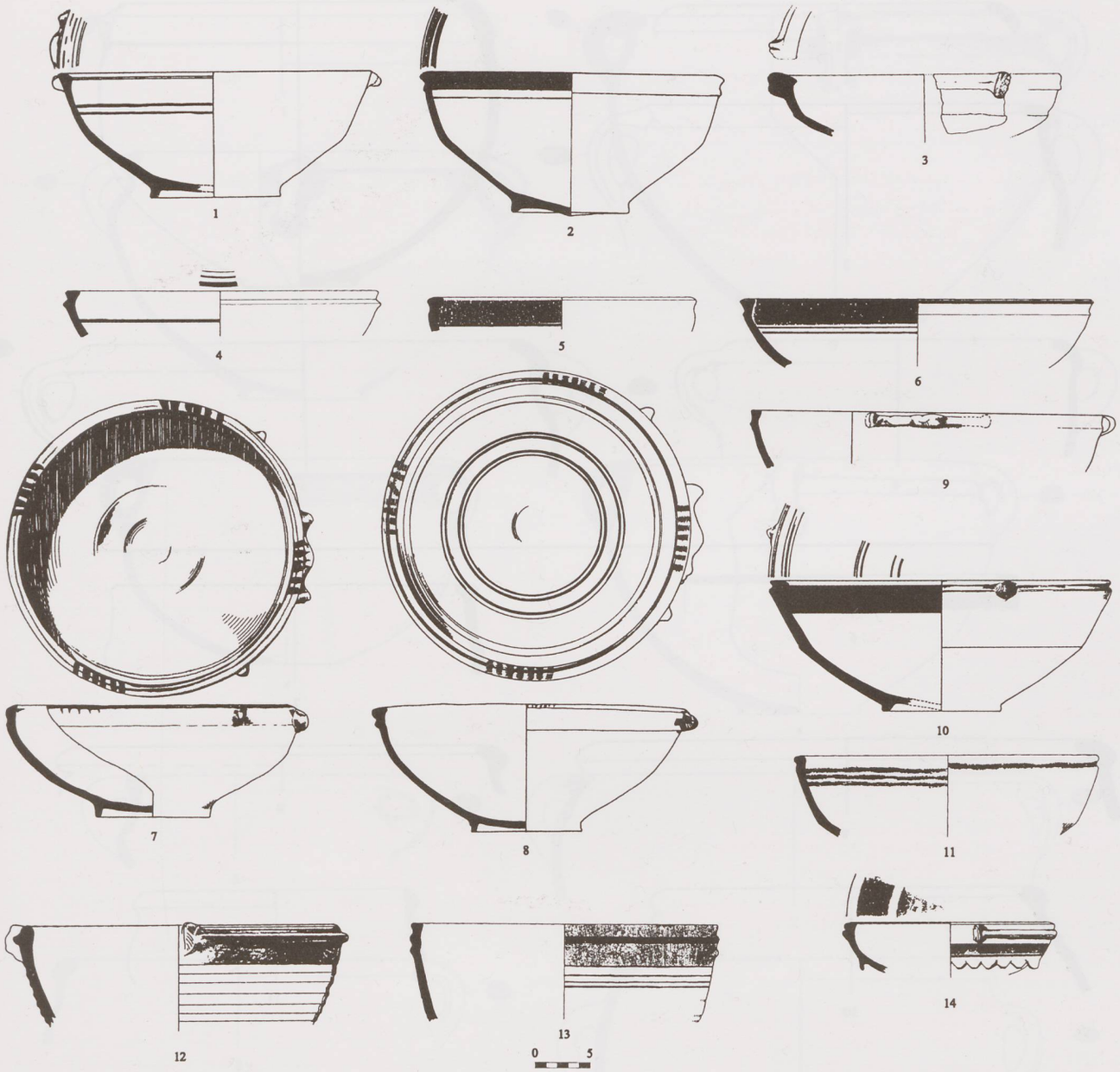


Figure no.	Type	Register/TS no.	Locus	Description
1	E3b	R565	B3.7.1	Fired pink. Temper up to 5 mm.: lime, grog, rare basalt. Black decoration and red slip inside and out.
2	E3b	R664	B2.7.2	Fired buff; red patch on exterior; core brown. Temper up to 3 mm.: lime, basalt. Red and black decoration.
3	E3b	TS374	B6.4.2	
4	E4	TS147	B1.1.1-3	Fired pink; core grey. Temper up to 1.5 mm.: lime, quartz, rare grog. Red and black decoration.
5	E4	TS148	B1.1.1-3	Fired yellow. Temper up to 2 mm.: quartz, lime. Red and black decoration.
6	E4a	TS149	B1.1.1-3	Fired red; core grey. Temper up to 4 mm.: quartz, lime, grog. Red and black decoration.
7	E4a	R65	B1.1.1-3	Fired pink; core grey. Temper up to 1 mm.: quartz; up to 3 mm.: lime, basalt. Red and brown decoration.
8	E4a	R66	B1.1.3	Fired pink/yellow; core grey. Temper up to 2 mm.: quartz, lime. White, brown and red decoration.
9	E4a	TS163	B1.2.2c	Fired red; core grey. Temper up to 5 mm.: quartz, lime, grog, basalt.
10	E4b	R1056	B3.2.m	Fired grey/buff. Lime, basalt and grog temper. Red and black decoration.
11	E4b	TS49/87	B1.1.1-3	Fired pink; core brown. Temper up to 2 mm.: basalt, lime, grog. Red slip and black slip lines inside and out.
12	E4c		D3.2.3	
13	E4c	TS211	B2.7.2	Fired pink; core brown. Temper up to 3 mm.: lime; up to 1 mm.: basalt, quartz, limestone, grog. Black, red and white decoration.
14	E5	TS160	B3.2.+	Fired pinkish-buff; core brown. Temper up to 3 mm.: lime, basalt, vegetable. Red and black decoration.

Figure 9.21: Bowls F1, F2

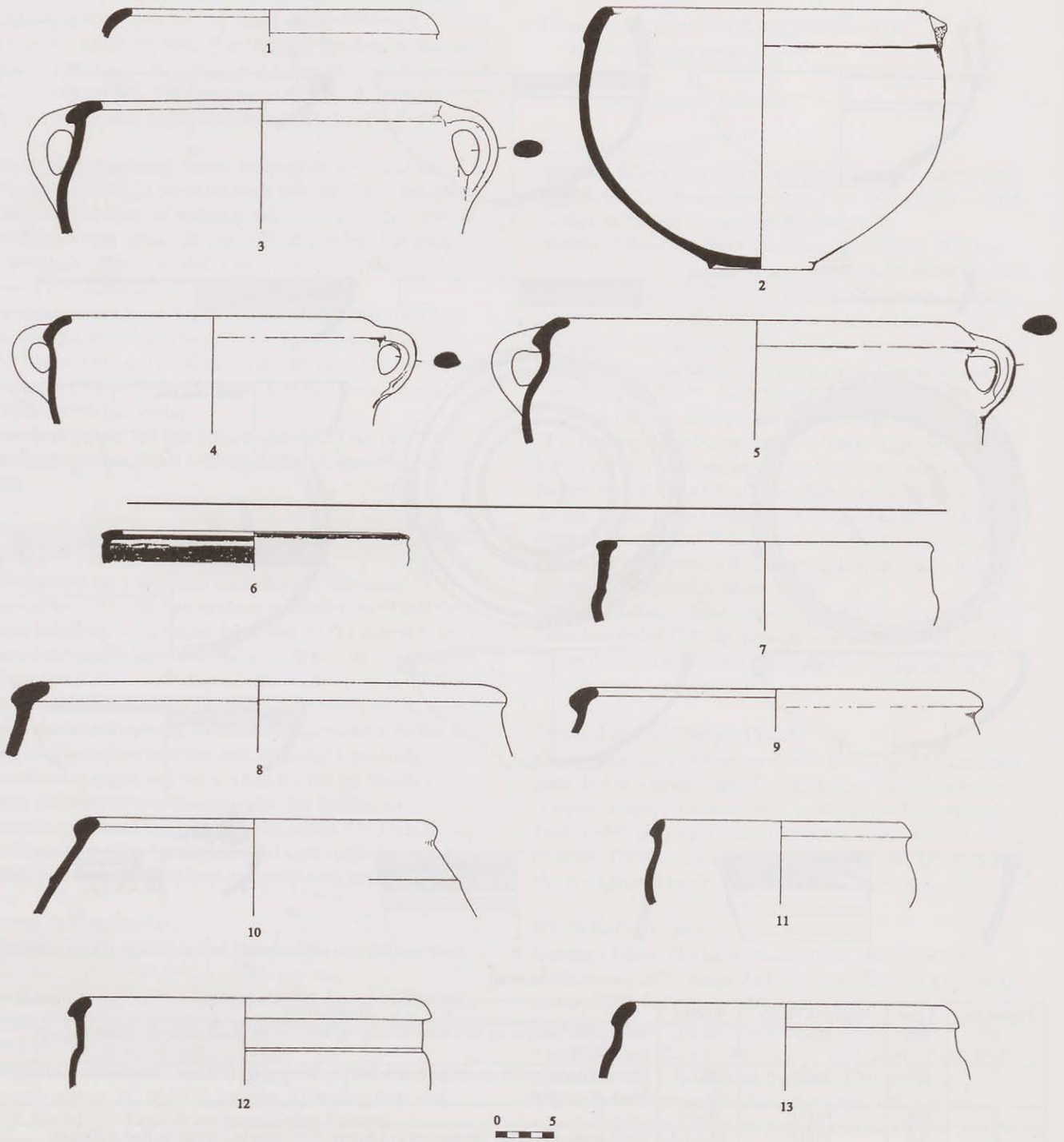


Figure no.	Type	Register/TS no.	Locus	Description
1	F1		C1.2.2	
2	F1	R697	A1.10.6	Fired pink/brown. Temper up to 4 mm.: rare lime; up to 2 mm: grog, basalt. Lower part possibly turned.
3	F1	TS331	B1.2.2c	Fired buff; core brown. Temper up to 2 mm.: grog, lime, quartz.
4	F1	TS53	B1.1.1-3	Fired cream out, pink in; core grey. Temper up to 2 mm.: lime, basalt, rare grog.
5	F1	TS55	B1.1.1-3	Fired pink; core grey. Temper up to 1 mm.: quartz, lime.
6	F2		B1.1.1-3	Red and black decoration.
7	F2	TS270	A1.11.18	Fired buff. Temper up to 2 mm.: lime, basalt, red limestone.
8	F2	TS330	B1.1.1-3	Fired pink; core grey. Temper up to 3 mm.: basalt, lime, grog.
9	F2	TS332	B1.2.2c	Fired red; core dark grey. Temper up to 1 mm.: basalt, lime.
10	F2	TS333	B1.1.1-3	Fired pink; core grey. Temper up to 3 mm.: quartz, lime, grog.
11	F2	TS334	B1.1.1-3	Fired grey-green; core grey. Temper up to 0.5 mm.: quartz, mica, lime.
12	F2	TS516	B1.2.2	
13	F2	TS54	B1.1.1-3	Fired grey; core purple. Temper up to 2 mm.: basalt, rare lime.

Figure 9.22: Bowls F2

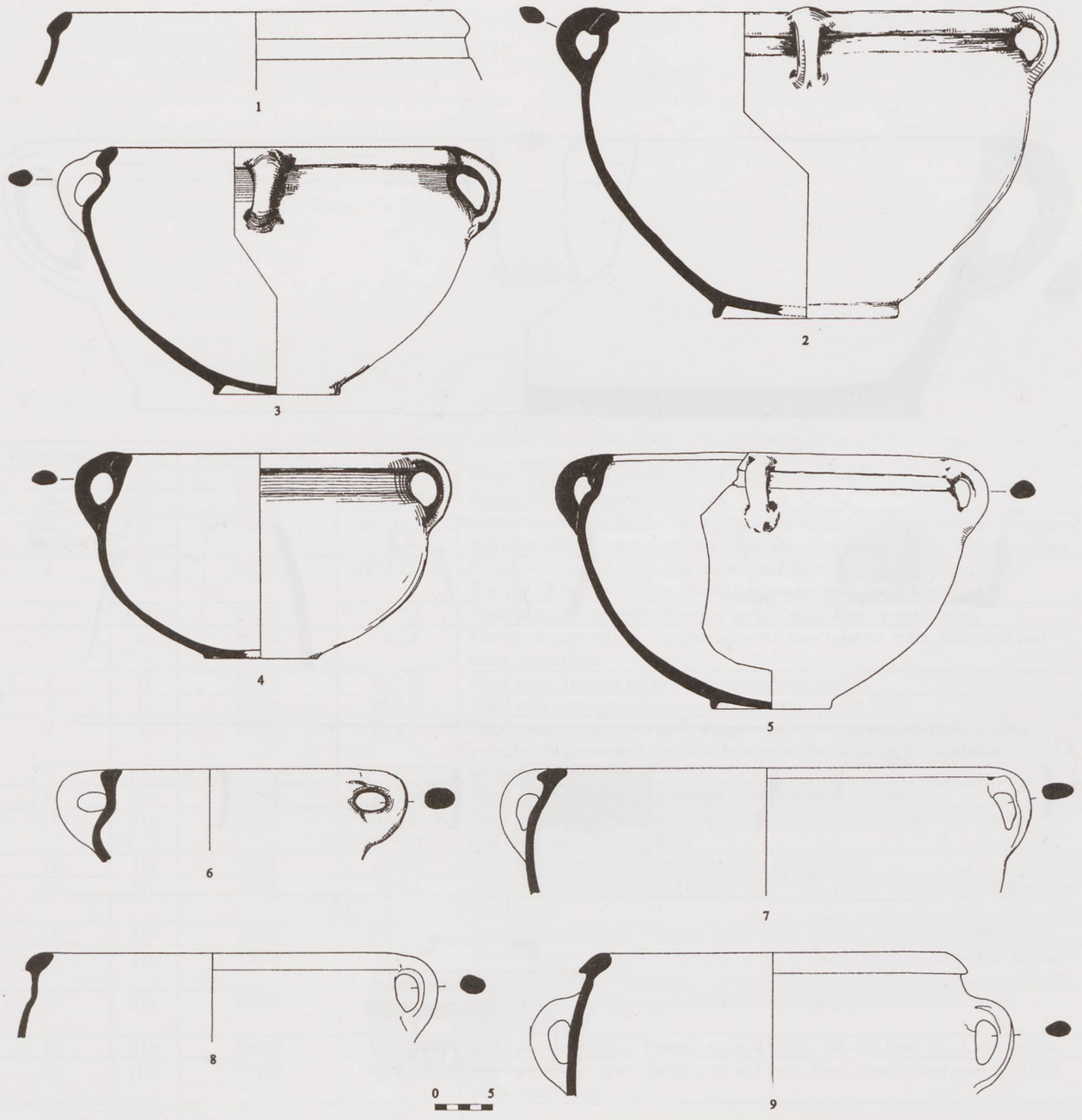


Figure no.	Type	Register/TS no.	Locus	Description
1	F2	TS621	B1.1.1-3	
2	F2a	R1098	B2.10.2/B3.2.m	Fired buff. Lime temper.
3	F2a	R497	B3.4.3	Fired pink/cream; core grey/pink. Temper up to 4 mm.: basalt, rare lime. Pulled handles.
4	F2a	R795	B2.7.2	Fired pink; core dark grey. Temper up to 4 mm.: lime; up to 2 mm.: grog, quartz. Two pulled handles.
5	F2a	R80	B1.1.3	Fired pink; core grey. Temper up to 1 mm.: lime, quartz. Pulled handles.
6	F2a	TS251	A1.33.6	Fired pinkish-buff outside, brown inside; core brown. Temper up to 1 mm.: lime, basalt, grog. Pulled handle.
7	F2a	TS56	B1.1.1-3	Fired pale grey; core purple. Temper up to 2 mm.: basalt and some lime.
8	F2a	TS641	B1.1.1-3	
9	F2b	TS208	B2.7.2	Fired pink/cream; core red except at rim, where it is grey. Temper up to 3 mm.: basalt, quartz, lime. Pulled handle.

Figure 9.23: Bowls G, H, J, J1a

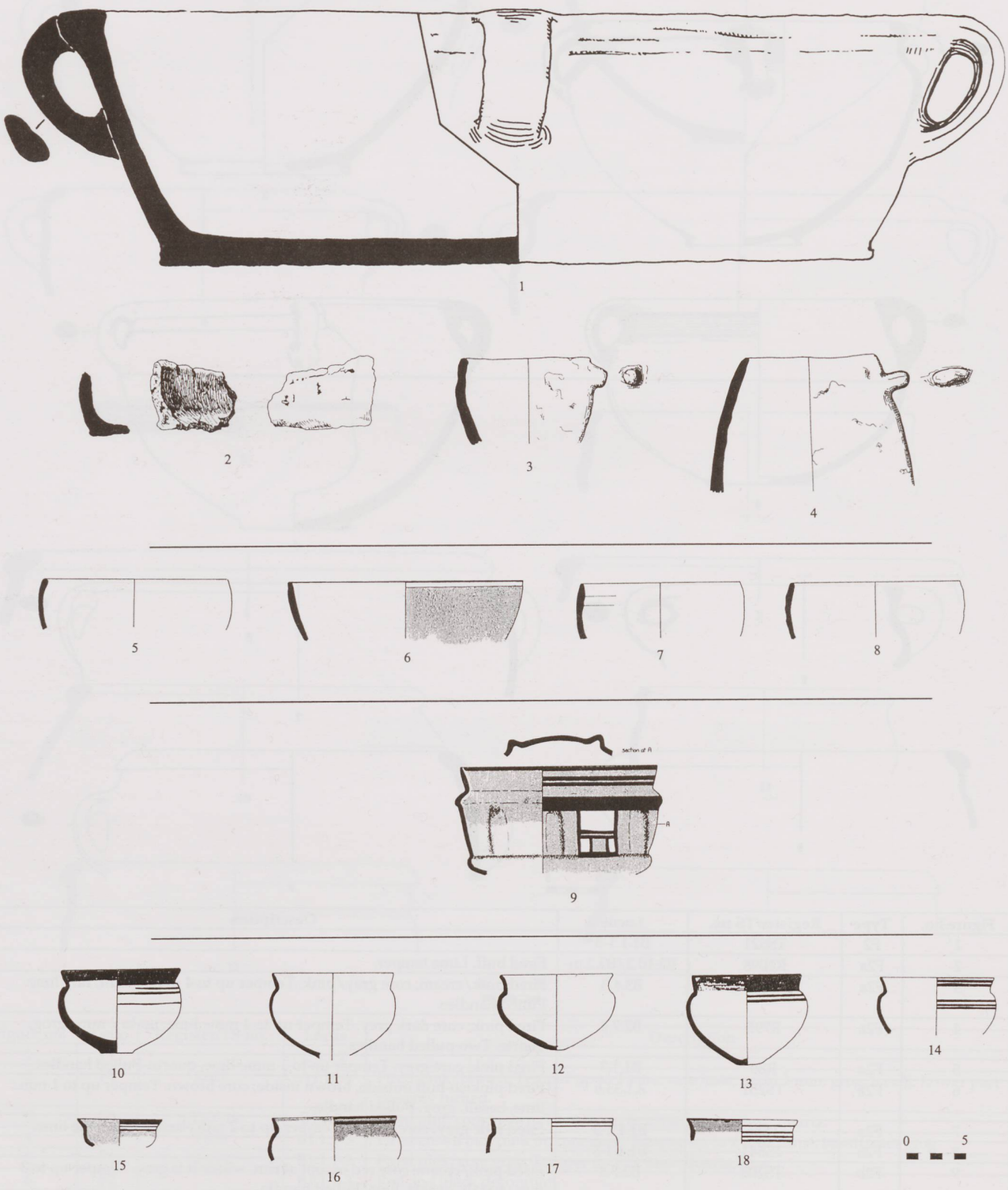


Figure no.	Type	Register/TS no.	Locus	Description
1	G	R1122	B8.4.9	Negev Ware: very crumbly, thick, heavy, low fired.
2	G	R150	C2.2.6.F9	Negev Ware: coarse lime temper.
3	G	TS240	A1.11.15	Negev Ware: fired black/brown; core red in places, black in others. Temper up to 3 mm.: clinker, some red limestone, lime, basalt, vegetable. Wet-smoothed.
4	G	TS246	A1.11.15/16	Negev Ware: fired black and yellow outside, red inside; core red/grey. Temper up to 2 mm.: lime, basalt, some vegetable. Wet-smoothed.
5	H	TS202	B2.7.2	Fired pinkish; core grey. Temper up to 2 mm.: lime, quartz, grog.
6	H	TS326	C2.2.6	Fired red; core yellow. Temper up to 0.5 mm.: quartz, mica, lime. Red and black decoration.
7	H	TS328	B1.2.2c	Fired pink. Temper up to 3 mm.: grog, lime, quartz.
8	H	TS329	B1.2.2a	Fired pink; core grey. Temper up to 1 mm.: quartz, lime.
9	J	TS181	B1.2.2c	Fired cream/pink; core grey. Temper up to 2 mm.: quartz, lime. Surface outside continuously burnished to a gloss. Red and black decoration. cf. NAA analysis.
10	J1a	R1090	B3.2.m	Fired pinkish-buff. Lime temper. Red and black decoration.
11	J1a	R113	B1.2.2c	Fired pink/grey; core grey/orange. Temper up to 0.25 mm.: profuse quartz and lime; up to 1 mm.: lime.
12	J1a	R361	B2.4.2	Fired pink. Temper up to 4 mm.: lime, grog, quartz.
13	J1a	R588	B3.7.1	Fired pinkish-buff. Temper up to 2 mm.: lime, basalt, rare grog. Red and black decoration.
14	J1a	TS172	B1.1.1-3	Fired pink; core grey. Temper up to 1 mm.: quartz, lime. Black decoration.
15	J1a	TS176	B1.2.2c	Fired cream; core yellow. Temper up to 1.5 mm.: basalt, quartz, lime. Red and black decoration. Continuous shiny ring-burnish inside and out, over red slip.
16	J1a	TS178	B1.1.1-3	Fired yellow. Temper up to 4 mm.: lime, basalt, quartz. Red and black decoration.
17	J1a	TS180	B1.1.1-3	Fired pink; core grey. Temper up to 0.5 mm.: quartz, lime. Black decoration.
18	J1a?	TS183	B1.1.1-3	Fired pink; core grey. Temper up to 1 mm.: lime, quartz, rare grog. Red and black decoration.

BOWLS H: PARALLELS

Northern Edom: Ash-Shorabat (Bienkowski and Adams 1999: figs 1:11–12; 2:1–2, 4), Khirbat an-Nahas (Fritz 1996: fig. 3:4 — ninth century BC?)
Northern Transjordan: Dhiban (Tushingham 1972: fig. 2:12–14?), Tall al-ʿUmayri (Herr *et al.* 2000: fig. 3.33:1–5, late Iron II/early Persian)
Negev: Horvat Qitmit (Freud and Beit-Arieh 1995: fig. 4.1: 26, 27, 31–32, 35, very common)

Bowls Type J: 'Fine Ware' Bowls

The defining characteristic of type J bowls is the thinness of the walls, achieved by careful trimming of the vessel wall at the leather-hard stage. Both red-firing and white-firing clays were used, white-firing clays with greater frequency than in all other vessel types with the exception of bowls type S (made exclusively from white-firing clay), lids and jugs type D. Bowls type J were made by Method A, and when leather-hard the vessel was replaced on the wheel and turned to give an average wall thickness of 2–5 mm. They are almost without exception decorated with bands and lines of slip, usually red, brown or black, and occasionally dotted decoration. Handles and applied decoration are rare.

J1: ROUNDED SIDES, FLARING OR VERTICAL NECK

J1a: small bowl
Rim diameters 8–10.5 cm. Only Figure 9.23:12–13 are complete with base.

J1b: medium bowl
Rim diameters 11–15 cm.

J1c: large bowl
Rim diameters greater than 15 cm.

J2: CURVE-SIDED BOWLS

J2a: medium bowl
Rim diameters 11–17 cm.

J2b: large bowl
Rim diameters 17.5–22 cm.

J3: CARINATED BOWLS

J3a: wall above carination is vertical or flares outwards

J3b: wall above carination curves inwards

J3c: wall above carination curves inwards but rim curves outwards

BOWLS J: PARALLELS

Parallels for the basic shape are common in neighbouring areas, but decorated examples are common only in Edom and at certain sites in the Negev.

Northern Edom: Ash-Shorabat (Bienkowski and Adams 1999: fig. 2:5)
Southern Edom: Tawilan (Bennett and Bienkowski 1995: fig. 6.8:1–8, 11–17), Umm al-Biyara (Oakeshott 1978: pls 56:2; 57:5), Jabal al-Qseir (Lindner *et al.* 1996: fig. 27:1), Ghrareh (Hart 1987: fig. 9:5–6; 1988: fig. 7:2, 4; 1989: pls 9:9–29; 10:1–4), Tall al-Khalayfi (Pratico 1993: pls 27:15; 28:7–8)
Northern Transjordan: Dhiban (Tushingham 1972: fig. 1:67? — undecorated), Hisban (Lugenbeal and Sauer 1972: nos 274–276 — undecorated), Tall al-ʿUmayri (Herr 1989: fig. 19.4:21, undecorated, late eighth–early seventh centuries BC)
Negev: Horvat Qitmit (Freud and Beit-Arieh 1995: figs 4.5:3; 4.6:2; 4.9:16–19; 4.11:8. 9, undecorated; fig. 4.11:7 is the only painted bowl of this type at Qitmit), Tel ʿIra (Freud 1999a: figs 6.80:4; 6.90:1), Tel Masos (Fritz and Kempinski 1983: pl. 164:7), Malhata (Mazar 1985: fig. 5:2), Beersheba (Singer-Avitz 1999: fig. 9:1–4, 13–19)
Southern Judah: Tel Goren (Mazar, Dothan and Dunayevsky 1966: fig. 15:11, seventh–sixth centuries BC)

Bowls Type K: Imitation Assyrian Bowls

The shape of these flared bowls is probably imitated from Neo-Assyrian carinated bowls and beakers made in 'palace ware' (cf. generally Hausleiter 1996: pl. 105), and, although the ware is finer than the bulk of the Busayra pottery, the manufacturing technique and decoration show no distinctive characteristics. However, instrumental neutron activation analysis of one sample from a Bowl K did not prove that it originated locally, since the sample was a chemical outlier whose provenance has not been established (see Appendix 1: BUS 13). The bowls were made by Method A, with Base type 2, always turned. They are generally finished with great care, with polychrome slip decoration and burnish.

K1: SHALLOW BOWLS WITH ROUNDED BODY

K2: SHALLOW BOWLS WITH S-CARINATION

K3: DEEP BOWLS WITH ROUNDED BODY

BOWLS K: PARALLELS

Imitations of Assyrian carinated bowls and beakers are widespread in Palestine and Transjordan from late Iron II (late eighth century BC) into the Persian period (cf. Bloom 1988; Gitin 1990: 197–98, Type 73). It is not always clear from published descriptions if a particular vessel is judged to be real Assyrian 'palace ware' or a local imitation. Most seem to be imitations: so far, not one sherd convincingly identified as real Assyrian pottery has been found in Transjordan — compare typical seventh-century BC Assyrian 'palace ware' bowls and beakers from Nimrud (Lines 1954: pl. 37:7–9; Oates 1959: pl. 37:64; cf. also Hausleiter 1999) and Nineveh (Lumsden 1999: fig. 8:58–60). In Palestine, by contrast, real Assyrian 'palace ware' is certainly found at Tell Jemmeh and Tel Seraʿ, alongside other evidence of actual Assyrian presence and building activity (van Beek 1993; Oren 1993); however, X-ray fluorescence analysis of 'palace ware' sherds from Tell Jemmeh suggests that it was made locally, perhaps by Assyrian potters (unpublished study cited in Lehmann 2001: 95).

Northern Edom: Ash-Shorabat (Bienkowski and Adams 1999: figs 1:19; 2:6, 3:1)
Southern Edom: Tawilan (Bennett and Bienkowski 1995: fig. 6.8:9–10, 18–22), Umm al-Biyara (Bennett 1966: fig. 3:13), as-Sadeh (Zeitler 1992: fig. 14.6:10), Ghrareh (Hart 1987: fig. 9:4; 1988: fig. 7:1; 1989: pl. 9:1–8), Tall al-Khalayfi (Pratico 1993: pls 26:6–18; 27:1–12)

Figure 9.24: Bowls J1b, J1c

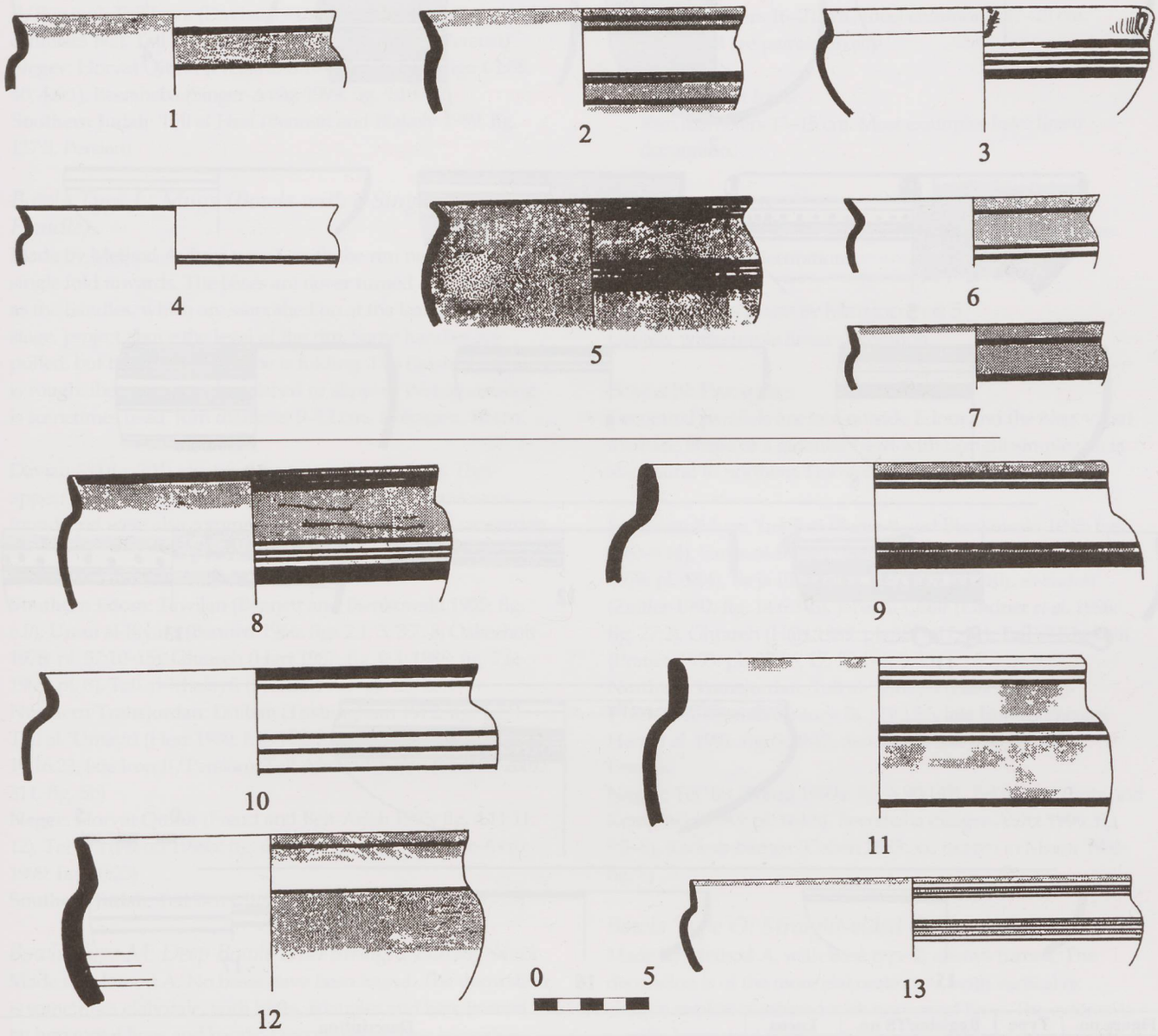


Figure no.	Type	Register/TS no.	Locus	Description
1	J1b		B1.1.1-3	
2	J1b		B1.1.1-3	
3	J1b	R788	B2.7.2	Fired buff. Temper up to 1 mm.: lime, basalt. Wet-smoothed, some grits protruding. Black decoration. Probably four handles originally.
4	J1b	TS171	B1.1.1-3	Fired yellow. Temper up to 0.5 mm.: rare grog, quartz, lime. Black decoration. Discontinuous glossy ring-burnish outside.
5	J1b	TS173	B1.1.1-3	Fired pink. Temper up to 0.25 mm.: quartz, rare lime. Red slip over whole surface inside and out. Continuous shiny ring-burnish inside and out. Black decoration.
6	J1b	TS177	B1.2.2c	Fired pink; core grey. Temper up to 4 mm.: lime; up to 1 mm.: quartz. Red and black decoration. Discontinuous shiny ring-burnish over red slip.
7	J1b	TS184	B1.1.1-3	Fired pink. Temper up to 0.25 mm.: lime, quartz. Red and black decoration.
8	J1c		B1.1.1-3	
9	J1c		B1.1.1-3	
10	J1c		B1.1.1-3	
11	J1c		B1.1.1-3	
12	J1c		B1.1.1-3	
13	J1c	TS185	B1.2.2c	Fired yellow. Temper up to 0.25 mm.: quartz, lime. Red and black lines.

Figure 9.25: Bowls J2a, J2b, J3, J3a

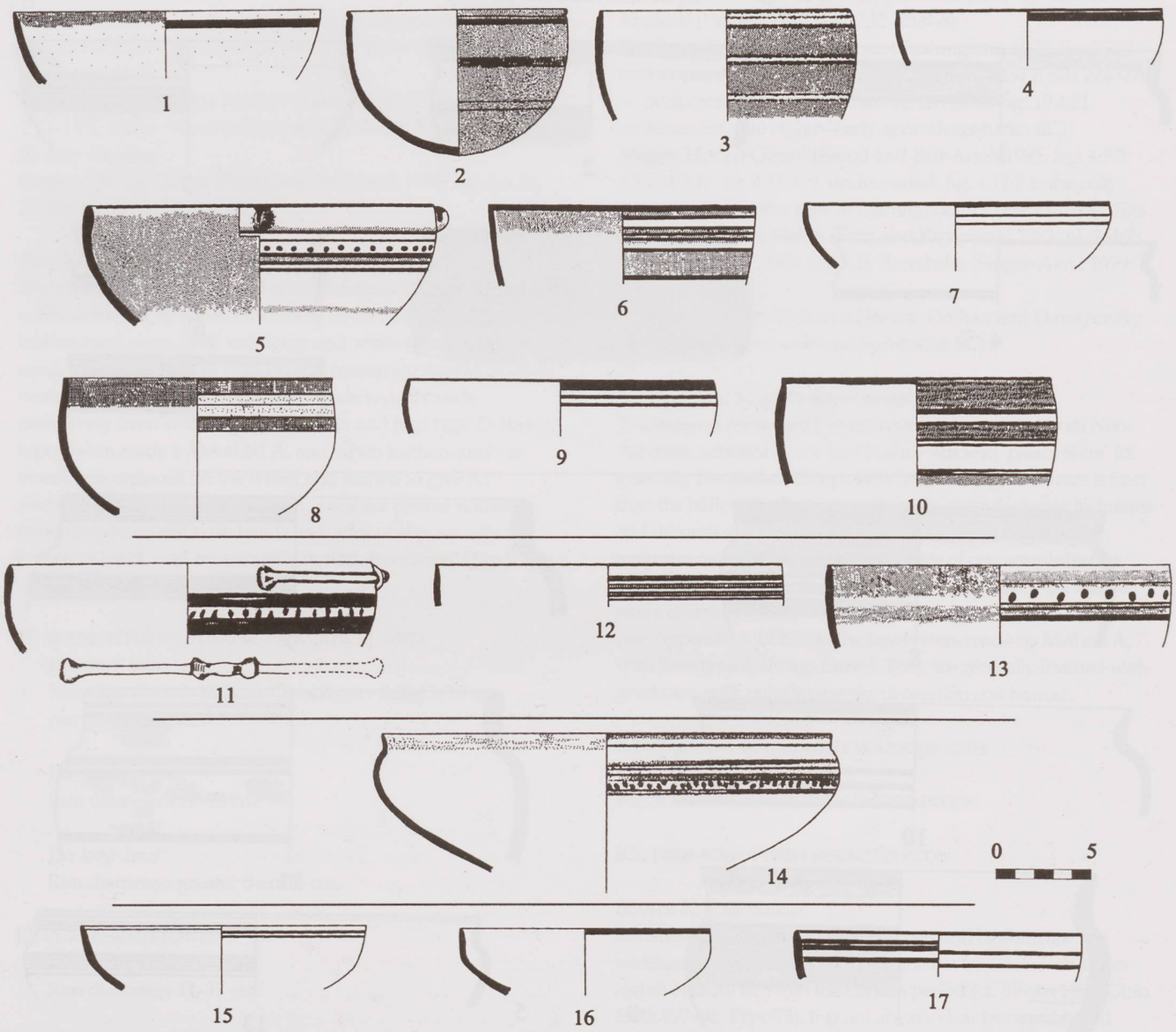


Figure no.	Type	Register/TS no.	Locus	Description
1	J2a		B1.1.1-3	
2	J2a	R881	B3.1.15	Fired red. Temper up to 1 mm.: quartz, lime. Red sip over exterior, continuously ring-burnished to a sheen. Black lines.
3	J2a	TS103	B3.4.18	Fired red. Temper smaller than 0.25 mm.: quartz. Continuous shiny ring-burnish on outside has produced bands of red. Black and white decoration.
4	J2a	TS167	B1.1.1-3	Fired cream out, brown in; core brown. Temper up to 0.5 mm.: quartz, lime. Black decoration.
5	J2a	TS174a	B1.1.1-3	Fired pale pink; core brown. Temper up to 1.5 mm.: quartz, basalt, rare lime. Black and red decoration.
6	J2a	TS176	B1.2.2c	Fired cream. Temper up to 3 mm.: basalt, grog. Red and black decoration.
7	J2a	TS186	B1.1.1-3	Fired cream; core buff. Temper up to 2 mm.: quartz, lime, red limestone. Black decoration.
8	J2a	TS189	B1.1.1-3	Fired pink. Temper up to 0.5 mm.: quartz, lime. A few discontinuous shiny burnish lines. Red, black and white decoration.
9	J2a	TS193	B1.1.1-3	Fired cream; core buff. Temper up to 0.5 mm.: quartz. Black decoration.
10	J2a	TS201	B2.7.2	Fired yellow inside, white/pink outside; core brown. Temper up to 1 mm.: quartz, lime. Red slip, continuously ring-burnished (shiny), and black slip.
11	J2b	R97	B1.1.3	Fired red. Temper up to 1 mm.: rare lime, rare quartz. Red and dark brown decoration.
12	J2b	TS169	B1.1.1-3	Fired pink/yellow; core yellow. Temper up to 0.25 mm.: quartz. Red and black decoration. Continuous shiny ring-burnish inside and out.
13	J2b	TS175	B1.1.2a	Fired pink/yellow; core yellow. Temper up to 0.25 mm.: lime; smaller than 0.25 mm. including mica. Red and black decoration.
14	J3	TS192	B2.4.2	Fired pink; core grey. Temper up to 1.5 mm.: grog, lime, quartz. Red and brown decoration.
15	J3a	TS190	B1.2.2c	Fired cream; core brown. Temper up to 4 mm.: lime, quartz. Black decoration.
16	J3a	TS194	B1.2.2c	Fired yellow; core brown. Temper up to 1 mm.: lime, quartz, basalt. Black decoration.
17	J3a?	TS523	B1.1.1-3	

Northern Transjordan: Hisban (Lugenbeal and Sauer 1972: no. 273), Tall al-ʿUmayri (Herr 1989: fig. 19.16:7, late Iron II/Persian), Tall Jawa (Daviau 1997a: fig. 4, late eighth–seventh centuries BC), Tall al-Mazar (Yassine 1984: fig. 3:3, Persian)
Negev: Horvat Qitmit (Freud and Beit-Arieh 1995: figs 4.1:38, 40; 4.6:1), Beersheba (Singer-Avitz 1999: fig. 9:10–12)
Southern Judah: Tell el-Hesi (Bennett and Blakely 1989: fig. 137:5, Persian)

Bowls Type L: Mugs (Bowls with a Single Loop Handle)

Made by Method A, Base type 1, with the rim neatened by a single fold inwards. The bases are never turned on the wheel, as the handles, which are smoothed on at the leather-hard stage, project above the level of the rim. Some handles are pulled, but the usual technique is folding. The finish of the mug is rough: they are never burnished or slipped. Wet-smoothing is sometimes used. Rim diameter 9–12 cm., average c. 10 cm.

Daviau (2001a: 204) identifies these as cultic artefacts. They appear in all loci at Tall Jawa where clearly cultic items were found, and were also common in tombs in northern Transjordan.

BOWLS L: PARALLELS
Southern Edom: Tawilan (Bennett and Bienkowski 1995: fig. 6.9), Umm al-Biyara (Bennett 1966: figs 2:1, 3; 3:7, 8; Oakeshott 1978: pl. 57:10–15), Ghrareh (Hart 1987: fig. 9:3; 1988: fig. 7:6; 1989: pl. 8), Tall al-Khalayfi (Pratico 1993: pls 25; 26:1–5)
Northern Transjordan: Dhiban (Tushingham 1972: fig. 1:13), Tall al-ʿUmayri (Herr 1989: figs 19.9:31, seventh century BC; 19.16:23, late Iron II/Persian), Tall Abu al-Kharaz (Fischer 2001: 311, fig. 5b)
Negev: Horvat Qitmit (Freud and Beit-Arieh 1995: fig. 4.11:11, 12), Tel ʿIra (Freud 1999a: fig. 6.74:4), Beersheba (Singer-Avitz 1999: fig. 10:23)
Southern Judah: Tell Beit Mirsim (Albright 1943: pl. 17:7–15)

Bowls Type M: Deep Bowls with Straight Flaring Neck

Made by Method A. No bases have been found. The decoration is sometimes elaborate, with blobs, triangles and bars framed by horizontal lines and bands. Discontinuous ring burnish is generally found. This form is very rare outside Busayra.

M1: RIM FLARES SLIGHTLY

M2: RIM FLARES CONSIDERABLY

BOWLS M: PARALLELS
Southern Edom: Tawilan (Bennett and Bienkowski 1995: fig. 6.11:5)
Negev: Tel Masos (Fritz and Kempinski 1983: pl. 164:10), Aroʿer (Mazar 1985: fig. 5:1), Beersheba (Singer-Avitz 1999: fig. 9:9)

Bowls Type N: Deep Bowls with Short Necks

Made by Method A, with Base type 5. Wet-smoothing is common, resulting in a rough surface with projecting temper. Simple linear decoration is common, usually in red, brown and black.

N1: RING BASES BUILT ON BASE TYPE 5

N1a: larger bowls
Rim diameters 16–21 cm., most commonly 17–20 cm. Nearly all are painted in slip.

N1b: medium bowls
Rim diameters 13–15 cm. Most examples have linear decoration.

N1c: small bowls
Rim diameters smaller than 13 cm. Most examples have simple linear decoration.

N2: FLAT BASES MADE BY METHOD 2 OR 5
Usually with simple linear decoration.

BOWLS N: PARALLELS
Decorated parallels are rare outside Edom and the Negev, but the basic shape of a globular bowl with upright simple rim is also found in northern Transjordan.

Southern Edom: Tawilan (Bennett and Bienkowski 1995: figs 6.10–6.14), Umm al-Biyara (Bennett 1966: fig. 2:10; Oakeshott 1978: pl. 58:4), Baʿja III (Zeitler 1992: fig. 14.1:10), as-Sadeh (Zeitler 1992: fig. 14.6:5–6), Jabal al-Qseir (Lindner *et al.* 1996: fig. 27:2), Ghrareh (Hart 1989: pls 10:5–17; 11), Tall al-Khalayfi (Pratico 1993: pls 27:16, 17; 28:1–6, 9–11)
Northern Transjordan: Tall al-ʿUmayri (Herr 1989: figs 19.8:14–15, seventh century BC; 19.15:6, late Iron II/Persian; Herr *et al.* 1991: fig. 3.29:17, decorated, late Iron II/early Persian)
Negev: Tel ʿIra (Freud 1999a: fig. 6.90:14?), Tel Masos (Fritz and Kempinski 1983: pl. 164:8), Beersheba (Singer-Avitz 1999: fig. 9:5–8), Kadesh-barnea (Cohen 1983: xx, drawn in Mazar 1985: fig. 8)

Bowls Type O: Straight-sided Cups

Made by Method A, with Base type 2, always turned. The decoration is of the more elaborate type, with vertical or oblique strokes combined with horizontal lines. The exterior is usually burnished in discontinuous lines. Most bowls type O have applied tripod feet smoothed on. Type O4 has feet made from pulled strip of clay.

O1: WITHOUT FEET

O2: WALL SWELLS AT BASE

O3: TRIPOD FEET MADE FROM LUMPS OF CLAY

O4: TRIPOD FEET MADE FROM STRIP OF CLAY
Single example only.

BOWLS O: PARALLELS
Northern Transjordan: Dhiban (Tushingham 1972: fig. 23:9)
Negev: Horvat Qitmit (Freud and Beit-Arieh 1995: figs 4.1:47, undecorated; 4.2:17, 19, larger, and different rims), Beersheba (Singer-Avitz 1999: fig. 9:20–22)

Figure 9.26: Bowls J3b, J3c, K

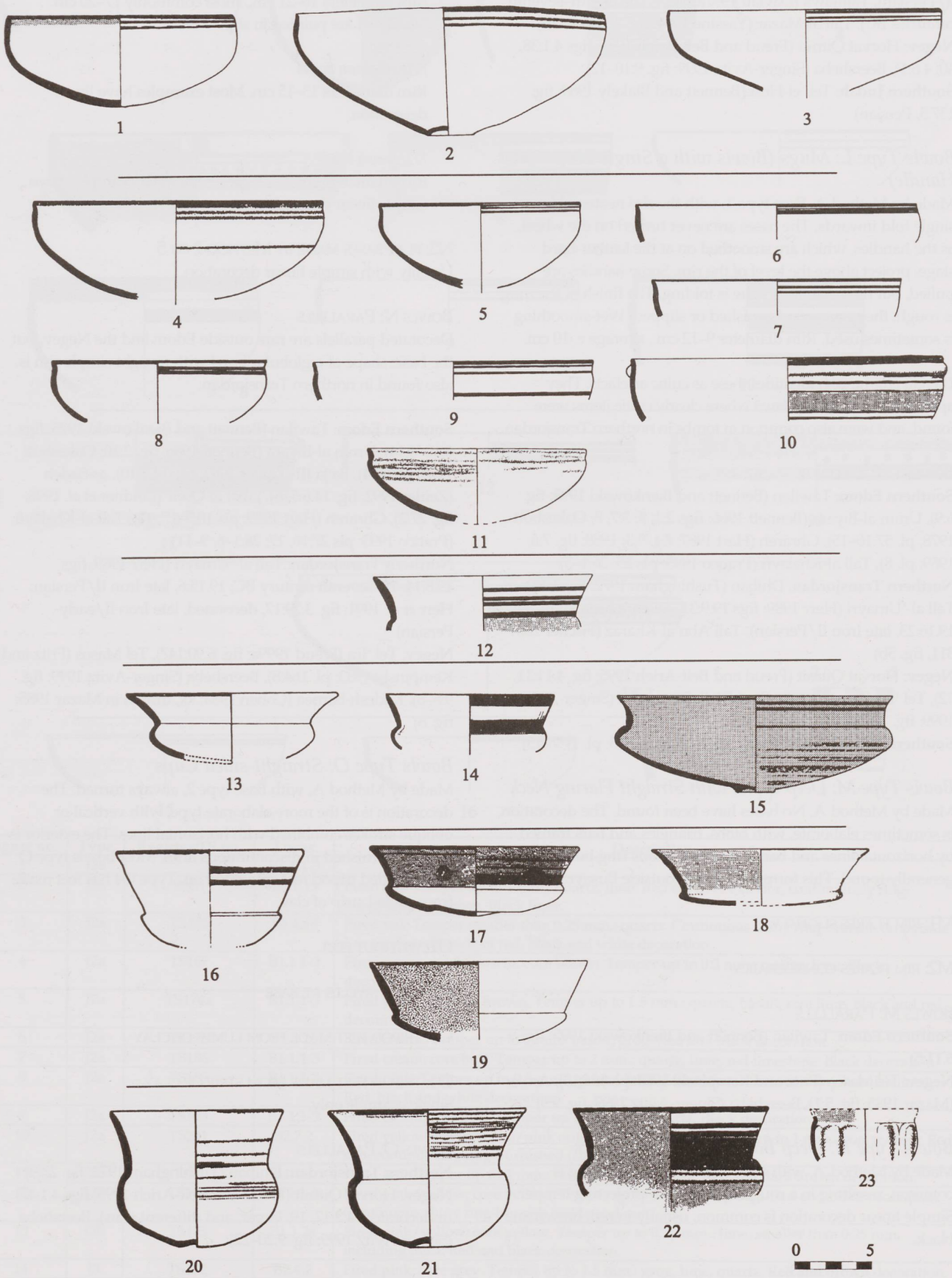


Figure no.	Type	Register/TS no.	Locus	Description
1	J3b	R504	B3.4.3	Fired pink/cream. Temper up to 3 mm.: grog, basalt. Red and black decoration.
2	J3b	R70	B1.1.3	Fired yellow/grey. Temper profuse, up to 1 mm.: quartz, lime, basalt, red limestone. Dark brown decoration.
3	J3b	R738	B2.7.2	Fired cream. Temper up to 1 mm.: basalt, rare lime. Black decoration.
4	J3c	R518	B3.4.2	Fired nearly white; core brown. Temper up to 3 mm.: basalt, lime. Upper part outside, and whole inside wet-smoothed. Black decoration.
5	J3c	R618	B3.6.2	Fired pinkish-brown; core brown. Temper up to 0.5 mm.: basalt, mica, red limestone. Upper part outside: continuous dull ring-burnish. Black lines.
6	J3c	TS168	B1.1.1-3	Fired yellow/pink; core yellow. Temper up to 1 mm.: rare grog, lime, quartz. Continuous shiny ring-burnish inside and out. Black decoration.
7	J3c	TS170	B1.1.1-3	Fired pink. Temper up to 0.5 mm.: quartz, lime. Black decoration.
8	J3c	TS182	B1.1.1-3	Fired nearly white; core grey. Temper up to 1.5 mm.: lime, quartz, grog. Red and black decoration.
9	J3c	TS188	B1.1.1-3	Fired pink outside, brown inside; core brown. Temper up to 0.5 mm.: quartz, lime. Discontinuous shiny ring-burnish inside and out. Black decoration.
10	J3c	TS203	B2.7.2	Fired pink/yellow; core yellow. Temper up to 1.5 mm.: lime; up to 1 mm.: grog, quartz. Applied bar. Red and black decoration. Inside is a rectangular seal impression of a stag. cf. Small finds chapter.
11	J3c	TS2/32	B1.2.2c	Fired pink; core yellow. Temper up to 1 mm.: quartz, lime. Discontinuous shiny ring-burnish inside and out.
12	K	TS187	B1.2.2c	Fired red; core yellow. Temper up to 3 mm.: lime. quartz, grog. Red and black decoration.
13	K1	R1015	B3.2.m	Fired pinkish-buff. Basalt temper. Inside of rim painted with black line, and below appears to have orange slip. Outside appears to have red slip.
14	K1	R106	B1.2.2c	Fired pink/yellow; core grey. Temper up to 1 mm.: quartz, lime. Red and black slip. Discontinuous shiny ring-burnish on carination.
15	K1	R1210	B3 baulk 3-6.1	Fired orange. Red slip inside and out. Painted black bands. Burnished outside below carination.
16	K2	R1277	C21.3.12	Fired buff. Reddish slip and black lines.
17	K2	R327	B2.4.2	Fired cream; core cream/brown. Temper up to 0.75 mm.: quartz, lime. Red and black decoration. Lines of shiny ring-burnish inside and out.
18	K2	R885	A27.1.8	Fired brown. Temper up to 1 mm.: lime, grog, quartz. Red slip.
19	K2	TS191	C1.3.1	Fired yellow; core black. Temper up to 0.25 mm.: quartz, lime. Black and brown slip.
20	K3	R376	B3.2.18	Fired pink; core grey. Temper up to 1 mm.: quartz, lime. Black decoration. Discontinuous ring-burnish outside, some shiny.
21	K3	R377	B3.2.18	Fired dark buff; core brown. Temper up to 1 mm.: quartz, lime. Black decoration. Discontinuous glossy ring-burnish outside on rim.
22	K3	R602	B3.6.2	Fired red inside, pale pink outside; core pale pink. Temper up to 2 mm.: basalt, quartz, lime. Black, brown, white and red decoration. Discontinuous shiny ring-burnish outside.
23	K3	TS478	B1.2.2c	

Figure 9.27: Bowls L

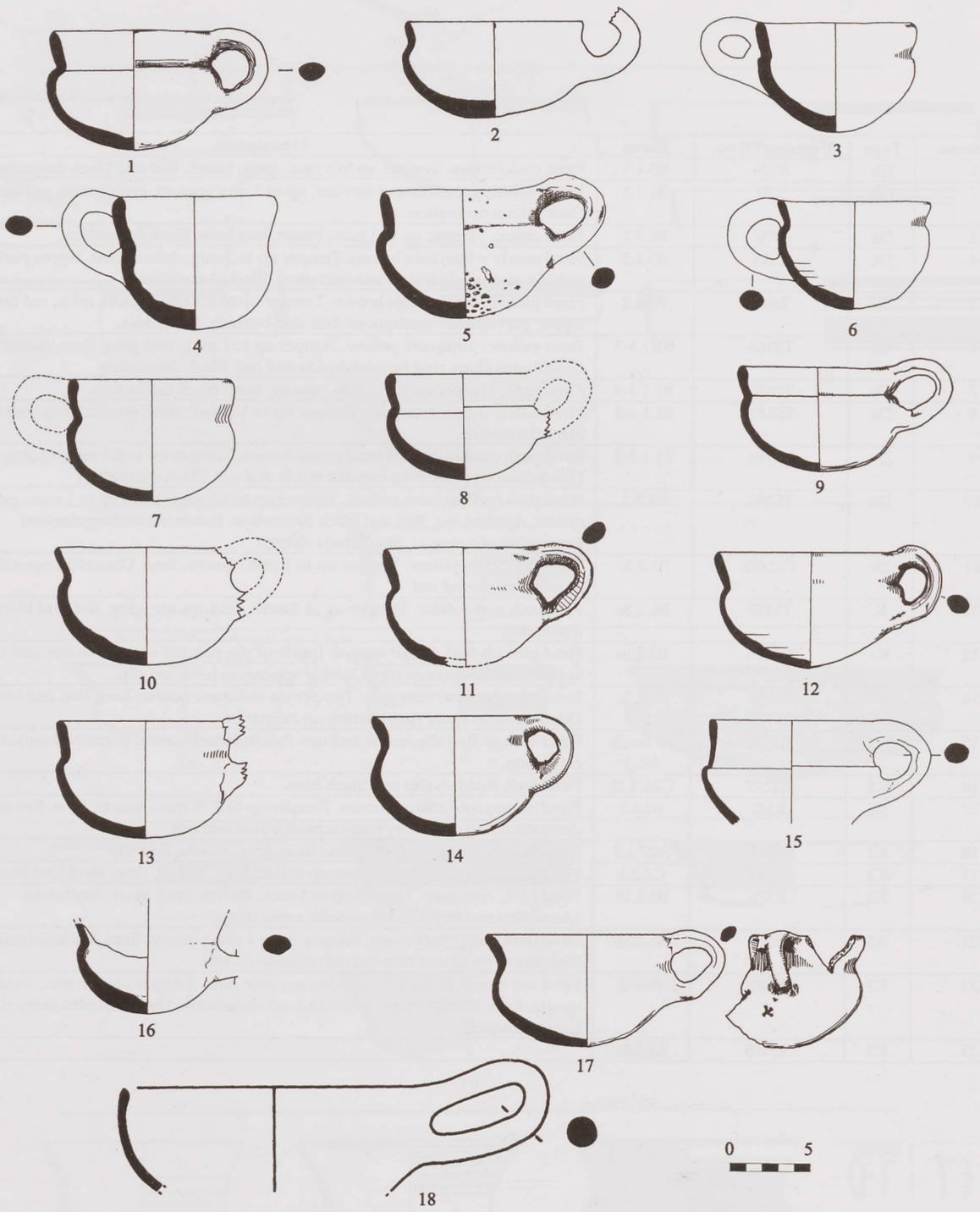


Figure no.	Type	Register/TS no.	Locus	Description
1	L	R1019	B2.10.1	Fired grey-green. Lime and quartz temper.
2	L	R112	B1.2.2c	Fired white. Temper up to 2 mm.: quartz, lime.
3	L	R254	B3.2.12	Fired pink. Temper up to 2 mm.: quartz, lime.
4	L	R255	B3.2.12	Fired red. Temper up to 3 mm.: quartz, lime.
5	L	R305	B2.1.3	Fired buff. Temper up to 3 mm.: quartz, lime.
6	L	R342	B2.1.1	Fired buff; core grey. Temper up to 1 mm.: quartz, lime.
7	L	R343	B3.2.1	Fired buff; core grey. Temper up to 3 mm.: quartz, lime, basalt.
8	L	R555	B3.4.5	Fired orange/buff. Temper up to 2 mm.: lime, basalt, vegetable.
9	L	R556	B3.4.5	Fired buff/pink; core brown/grey. Temper up to 3 mm.: lime, grog, basalt. Pulled handle.
10	L	R603	B3.7.2	Fired pinkish-buff; core grey. Temper up to 3 mm.: lime, basalt, grog.
11	L	R650	B2.7.4	Fired buff outside, pinkish inside; core pinkish-buff. Temper up to 4 mm.: mainly basalt, rare lime. Pulled handle. Base irregularly wet-smoothed.
12	L	R651	B2.7.2	Fired buff. Temper up to 3 mm.: basalt, rare lime. Pulled handle.
13	L	R711	B2.7.2	Fired buff. Temper up to 2 mm.: basalt, grog.
14	L	R800	B3.6.21	Fired pink. Temper up to 2 mm.: lime, quartz, basalt.
15	L	TS195	B1.1.1-3	Fired pink; core buff. Temper up to 1 mm.: quartz, lime, grog.
16	L	TS7	B3.3.4	Fired yellow; core grey. Temper up to 1 mm.: quartz, lime, grog.
17	L	R745	A1.10.10	Fired pink; core grey. Temper up to 1.5 mm.: basalt, lime, quartz, vegetable. Pulled handle. Impression resembling bird' s foot beside handle.
18	L	TS3040	C23.2.9	Fired pinkish-buff; core grey. Temper up to 3 mm.: lime, quartz, grog, vegetable.

Figure 9.28: Bowls M, N, N1a

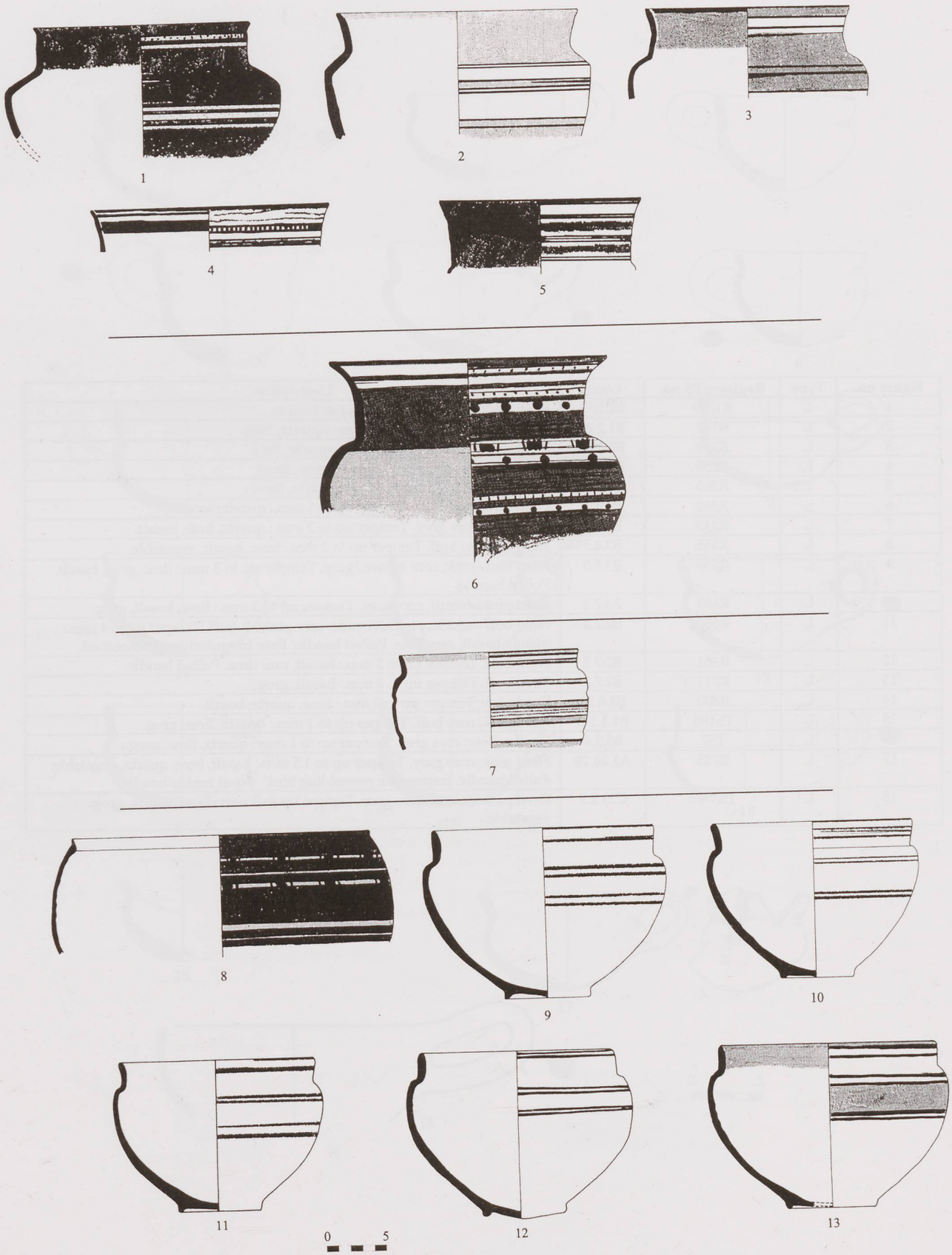


Figure no.	Type	Register/TS no.	Locus	Description
1	M1	R96	B1.1.3	Fired yellow; core brown. Temper up to 1 mm.: quartz, lime. Red and black decoration. Discontinuous shiny ring-burnish over slipped area.
2	M1	TS196	B1.1.1-3	Fired red; core grey. Temper up to 2 mm.: lime, quartz, grog. Red and black decoration.
3	M1	TS314	B1.1.1-3	Fired brown; core grey. Temper up to 1 mm.: quartz, mica, lime. Black and red decoration.
4	M1	TS198	B1.1.1-3	Fired pink; core brown. Temper up to 1 mm.: quartz, lime, basalt. Black decoration. Lines of shiny burnish on unslipped surface outside.
5	M1	TS199	B1.1.1-3	Fired pink; core brown. Temper up to 0.25 mm.: quartz, mica, lime, grog. Black and red decoration. Discontinuous shiny ring-burnish over red slip outside.
6	M2	R693	B3.2.19	Fired pink; core grey. Temper up to 3 mm.: basalt, lime, grog, quartz; one piece of flint 9 mm. Black and red-brown decoration. Discontinuous shiny ring-burnish over red slip outside.
7	N	TS210	B2.7.2	Fired buff/white/pink; core red. Temper up to 1 mm.: basalt, lime. Black and red decoration.
8	N1a?		B3.2.m	
9	N1a	R357	B2.2.11	Fired buff. Temper up to 4 mm.: quartz, basalt; up to 6 mm.: lime. Red and black decoration.
10	N1a	R384	B3.2.13	Fired red; core grey. Temper up to 1.5 mm.: quartz, lime. Red and black decoration.
11	N1a	R385	B3.2.13	Fired red on upper part; grey on lower part and inside; patches of white bloom outside. Temper up to 2 mm.: quartz, lime. Red and black decoration.
12	N1a	R539	B3.4.5	Fired pale grey outside, grey inside; core grey. Temper up to 3 mm.: basalt; up to 5 mm.: lime. Black decoration.
13	N1a	R578	B3.4.3	Fired pink inside and under base; white bloom over whole exterior; core grey. Temper up to 2 mm.: lime; and profuse very fine quartz. Red and black decoration.

Figure 9.29: Bowls N1a, N1b, N1c, N2

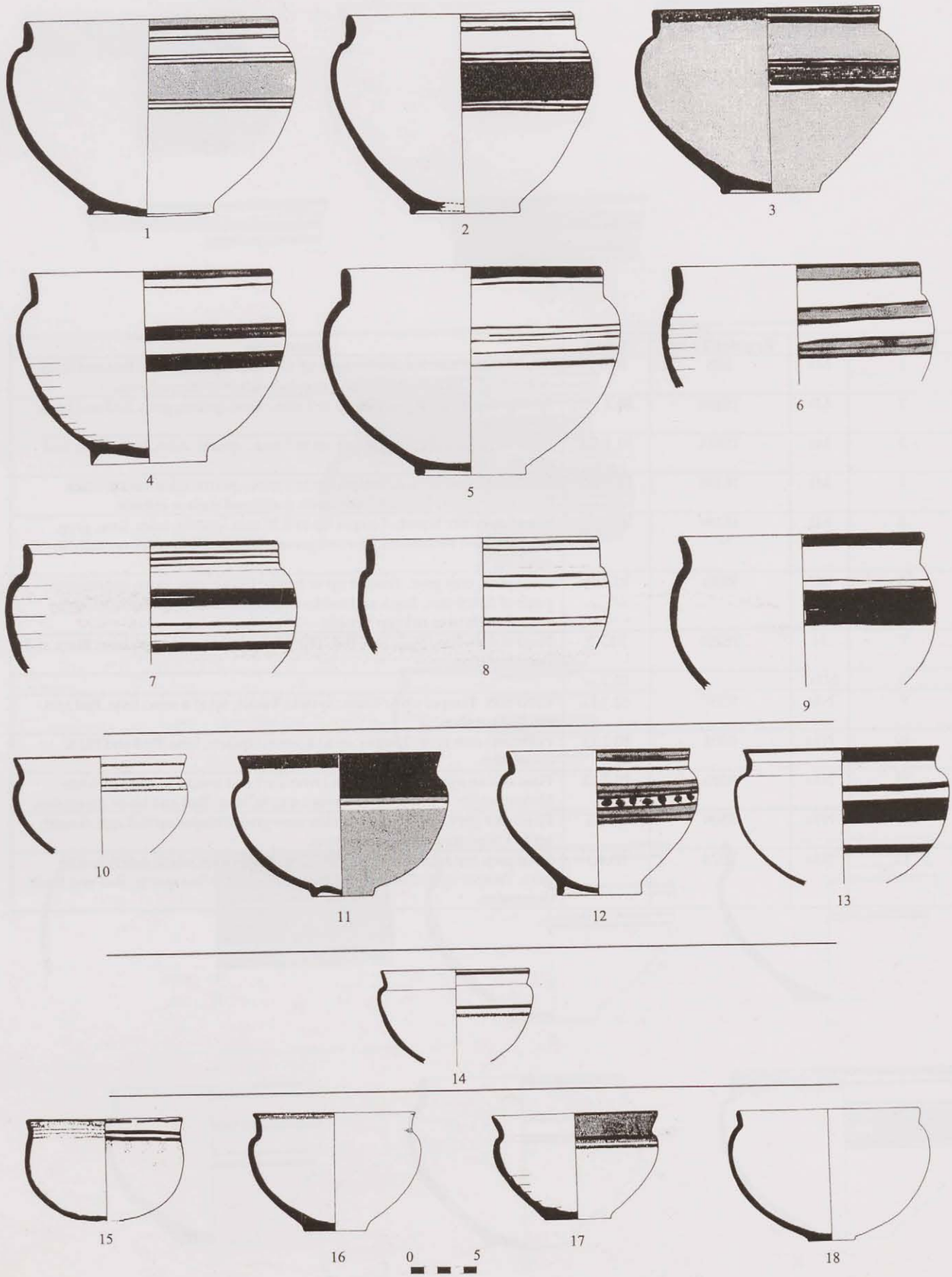


Figure no.	Type	Register/TS no.	Locus	Description
1	N1a	R601	B3.4.6	Fired grey; core grey/pink. Temper up to 4 mm.: basalt, lime. Red and black decoration.
2	N1a	R655	B3.4.7	Fired buff inside, white outside; core buff. Temper up to 4 mm.: basalt, rare lime. Red and black decoration; one or two lines of shiny burnish on the red.
3	N1a	R811	B2.7.2	Fired cream; core cream/purple. Temper up to 1.5 mm.: lime, basalt, grog; fine quartz. Black, red and white decoration.
4	N1a	R88	B1.1.3	Fired grey. Temper up to 3 mm.: quartz, lime, basalt. Red and brown decoration.
5	N1a	R91	B1.1.3	Fired grey. Temper up to 2 mm.: quartz, lime. Wet-smoothed inside and out. Red and dark brown decoration.
6	N1a	R92	B1.1.3	Fired grey. Temper up to 2 mm.: quartz, lime. Wet-smoothed inside and out. Red and brown decoration.
7	N1a	R93	B1.1.3	Fired grey. Temper up to 2.5 mm.: quartz, lime. Wet-smoothed inside and out. Brown and red decoration.
8	N1a	R94	B1.1.3	Fired grey. Temper up to 3 mm.: quartz, lime. Dark brown and red decoration.
9	N1a	R95	B1.1.3	Fired red; core grey. Temper up to 2 mm.: lime, quartz, grog. Black, red and white decoration.
10	N1b	R221	B3.2.6	Fired pink; core dark grey. Temper up to 2 mm.: lime, quartz. Red decoration.
11	N1b	R513	B3.4.3	Fired yellow/red. Temper up to 4 mm.: grog, lime. Red slip, irregularly ring-burnished, on upper part inside and out; and black lines.
12	N1b	R89	B1.1.3	Fired pink; core grey. Temper up to 2 mm.: quartz, lime. Brown and red decoration.
13	N1b	R90	B1.1.3	Fired pink; core grey. Temper up to 2 mm.: quartz, mica, lime; up to 3.5 mm.: lime. Dark brown decoration.
14	N1c	R516	B3.4.3	Fired pink. Temper up to 2 mm.: lime; up to 0.5 mm.: basalt. Brown and black decoration.
15	N2	R1257	C21.3.13	Fired buff/pink. Red and black decoration, with vertical red stripes.
16	N2	R307	B3.2.11	Fired buff; core buff/grey. Temper up to 1 mm.: lime, quartz, rare basalt. Discontinuous dull ring-burnish on shoulder outside. Red and black decoration.
17	N2	R313	B3.2.2-6	Fired brown; core dark grey. Temper up to 1 mm.: quartz, lime, basalt. Red and black decoration. Base turned.
18	N2	R345	B2.1.2	Fired pink; core grey. Temper up to 1.5 mm.: quartz, lime.

Figure 9.30: Bowls O

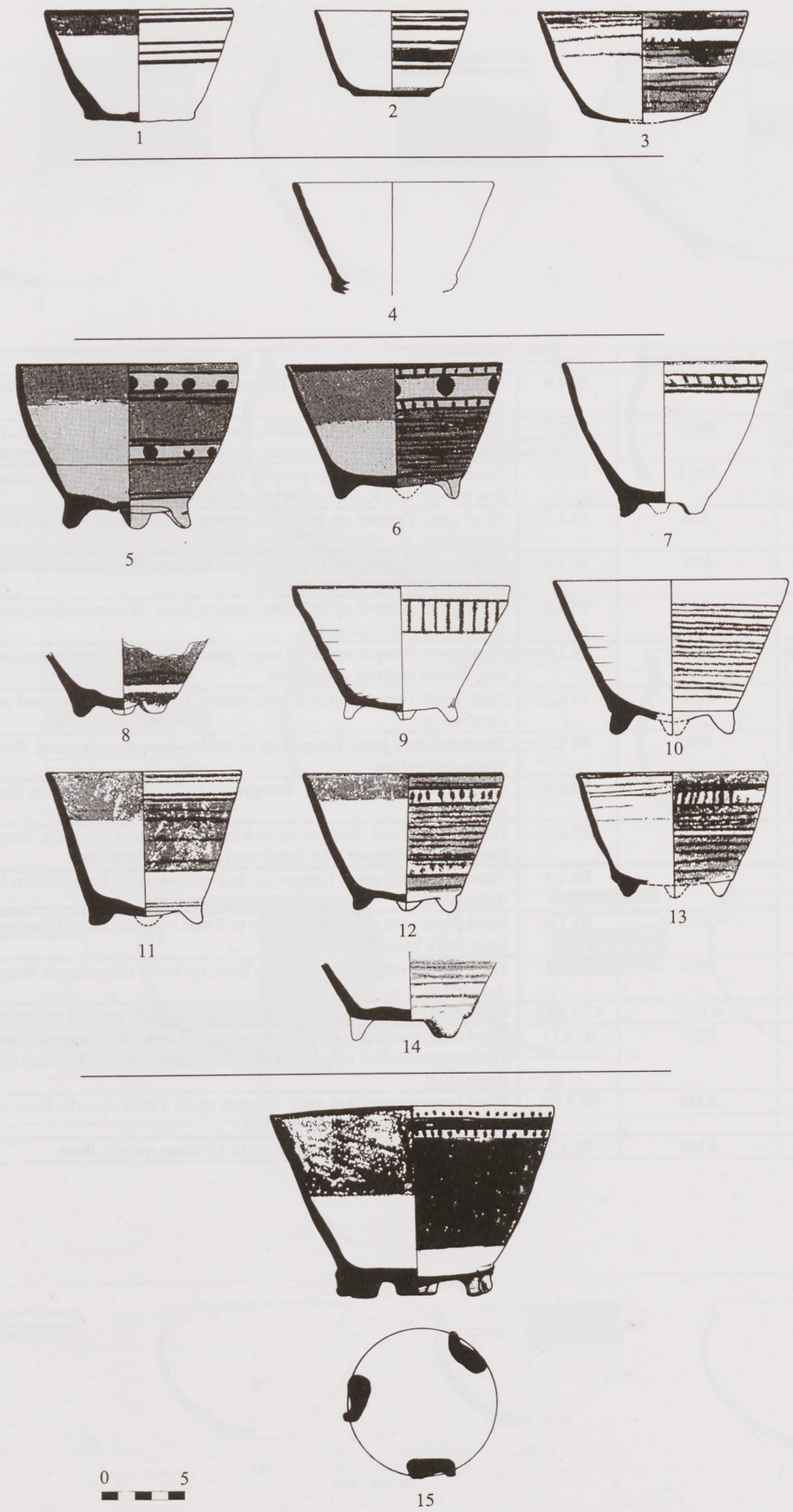


Figure no.	Type	Register/TS no.	Locus	Description
1	O1	R1018	B3.2.11	Fired buff/pink. Lime temper. Painted black inside and out, red slip inside.
2	O1	R144	B1.2.2c	Fired pink. Temper up to 1 mm.: quartz, lime, grog. Red and dark brown decoration. Continuous shiny ring-burnish outside.
3	O1	R354	B3.2.19	Fired buff. Temper up to 0.5 mm.: quartz, lime. Red and black slip. Discontinuous shiny ring-burnish inside and out.
4	O2	R253	B3.2.+	Fired pink; core buff. Temper up to 0.5 mm.: quartz, lime.
5	O3	R1054	B3.2.m	Fired buff. Outside painted with series of black lines and dots on red slip. One foot shows traces of black paint. Inside plain with traces of red slip near rim.
6	O3	R1055	B3.2.m	Fired pinkish-buff. Exterior rim painted with black dots and lines, then white slip with black dots and lines. Body painted red. Interior rim painted black, then red band.
7	O3	R189	B3.2.5	Fired buff. Temper up to 2 mm.: quartz, rare lime. Red decoration. Discontinuous shiny ring-burnish outside.
8	O3	R240	B3.2.6	Fired buff; core brown. Temper up to 2 mm.: quartz, lime. Red, cream and black slip. Discontinuous shiny ring-burnish outside.
9	O3	R306	B3.2.12	Fired red; core dark brown. Temper up to 1 mm.: quartz, lime. Red and black decoration. Line of shiny ring-burnish outside.
10	O3	R373	B3.2.18	Fired buff. Temper up to 1 mm.: quartz, lime. Discontinuous shiny ring-burnish outside.
11	O3	R374	B3.2.6	Fired buff; core brown. Temper up to 1 mm.: quartz, lime. Red and black decoration. Sporadic shiny ring-burnish outside.
12	O3	R375	B3.2.18	Fired pink. Temper up to 1 mm.: quartz, lime. Red and black decoration. Discontinuous ring-burnish outside, some shiny.
13	O3	R405	B3.2.6	Fired orange; core grey. Temper up to 1 mm.: quartz, lime. Red and black decoration. Discontinuous shiny ring-burnish inside and out.
14	O3	TS8	B3.2.6	Fired buff; core buff/grey. Temper up to 1 mm.: quartz, lime. Black decoration. Discontinuous shiny ring-burnish outside.
15	O4	R798	B8.2.2	Fired pink; core yellow. Temper up to 2 mm., but mainly smaller than 1 mm.: quartz, lime. Red and black decoration. Discontinuous shiny ring-burnish outside.

Bowls Type P: Rough Bowls with Flat or Slightly Rounded Base (Base Type 2)

These bowls are left without much surface treatment. They have flat or slightly rounded bases. Made by Method A, almost never painted.

P1: BASE TYPE 2, LEFT ROUGH; SHALLOW BOWLS

These bowls are fairly shallow. The rims were formed by a fold to the inside. The bases are rough, and flat or slightly developed into a stump (i.e. the bowl was cut away from the clay lump rather lower in these cases). These bowls suggest a poorly constructed version of bowls type B (especially B4).

P1a: flattened out-turned rim

The rims are flattened on the inside and turned outwards. The walls are often roughly ridged on the outside. Rim diameters 11–14 cm.

P1b: shallower and larger than P1a

Similar to P1a, but the slope of the walls is shallower, and the rim diameter is larger, 15–18 cm.

P1c: possible cooking bowls

The ware of these bowls is identical to that used for cooking pots, i.e. very high quartz content: ware 3c.

P2: MISCELLANEOUS BOWLS OF TYPE P

An assorted group of small deep bowls, with sides approaching vertical and with tapering rim. The bases, of type 2, vary between flat and stump, through rounded to pointed. Rim diameters 9–13 cm.

BOWLS P: PARALLELS

Parallels to Bowls P are difficult to detect from publications, since so much depends on the base which is often missing. The other diagnostic feature of Bowls P, the rough surface treatment, is often not mentioned in published descriptions of pottery.

Southern Edom: Umm al-Biyara (Oakeshott 1978: pl. 57:6–9), Tall al-Khalayfi (Pratico 1993: pl. 33:1)
Southern Judah: Tel Goren (Mazar, Dothan and Dunayevsky 1966: figs 15:6; 16:1, 2, seventh–sixth centuries BC)

Bowls Type Q: Censers

These bowls are roughly made by Method A. The rims are folded once inwards and twice outwards, except for Figure 9.33:4 which was simply neatened with a small inward fold. Base type 2, with tripod, seems to have been the norm. Several censers have applied rolled handles. Figure 9.33:6 has an applied vertical lug handle.

The holes were pierced with a hollow stick while the clay was leather-hard. They are usually unevenly arranged in one or two rows. Figure 9.33:9 has no pierced holes and so cannot have been used as a censer, but as this shape occurs otherwise at Busayra only as a censer it has been grouped with bowls type Q.

Daviau (2001a: 205–08) lists parallels from Palestine and Transjordan, including Tall Jawa. She points out that, although they are usually identified as censers, the interior of the base is not usually stained, and there is no evidence for the burning of incense or resin inside these vessels. She suggests that they were used for scented materials, but not necessarily for burning resins.

BOWLS Q: PARALLELS

Southern Edom: Tall al-Khalayfi (Pratico 1993: pl. 29)
Northern Transjordan: Dhiban (Tushingham 1972: figs 16:14–18; 23:7, 11)
Negev: Horvat Qitmit (Freud and Beit-Arieh 1995: figs 4.3:26–28; 4.21), 'En Hazeva (Cohen and Yisrael 1995b: 34), Kadesh-barnea (Cohen 1983: fig. 14)

Bowls Type R: Kraters

A mixed group of vessels of large diameter, probably made by Method B. Figure 9.33:11–12 have some similarities to miscellaneous bowls from Tawilan (Bennett and Bienkowski 1995: fig. 6.18) in the rim profiles and, for Figure 9.33:12, the decoration. Cf. also large bowls from as-Sadeh (Zeitler 1992: fig. 14.6:7, 9).

BOWLS R: PARALLELS

Northern Transjordan: Figure 9.33:12: Dhiban (Tushingham 1972: fig. 22:1)

Bowls Type S: 'White Ware' Chalices

Bowls type S are made exclusively from white-firing clay, which appears to originate in the Wadi Arabah (see Appendix 1: BUS 5). No complete example has been found, and both the reconstruction of a second handle and the attribution of the two white ware bases, Figure 9.34: 1–2, are speculative. These bowls are shaped by Method A. The base is afterwards turned. The temper is always very fine. Figure 9.34:8 also has chopped straw or dung as temper. The handles are occasionally pulled. Usually they are undecorated, but a few examples have bands of red or black paint on the rim or externally on the body. A few S bowls are painted with slip. The colours are unusual: a bluish-grey and a purple, likely to be the result of painting the normal pigmented slips onto white-firing clay.

BOWLS S: PARALLELS

Northern Edom: Figure 9.34:1–2 (bases): Ash-Shorabat (Bienkowski and Adams 1999: fig. 1:15, same ware)
Negev: Horvat Qitmit (Freud and Beit-Arieh 1995: fig. 4.1:29, fired greenish-white)

Double Bowls

Made by Method A, Base type 2. The 'cups' were made separately and smoothed into place. In type A1 the hole in the base was made by poking a hollow stick through the leather-hard clay after the cup was in position. The bases are rather rough, and the vessels are not carefully finished, although the interior of the 'cup' is usually dry-smoothed. These double bowls are sometimes described as 'cup-and-saucers' (Amiran 1970: 303; Fantalkin 2001: 58–9 with Judaean parallels) or as partitioned lamps, i.e. lamps joined to saucers by pedestals (e.g. Mazar 1985: 257, who confuses Double bowls with Lamps C), and unpublished examples are known from sites in the Negev (Beit-Arieh 1995a: 34). However, the more-or-less complete examples from Busayra neither resemble lamps nor show evidence of use as lamps; moreover, use as a lamp would not explain the hole pierced through the base in type A1.

Figure 9.31: Bowls P1, P1a, P1b

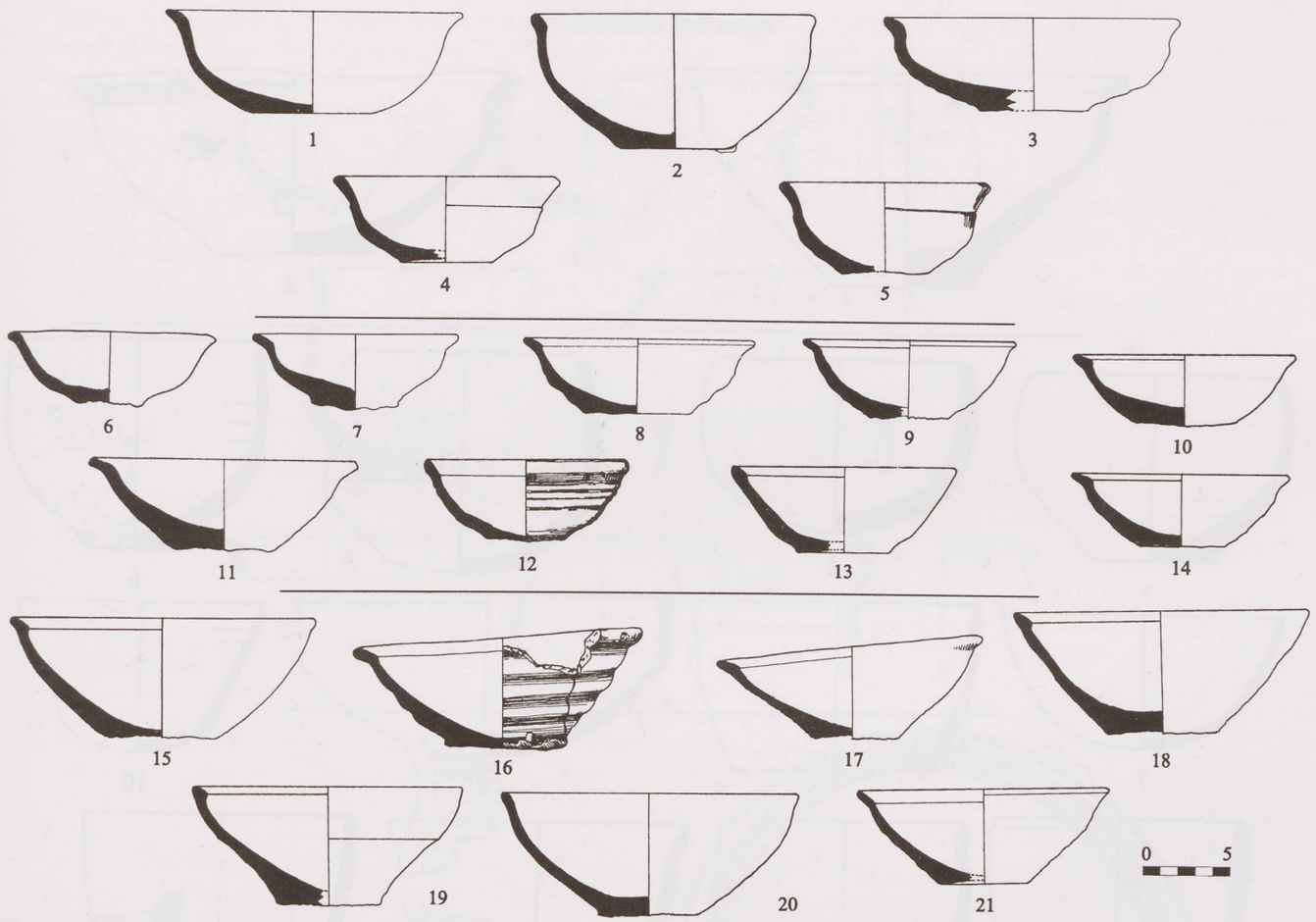


Figure no.	Type	Register/TS no.	Locus	Description
1	P1		B3.1.3	Fired buff. Temper up to 1 mm.: quartz, lime. Outside roughly finished; inside dry-smoothed. Base string-cut.
2	P1	R111	B1.2.2c	Fired pink. Temper up to 6 mm.: grog; up to 2 mm.: quartz, lime. Roughly finished. Base string-cut.
3	P1	R214	B3.1.3	Fired buff. Temper up to 1 mm.: quartz, lime. Outside roughly finished; inside dry-smoothed. Base string-cut.
4	P1	R589	A20.2.1	Fired buff; core brownish-buff. Temper up to 2 mm.: basalt, lime. Lower part outside turned.
5	P1	R598	A20.2.1	Fired red/black; core red. Temper up to 2 mm.: lime, basalt.
6	P1a	R1213	A8.1a.9	Fired pale orange. Lime, basalt and grog temper.
7	P1a	R195	B3.2.4	Fired buff/pink. Temper up to 3 mm.: profuse quartz and lime. Roughly finished. Base badly string-cut.
8	P1a	R204	B3.1.3	Fired pink; core grey. Temper up to 1 mm.: quartz, basalt, lime. Outside roughly finished; inside dry-smoothed. Base string-cut.
9	P1a	R580	B3.4.3	Fired buff; core grey. Temper up to 1.5 mm.: lime, grog, basalt. Inside dry-smoothed. Base string-cut.
10	P1a	R591	B3.7.2	Fired red; core yellow. Temper up to 4 mm.: mainly unevenly pounded grog; rare lime. Roughly finished. Base string-cut.
11	P1a	R599	B3.6.4	Fired greyish cream; core brown. Temper up to 4 mm.: lime, basalt. Roughly finished. Base badly string-cut.
12	P1a	R699	B2.7.2	Fired buff. Temper up to 2 mm.: basalt, lime, quartz, grog.
13	P1a	R762	B2.7.2	Fired pink. Temper up to 3 mm.: quartz, lime, grog, rare basalt. Base irregular; no cutting marks discernible.
14	P1a	R763	B2.7.2	Fired pinkish grey; core grey. Temper up to 2 mm.: quartz, lime, basalt, grog, vegetable. String-cut base, left rough.
15	P1b	R1020	B2.10.1	Fired buff. Lime temper.
16	P1b	R347	B2.1.1	Fired pink/buff; core pink. Temper up to 4 mm.: lime, quartz. Outside grooved by turning; inside dry-smoothed. Base string-cut.
17	P1b	R505	B3.6.2	Fired pink; core pink/grey. Temper up to 5 mm.: mainly grog; some lime and basalt. Base string-cut. Outside very rough.
18	P1b	R590	B3.3.2	Fired creamy yellow. Temper up to 6 mm.: lime; mostly grits smaller than 1 mm.: grog, basalt; frequent minute mica. Roughly finished. Base string-cut.
19	P1b	R720	B2.7.2	Fired pale pink/cream. Temper up to 5 mm.: lime, basalt, quartz. Outside very rough; inside dry-smoothed. Base string-cut.
20	P1b	R741	B2.7.12	Fired pale pink. Temper up to 5 mm.: lime, quartz, minute mica. Roughly finished. Base string-cut.
21	P1b	R789	B2.7.2	Fired pink. Temper up to 1 mm.: lime; rare quartz and grog. Outside rough; inside dry-smoothed. Base string-cut.

Figure 9.32: Bowls P1c, P2

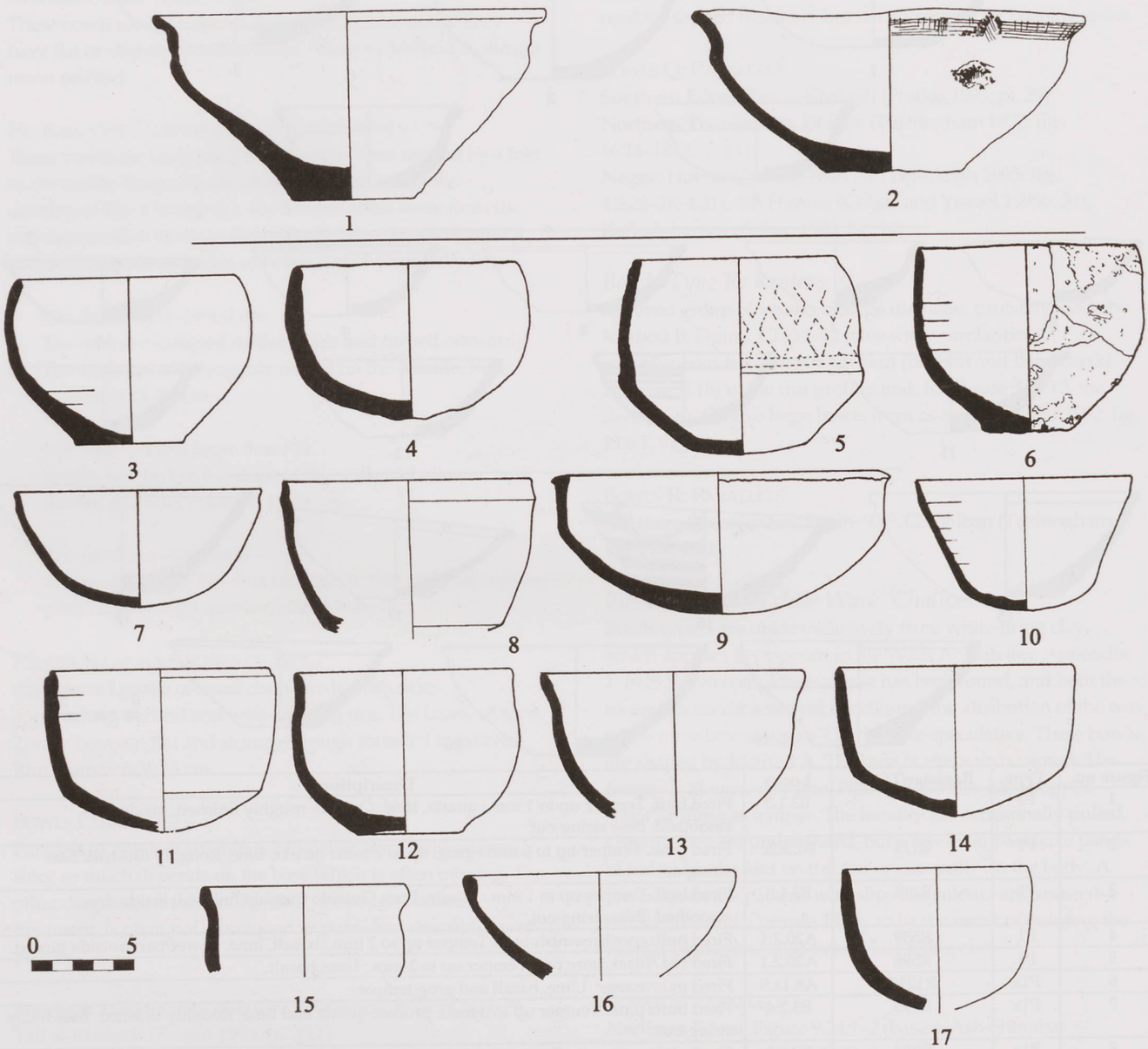


Figure no.	Type	Register/TS no.	Locus	Description
1	P1c	R193	B3.2.6	Fired dark grey. Temper up to 2 mm.: numerous quartz grits, as in cooking pot ware. Dry-smoothed in and out.
2	P1c	R216	B3.2.1	Fired orange. Temper up to 2 mm.: numerous quartz grits, as in cooking pot ware. Dry-smoothed in and out. Remains of handle from shoulder to rim.
3	P2	R1091	B3.2.m	Fired buff. Lime and basalt temper. Very rough coarse ware.
4	P2	R1097	B3.2.m	Heavily burned, nearly black. Lime encrusted; grog temper. Very rough coarse ware.
5	P2	R147	B1.5.3	Fired pink; core grey. Temper up to 2 mm.: quartz, lime, basalt. Dry-smoothed in and out. Decorated with criss-cross bands of brown slip; traces only remain.
6	P2	R386	B2.4.2	Fired pink/buff. Temper up to 2 mm.: lime, quartz, basalt. Base string-cut.
7	P2	R441	D2.5.15	Fired orange/buff; core orange. Temper up to 1 mm.: quartz, lime.
8	P2	R506	B3.4.3	Fired red; core grey. Temper up to 2 mm.: lime, basalt; quartz mainly up to 0.25 mm.
9	P2	R535	A1.11.15	Fired red. Temper up to 3 mm.: lime, basalt, grog. Lower part outside turned.
10	P2	R551	B3.4.5	Fired red; core brown. Temper up to 1 mm.: lime. Base exterior turned.
11	P2	R552	B3.4.3	Fired pinkish-buff; core buff. Temper up to 2 mm.: basalt, lime.
12	P2	R572	B3.4.6	Fired buff; core brownish-buff. Temper up to 3 mm.: grog, lime, basalt. Roughly finished. Base string-cut.
13	P2	R612	A20.2.1	Fired black. Temper up to 1 mm.: quartz. Much of outer surface covered with hair-cracks. Lower part outside ring-burnished.
14	P2	R756	B2.7.4	Fired grey. Temper up to 3 mm.: profuse basalt, some lime. Base dry-smoothed.
15	P2	TS231	B3.4.3	Fired buff. Temper up to 3 mm.: much lime up to 1.5 mm.: quartz, basalt.
16	P2	TS278	B2.9.7	Fired white outside; pink inside; core pink. Temper up to 2 mm.: lime, flint.
17	P2	TS292	D3.3.2	Fired pink. Temper up to 1 mm.: quartz, grog, basalt; one piece of basalt 4 mm. Roughly finished.

Figure 9.33: Bowls Q, R

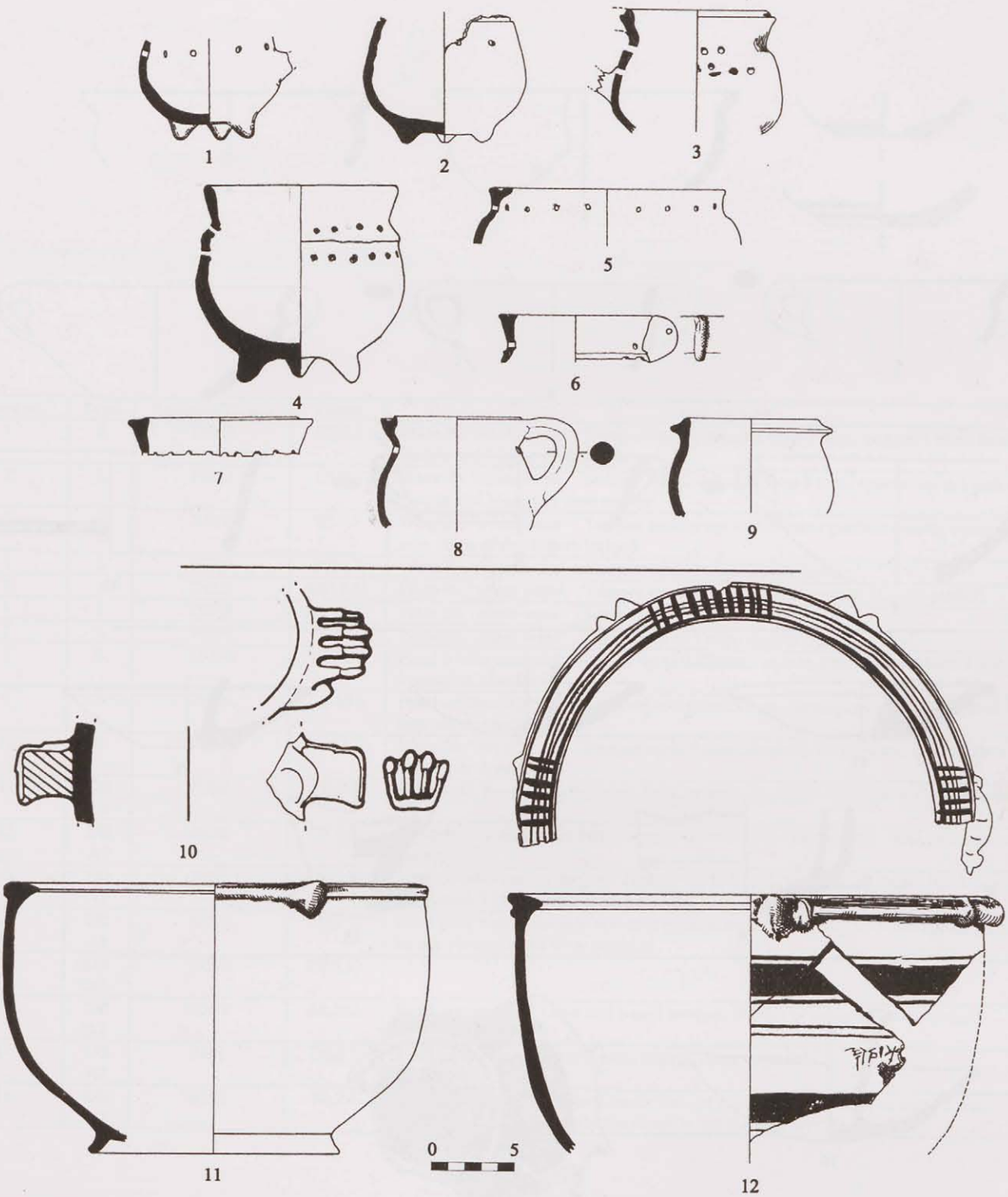


Figure no.	Type	Register/TS no.	Locus	Description
1	Q	TS94	B3.6.2	Fired red; core pink. Temper up to 3 mm.: basalt, grog, lime.
2	Q	R241	B3.2.6	Fired pink. Temper up to 2 mm.: quartz, basalt, lime.
3	Q	R243	B3.1.3	Fired yellow; core grey/brown. Temper up to 1 mm.: quartz, lime, basalt.
4	Q	R592	B3.7.6	Fired red; core yellow. Temper up to 2 mm.: quartz, basalt, rare lime. Roughly made and finished.
5	Q	TS107	D3.2.13	Fired pink; core orange. Temper up to 0.5 mm.: quartz, rare lime.
6	Q	TS318	B1.2.2c	Fired pink. Temper up to 1.5 mm.: quartz, lime. Applied lug handle, pierced.
7	Q	TS316	B1.2.2c	Fired red; core brown. Temper up to 3 mm.: quartz, lime, grog.
8	Q	TS317	B1.2.2c	Fired pink; core buff. Temper up to 3 mm.: quartz, lime, basalt. Fragment only: pierced holes presumably extended all around.
9	Q	TS315	B1.1.1-3	Fired pink; core brown. Temper up to 3 mm.: basalt, quartz, lime.
10	R		D3.10.6	Fired pinkish-buff; core grey. Temper up to 4 mm.: lime, basalt, quartz, grog.
11	R	R723	B2.7.2	Fired dark buff. Temper up to 4 mm.: profuse basalt, lime. Lower part turned. Bar handle applied.
12	R	R583	B3.1.7	Fired pinkish-cream; core purple. Temper up to 3 mm.: mainly basalt, some lime. Bar handle applied. Red and black decoration. Incised inscription on wall.

Figure 9.34: Bowls S, Double bowls

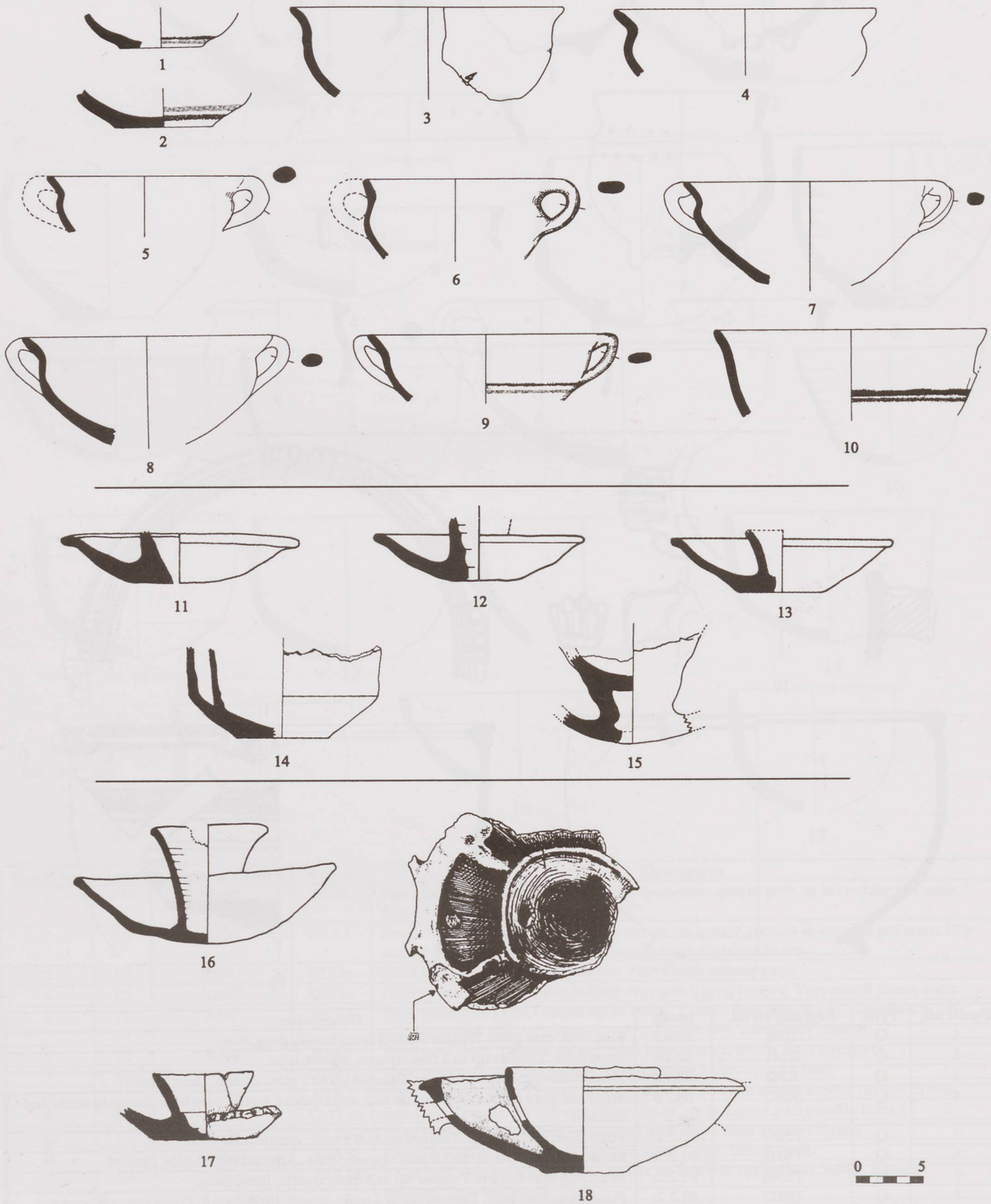


Figure no.	Type	Register/TS no.	Locus	Description
1	S	TS305	D2.7.1	Ware 3b: 'white ware' . Temper mainly smaller than 1 mm.: quartz; 1 mm.: lime. Purple and blue-grey decoration.
2	S	TS311	D2.7.1	Ware 3b: 'white ware' . Temper mainly smaller than 1 mm.: quartz; up to 1 mm.: lime. Purple and blue-grey decoration.
3	S	R889	B2.9.7	Ware 3b: 'white ware' . Temper mainly up to 0.25 mm.: profuse quartz; some up to 1 mm. Parts of two letters incised.
4	S	TS217	B10.1.5	Ware 3b: 'white ware' . Temper up to 1 mm.: basalt, lime.
5	S	TS221	B10.1.11	Ware 3b: 'white ware' . Temper up to 0.5 mm.: quartz, shale. Handle pulled.
6	S	TS238	A1.11.17	Ware 3b: 'white ware' . Temper up to 0.25 mm.: quartz, lime.
7	S	TS279	B2.9.7	Ware 3b: 'white ware' . Temper up to 1 mm.: quartz. Handle rolled.
8	S	TS300	B2.7.27	Fired white; core pink. Temper up to 0.25 mm.: quartz, lime; piece of lime 3 mm.; and vegetable. Handle rolled.
9	S	TS304	D2.18.6	Fired white; core brownish. Temper up to 0.5 mm.: lime, quartz. Handle pulled. Grey and red decoration.
10	S	TS308	A1.22.10	Ware 3b: 'white ware' . Temper up to 2 mm.: lime; up to 0.25 mm.: quartz. Dark grey and white decoration.
11	DB A1	R355	D2.5.5	Fired buff. Temper up to 2 mm.: lime, quartz, vegetable. Hole pierced from beneath.
12	DB A1	R428	D2.8.9a	Fired pinkish-buff; core buff. Temper up to 2 mm.: quartz, lime. Hole pierced from beneath.
13	DB A1	R451	D2.5.15	Fired pinkish-buff; core grey. Temper up to 5 mm.: lime, basalt. Inner bowl slightly blackened. Hole pierced from beneath.
14	DB A1	R754	B2.7.2	Fired pink inside; outside and core pinkish buff. Temper up to 2 mm.: grog, lime, basalt. Hole pierced from beneath.
15	DB A1	TS536	D2.8.12	
16	DB A2	R1219	A8.1a.6	Fired orange/buff. Lime and basalt temper. Broken in antiquity and repaired.
17	DB A2	R404	D2.8.2	Fired buff. Temper up to 2 mm.: quartz, lime, vegetable.
18	DB A2	R259	B3.2.6	fired mainly pink, but black inside base of cup; core grey. Temper up to 5 mm.: quartz, grog, rare basalt. Holes roughly cut through wet clay.

Figure 9.35: Miscellaneous bowls (1)

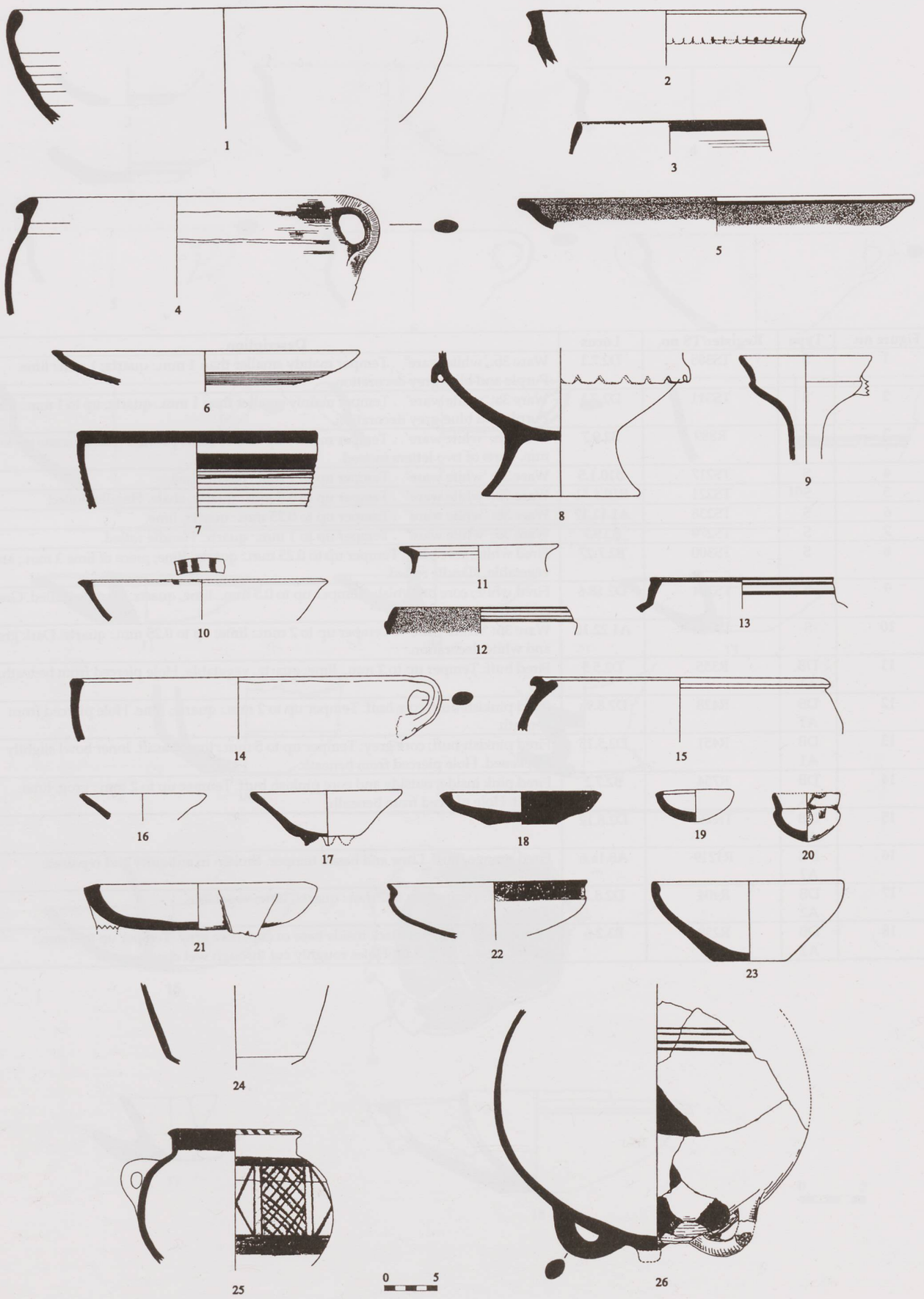


Figure no.	Register/TS no.	Locus	Description
1	R537	D3.3.3	Cooking bowl? Fired pink; core grey. Temper up to 2 mm.: grog, profuse quartz, some vegetable.
2		A60.+	
3		B1.1.1-3	Red and black decoration.
4		B1.1.1-3	
5		A7.1.5	
6		B2.10.5	
7		B3.20.m	Red and black decoration.
8		B3.20.5	
9		B3.2.2	Possibly a funnel.
10		C1.3.1	Red decoration.
11		C1.3.3e	
12		C1.4.1	
13		C2.2.4	
14		D2.8.2	
15		D3.2.2	
16	TS264	B3.3.13	Possibly lid. Ware 3b: 'white ware' . Temper up to 3 mm.: lime; very fine mica. Wet-smoothed in and out.
17	R1159	B3.20.4	Fired pale buff. Lime temper.
18	R382	B2.5.3	Black burnished ware. Temper up to 1.5 mm.: quartz, basalt. Lower part outside turned.
19	R175	B3.2.2	Fired pink. Grog temper.
20	R1032	B3.2.4	Fired red. Lime temper.
21	R231	B3.1.3	Fired white. Temper up to 5 mm.: mainly basalt, some lime. Turned below carination outside; dry-smoothed inside and out. Imitation of stone bowl? Perhaps a mortar.
22	R242	B3.1.3	Fired pink. Temper up to 1 mm.: quartz, lime. Red and black decoration.
23	R442	D2.8.4	Fired pink; core light grey. Temper up to 3 mm.: quartz, lime. Roughly finished. Base string-cut.
24	TS323	B3.2.1	Possibly jar? Fired red; core grey. Temper up to 3 mm.: grog, lime, quartz.
25	R260	B3.2.6	Fired grey. Temper up to 1.5 mm.: quartz, lime, basalt. Surface outside coated with cream slip with designs over-painted in red and black slip.
26	R1151	B3.20.4	Fired reddish-buff. Lime temper. Painted black lines.

Figure 9.36: Miscellaneous bowls (2)

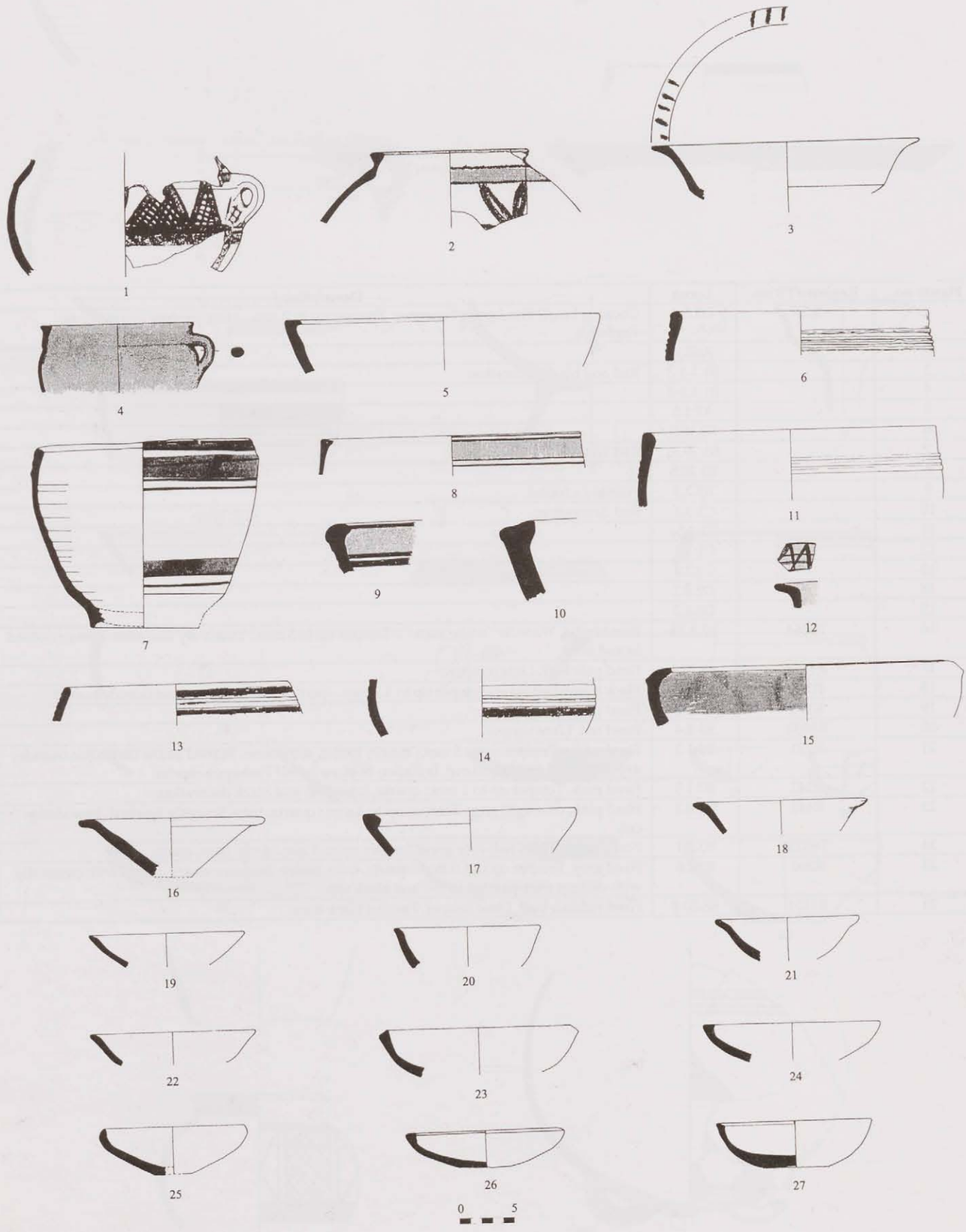


Figure no.	Register/TS no.	Locus	Description
1	TS197	B3.2.6	Fired greyish-white; core grey. Temper up to 2 mm.: lime, quartz, basalt. Red and black decoration.
2	TS259	B3.2.6	Fired buff outside, brown inside; core grey. Temper up to 2 mm.: lime, quartz. Red and black slip bands and lines, and flower design.
3	R470	A1.11.2	Fired red; core grey. Temper up to 3 mm.: quartz, grog, basalt, shale. Groups of strokes in black on rim.
4	TS258	B3.6.12	Fired pink. Temper up to 2 mm.: basalt, lime. Handle pulled. Red slip inside and out.
5		D2.8.2	
6	TS114	A1.10.10	Ware 3b: 'white ware' ; core white/green. Temper up to 1 mm.: quartz, lime. Irregular incised grooves.
7	R81	B1.1.3	Fired pink; core grey. Temper up to 3 mm.: quartz, lime, basalt. Brown and red decoration.
8	TS215	B2.7.2	Fired pink inside, white outside; core brown. Temper up to 2 mm.: quartz, basalt. Red and black lines and bands outside.
9	TS216	B2.7.2	Fired pale pink; core grey. Temper up to 5 mm.: lime; up to 1 mm.: basalt, quartz. Traces of handle broken from rim. Red and black decoration.
10	TS231a	A5.6.6	Fired red, with whitish bloom on rim and outside; core grey. Temper up to 3 mm.: basalt, lime, vegetable.
11	TS281	B3.1.15	Ware 3b: 'white ware' . Temper up to 1 mm.: quartz; up to 4 mm.: vegetable.
12	TS297	B2.7.12	Fired pink. Temper up to 1 mm.: lime, basalt, quartz. Red slip over whole surface, black design on rim.
13	TS21a	D2.5.5	Fired pinkish-yellow. Temper up to 2 mm.: quartz, lime. Black decoration.
14	TS21b	D2.5.5	Fired pinkish-yellow. Temper up to 2 mm.: quartz, lime. Black decoration. Possibly fits with Fig. 36:13 above.
15	TS282	C3.7.2j	Fired brown. Temper up to 3 mm.: lime, quartz. Red and black decoration.
16	TS283	D2.5.14	Fired pink; core brown. Temper up to 3 mm.: grog, lime, quartz.
17	TS226	A5.6.2	Fired red; core grey. Temper up to 2 mm.: lime, quartz. Rim folded inwards.
18	TS268	B3.7.6	Ware 3b: 'white ware' . Temper up to 1 mm.: lime, quartz. Rim and upper part outside smoothed with rib, producing a sheen. Possibly Bowl S.
19	TS237a	A1.11.14	Fired white inside, buff outside; core pink. Temper up to 2 mm.: basalt, lime. Possibly Bowl S.
20	TS241	A1.11.15	Fired grey. Temper up to 2 mm.: lime, basalt.
21	TS243	A1.11.15/16	Fired pink; core buff. Temper up to 2 mm.: grog; some lime and quartz.
22	TS244	A1.11.15	Fired orange/pink. Temper up to 1 mm.: quartz, basalt.
23	TS245	A1.11.15/16	Fired red inside, brown outside; core grey. Temper up to 2 mm.: coral(?), quartz, lime.
24	TS248	A1.11.15	Fired red-brown; core grey. Temper up to 1 mm.: basalt, grog, quartz, some vegetable.
25	TS249	A1.11.15	Fired red/brown outside, white/red inside; core brown. Temper up to 4 mm.: profuse lime, basalt. Lower part outside and under base turned.
26	R558	A1.11.16	Fired purple/cream; core grey. Temper up to 4 mm.: lime, rare grog and basalt. Lower part outside and under base turned. Inside dry-smoothed.
27	R574	A1.11.18	Fired red; core grey. Temper up to 3 mm.: lime, some basalt. Turned under base.

Figure 9.37: Miscellaneous bowls (3)

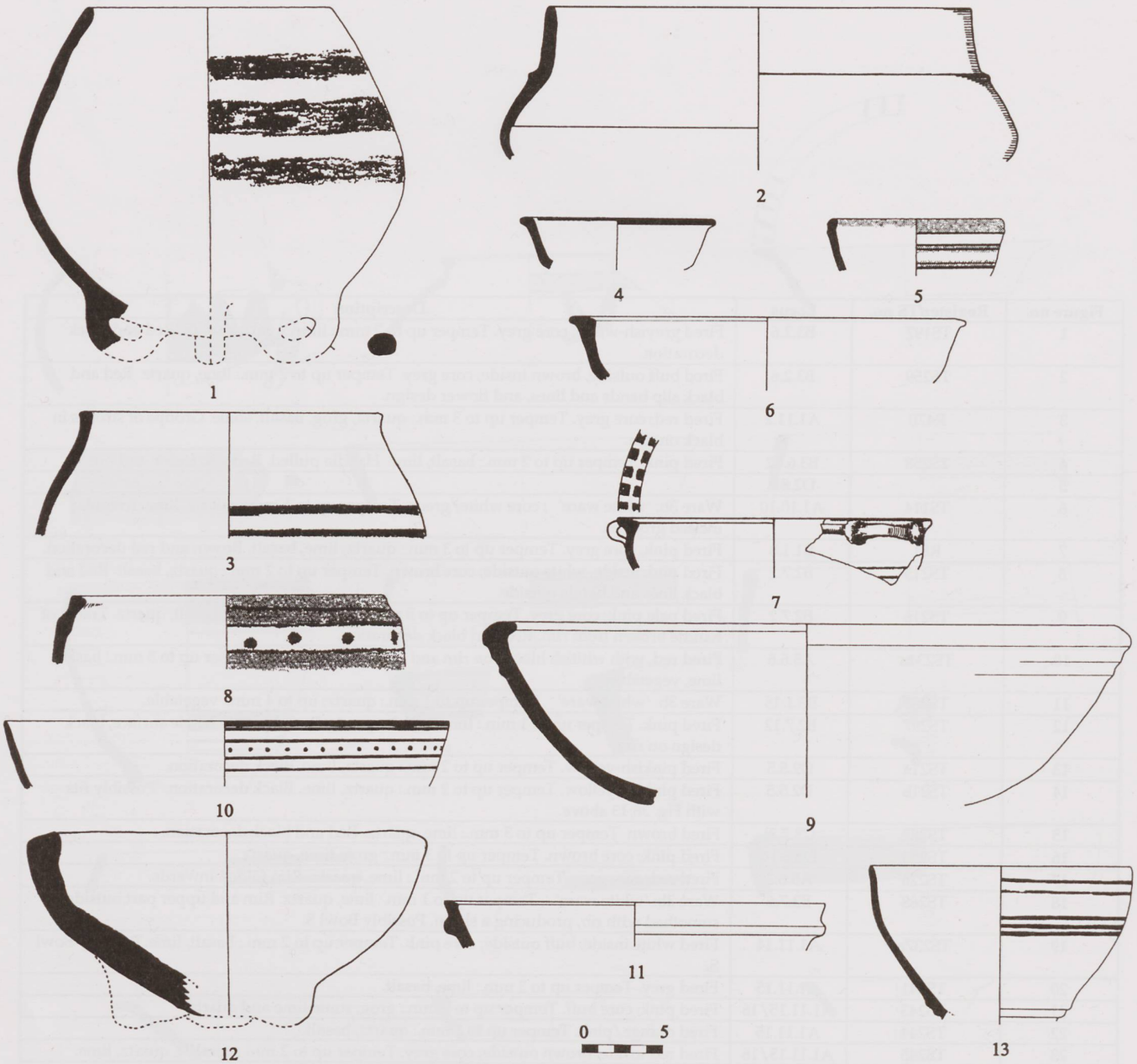


Figure no.	Register/TS no.	Locus	Description
1	TS298	B2.7.28	Fired pink; core yellowish-pink. Temper up to 2 mm.: lime, quartz, mica, vegetable. Outside surface irregular, and scratched while leather-hard; lower part turned. One loop foot partially surviving: this was rolled and applied with a lump of clay as reinforcement between loop and body. Black slip decoration, roughly applied.
2	TS302	B2.9.6	Fired red; core grey. Temper up to 2 mm.: lime, quartz, grog.
3	TS313	D2.7.1	Fired creamy-white; core white. Temper up to 2 mm.: basalt, lime, quartz. Black and grey decoration.
4	TS319	B1.1.1-3	Fired buff. Temper up to 2 mm.: lime, quartz, basalt. Black slip on rim, inside and out.
5	TS320	B1.2.2c	Fired yellow; core grey. Temper up to 2 mm.: lime, quartz. Outside turned. Red and black decoration.
6	TS320a	B1.2.2c	Fired dark red; core brown. Temper up to 3 mm.: quartz, lime.
7	TS321	B3.3.5	Fired red/cream; core grey. Temper up to 3 mm.: lime, quartz, grog. Applied bar handle. Red and dark brown slip.
8	TS57	B1.1.1-3/B2.7.2	Fired buff; core brown. Temper up to 2 mm.: lime, basalt. Red and black slip bands and lines; black blobs.
9	TS327	B1.2.2c	Fired red; core dark grey. Temper up to 4 mm.: lime; up to 3 mm.: grog, quartz.
10	TS503	B1.2.2c	
11	TS520	B1.1.1-3	
12	TS555	B2.2.8	Possibly a mortar?
13	TS558	B3.2.3	

A1: DOUBLE BOWL WITH A HOLE PIERCED THROUGH THE CENTRE OF THE BASE

A2: DOUBLE BOWL WITHOUT PIERCED HOLE

DOUBLE BOWLS: PARALLELS
Northern Transjordan: Tall al-ʿUmayri (Herr *et al.* 1991: fig. 4.9:5, late Iron II/early Persian)
Southern Judah: Lachish (Amiran 1970: 306, photo 340, LB II; Tufnell 1953: pl. 81:116, Levels II–III)

Miscellaneous Bowls

Many bowls do not fall into any particular group, but specific parallels are quoted below.

MISCELLANEOUS BOWLS: PARALLELS
Northern Edom: Figure 9.36: 6, 11: Ash-Shorabat (Bienkowski and Adams 1999: fig. 2:7, same ware)
Southern Edom:
Figure 9.35:1: Ghrareh (Hart 1989: pl. 7:1)
Figure 9.35:2: Petra, az-Zantur (this is not an exact parallel, and the Busayra bowl — found in topsoil — may well be Iron II, but the rim of a Late Roman, fourth-century AD small bowl with a high profiled foot from Petra has some similarities: Gerber and Brogli 1995: fig. 6:2)
Figures 9.35:7; 9.36:6, 11: Tawilan (Bennett and Bienkowski 1995: fig. 6.19:5, 7), Ghrareh (Hart 1989: pl. 7:15)
Figure 9.35:9: Tall al-Khalayfi (Pratico 1993: pl. 39:6, a funnel)
Figures 9.35:21; 9.36:10; 9.37:12: Tawilan (Bennett and Bienkowski 1995: fig. 6.21:3–7, thick bowls)
Figure 9.35:25: Tawilan (Bennett and Bienkowski 1995: fig. 6.18:1–3)
Figures 9.35:26; 9.37:1: Tall al-Khalayfi (Pratico 1993: pl. 39:4–5)
Figure 9.36:2: Tawilan (Bennett and Bienkowski 1995: fig. 6.37:6 for flower design)
Figure 9.36:5: Tawilan (Bennett and Bienkowski 1995: fig. 6.19:3)
Figure 9.36:23, 24, 26: Tawilan (Bennett and Bienkowski 1995: fig. 6.20:5)
Figure 9.37:2: Tall al-Khalayfi (Pratico 1993: pl. 37:7 with crenellations)
Northern Transjordan:
Figure 9.35:21: Tall al-ʿUmayri (Herr *et al.* 1991: fig. 8.12:11, late Iron II)
Figure 9.36:6, 11, 13: Dhiban (Tushingham 1972: fig. 2:5–10), Hisban (Lugenbeal and Sauer 1972: nos 195–197)
Figures 9.36:15; 9.37:9: Tall al-ʿUmayri (Herr *et al.* 2000: fig. 3.33:8, late Iron II/early Persian)
Figure 9.37:1: Dhiban (Winnett and Reed 1964: pl. 77:14, similar ware, although apparently different base; Tushingham 1972: figs 22:11, 13; 24:26)
Figure 9.37:12: Tall al-ʿUmayri (Herr 1989: figs 19.16:16, late Iron II/Persian; Herr *et al.* 1997: fig. 3.22:24, early Persian)
Negev:
Figure 9.35:8: Horvat Qitmit (Freud and Beit-Arieh 1995: fig. 4.17:34–37, stands and chalice)
Figure 9.35:9: Horvat Qitmit (Freud and Beit-Arieh 1995: fig. 4.5:16, chalice?)
Figure 9.35:21: Tel ʿIra (Freud 1999a: fig. 6.70:7), Horvat Teiman (Ayalon 1995: fig. 3:18)
Figure 9.35:26: Beersheba (Aharoni 1973: pl. 75:5, Stratum II)
Figure 9.36:6, 11: Horvat Qitmit (Freud and Beit-Arieh 1995: fig. 4.14:14), Tel ʿIra (Freud 1999a: fig. 6.83:8)
Figure 9.37:9: Horvat Qitmit (Freud and Beit-Arieh 1995: fig. 4.13:38)

Cooking Pots

Cooking Pots Type A: Rim Continuing Line of Shoulder

These cooking pots have handles, possibly four, but since only one example was found with a complete rim the number of handles remains uncertain. The rim continues the line of the shoulder. It was made by folding twice, first inwards and then outwards. The pots were probably built in sections on a moulded base (Method B), but since there are few bases conclusive evidence is lacking. The handles are folded. Rim diameters vary between 10 and 35 cm.

COOKING POTS A: PARALLELS
These are typical Iron II cooking pots in Palestine and Transjordan. The Busayra examples all lean inwards, and the closest parallels are from late Iron II/Persian contexts. Early Iron II types have a fairly upright stance (cf. Herr 2000: 199).

Northern Edom: Ash-Shorabat (Bienkowski and Adams 1999: figs 1:18, 20; 3: 14), Feifa (Lapp 1994: fig. 13–2:7–9)
Southern Edom: Tawilan (Bennett and Bienkowski 1995: figs 6.33; 6.34:1–5; 6.35:1, 3–6), Umm al-Biyara (Bennett 1966: figs 3:12; 4:8), Baʿja III (Zeitler 1992: fig. 14.1:2–3), as-Sadeh (Zeitler 1992: figs 14.3A:8; 14.4B:6–10; 14.5:1–6), Jabal al-Qseir (Lindner *et al.* 1996: fig. 23:4, 7–11), Ghrareh (Hart 1987: fig. 9:7; 1989: pls 21:3; 22; 23:1–6), Tall al-Khalayfi (Pratico 1993: pls 16–18:1–6)
Northern Transjordan: Aroʿer (Olávarri 1965: fig. 2:8), Dhiban (Tushingham 1972: fig. 1:17–19), Hisban (Lugenbeal and Sauer 1972: nos 291–304), Tall al-ʿUmayri (Herr 1989: figs 19.4:13, eighth century BC, 19.10:22, 24, 28, seventh century BC; Herr *et al.* 2000: fig. 3.33:17, late Iron II/early Persian), Tall Nimrin (Flanagan, McCreery and Yassine 1994: fig. 20:5, Iron II)
Negev: Horvat Qitmit (Freud and Beit-Arieh 1995: figs 4.6:22–25; 4.9:32–34; 4.11:25, 27; 4.12:21, 23), Tel ʿIra (Freud 1999a: fig. 6.54:4), Tel Masos (Fritz and Kempinski 1983: pl. 165:14), Beersheba (Aharoni 1973: pl. 68: 4, Stratum II)
Southern Judah: Tell Beit Mirsim (Albright 1943: pl. 19:2–3), Jerusalem (Eshel 1995: fig. 18:1, 3, seventh century BC), Tel Goren (Mazar, Dothan and Dunayevsky 1966: fig. 17:6, seventh–sixth centuries BC)

Cooking Pots Type B: Short Neck

As with cooking pots type A, handles are probably a normal feature, but evidence for number is lacking. Cooking pots type B were made in the same way as type A, although some of the handles were certainly pulled. The distinction from type A is artificial as there is a continuum between cooking pots with necks and those without (as noted by Hart for Busayra [1995a: 255] and Tawilan [1995b: 55]).

COOKING POTS B: PARALLELS
Northern Edom: Ash-Shorabat (Bienkowski and Adams 1999: figs 2:13–15; 3:5)

Figure 9.38: Cooking Pots A

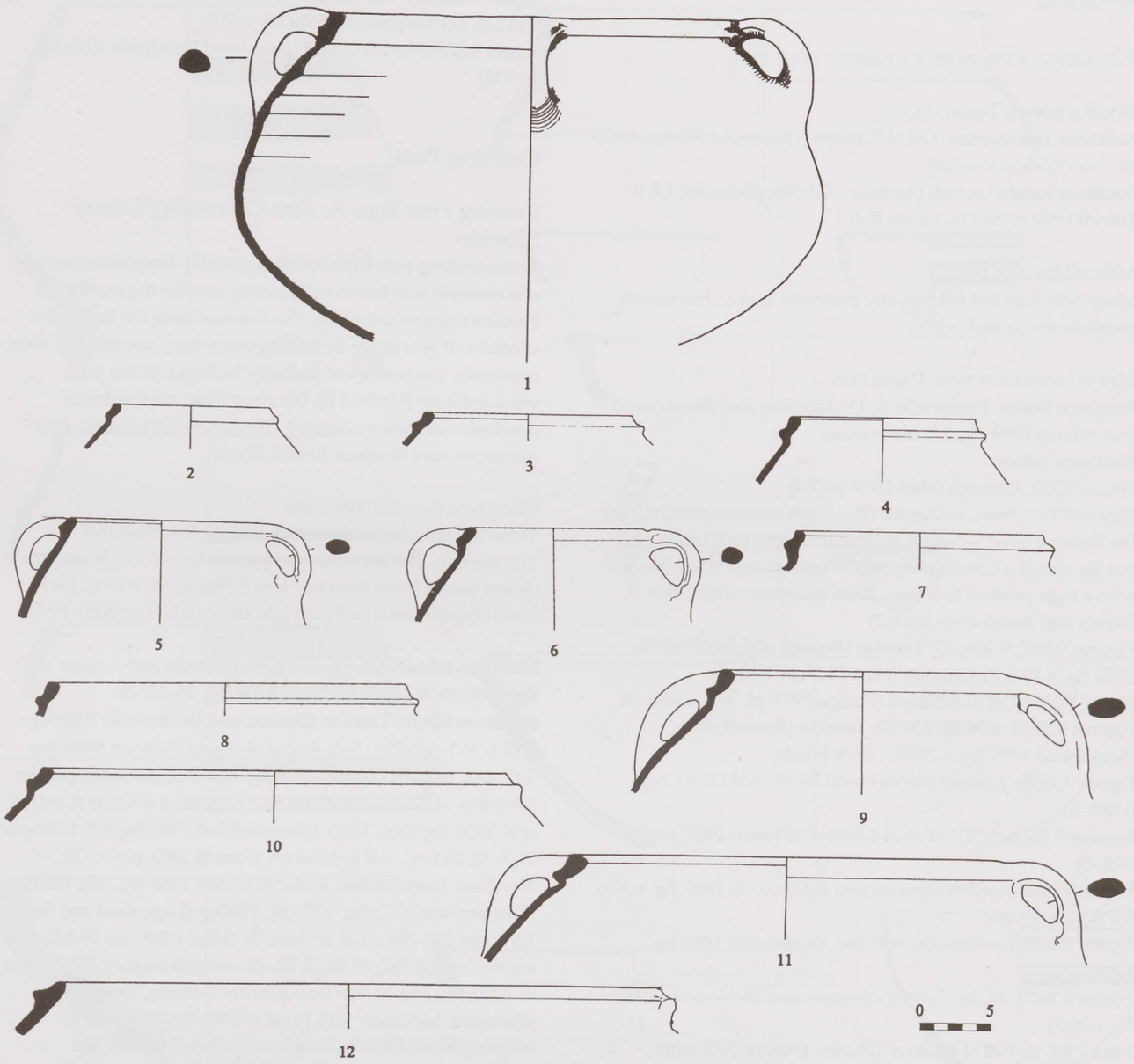


Figure no.	Type	Register/TS no.	Locus	Description
1	A	R55	B1.1.3	Fired pink. Temper up to 1 mm.: profuse quartz. Handles probably folded.
2	A	TS335	B1.1.3	Fired red/dark brown. Temper up to 1 mm.: mainly quartz.
3	A	TS336	B1.1.1-3	Fired red/dark brown. Temper up to 1.5 m.: mainly quartz; some lime.
4	A	TS337	B1.1.1-3	Fired red/dark brown. Temper up to 1 mm.: mainly quartz.
5	A	TS338	B1.1.3	Fired red/dark brown. Temper up to 1 mm.: mainly quartz. Handle probably folded.
6	A	TS339	B1.1.3	Fired red/dark brown. Temper up to 1.5 mm.: quartz. Handle probably folded.
7	A	TS586	B1.1.1-3	
8	A	TS587	B1.1.1-3	
9	A	TS340	B1.1.3	Fired red/dark brown. Temper up to 3 mm.: mainly quartz; some lime and basalt. Possibly wet-smoothed. Handle folded.
10	A	TS341	B1.1.1-3	Fired red/dark brown. Temper up to 4 mm.: quartz, some lime. Roughly finished.
11	A		B1.1.1-3	Fired red/dark brown. Temper up to 4 mm.: quartz, some lime. Irregularly finished. Handle probably folded.
12	A	TS401	B1.1.3	

Figure 9.39: Cooking Pots B

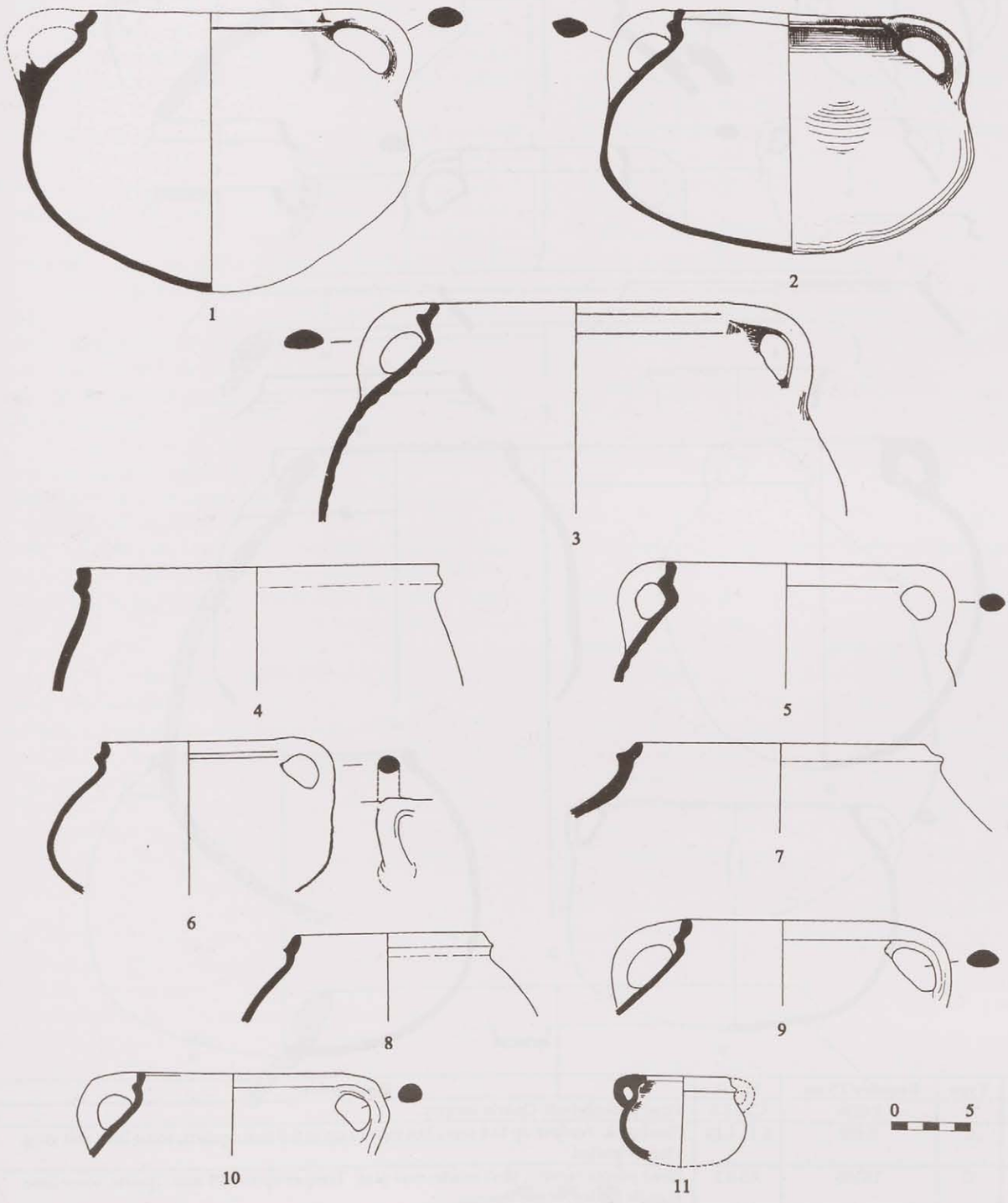


Figure no.	Type	Register/TS no.	Locus	Description
1	B		B3.2.12	
2	B	R830	B2.7.4	Fired purple; core grey. Temper up to 3 mm.: lime; up to 2 mm.: basalt, quartz. Handles pulled.
3	B	R86	B1.1.3	Fired pink/grey. Temper up to 0.5 mm.: quartz; some lime up to 2 mm. Folded handles.
4	B	TS343	B1.1.1-3	Fired red/dark brown. Temper up to 2 mm.: mainly quartz, some lime.
5	B	R85	B1.1.3	Fired grey. Temper mainly up to 0.5 mm.: quartz; up to 2 mm.: lime.
6	B	R84	B1.1.3	Fired pink. Temper up to 1 mm.: mainly quartz. Folded handle.
7	B	TS344	B1.1.1-3	Fired red/dark brown. Temper up to 2 mm.: mainly quartz.
8	B	TS345	B1.1.1-3	Fired red/dark brown. Temper up to 1.5 mm.: mainly quartz, some lime.
9	B	TS346	B1.1.3	Fired red/dark brown. Temper up to 4 mm.: quartz. Handle pulled.
10	B	TS347	B1.1.3	Fired red/dark brown. Temper up to 2 mm.: quartz, some lime and grog. Folded handle.
11	B	R215	B3.2.4	Fired brown. Temper up to 0.5 mm.: mainly quartz. Folded handle.

Figure 9.40: Cooking Pots C, D

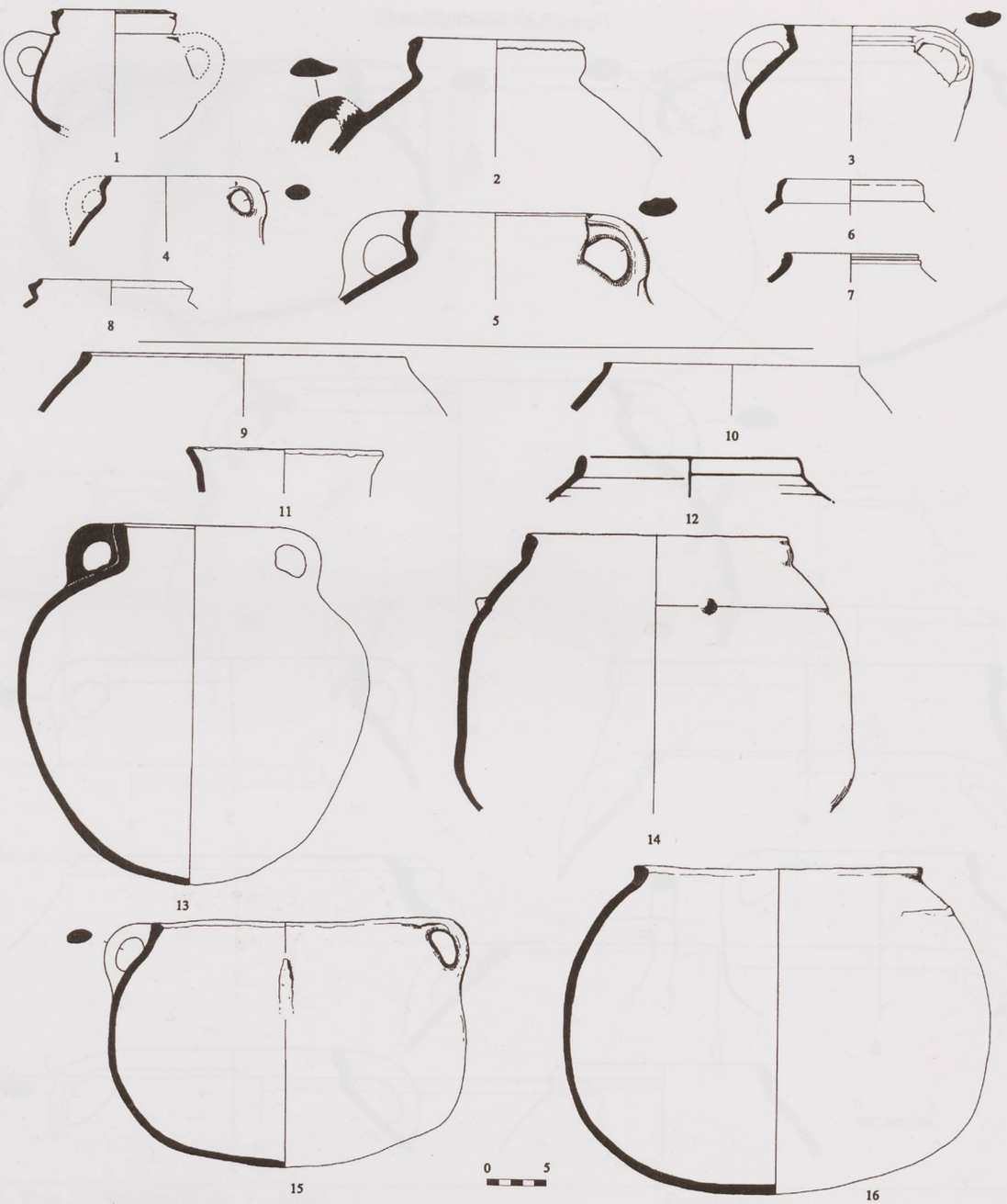


Figure no.	Type	Register/TS no.	Locus	Description
1	C	R1236	C14.3.6	Fired pinkish-buff. Quartz temper.
2	C	R498	C11.1.12	Fired pink. Temper up to 6 mm., but mainly up to 0.5 mm.: quartz, some lime and grog. Handle pulled.
3	C	TS105	A5.6.2	Fired purple outside, pink inside; core pink. Temper up to 0.25 mm.: quartz, some lime. Handle pulled; vessel thrown.
4	C	TS255	B3.6.12	Fired pink/grey; core grey. Temper up to 0.5 mm.: profuse quartz. Handle pulled.
5	C	TS261	A20.2.1	Fired pink outside, brown inside; core grey. Temper up to 3 mm.: basalt, lime, profuse quartz. Pulled handle.
6	C	TS348a	C2.1.1	Fired pink. Temper up to 4 mm.: mainly quartz.
7	C	TS349	B1.1.3	Fired red/dark brown. Temper up to 3 mm.: mainly quartz, some lime and basalt.
8	C	TS350	B1.1.3	Fired red/dark brown. Temper up to 1 mm.: quartz.
9	D		A21.2.7	
10	D		A6.1.6	
11	D		C1.2.2	
12	D		D2.1.10	Fired red with dark grey patches; core grey. Temper up to 4 mm.: grog, lime; but mainly fine quartz.
13	D	R1201	C14.1.11	Fired red/grey. Coarse quartz temper.
14	D	R1231	C11.1.19	Fired red outside, grey inside. Knob on shoulder.
15	D	R864	B3.4.16	Fired pink inside, black outside; black core almost to surface. Temper up to 2 mm.: lime; up to 1 mm.: quartz. Pulled handles and two vestigial lugs.
16	D	R880	B8.2.3	Fired pink; surface blackened in use. Temper up to 0.25 mm.: quartz. Vestigial horizontal lug handle.

Figure 9.41: Cooking Pots D, E

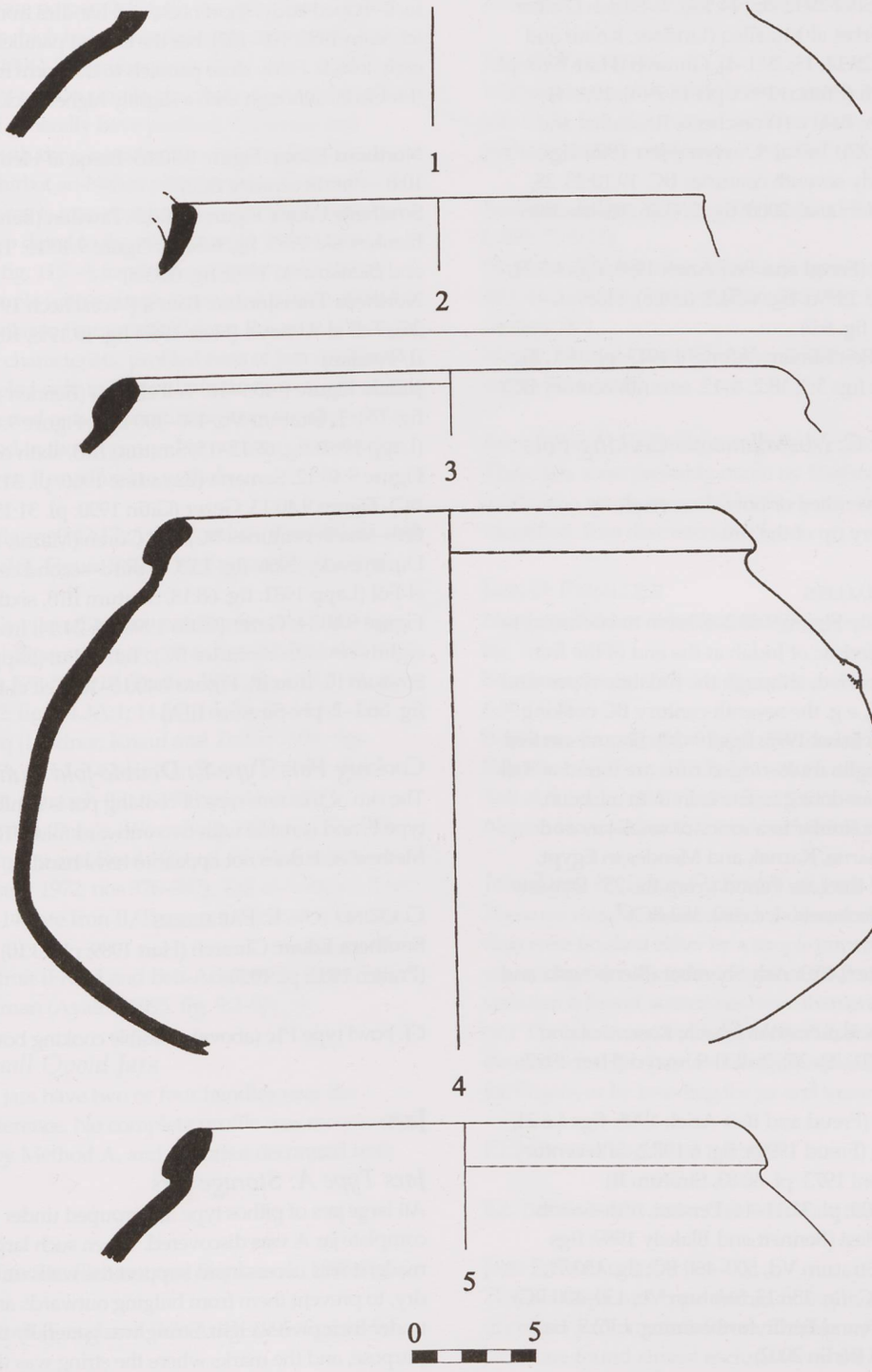


Figure no.	Type	Register/TS no.	Locus	Description
1	D	TS351	B1.1.3	Fired red/dark brown. Temper up to 1 mm.: quartz.
2	D	TS450	C1.2.2	
3	E		C1.3.3c	
4	E	R571	B3.4.3	Fired pink/black. Temper up to 1 mm.: quartz.
5	E	TS348	B1.1.3	Fired red/dark brown. Temper up to 2 mm.: quartz, some lime.

Southern Edom: Tawilan (Bennett and Bienkowski 1995: fig. 6.34:6–12), Ba'ja III (Zeitler 1992: fig. 14.1:4), as-Sadeh (Zeitler 1992: fig. 14.3A:7), Khirbat al-Mu'allaq (Lindner, Knauf and Zeitler 1996: figs 26:4; 28:14, 15; 29:1–4), Ghrareh (Hart 1989: pl. 21:1–2), Tall al-Khalayfi (Pratico 1993: pls 18:7–10; 19:1–4)
Northern Transjordan: Balu'a (Worschech, Rosenthal and Zayadine 1986: fig. 13:22), Tall al-'Umayri (Herr 1989: figs 19.4:22, late eighth–early seventh centuries BC; 19.10:23, 25, seventh century BC; Herr *et al.* 2000: fig. 3.33:16, 18, late Iron II/early Persian)
Negev: Horvat Qitmit (Freud and Beit-Arieh 1995: figs 4.5:21; 4.12:22), Tel 'Ira (Freud 1999a: figs 6.54:3; 6.94:8), Horvat Teiman (Ayalon 1995: fig. 6:5)
Southern Judah: Tell Beit Mirsim (Albright 1943: pl. 19:1, 3), Jerusalem (Eshel 1995: figs 5:3; 18:2, 4–12, seventh century BC)

Cooking Pots Type C: Miscellaneous Cooking Pots with Necks

Some cooking pots have rilled or bow rims, made by one outward fold of the very tip of the rim.

COOKING POTS C: PARALLELS

Some of these, especially Figure 9.40:2–6, seem to be similar to Judahite types, characteristic of Judah at the end of the Iron Age or in the Persian period, although the Judahite types tend to have taller necks (cf., e.g. the seventh-century BC cooking pots from Jerusalem in Eshel 1995: figs 19–20). Shorter-necked cooking pots with upright, multi-ridged rims are found at Tall al-'Umayri near Amman dating to late Iron II. In addition, Figure 9.40:2, 4–6, 8 are similar to a series of small jars and cooking pots from Amarna, Karnak and Mendes in Egypt, dating from the end of the Late Period (from the 25th Dynasty through the reign of Nectanebo I, c. 760–362 BC).[2]

Northern Edom: Figure 9.40:3: Ash-Shorabat (Bienkowski and Adams 1999: fig. 3:15)
Northern Transjordan: Balu'a (Worschech, Rosenthal and Zayadine 1986: fig. 13:21, 23–26), Tall al-'Umayri (Herr 1989: fig. 19.11:10–12)
Negev: Horvat Qitmit (Freud and Beit-Arieh 1995: figs 4.6:21, 28; 4.11:26, 28), Tel 'Ira (Freud 1999a: fig. 6.107:2, fifth century BC), Beersheba (Aharoni 1973: pl. 60:83, Stratum II)
Judah: Gezer (Gitin 1990: pl. 31:11–14, Persian, fifth–fourth centuries BC), Tell el-Hesi (Bennett and Blakely 1989: figs 139:32, 141:33, 149:26, Stratum Vd, 500–460 BC; fig. 150:41, Stratum Vc, 460–430 BC; fig. 156:13, Stratum Vb, 430–400 BC)
Egypt: Coptos (Herbert and Berlin forthcoming: LP2.9, Late Period; cf. Herbert and Berlin 2002)

Cooking Pots Type D: Simple Rim

These are essentially holemouth cooking pots, with the rims pressed rather than folded into shape. They are built by Method A or B (no bases are extant).

COOKING POTS D: PARALLELS

These have parallels in the Iron II and Persian periods, with some possibly into the third century BC, within the Hellenistic period. Figure 9.40:13 was cited by Bennett (1977:8) as 'undoubtedly Persian', and certainly has a characteristic Persian-period globular sack-shaped body, short neck, and handles from rim to shoulder (cf. Stern 1982: 100–102), but the earliest parallel from Edom is early Iron II. Fairly close parallels to this form from Tel Goren (En-Gedi), although with a slightly higher neck, are Hellenistic.

Northern Edom: Figure 9.40:13: Barqa al-Hetiye (Fritz 1994: fig. 10:8 — ninth century BC?)
Southern Edom: Figure 9.40:13: Tawilan (Bennett and Bienkowski 1995: fig. 6.34:8), Figure 9.40:15: Tawilan (Bennett and Bienkowski 1995: fig. 6.35:5)
Northern Transjordan: Balu'a (Worschech 1990: fig. 23:23, 25, 26), Tall al-'Umayri (Herr 1989: fig. 19.17:8, 10, late Iron II/Persian)
Judah: Figure 9.40:9–10: Tell el-Hesi (Bennett and Blakely 1989: fig. 154: 1, Stratum Vb, 430–400 BC), Figure 9.40:11: Tell el-Fūl (Lapp 1981: fig. 69:13–15, Stratum IIIB, sixth century BC?), Figure 9.40:12: Samaria (Zayadine 1966: pl. 31:92, third century BC), Figure 9.40:13: Gezer (Gitin 1990: pl. 31:15, Persian, fifth–fourth centuries BC), Tel Goren (Mazar, Dothan and Dunayevsky 1966: fig. 25:3, 4, third–second centuries BC), Tell el-Fūl (Lapp 1981: fig. 68:18, Stratum IIIB, sixth century BC?), Figure 9.40:14: Gezer (Gitin 1990: pl. 24:14, Iron IIC, late eighth–seventh centuries BC), Tell el-Fūl (Lapp 1981: fig. 67:1, Stratum III, Iron II), Figure 9.40:15–16: Tell el-Fūl (Lapp 1981: fig. 66:1–2, pre-Stratum IIIA)

Cooking Pots Type E: Double-fold Rim

The rim of this rare type of cooking pot is similar to that of bowl type F, and is made with two outward folds. The pot is made by Method A. It does not appear to have handles.

COOKING POTS E: PARALLELS

Southern Edom: Ghrareh (Hart 1989: pl. 23:10), Tall al-Khalayfi (Pratico 1993: pl. 19:5)

Cf. bowl type P1c (above), possible cooking bowls.

Jars

Jars Type A: Storage Jars

All large jars of pithos type are grouped under type A. No complete jar A was discovered. When such large vessels were made, it was necessary to support the walls until the clay was dry, to prevent them from bulging outwards and collapsing under their own weight. String was generally used for this purpose, and the marks where the string was tied around the jar near the widest point can often be seen. Manufacturing Method A was probably used. Rims were made with an inward fold followed by a single outward fold, and subsequent shaping done with a rib or rilling implement, with the exception of Figure 9.44:2 where the rim was simply folded inwards.

A1: PROFILED RIM, NORMALLY WITH THREE RIDGES

A2: OTHER TYPES — RIM NORMALLY FOLDED OVER AND EVERTED, OR HOLEMOUTH, OCCASIONALLY WITH COLLAR

[2] Amarna: French 1986: SJ 1.2.2, fig. 9.8, 25th Dynasty. Karnak: Redford and Haynes 1981: fig. 7a.5, period of Nectanebo I, mid-fourth century BC; Jacquet-Gordon forthcoming: pl. III.5, Complex I, group 2, series c. Mendes: Wilson 1982: pl. XVI.2. Thanks to Andrea M. Berlin for these references and for discussing this series of cooking pots with me.

JARS A: PARALLELS

Significantly, there are no parallels with the pithoi from nearby Khirbat an-Nahas, which is dated to the ninth century BC by radiocarbon (Fritz 1996). The pithoi there (Fritz 1996: fig. 3:11–13) have a short straight neck, a simple rim, and sometimes a collar. The Busayra pithoi generally have profiled, thickened and everted, or holemouth rims, occasionally with a collar. It is possible that the Khirbat an-Nahas pithoi represent an earlier Iron II form. The same is true of pithoi from Barqa al-Hetiye in the Wadi Fidan, also dated to the ninth century BC by radiocarbon (Fritz 1994: fig. 11:7–9; for date see Bienkowski 2001a), except for one example with a simple everted rim (Fritz 1994: fig. 11:10), which is similar to Figure 9.43:12 from Busayra, although slightly larger. The characteristic profiled rims of Jars A1 (Figure 9.42:1–6) are paralleled only in Edom, but other types, especially with thickened, everted or holemouth rims, occasionally with a collar, are also found in the Negev and in northern Transjordan, dating to the late Iron II and Persian periods.

Northern Edom: Figure 9.42:17: Ash-Shorabat (Bienkowski and Adams 1999: fig. 1:16), Figure 9.42:8, 12: Faynan (Barker *et al.* 1999: fig. 27:5–7)
Southern Edom: Tawilan (Bennett and Bienkowski 1995: figs 6.22–6.25), Umm al-Biyara (Bennett 1966: figs 2:2; 3:14; 4:5; Oakeshott 1978: pl. 53), Ba'ja III (Zeitler 1992: fig. 14.1:5–9), as-Sadeh (Zeitler 1992: figs 14.3A:1; 14.5:7–10, 20–21; 14.6:1–2), Khirbat al-Mu'allaq (Lindner, Knauf and Zeitler 1996: figs 26:7–10; 27:1–2, 5–7), Jabal al-Qseir (Lindner *et al.* 1996: figs 24:1–4; 25:8; 26:1–4), Ghrareh (Hart 1989: pls 14–16:1–9)
Northern Transjordan: Balu'a (Worschech 1990: fig. 22; 1992: fig. 2), Dhiban (Winnett and Reed 1964: pl. 75:17), Hisban (Lugenbeal and Sauer 1972: nos 376–387), Tall al-'Umayri (Herr 1989: fig. 19.12:11–14, late Iron II/Persian; Herr *et al.* 2000: fig. 3.32:1–3, Persian)
Negev: Horvat Qitmit (Freud and Beit-Arieh 1995: figs 4.3:10; 4.10:3), Horvat Teiman (Ayalon 1995: fig. 9:2–5)

Jars Type B: Small Ovoid Jars

These small ovoid jars have two or four handles near the maximum circumference. No complete profile was recovered. They were made by Method A, and are often decorated with linear designs.

JARS B: PARALLELS

Southern Edom: Tawilan (Bennett and Bienkowski 1995: fig. 6.30:15–18?)
Negev: Horvat Qitmit (Freud and Beit-Arieh 1995: figs 4.3:9; 4.6:26)

Jars Type C: Small Jars without Necks

These were probably made by Method A. Only rim sherds have been identified, and it is possible that the C2 'jars' may have been kraters.

C1: RIM CONTINUES LINE OF WALL

Rims made by folding first outwards, then inwards. Rim diameters c. 10 cm (cf. also Oakeshott 1978: pl. 29:25–6).

C2: RIM CONTINUES LINE OF WALL

Rims made with a single outward fold. Rim diameters 15 cm. and more.

C3: RIMS STAND VERTICALLY

Rims made with a single outward fold.

JARS C: PARALLELS

Without bases, it is difficult to be certain of the overall shape of Jars C. At Tall al-'Umayri, late Iron II jars with similar rims — perhaps slightly narrower — tapered to a pointed base.

Southern Edom: Tawilan (Bennett and Bienkowski 1995: fig. 6.30:1–7, 9–11)
Northern Transjordan: Hisban (Lugenbeal and Sauer 1972: nos 403–442), Tall al-'Umayri (Herr 1989: fig. 19.5:1–2, seventh century BC)
Negev: Horvat Qitmit (Freud and Beit-Arieh 1995: figs 4.3:16; 4.6:30–32; 4.14:45)

Jars Type D: Small Jars with Necks

These jars were probably made by Method A, and the rims made by a single inward fold. Only rim sherds have been identified. Rim diameters 9–15 cm.

JARS D: PARALLELS

Northern Edom: Ash-Shorabat (Bienkowski and Adams 1999: fig. 1:5, 7, 9, 17)
Southern Edom: Tawilan (Bennett and Bienkowski 1995: fig. 6.30:14, 16)
Northern Transjordan: Balu'a (Worschech, Rosenthal and Zayadine 1986: fig. 13:35), Dhiban (Tushingham 1972: fig. 17:2), Tall al-'Umayri (Herr 1989: fig. 19.6:8–10, seventh century BC)
Negev: Horvat Qitmit (Freud and Beit-Arieh 1995: fig. 4.14:36)

Jars Type E: Long Cylindrical Jars

These are roughly made cylindrical jars, made by Method C. The rims were finished either by a simple outward fold or by smoothing the outward fold against the body: every possible variation is found, sometimes more than one occurring on a single rim. The bases were made by Method 2, either by cutting through the clay below the base and roughly squeezing it into shape with the fingers, or by inverting the jar and turning the base.

E1: THE BASE HAS BEEN TURNED

E2: THE BASE HAS BEEN LEFT ROUGHLY FLATTENED

JARS E: PARALLELS

This is a fairly rare type; within Edom there is only one uncertain earlier parallel from Khirbat an-Nahas. At Busayra, Jars E are found almost exclusively in the series of small rooms along the side of the courtyard facing the 'sanctuary' in Area A; unpublished seventh-century BC parallels from similar contexts in public buildings came from Tel Miqne and Malhata (cf. Chapter 4 for discussion), and similar but not identical jars came from the eighth-century BC Stratum II storehouse at Beersheba. These parallels suggest that this may have been a type of 'industrial' jar used for storage, perhaps of oil. Instrumental neutron activation analysis of one sample from a Jar E indicates that it originated locally at Busayra (see Appendix 1: BUS 17).

Northern Edom: Khirbat an-Nahas? (Fritz 1996: fig. 3:15 — ninth century BC?)

Figure 9.42: Jars A (1)

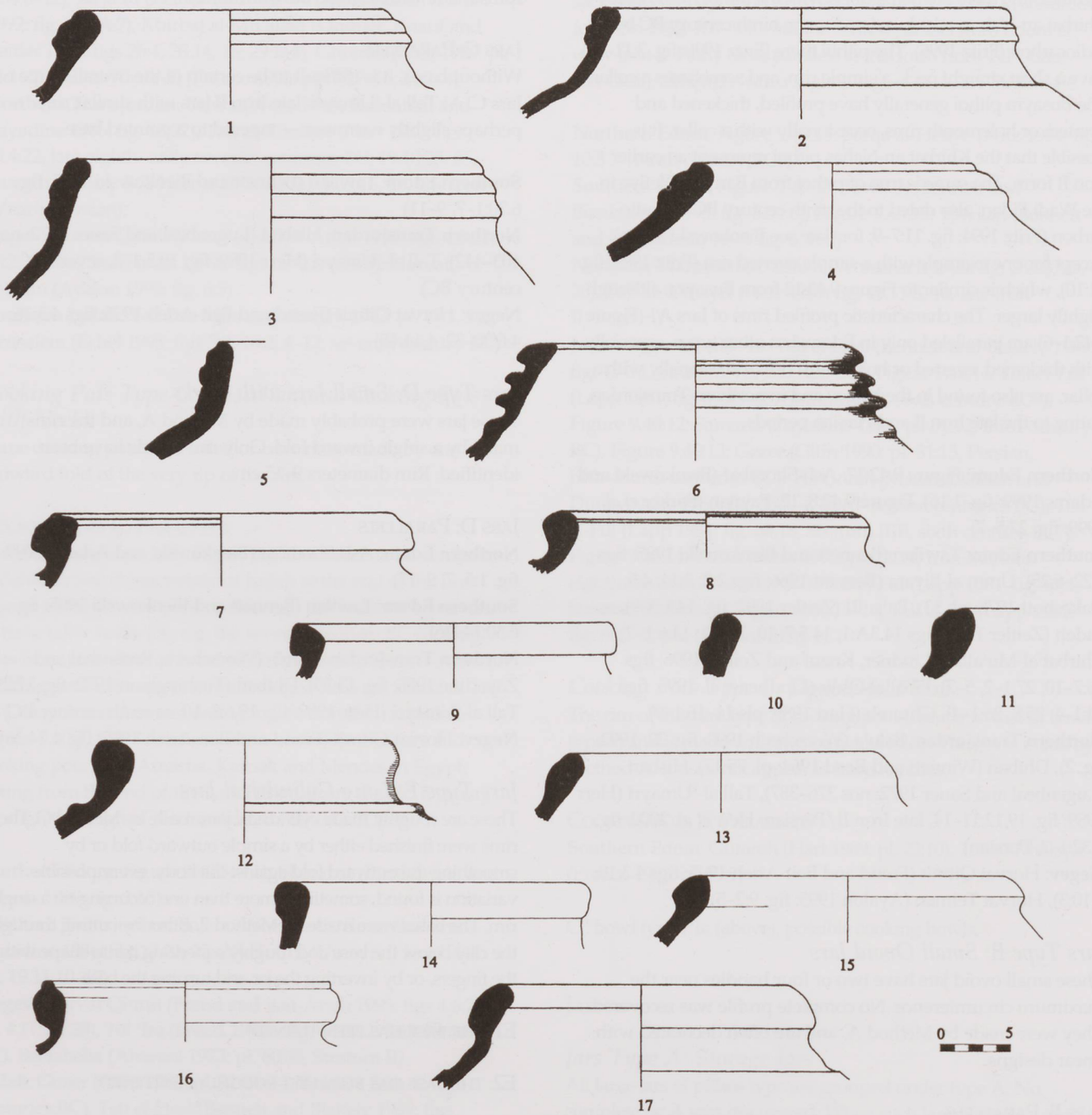


Figure no.	Type	Register/TS no.	Locus	Description
1	A1		B3.2.m	
2	A1		B3.2.m	
3	A1		B3.2.m	
4	A1	TS368	A1.1.1-4	Fired pink; core grey. Temper up to 4 mm.: lime, quartz.
5	A1	TS234	A5.7.6	Fired pinkish-brown inside, whitish bloom outside; core grey. Temper up to 6 mm.: lime; mainly up to 1 mm.: lime, basalt.
6	A1		B3.2.m	
7	A2		B3.2.m	
8	A2		B3.2.m	
9	A2		B3.2.m	
10	A2	TS379	A21.1.3	Fired grey. Temper up to 0.25 mm.: quartz, some lime.
11	A2	TS377	A26.1.1	Fired yellow; core grey. Temper up to 0.25 mm.: lime, quartz.
12	A2	TS294	B2.7.14	Fired red/grey/brown/buff; core grey. Temper up to 4 mm.: basalt, lime.
13	A2	TS369	A5.4.8	Fired grey. Temper up to 3 mm.: quartz, lime.
14	A2	TS372	B1.1.1-3	Fired grey/brown. Temper up to 4 mm.: lime, basalt.
15	A2	TS371	B1.1.1-3	Fired brown; core grey. Temper up to 4 mm.: lime, quartz.
16	A2	TS375	C1.3.3c	Fired red; core brown. Temper up to 3 mm.: quartz, lime.
17	A2		B3.2.m	

Figure 9.43: Jars A (2)

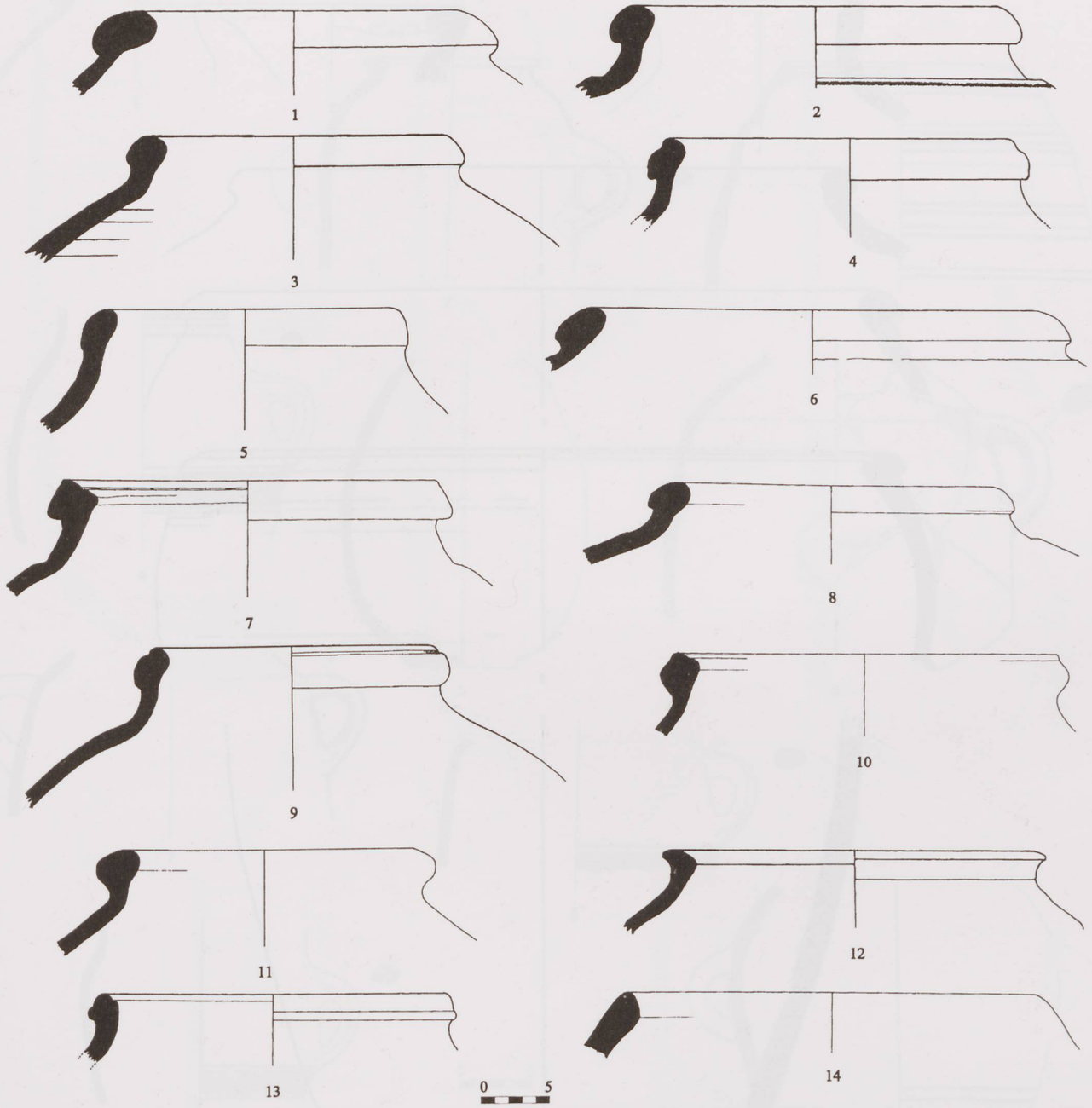


Figure no.	Type	Register/TS no.	Locus	Description
1	A2		A60.7.4	
2	A2		B3.2.m	
3	A2		B3.2.m	
4	A2	TS567	B2.1.3	
5	A2	TS511	B1.2.2e	
6	A2	TS563	B1.2.2c	
7	A2	TS230	A5.6.6	Fired red. Temper up to 3 mm.: basalt, lime.
8	A2	TS370	B1.1.1-3	Fired red; core grey. Temper up to 3 mm.: basalt, lime, rare vegetable.
9	A2		B3.4.3	
10	A2	TS373	B1.1.1-3	Fired pink; core brown. Temper up to 3 mm.: lime, quartz.
11	A2	TS374	B1.1.1-3	Fired pink/grey; core grey. Temper up to 4 mm.: lime, quartz.
12	A2		B3.2.m	
13	A2	TS513	B1.2.2	
14	A2	TS367	B1.1.1-3	Fired pink; core grey. Temper up to 1.5 mm.: lime, quartz, vegetable.

Figure 9.44: Jars A (3)

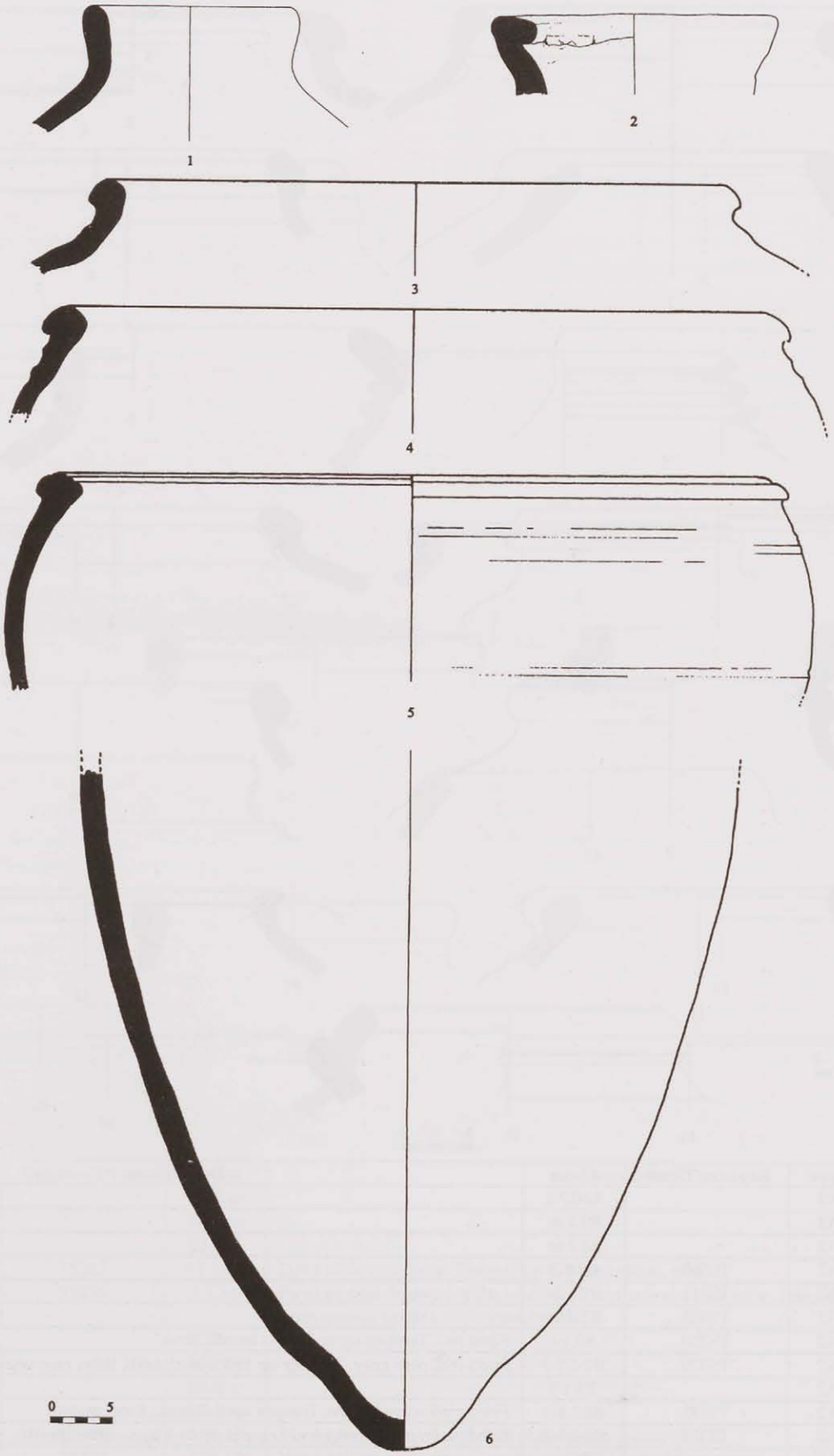


Figure no.	Type	Register/TS no.	Locus	Description
1	A2	TS376	B2.2.2c	Fired brown; core grey. Temper up to 3 mm.: lime, quartz.
2	A2	TS378	B1.1.1-3'	Fired pink; core pink, black in patches. Temper up to 3 mm.: quartz, lime, vegetable, one piece of flint 8 mm.
3	A2		D3.3.10	
4	A2	TS525	D2.+	Possibly a krater.
5	A2	TS520	B3.4.3	Possibly a krater.
6	A2	R1272	C22.10.3	Fired orange/pink outside, grey inside; grey core. Very coarse and unevenly fired.

Figure 9.45: Jars B

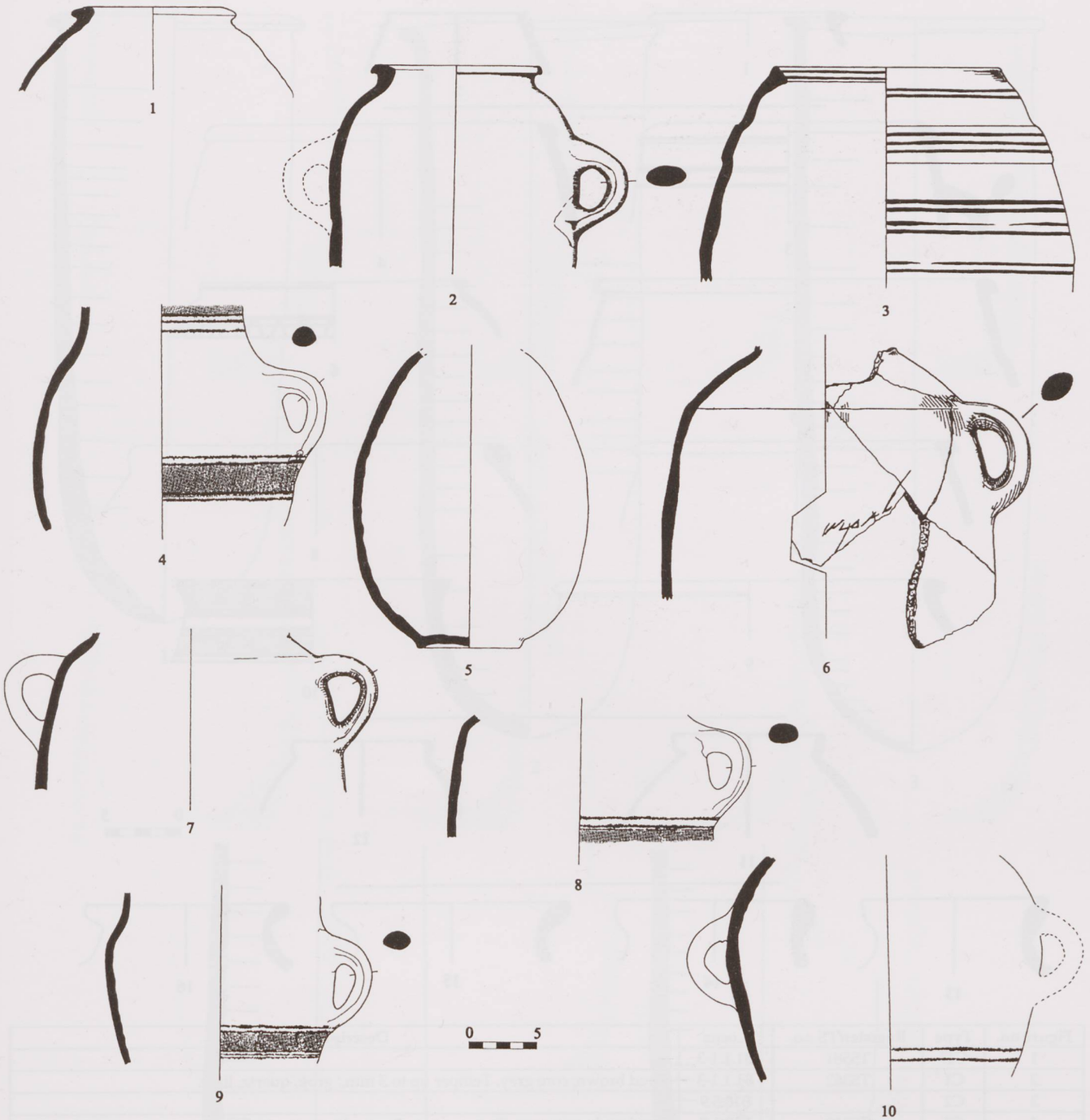


Figure no.	Type	Register/TS no.	Locus	Description
1	B	TS531	D2.8.12	
2	B?	TS301	B2.9.1	Fired white outside, with pink patches; inside red and yellow; core pink and yellow. Temper up to 4 mm.: lime and quartz.
3	B		B3.20.m	
4	B	TS37	B1.1.1-3	Fired pink/white; core brown. Temper up to 2 mm.: lime, basalt. Red and black decoration.
5	B		B3.2.6/10	
6	B	R802	D3.5.2	Fired pink; core orange. Temper up to 3 mm.: lime; up to 0.25 mm.: quartz. Inscription incised on wall after firing.
7	B	TS206	B2.7.2	Fired pink/red; core red. Temper up to 1 mm.: lime, grog.
8	B	TS64	B1.1.1-3	Fired pink outside, yellow inside; core brown. Temper up to 2 mm.: lime, grog, basalt, flint. Red and black decoration. Pulled handle.
9	B	TS43	B1.1.1-3	Fired pink; core brown. Temper up to 2 mm.: basalt, lime, grog. Red and black decoration.
10	B	TS380	B1.1.2a	Fired pink; core grey; interior partially grey. Temper up to 2 mm.: basalt, lime. Black decoration.

Figure 9.46: Jars C, D

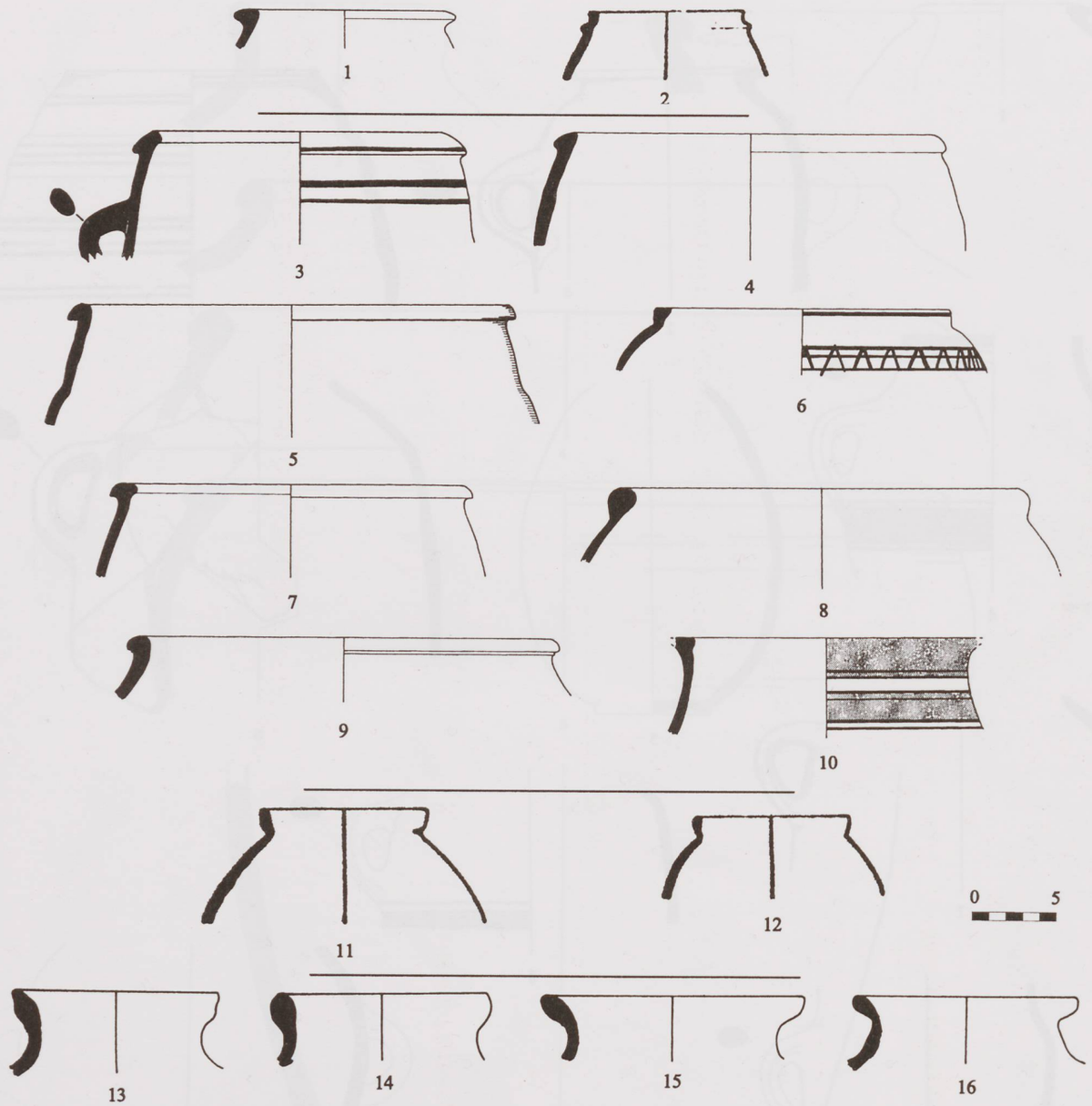


Figure no.	Type	Register/TS no.	Locus	Description
1	C1?	TS581	B1.1.1-3	
2	C1	TS362	B1.1.1-3	Fired brown; core grey. Temper up to 3 mm.: grog, quartz, lime.
3	C2		B10.5.9	
4	C2	TS218	B10.1.5	Fired pink; core grey. Temper up to 2 mm.: lime, quartz, grog.
5	C2	TS303	D2.8.15	Fired red/yellow; core brown at thickest part, elsewhere red. Temper mainly fine quartz; also up to 3 mm.: lime, shale.
6	C2	TS365	B1.2.2c	Fired yellow. Temper up to 3 mm.: lime, quartz. Brown and black decoration.
7	C2	TS366	B1.1.1-3	Fired pink; core grey. Temper up to 1 mm.: quartz, lime.
8	C2	TS564	B2.1.3	
9	C2	TS583	B1.1.1-3	
10	C2	TS584	B1.1.1-3	
11	C3	TS254	B3.6.12	Fired dark grey. Temper up to 2 mm.: basalt; up to 1 mm.: profuse quartz and some lime. Knob probably applied.
12	C3	TS352	B1.1.1-3	Fired grey. Temper up to 1.5 mm.: lime, quartz, basalt.
13	D	TS354	C1.5.1	Fired pink. Temper up to 1 mm.: quartz, lime.
14	D	TS355	C1.1.1	Fired pink inside, whitish bloom outside; core pink. Temper up to 2 mm.: lime, quartz.
15	D	TS356	C1.1.1	Fired pink; core brown. Temper up to 1 mm.: lime, grog, some quartz.
16	D	TS357	A26.1.1	Fired pink. Temper up to 1 mm.: quartz, lime.

Figure 9.47: Jars E1

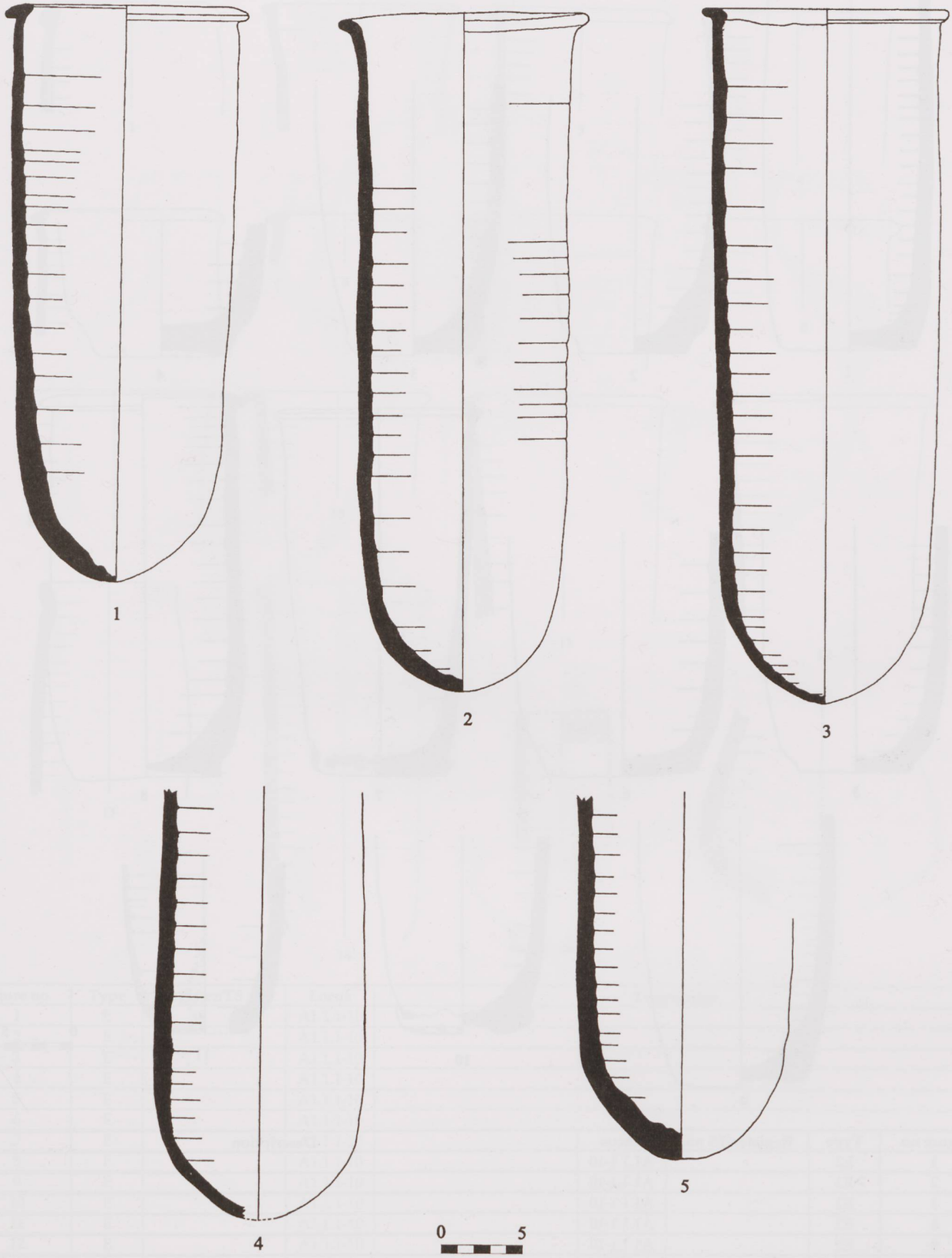


Figure no.	Type	Register/TS no.	Locus	Description
1	E1	R41	A1.3.1	Fired pink; core brown. Temper up to 2 mm.: lime, quartz, basalt.
2	E1	R42	A1.1.1	Fired pink; core grey. Temper up to 3 mm.: lime, quartz.
3	E1		A1.1.1-10	
4	E1		A1.1.1-10	
5	E1		A1.1.1-10	

Figure 9.48: Jars E2

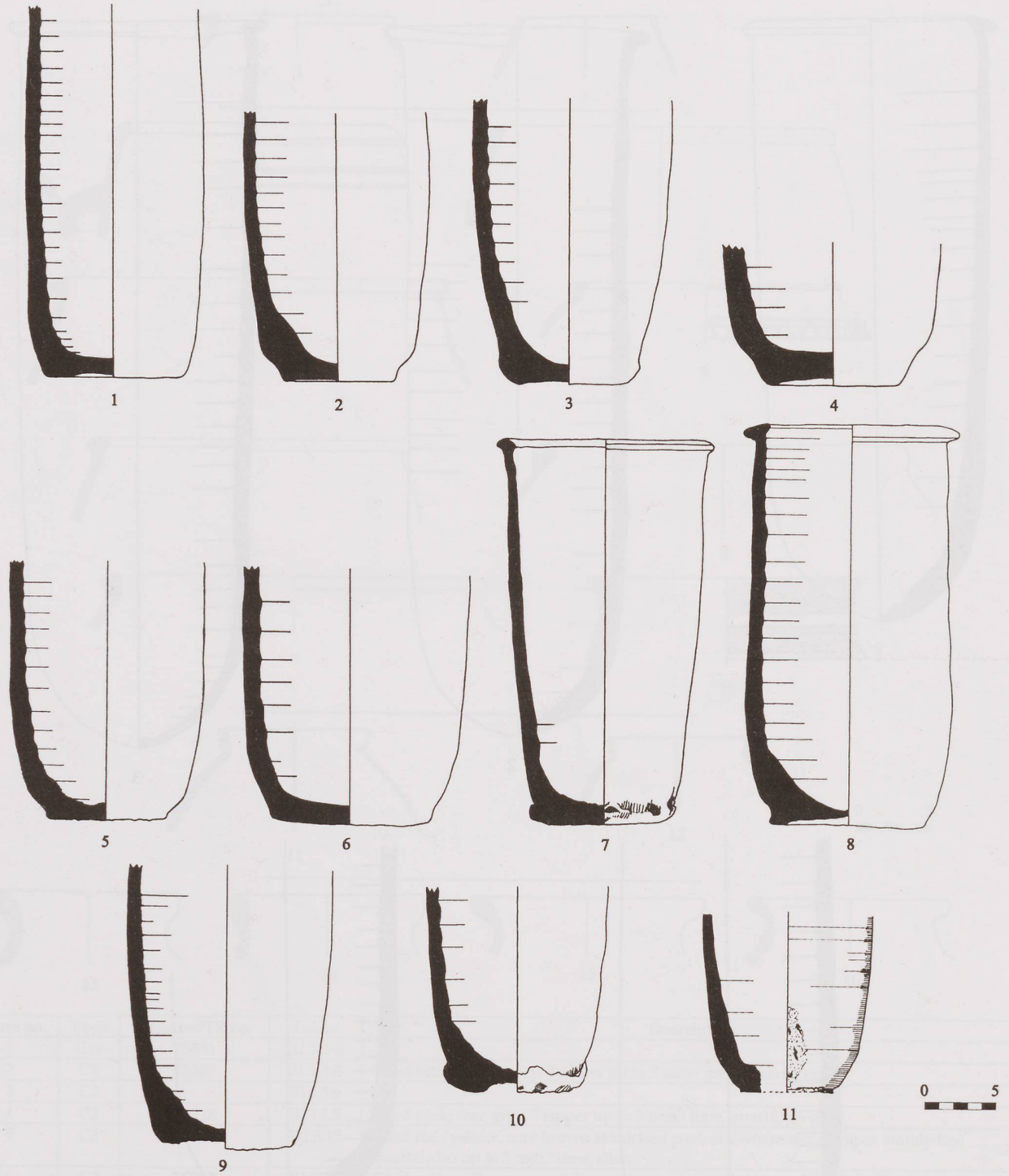


Figure no.	Type	Register/TS no.	Locus	Description
1	E2		A1.1.1-10	
2	E2		A1.1.1-10	
3	E2		A1.1.1-10	
4	E2		A1.1.1-10	
5	E2		A1.1.1-10	
6	E2		A1.1.1-10	
7	E2	R1192	A5.13.3	Fired grey/buff. Lime and basalt temper. Very coarse, finger marks showing around edge of base.
8	E2	R40	A1.1.2-4	Fired buff; core grey. Temper up to 4 mm.: basalt, lime, quartz, grog.
9	E2	R47	A1.1.1	Fired pink; core grey. Temper up to 1 mm.: lime, quartz.
10	E2	R48	A1.1.6	Fired buff; core grey. Temper up to 4 mm.: grog, basalt, lime, quartz.
11	E2	TS310	D2.5.14	Fired pink/grey; core grey. Temper up to 5 mm.: grog, basalt, lime, quartz.

Figure 9.49: Jars E

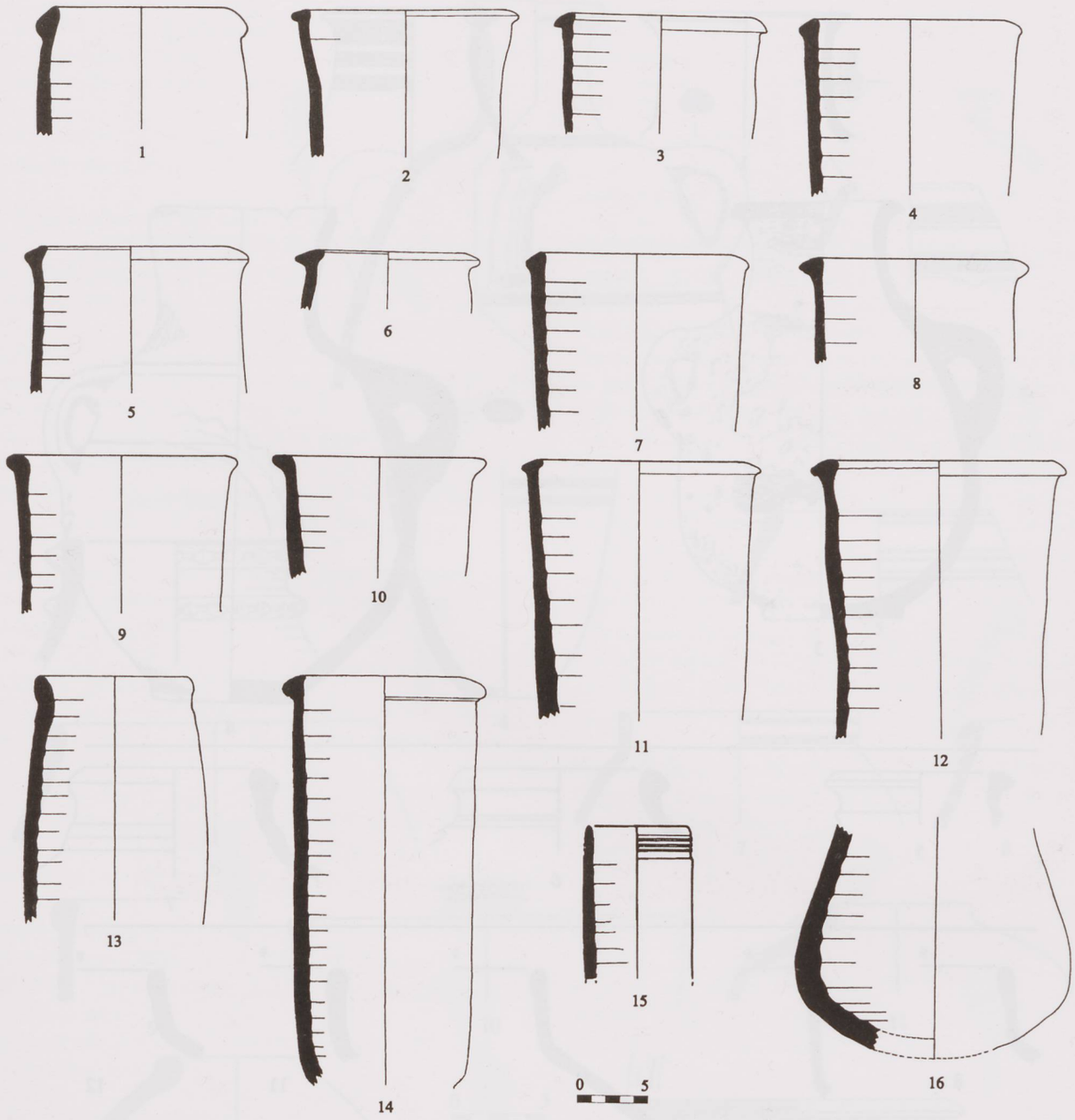


Figure no.	Type	Register/TS no.	Locus	Description
1	E		A1.1.1-10	
2	E		A1.1.1-10	
3	E		A1.1.1-10	
4	E		A1.1.1-10	
5	E		A1.1.1-10	
6	E		A1.1.1-10	
7	E		A1.1.1-10	
8	E		A1.1.1-10	
9	E		A1.1.1-10	
10	E		A1.1.1-10	
11	E		A1.1.1-10	
12	E		A1.1.1-10	
13	E	R51	A1.1.9	Fired orange; core grey-brown. Temper up to 1 mm.: quartz, some lime.
14	E	R52	A1.1.1	Fired pink. Temper up to 0.5 mm.: mainly quartz, some lime.
15	E?		D3.10.6	Ware 3b: 'white ware' . Temper up to 1 mm.: quartz, some very fine mica.
16	E misc		A1.1.1-10	

Figure 9.50: Jars F, G, H

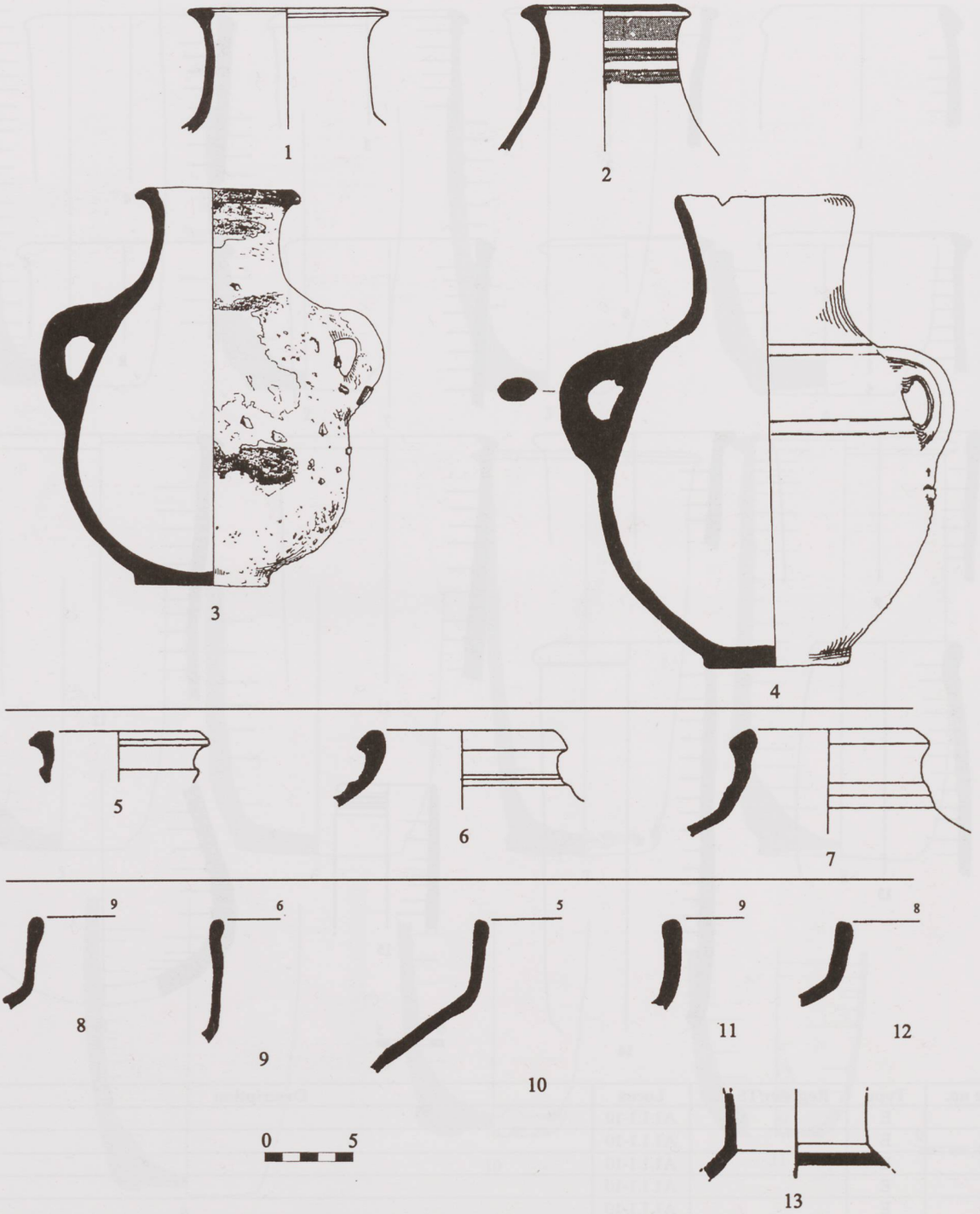


Figure no.	Type	Register/TS no.	Locus	Description
1	F?		B10.3.9	
2	F?		B3.20.2a	
3	F	R181	B3.1.3	Fired buff. Temper up to 3 mm.: lime, basalt. Handles rolled. Traces of red decoration.
4	F	R517	B3.4.3	Fired buff/pink; some white bloom. Temper up to 3 mm.: basalt, lime. Handles rolled.
5	G		D2.10.2	
6	G		D2.6.6	
7	G		D3.10.+	
8	H		D2.18.22	
9	H		D2.5.6	
10	H		D3.1.5	
11	H		D3.2.20	
12	H		D3.6.7	
13	H?		A8.5.16	Fired buff. Temper up to 0.5 mm.: quartz, lime. Blue/green/yellow glaze in and out.

Figure 9.51: Miscellaneous jars (1)

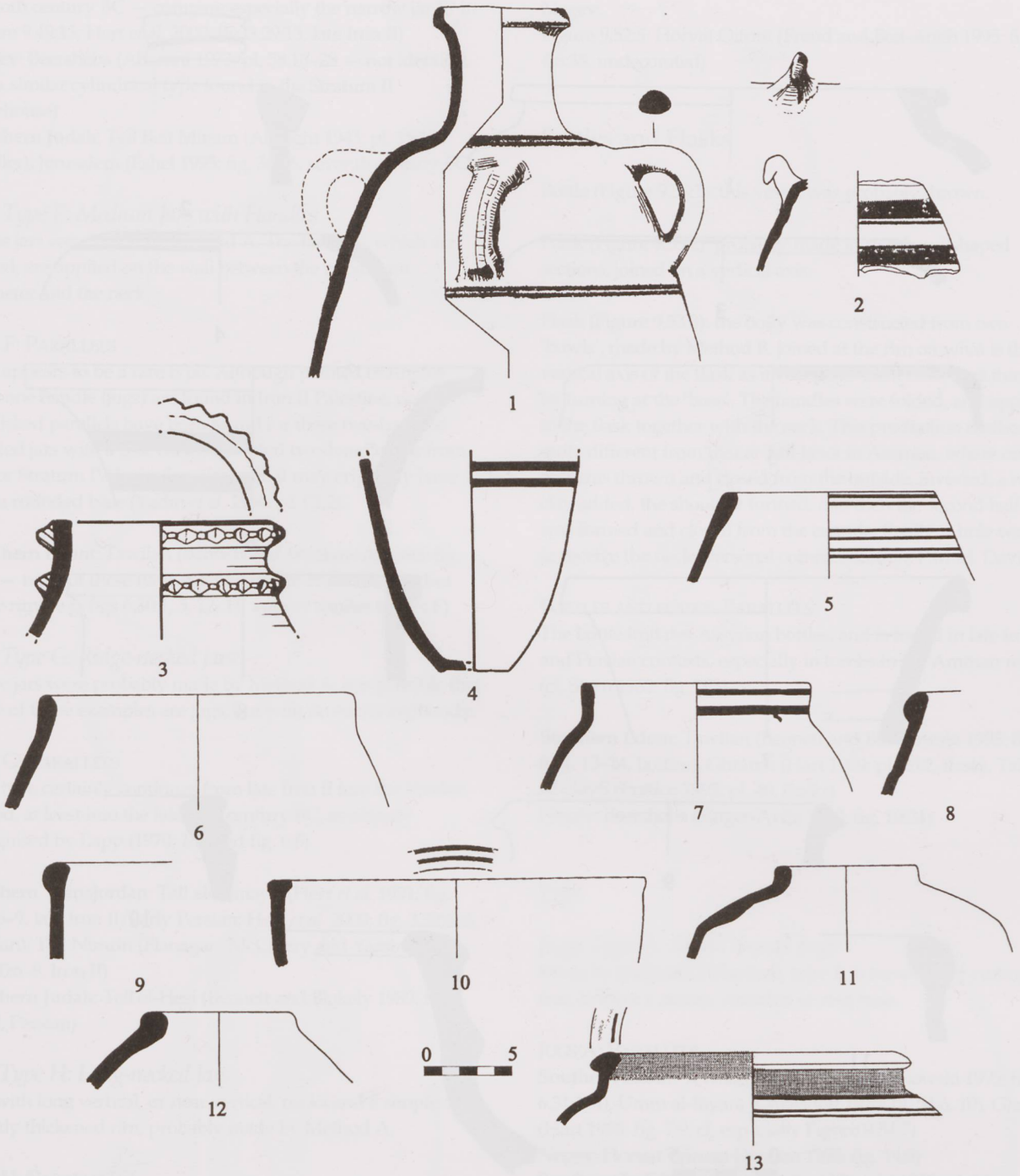


Figure no.	Register/TS no.	Locus	Description
1	R351	B3.2.6	Fired pink with white bloom outside; core pink. Temper up to 2 mm.: grog, quartz, lime. Originally four handles. Black decoration.
2	R251	B3.2.6	Jar? Fired red; core brown. Temper up to 1.5 mm.: quartz, lime. Red and black decoration. Small handle perhaps represents bird' s head.
3		B3.2.m	Fired pinkish-buff. Temper up to 1 mm.: basalt, lime, grog, quartz.
4	TS3045	C+	Fired pink. Temper up to 2 mm.: basalt, lime, grog, quartz. Cream slip on outside. Dark brown lines.
5	TS325	C2.2.6	Fired pink/yellow. Temper up to 2 mm.: quartz, lime. Black lines outside.
6	TS265	B3.4.13	Fired red. Temper up to 1 mm.: quartz, rare lime.
7	TS266	B3.4.13	Fired pink, with white bloom inside and out; core grey. Temper up to 2 mm.: lime, quartz. Black decoration.
8	TS582	B1.1.1-3	
9		A1.1.1	
10	TS437	B1.1.1-3	
11	TS287	D2.8.20	Fired red/buff; core black. Temper up to 1 mm.: lime, profuse quartz.
12	TS275	A1.32.10	Fired red. Temper up to 1 mm.: lime, shale.
13	TS565	B2.2.26	

Figure 9.52: Miscellaneous jars (2)



Figure no.	Register/TS no.	Locus	Description
1		B1.2.1	
2	TS225	A11.1.3	Fired pink outside, brown inside; core grey. Temper up to 2 mm.: basalt; and minuscule quartz and lime. Traces of handle join. Black decoration.
3	TS324	B1.1.1-3	Fired pale pink. Temper up to 2 mm.: lime, quartz, grog. Black line below rim outside.
4	TS290	D3.1.4	Fired yellowish-cream; core yellow. Temper up to 1 mm.: lime; and minute quartz. Continuous shiny ring-burnish outside. Black decoration.
5	TS232	A5.6.8	Fired pink. Temper up to 1 mm.: basalt, quartz. Red slip on rim edge.
6	TS111	B6.1.1	Fired greenish-white; core grey. Temper up to 2 mm.: basalt, some lime. Outside dry-smoothed. Bands of black slip.
7	TS322	D2.8.2	Fired pink; core brown. Temper up to 3 mm.: lime, grog, basalt.
8		B1.2.2c	
9		C1.2.2	
10	TS274	A1.32.5	Fired pink/buff; core pink. Temper up to 3 mm.: basalt, lime, quartz. Rough surface.
11	TS273	A1.30.3	Fired white; core pink. Temper up to 2 mm.: lime, grog, basalt, quartz.
12	TS299	B2.7.28	Fired reddish-yellow outside; red-brown inside; just below surface red; core dark grey. Temper up to 3 mm.: lime, basalt, quartz, limestone. Traces of handle join over ridge.

Northern Transjordan: Tall al-'Umayri (Herr 1989: fig. 19.6:21, seventh century BC — compare especially the narrow jar E? in Figure 9.49:15; Herr *et al.* 2000: fig. 3.29:13, late Iron II)
Negev: Beersheba (Aharoni 1973: pl. 58:18–28 — not identical, but a similar cylindrical type found in the Stratum II storehouse)
Southern Judah: Tell Beit Mirsim (Albright 1943: pl. 15:12, smaller), Jerusalem (Eshel 1995: fig. 30:16, seventh century BC)

Jars Type F: Medium Jars with Handles

These jars were made by Method A. The handles, which are folded, are applied on the wall between the maximum diameter and the neck.

JARS F: PARALLELS

This appears to be a rare type. Although painted examples with one handle (jugs) are found in Iron II Palestine, no published parallels have been found for these two-handled painted jars with a disc base. A painted two-handled jar from Hazor Stratum IV is similar, although it may originally have had a rounded base (Yadin *et al.* 1960: pl. CI:2).

Southern Edom: Tawilan (Bennett and Bienkowski 1995: fig. 6.30 — none of these have extant handles or decoration, but some rims, e.g. figs 6.30:1, 5, 12, 14, appear similar to Jars F)

Jars Type G: Ridge-necked Jars

These jars were probably made by Method A. It is possible that some of these examples are jugs, but with no surviving handle.

JARS G: PARALLELS

This type certainly continues from late Iron II into the Persian period, at least into the late fifth century BC, as already recognised by Lapp (1970: 183 and fig. 6:6).

Northern Transjordan: Tall al-'Umayri (Herr *et al.* 1991: fig. 3.12:6–9, late Iron II/early Persian; Herr *et al.* 2000: fig. 3.32:4–6, Persian), Tall Nimrin (Flanagan, McCreery and Yassine 1994: fig. 20:6–8, Iron II)
Southern Judah: Tell el-Hesi (Bennett and Blakely 1989: fig. 143:2, Persian)

Jars Type H: Long-necked Jars

Jars with long vertical, or near vertical, necks and a simple or slightly thickened rim, probably made by Method A.

JARS H: PARALLELS

Southern Edom: Tawilan (Bennett and Bienkowski 1995: fig. 6.30:12, 17)
Negev: Horvat Qitmit (Freud and Beit-Arieh 1995: fig. 4.14:37)

Miscellaneous Jars

Many jars do not fall into any particular group, but specific parallels are quoted below.

MISCELLANEOUS JARS: PARALLELS

Northern Edom: Figure 9.52: 3–4: Ash-Shorabat (Bienkowski and Adams 1999: figs 1:8, 13; 2:3; 3:7)
Southern Edom: Figures 9.51:13; 9.52:1: Tawilan (Bennett and Bienkowski 1995: figs 6.30:15; 6.32:3 undecorated), Figure 9.52:10: Tawilan (Bennett and Bienkowski 1995: fig. 6.30:19), Figure 9.52:11: Tawilan (Bennett and Bienkowski 1995: fig. 6.30:18)
Negev:
Figure 9.52:5: Horvat Qitmit (Freud and Beit-Arieh 1995: fig. 4.6:38, undecorated)

Bottles and Flasks

Bottle (Figure 9.53:1): this vessel was probably thrown.

Flask (Figure 9.53:2): probably made in two-bowl-shaped sections, joined on a vertical axis.

Flask (Figure 9.53:3): the body was constructed from two 'bowls', made by Method B, joined at the rim on what is the vertical axis of the flask as it was used. Each bowl was thinned by turning at the 'base'. The handles were folded, and applied to the flask together with the neck. This production method is quite different from that at Tall Jawa in Ammon, where one half was thrown and closed from the outside, inverted, a roll of clay added, the shoulder formed, and then the second half was was formed and closed from the outside; finally, a hole was cut to receive the neck (personal communication, P.M.M. Daviau).

BOTTLES AND FLASKS: PARALLELS

The bottle imitates Assyrian bottles, and is found in late Iron II and Persian contexts, especially in tombs in the Amman region (cf. Stern 1982: fig. 198).

Southern Edom: Tawilan (Bennett and Bienkowski 1995: fig. 6.31: 13–14, bottles), Ghrareh (Hart 1989: pl. 25:2, flask), Tall al-Khalayfi (Pratico 1993: pl. 40, flasks)
Negev: Beersheba (Singer-Avitz 1999: fig. 10:24)

Jugs

Jugs Type A: Small Squat Jugs

Made by Method C. The base, type 2, is turned after cutting free, to form a stump, rounded or ring base.

JUGS A: PARALLELS

Southern Edom: Tawilan (Bennett and Bienkowski 1995: fig. 6.31:1–4), Umm al-Biyara (Oakeshott 1978: pl. 54:6, 10), Ghrareh (Hart 1988: fig. 7:9, cf. especially Figure 9.54:7)
Negev: Horvat Teiman (Ayalon 1995: fig. 14:9)
Southern Judah: Tell Beit Mirsim (Albright 1943: pl. 14)

Jugs Type B: Large Jugs with Ridged Rim

Made by Method A, with one handle from shoulder to rim, and rim shaped by an inward fold followed by a single outward fold. The handles were often pulled. Bases are of type 5, either rounded or with a ring added. Rim diameters 8–10 cm.

JUGS B: PARALLELS

Northern Edom: Ash-Shorabat (Bienkowski and Adams 1999: fig. 2:12)
Southern Edom: Tawilan (Bennett and Bienkowski 1995: figs 6.26; 6.27), Umm al-Biyara (Bennett 1966: fig. 4:2–4; Oakeshott 1978: pl. 55:3), as-Sadeh (Zeitler 1992: figs 14.3A:2–4; 14.4B:1–5), Khirbat al-Mu'allaq (Lindner, Knauf and Zeitler 1996: fig. 26:1–3,

Figure 9.53: Bottles and flasks

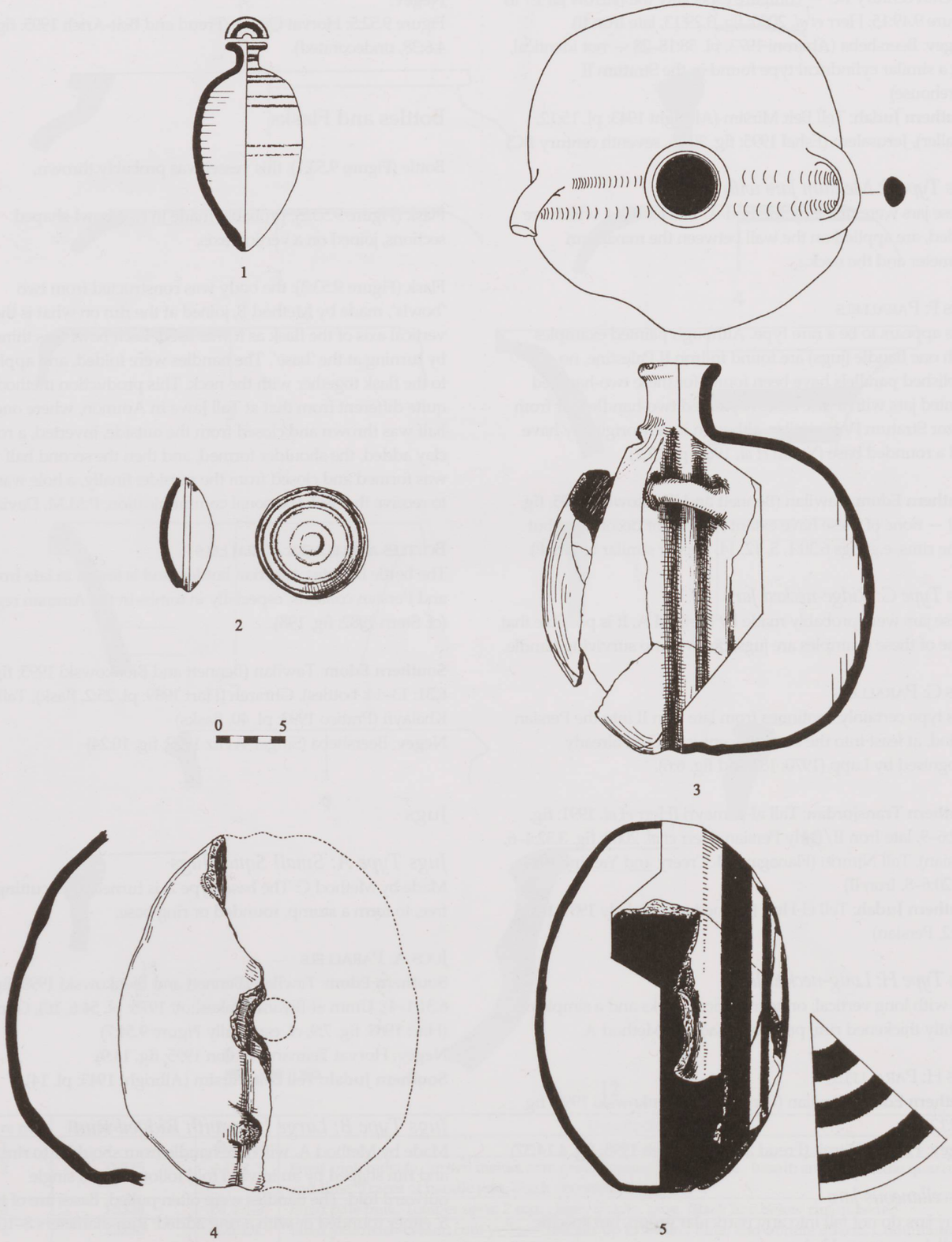


Figure no.	Type	Register/TS no.	Locus	Description
1	Bottle	R258	B3.2.6	Fired red; core black. Temper up to 0.25 mm.: profuse quartz, some lime and grog. Red and dark brown decoration.
2	Flask	R191	B3.2.6	Fired buff. Temper up to 0.25 mm.: quartz, lime, grog. Red decoration.
3	Flask	R415	B3.2.13	Fired pink. Temper up to 2 mm.: much quartz, lime.
4	Flask	R1152	B3.20.4	Fired red. Lime and quartz temper. Coarse.
5	Flask	R1126	C14.1.9	Fired buff. Lime and quartz temper. Red decoration.

Figure 9.54: Jugs A, B

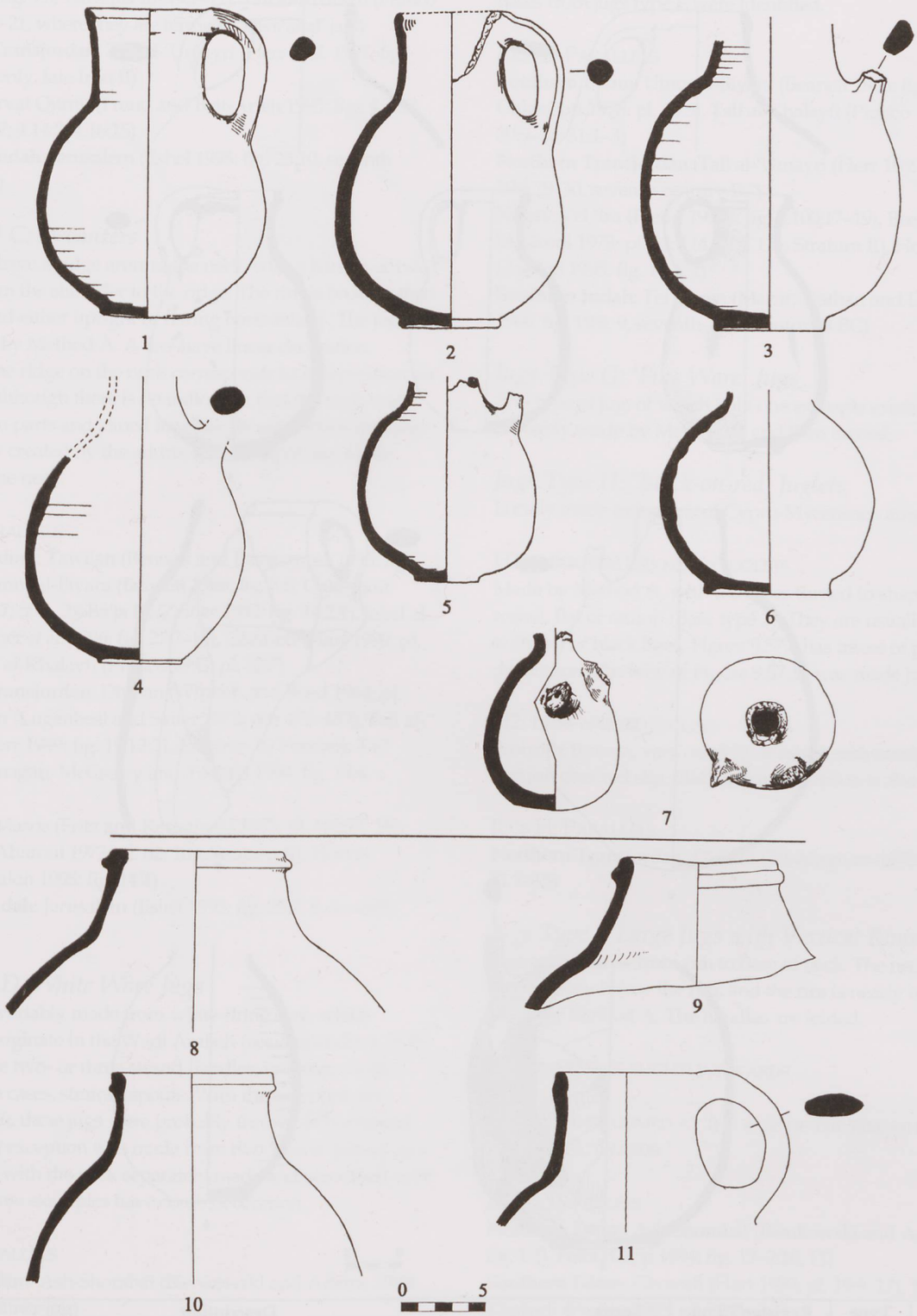


Figure no.	Type	Register/TS no.	Locus	Description
1	A	R1130	B3.20.4	Fired buff. Basalt temper.
2	A	R1172	B3.20.4	Fired pinkish-buff. Lime and quartz temper.
3	A	R1173	B3.20.4	Fired buff. Lime and quartz temper.
4	A	TS395	B1.1.2c	Fired grey/pink/white; core grey. Temper up to 1 mm.: quartz, lime, some grog.
5	A	R77	B1.1.3	Fired pink; core buff. Temper up to 1 mm.: quartz, lime.
6	A	R611	D3.3.2	Fired buff. Temper up to 3 mm.: lime, basalt, grog.
7	A	R233	B3.2.6	Fired whitish. Temper up to 4 mm.: lime, quartz, grog. Stumps of one or two handles.
8	B	TS61	A5.1.1-4	Fired grey. Temper up to 3 mm.: mainly basalt with some lime.
9	B	TS416	A5.1.1-4	Fired greenish-white; core brown. Temper up to 3 mm.: basalt, lime, quartz.
10	B	TS63	A5.1.1-4	Fired grey/orange; core grey. Temper up to 5 mm.: mainly basalt up to 1.5 mm.
11	B	TS410	B1.1.1-3	Fired whitish; core pale grey. Temper up to 2 mm.: lime, quartz.

Figure 9.55: Jugs B

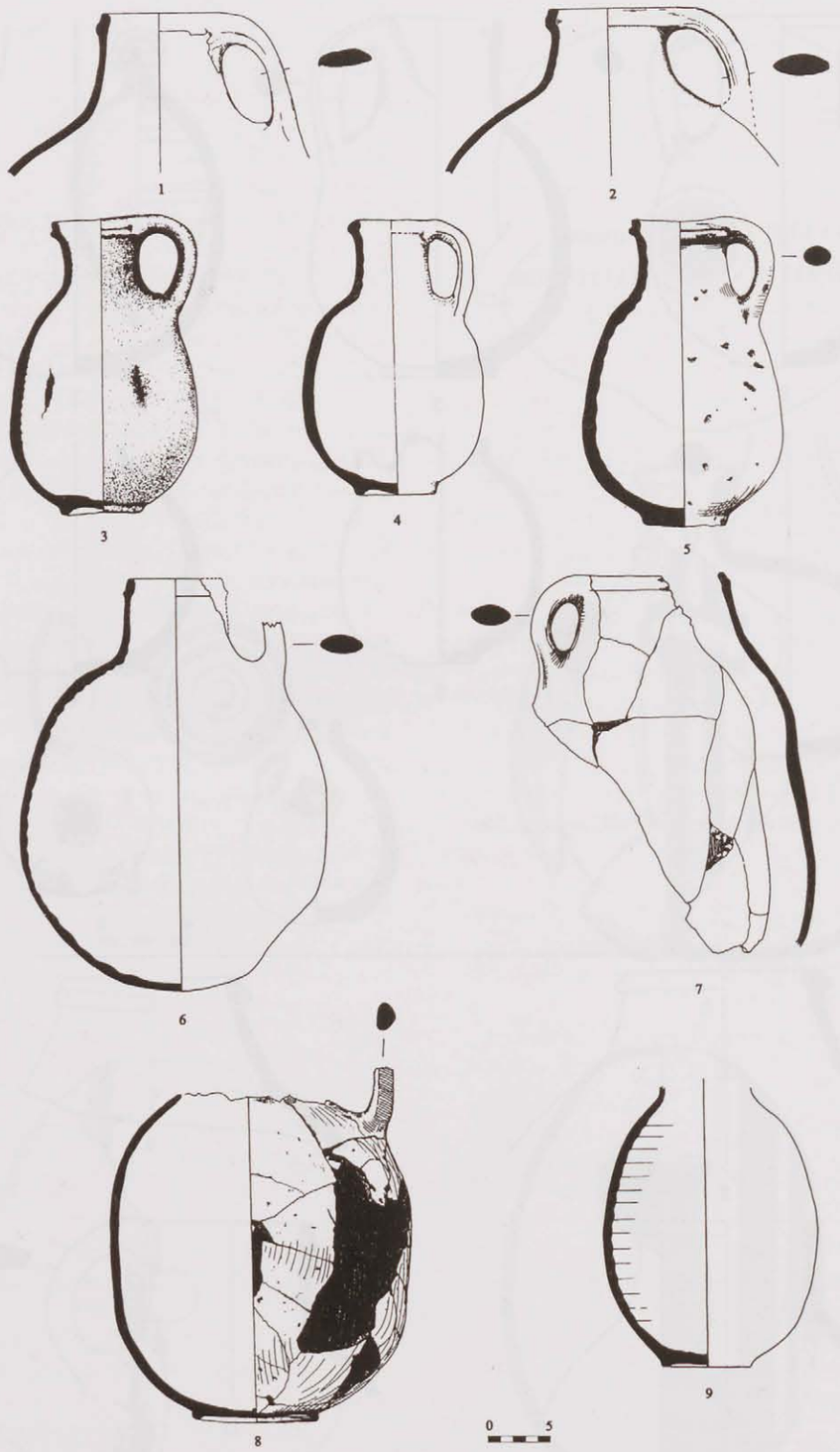


Figure no.	Type	Register/TS no.	Locus	Description
1	B	TS89	B2.7.2	Fired pale grey; core grey. Temper up to 3 mm.: basalt, lime. Pulled handle.
2	B	TS88	B3.6.2	Fired grey; red immediately below surface; core grey. Temper up to 1.5 mm.: basalt, lime. Handle folded.
3	B	R1255	C21.3.15b	Fired pink/buff. Lime, basalt and grog temper.
4	B	R1256	C21.3.15b	Fired buff/pink. Lime and grog temper.
5	B	R218	B3.2.9	Fired grey. Temper up to 3 mm.: lime, quartz. Handle possibly pulled.
6	B	R79	B1.1.3	Fired grey; patches of white bloom on exterior. Temper up to 1.5 mm.: basalt, lime, quartz. Folded handle.
7	B	R54	A5.1.1	Fired pink/grey; core grey. Temper up to 0.25 mm.: quartz, profuse basalt; up to 1 mm.: lime, basalt. Handle folded.
8	B	R783	A1.10.5	Fired greenish-white outside; inside and core purplish-brown. Temper up to 3 mm.: lime, basalt, quartz. Handle pulled.
9	B	TS41	B3.2.6-10	Fired grey. Temper up to 3 mm.: basalt, lime.

5, 6), Jabal al-Qseir (Lindner *et al.* 1996: fig. 23:1–3, 5, 6), Ghrareh (Hart 1987: fig. 9:8; 1989: pls 18–19:1–11), Tall al-Khalayfi (Pratico 1993: pls 20–21, where they are termed 'Qaws'anal' jars)
Northern Transjordan: Tall al-'Umayri (Herr *et al.* 1997: fig. 6.9:30, rim only, late Iron II)
Negev: Horvat Qitmit (Freud and Beit-Arieh 1995: figs 4.3:22; 4.6:29; 4.9:37; 4.14:2; 4.16:15)
Southern Judah: Jerusalem (Eshel 1995: fig. 25:10, seventh century BC)

Jugs Type C: Decanters

These jugs have a ridge around the neck, with a handle or two handles from the shoulder to the ridge. The rim is broader than the neck, and either upright or flaring horizontally. The jugs were made by Method A. A few have linear decoration. Normally the ridge on the neck corresponds to a depression on the inside, although there is no indication that the neck was made in two parts and joined together. In some cases the ridge is artificially created by the addition of a ring of clay to the outside of the neck.

Jugs C: Parallels

Southern Edom: Tawilan (Bennett and Bienkowski 1995: fig. 6.29:3–9), Umm al-Biyara (Bennett 1966: fig. 3:6; Oakeshott 1978: pls 54:7; 55:1, 2), Ba'ja III (Zeitler 1992: fig. 14.2:1), Jabal al-Qseir (Lindner *et al.* 1996: fig. 27:7–10), Ghrareh (Hart 1989: pl. 20:3–5), Tall al-Khalayfi (Pratico 1993: pl. 32:7)
Northern Transjordan: Dhiban (Winnett and Reed 1964: pl. 77:6), Hisban (Lugenbeal and Sauer 1972: nos 475–480), Tall al-'Umayri (Herr 1989: fig. 19.12:21, late Iron II/Persian), Tall Nimrin (Flanagan, McCreery and Yassine 1994: fig. 19:4, Persian)
Negev: Tel Masos (Fritz and Kempinski 1983: pl. 165:17, 18), Beersheba (Aharoni 1973: pl. 62: 103, Stratum II), Horvat Teiman (Ayalon 1995: fig. 14:4)
Southern Judah: Jerusalem (Eshel 1995: fig. 25:7, 8, seventh century BC)

Jugs Type D: White Ware Jugs

These are invariably made from white-firing clay, which appears to originate in the Wadi Arabah (see Appendix 1: BUS 5). They have two- or three-strand handles, imitation rivets and, in some cases, strainer spouts. With the exception of Figure 9.56:16, these jugs were probably thrown in horizontal sections. The exception was made from two 'bowls' joined on a vertical axis, with the neck separately made and smoothed over the body. Some examples have comb decoration.

Jugs D: Parallels

Northern Edom: Ash-Shorabat (Bienkowski and Adams 1999: fig. 3:3 — strainer jug)
Southern Edom: Tall al-Khalayfi (Pratico 1993: pl. 39:7–9 — strainer jugs)
Negev: Horvat Qitmit (Freud and Beit-Arieh 1995: fig. 4.3: 39, 40 — knob and strainer), Tel 'Ira (Freud 1999a: fig. 6.57:7), Beersheba (Singer-Avitz 1999: fig. 10:26)
Southern Judah: Jerusalem (Eshel 1995: fig. 31:5 — not a strainer, but the shape and knobs are identical, and the ware is similar)

Jugs Type E: Dippers

Small jugs made by Method C, maximum diameters c. 7 cm. The base of Figure 9.57:2 was made by Method 4. No other bases from jugs type E were identified.

Jugs E: Parallels

Southern Edom: Umm al-Biyara (Bennett 1966: fig. 2:14; Oakeshott 1978: pl. 58:5), Tall al-Khalayfi (Pratico 1993: pls 30:9–16; 31:1–3)
Northern Transjordan: Tall al-'Umayri (Herr 1989: fig. 19.6:29–30, seventh century BC)
Negev: Tel 'Ira (Freud 1999a: fig. 6.100:17–19), Beersheba (Aharoni 1973: pl. 62: 114, 115, 116, Stratum II), Horvat Teiman (Ayalon 1995: fig. 18:1, 2)
Southern Judah: Tel Goren (Mazar, Dothan and Dunayevsky 1966: fig. 19:8, 9, seventh–sixth centuries BC)

Jugs Type G: 'Fine Ware' Jugs

This type of jug, of which only one example exists, was probably made by Method A, and then turned.

Jugs Type H: 'Black-on-red' Juglets

Locally made imitations of Cypro-Myceneaen amphoriskoi.

H1: thick-walled heavy juglets

Made by Method A, with the bases turned to shape as either round, flat or stump (Base type 2). They are usually decorated with red or black lines. Figure 9.57:6 has traces of panel decoration. The base of Figure 9.57:10 was made by Method 6.

H2: thin-walled juglets

Probably thrown, very carefully finished with nearly continuous burnish over red slip. Black linear decoration is also used.

Jugs H: Parallels

Northern Transjordan: Dhiban (Tushingham 1972: figs 16:1–13; 21:1–15)

Jugs Type J: Large Jugs with Vertical Rims

Jugs with handle from rim to base of neck. The neck widens immediately below the rim, and the rim is nearly upright. Made by Method A. The handles are folded.

J1: rim inclines slightly inwards

J2: a ridge is formed at the base of the rim, which inclines outwards

Jugs J: Parallels

Northern Edom: Ash-Shorabat (Bienkowski and Adams 1999: fig. 1:2), Feifa (Lapp 1994: fig. 13–2:10, 11)
Southern Edom: Ghrareh (Hart 1989: pl. 19:9, 17), Tall al-Khalayfi (Pratico 1993: pl. 32:8)

Miscellaneous Jugs

Many jugs do not fall into any particular group. The miscellaneous jugs illustrated are made by Method A, with the exception of Figure 9.59:6–8, which were made by Method D.

Miscellaneous jugs: Parallels

Northern Edom: Figure 9.59:1: Ash-Shorabat (Bienkowski and Adams 1999: fig. 1:10)
Southern Edom: Figure 9.59:8: Tall al-Khalayfi (Pratico 1993: pl. 30:10)

Figure 9.56: Jugs C, D

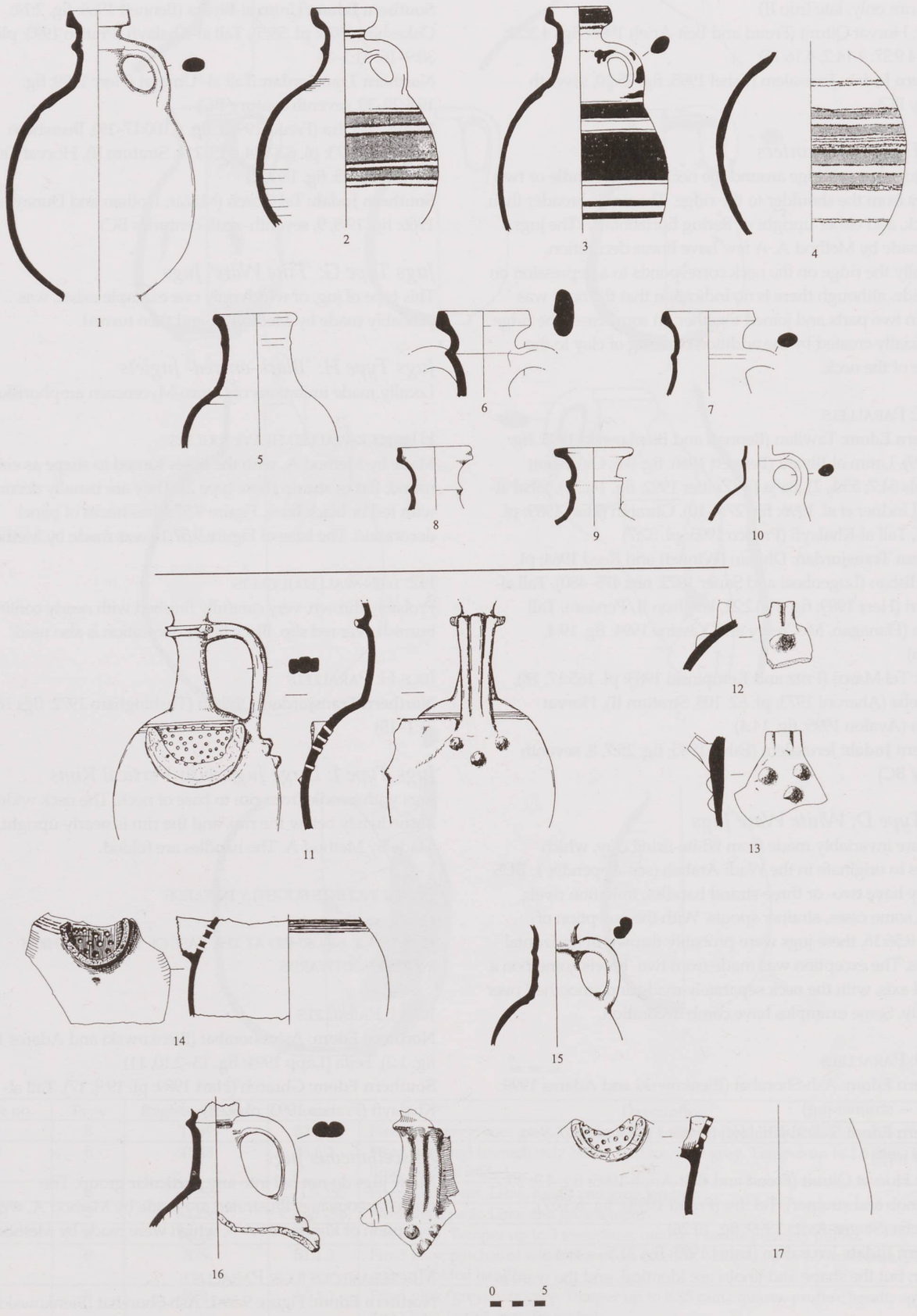


Figure no.	Type	Register/TS no.	Locus	Description
1	C	R737	B2.4.2	Fired pinkish-buff. Temper up to 2 mm.: basalt, grog, lime, quartz, vegetable. Handle pulled.
2	C	R407	B3.1.10	Fired cream outside, grey inside; core grey. Temper up to 2 mm.: lime, grog. Red and black decoration. Folded handle.
3	C		?	Red and black decoration.
4	C?	TS45	B1.1.1-3	Fired grey inside, pale creamy-pink outside; core grey. Temper up to 3 mm.: lime, basalt. Red and black decoration.
5	C	TS524	B3.7.6	
6	C	TS421	B1.1.1-3	Fired white; core pink. Temper up to 0.5 mm.: quartz, lime. Handles each made from one piece of clay, folded, with groove incised.
7	C	TS422	B1.1.1-3	Fired grey. Temper up to 3 mm.: lime, quartz.
8	C	TS36	B1.1.1-3	Fired pink; lower part inside, and core, grey. Temper up to 2.5 mm.: lime, basalt, grog.
9	C	TS48	B1.1.1-3	Fired grey/pink; core grey. Temper up to 1 mm.: basalt, grog, some lime. Wet-smoothed outside and on rim.
10	C	TS418	B1.2.2	Fired pink; white bloom on exterior. Temper up to 3 mm.: quartz, lime. Rolled handle.
11	D	R829	B2.7.25	Fired white outside, buff inside; core pink. Temper up to 2 mm.: quartz (mainly very fine); some lime up to 1 mm.: vegetable. Triple-strand handle made with three separate rolls of clay. Holes pierced from outside. Thrown; knobs pinched out.
12	D	TS419	A9.12.+	Fired white; core cream. Temper up to 2 mm.: quartz, lime. Knob probably pinched out. Handle made from one piece of clay, rolled.
13	D	TS420	D2.8.2	Fired white, core yellow. Temper up to 3 mm.: quartz, lime. Knobs probably pinched out. Handle made from three pieces of clay.
14	D	R787	B2.7.2	Fired pale grey. Temper up to 2 mm.: basalt, lime. Combed decoration done before holes pierced and spout applied.
15	D	TS417	B3.2.4	Fired white outside, buff inside; core buff. Temper up to 2 mm.: quartz, some lime. Thrown. Handle made from one piece of clay, folded.
16	D	R449	D2.9.1	Fired nearly white; core greenish. Temper fairly uniform up to 1 mm.: quartz, lime. Thrown; body made in two sections, joined on a vertical axis. Handle made from one piece of clay, folded. Knobs pinched out.
17	D	TS102	D3.3.3	Fired white. Temper up to 4 mm.: basalt, rare lime. Strainer, with holes pierced from outside, and broken spout. Wet-smoothed.

Figure 9.57: Jugs E, G, H

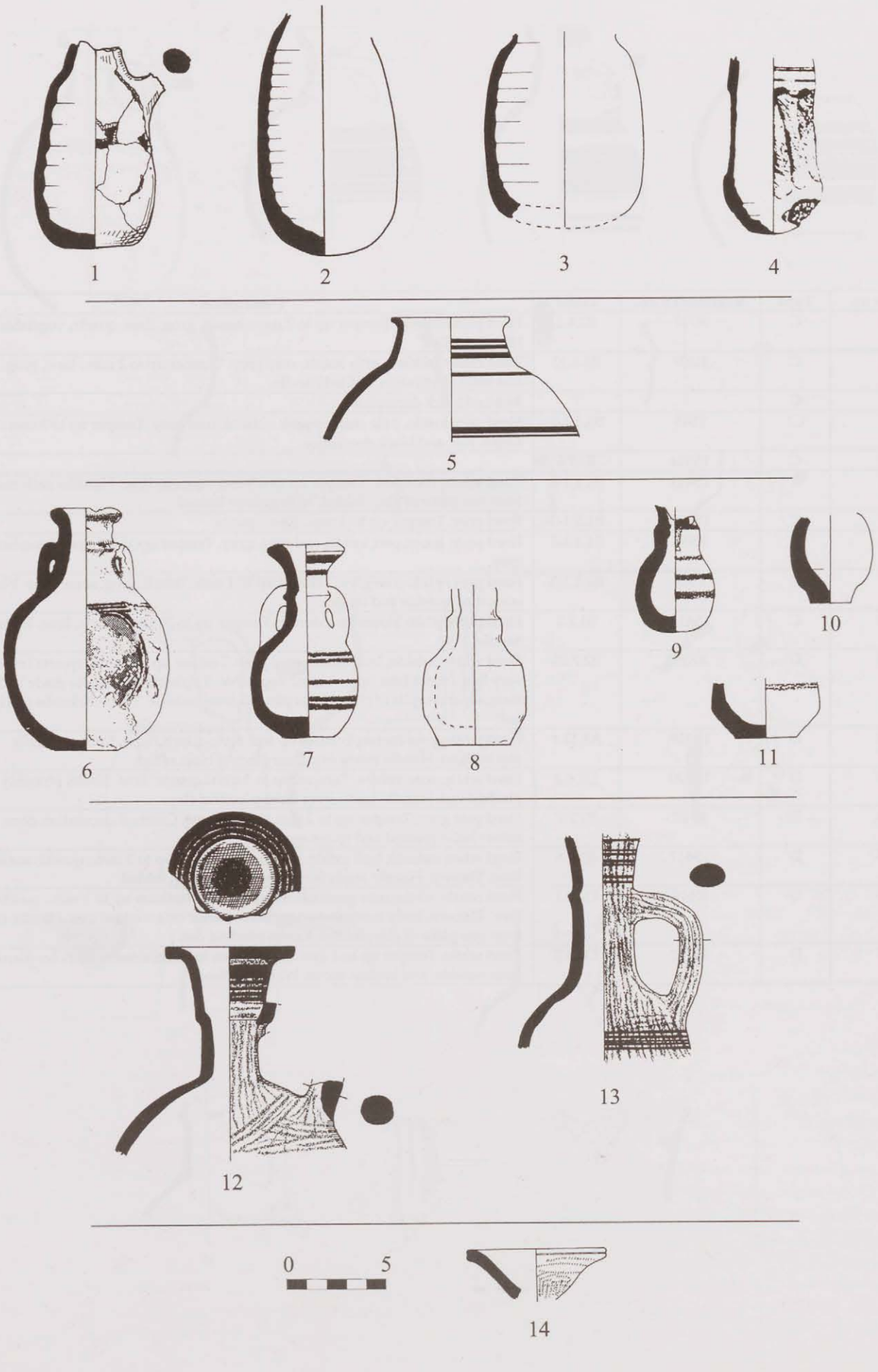


Figure no.	Type	Register/TS no.	Locus	Description
1	E	R1024	B2.7.2	Fired buff. Lime temper.
2	E	TS396	B3.2.6	Fired brown; core grey. Temper up to 2 mm.: quartz, lime.
3	E	TS397	B1.2.2c	Fired pink; core grey. Temper up to 1 mm.: quartz, lime.
4	E	R1243	C21.1.28	Fired grey. Lime temper. Sides appear to have been vertically shaved. Upper part outside painted red and black.
5	G	TS400	B1.1.1-3	Fired white. Temper up to 0.25 mm.: quartz, grog. Traces of brown slip inside neck; bands of black outside.
6	H1	R178	B3.2.4	Fired pink. Temper up to 2 mm.: lime, quartz. Traces of red and black panel decoration.
7	H1	R311	B2.4.2	Fired pink. Temper up to 1.5 mm.: profuse grog, some lime and quartz. Red and black decoration.
8	H1	R877	B8.2.2	Fired pink. Temper up to 3 mm.: grog, quartz, basalt, lime, limestone.
9	H1	R174	B3.2.6	Fired buff. Temper up to 1 mm.: quartz, lime. Black decoration.
10	H1	TS500	B1.1.1-3	Fired pink; core brown. Temper up to 2 mm.: lime, grog.
11	H1	TS101	B3.6.2	Fired pink; core pale pink. Temper up to 1.5 mm.: lime, basalt. Black decoration. Lower part of body burnished.
12	H2	TS306	D2.8.19	Fired red. Temper up to 0.5 mm.: lime, some quartz. Thrown. Outside and part of inside of neck covered with red slip. Outside burnished, horizontally on upper part of neck, vertically on lower part, and irregularly on shoulder. Black lines on wall and rim, and outside of handle black.
13	H2	TS288	D2.8.22	Fired pale orange; interior and core grey. Temper up to 3 mm.: basalt, lime, and profuse fine quartz. Thrown. Exterior vertically burnished, almost continuously, including underside of handle. Black lines on neck and shoulder.
14	H	TS227	A5.6.23	Possibly flask (or a pedestal base?). Fired red. Temper up to 1 mm.: quartz, lime. Unslipped exterior burnished irregularly, vertically and horizontally.

Figure 9.58: Jugs J, Miscellaneous

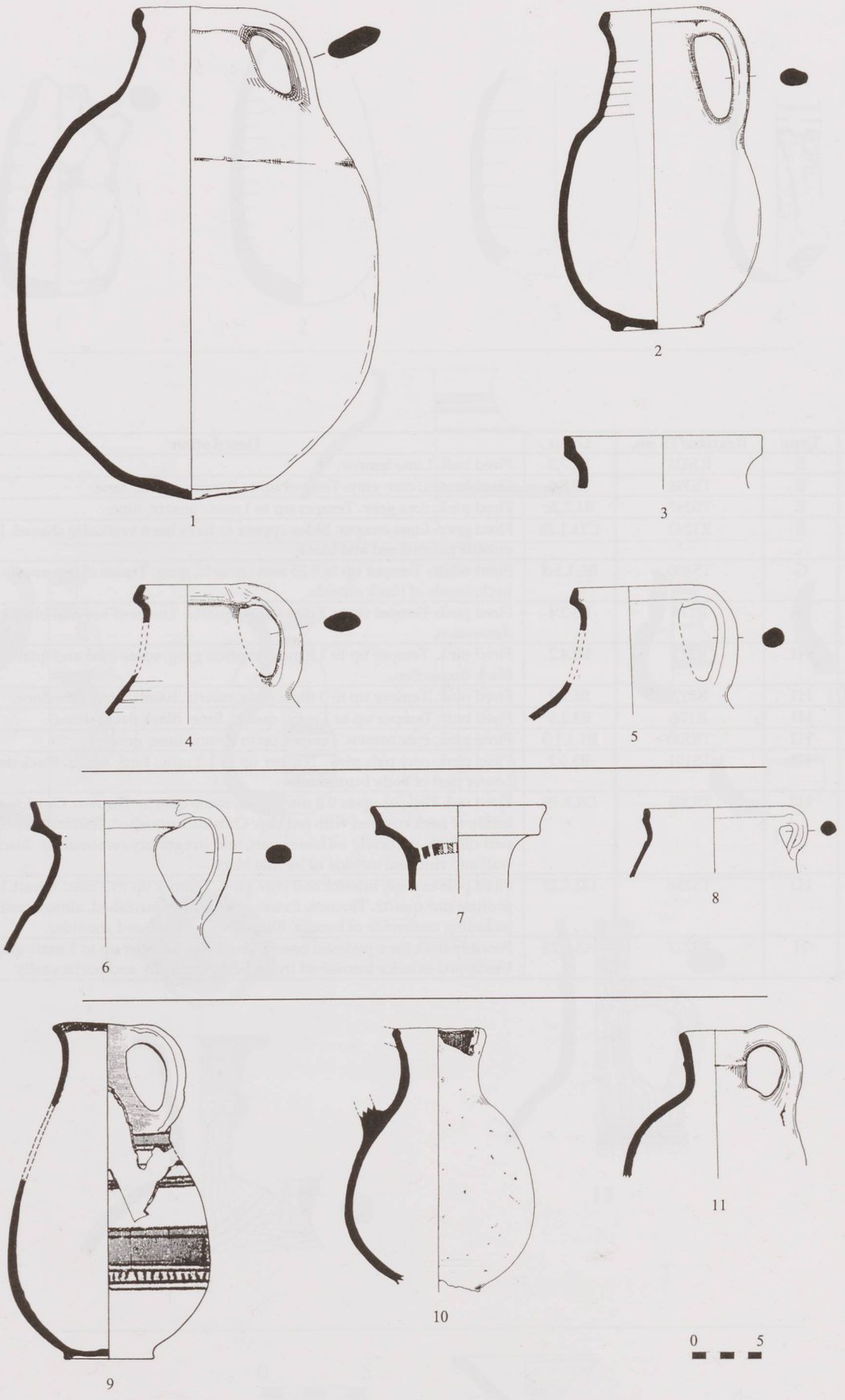


Figure no.	Type	Register/TS no.	Locus	Description
1	J1	R1078	B6.3.20	Fired buff. Lime and basalt temper.
2	J1	R812	B3.4.6	Fired pale grey. Temper up to 3.5 mm.: basalt, lime. Handle pulled.
3	J1?		A21.2.7	
4	J1	TS38	A5.1.1-4	Fired buff/pink/grey; core grey. Temper up to 2 mm.: lime, basalt. Pulled handle.
5	J1	TS44	B1.1.1-3	Fired buff/grey; core grey. Temper up to 2.5 mm.: lime, basalt. Rolled handle.
6	J2	TS90	B3.6.2	Fired pink/white; core grey. Temper up to 3 mm.: lime, basalt; mainly smaller than 0.5 mm. Probably had a strainer.
7	J2		B3.20.m	
8	J2?	TS452	B1.2.2e	
9	misc	R403	B3.2.13	Fired pink; core buff. Temper up to 2 mm.: lime, quartz, basalt. Handle folded. Red, buff and black decoration.
10	misc	R238	B3.2.12	Fired red; core black. Temper up to 2 mm.: quartz, lime.
11	misc	R657	B3.7.6	Fired orange/buff. Temper up to 7 mm.: basalt, lime; up to 1 mm.: quartz. Ridge on neck applied.

Figure 9.59: Miscellaneous jugs

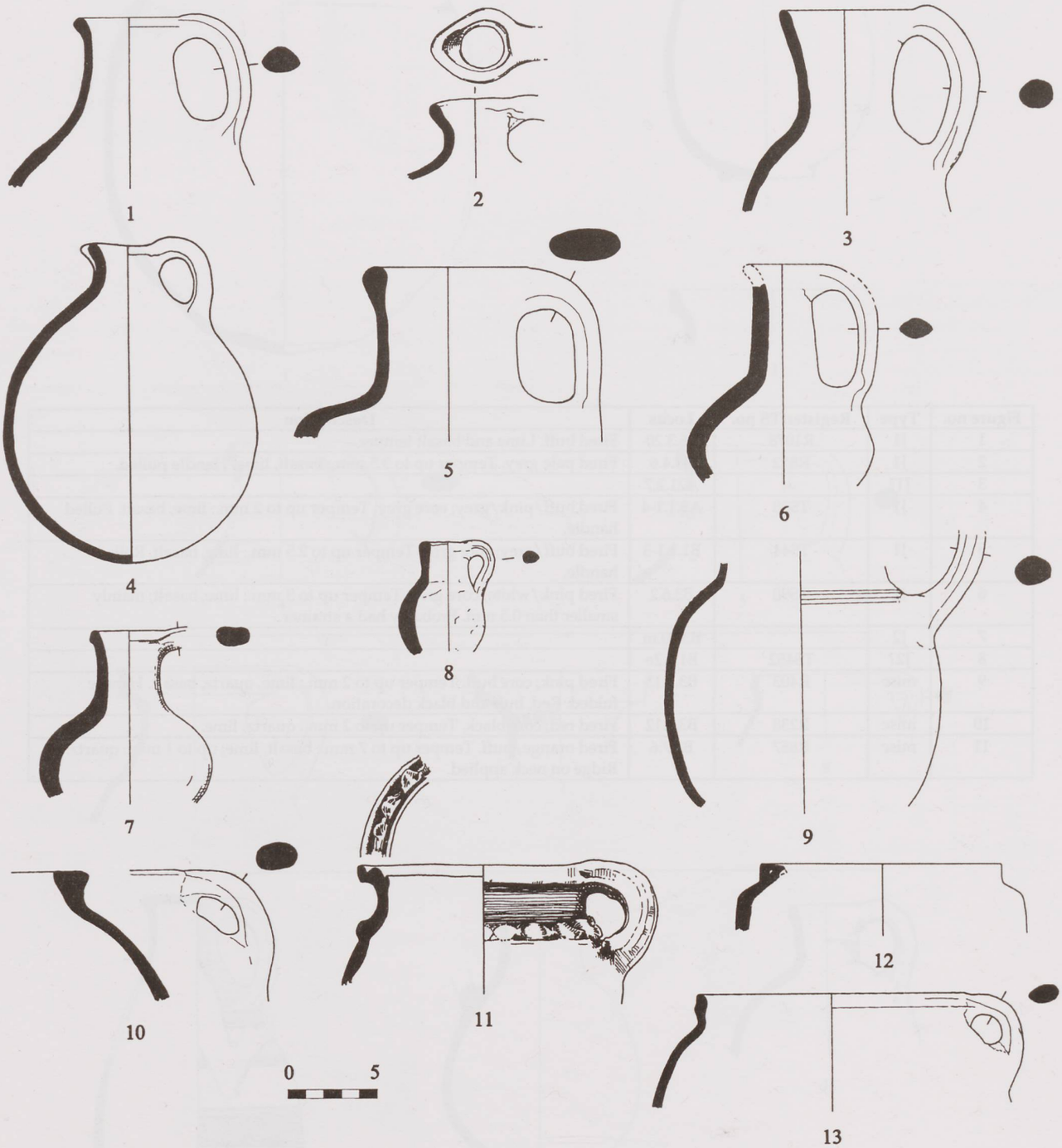


Figure no.	Register/TS no.	Locus	Description
1	TS398	B1.2.2c	Fired pink; core buff. Temper up to 1 mm.: quartz, lime.
2	TS25	B3.1.6-10	Fired grey. Temper up to 2 mm.: basalt, some grog.
3	TS83	B1.1.1-3	Fired greenish-white; core grey. Temper up to 1 mm.: basalt, lime. Handle probably rolled.
4	R402	B2.2.24	Fired pink; core grey. Temper up to 3 mm.: quartz, lime. Base turned.
5	TS394	B1.2.2c	Fired yellow; core grey. Temper up to 0.5 mm.: quartz; up to 3 mm.: lime. Folded handle.
6	TS399	C1.1.1	Fired grey. Temper up to 1.5 mm.: lime, basalt.
7	R884	A27.1.6	Fired brown outside, grey inside; core grey. Temper up to 1 mm.: lime, basalt.
8	TS24	B3.2.5	Fired grey. Temper up to 1 mm.: basalt, lime. Pulled handle.
9	TS46	B1.1.1-3	Fired yellow. Temper up to 2 mm.: grog; up to 1 mm.: basalt; up to 0.25 mm.: quartz. Incised comb decoration on shoulder. Rolled handle.
10	TS594	B1.1.1-3	Possibly a krater?
11		A60.2.2	
12	TS453	B1.2.2c	Possibly a krater?
13	TS589	B1.1.1-3	Possibly a krater?

Jar/Jug Rims

A number of rims with necks were excavated, belonging to either jars or jugs. In most cases it is impossible to allocate these to a particular vessel type.

Type 1: occurs on jugs J1. The final rim coil was longer than those used for the neck, thus increasing the diameter, and the rim is folded first inwards, then outwards.

Type 2: rim folded inwards.

Type 3: rim folded inwards.

Type 4: occurs on jugs B. The rim is folded inwards, then outwards once and the top of the rim is pressed to reduce its thickness.

Type 5: occurs on jug J2. Made in the same way as rim type 1.

Type 6: probably a jar neck. The rim is folded once inwards, then outwards. Some rims/necks of this type are decorated with bands of red, black or brown slip.

Type 7: probably a jar neck. Rim folded once inwards, then outwards.

Type 8: rim folded once inwards, then twice outwards.

Type 9: rim folded once inwards, then once outwards. Ridge on neck.

Type 10: rim folded once inwards, then twice outwards.

Type 11: rim folded once inwards, and profiled on the outside with an implement.

Type 12: rim folded once inwards, then once outwards.

Type 13: rim folded once inwards.

Type 14: rim folded once inwards.

Type 15: rim folded once inwards.

Type 16: rim folded once inwards, then once outwards.

Type 17: rim folded once inwards, then once outwards. Rim made wider than neck by the use of a longer coil to finish the pot.

Type 18: rim folded once inwards, then once outwards. These are probably jar necks, and are often decorated.

Type 19: this single example may be a pedestal base. It is not possible to judge which way the rim was folded.

Lids

Lids were made upside down by Method A, Base type 2. The inside is often left unsmoothed.

LIDS: PARALLELS
Southern Edom: Umm al-Biyara (Bennett 1966: figs 2:4, 5; 3:3; Oakeshott 1978: pl. 58:1–3)
Northern Transjordan: Dhiban (Winnett and Reed 1964: pl. 77:12)

Pot Stands

Stands were made by Method A, with the base left open. The shape is usually cylindrical, with a folded rim, either inverted or pushed inwards. Where a stand is decorated with denticulations, the strip of denticulated clay was separately made and smoothed on to the stand. Many stands were published from Horvat Qitmit in the Negev (Freud and Beit-Arieh 1995: 219), but not a single shape is paralleled at Busayra, despite numerous other ceramic parallels between the sites.

POT STANDS: PARALLELS
Negev: Beersheba (Aharoni 1973: pl. 63: 131, Stratum II — not identical but similar rim)

Lamps

The lamps were made by Method A, Base type 1. A saucer bowl is first made, and the lip is then formed by pinching the wall. The lamp is then held upside down in the hand and turned: it is not inverted on the wheel. Consequently, the scrape marks on the base are irregular. Both the rounded bases of type A and the stump bases of type B were shaped in this way and then dry-smoothed. The bases of lamps C and D were scraped but left rough, and a pedestal was applied.

Lamps Type A: Rounded Base

A1: DEEP

A2: SHALLOW

LAMPS A: PARALLELS
Northern Edom: Khirbat an-Nahas (Fritz 1996: fig. 3:16 — ninth century BC?), Barqa al-Hetiye (Fritz 1994: fig. 10:10 — ninth century BC?)
Southern Edom: Tawilan (Bennett and Bienkowski 1995: fig. 6.34:14–16), Umm al-Biyara (Bennett 1966: fig. 2:12, 13; Oakeshott 1978: pl. 59), Ba'ja III (Zeitler 1992: fig. 14.1:12), Jabal al-Qseir (Lindner *et al.* 1996: fig. 27:11), Ghrareh (Hart 1989: pl. 12:10), Tall al-Khalayfi (Pratico 1993: pls 38; 39:1–3)
Northern Transjordan: Dhiban (Winnett and Reed 1964: pl. 79:1, 8; Tushingham 1972: fig. 15:1, 4–10), Hisban (Lugenbeal and Sauer 1972: no. 542)
Negev: Tel 'Ira (Freud 1999a: fig. 6.80:17), Tel Masos (Fritz and Kempinski 1983: pl. 166:15), Horvat Teiman (Ayalon 1995: fig. 22:3, 4)
Southern Judah: Jerusalem (Eshel 1995: fig. 8:9, 10, seventh century BC), Tel Goren (Mazar, Dothan and Dunayevsky 1966: fig. 23:1, 2, seventh–sixth centuries BC)

Lamps Type B: Stump Base

LAMPS B: PARALLELS
Northern Transjordan: Dhiban (Winnett and Reed 1964: pl.

Figure 9.60: Jar/Jug rims

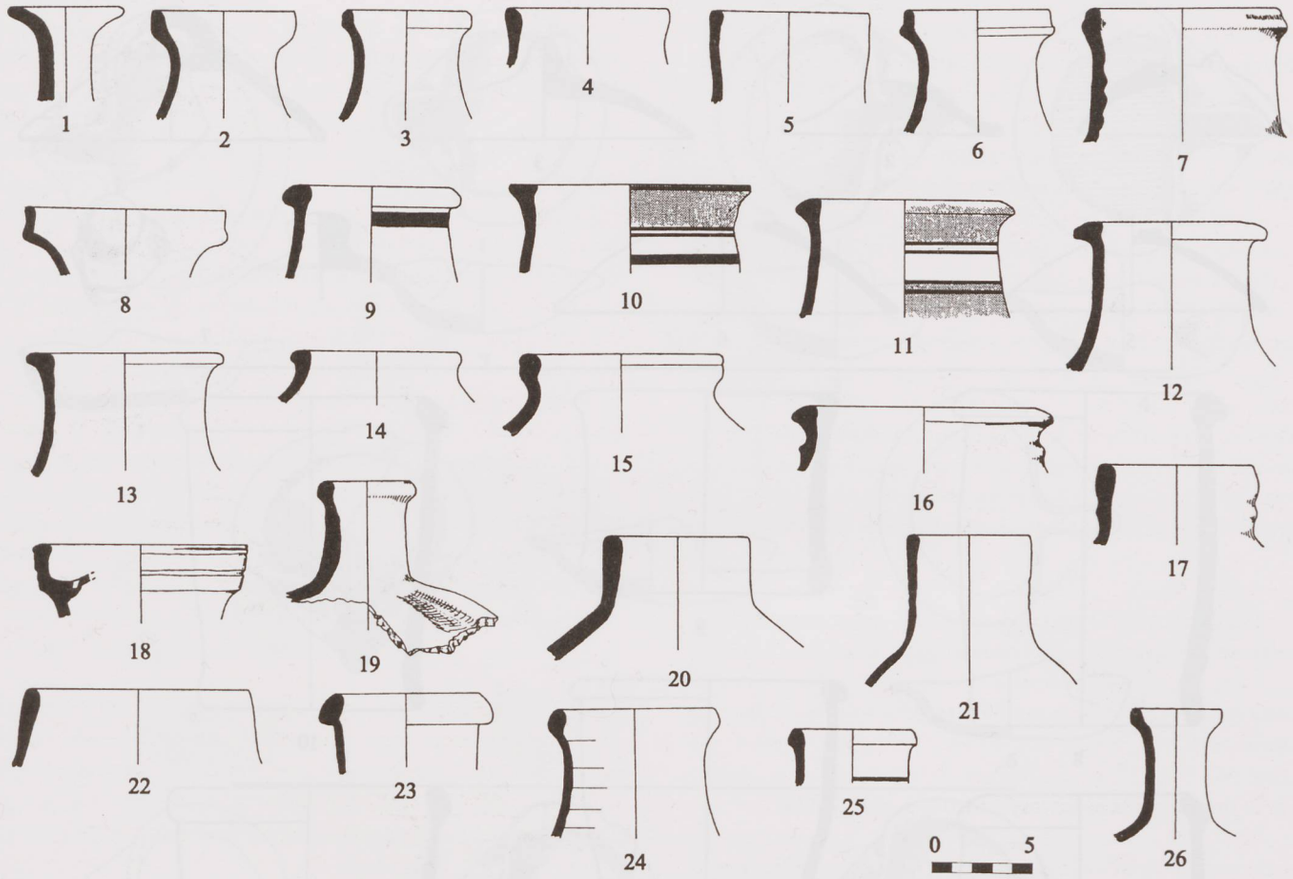


Figure no.	Rim type	Register/TS no.	Locus	Description
1	1	TS400a	B1.1.1-3	Fired pink; core grey. Temper up to 2 mm.: grog, lime.
2	1	TS409	B1.1.1-3	Fired grey. Temper up to 2 mm.: lime, grog, basalt, quartz.
3	1	TS415	B1.2.2c	Fired pink; cream bloom outside. Temper up to 2 mm.: quartz, lime.
4	2	TS404	B1.1.1-3	Fired pink; core brown. Temper up to 1.5 mm.: quartz, lime.
5	3	TS405	B1.1.1-3	Fired pink; core yellow. Temper up to 0.5 mm.: quartz, lime.
6	4	TS411	B1.1.1-3	Fired brown; core dark grey. Temper up to 1.5 mm.: lime, grog.
7	4	TS62	B1.1.1-3	Fired pink/green; core brown. Temper up to 1.5 mm.: basalt, lime.
8	5	TS413	B1.1.1-3	Fired pink; core grey. Temper up to 2 mm.: lime, quartz.
9	6	TS293	D4.4.5	Fired whitish; core very pale pink. Temper up to 2 mm.: lime, basalt. Black and red decoration.
10	6	TS401	B1.1.1-3	Fired pink; core brown. Temper up to 3 mm.: quartz, lime, some grog. Red and black decoration.
11	6	TS403	B1.1.1-3	Fired red; core grey. Temper up to 3 mm.: lime, quartz, grog. Red and black decoration.
12	6	TS412	B1.1.1-3	Fired green; core brown. Temper up to 3 mm.: mainly basalt, some lime. Wet-smoothed.
13	6	TS50	B1.1.1-3	Fired pink; core grey. Temper up to 2 mm.: lime, basalt.
14	7	TS263	A26.2.6	Fired pink; white bloom on outside. Temper mainly minuscule quartz; piece of flint 3 mm. long.
15	8	TS408	A5.1.1	Fired pink/grey; core grey. Temper up to 1 mm.: lime; up to 0.25 mm.: profuse quartz.
16	9	TS205	B2.7.2	Fired pink/grey inside, red outside; white bloom outside; core dark grey. Temper up to 1 mm.: quartz, occasional lime.
17	10	TS242	A1.11.15	Fired red. Temper up to 2 mm.: grog, lime, minuscule quartz.
18	11	TS112	B3.6.2	Fired pale grey. Temper up to 2 mm.: basalt, some lime. Remains of strainer across neck; some holes not pierced through.
19	12	R234	B3.2.6	Fired brown; core grey. Temper up to 5 mm.: quartz, lime, grog.
20	13	TS235	A1.11.6	Fired red; core orange. Temper up to 1 mm.: lime, basalt, quartz.
21	14	TS229	A5.6.2	Fired buff/orange; core orange. Temper up to 3 mm.: lime; up to 1 mm.: basalt; smaller than 0.25 mm.: quartz.
22	15	TS406	B1.1.1-3	Fired buff. Temper up to 2.5 mm.: grog, lime.
23	16	TS407	B1.1.1-3	Fired red; core grey. Temper up to 1.5 mm.: quartz, lime.
24	17	TS414	B1.1.1-3	Fired buff; core grey. Temper up to 2 mm.: grog, lime, basalt, quartz.
25	18	TS402	B1.1.1-3	Fired pale creamy pink; core grey. Temper up to 1.5 mm.: basalt, mica, some lime. Black decoration.
26	19	TS104	A5.7.1	Fired yellow. Temper up to 2 mm.: lime, grog, quartz.

Figure 9.61: Lids, Pot stands

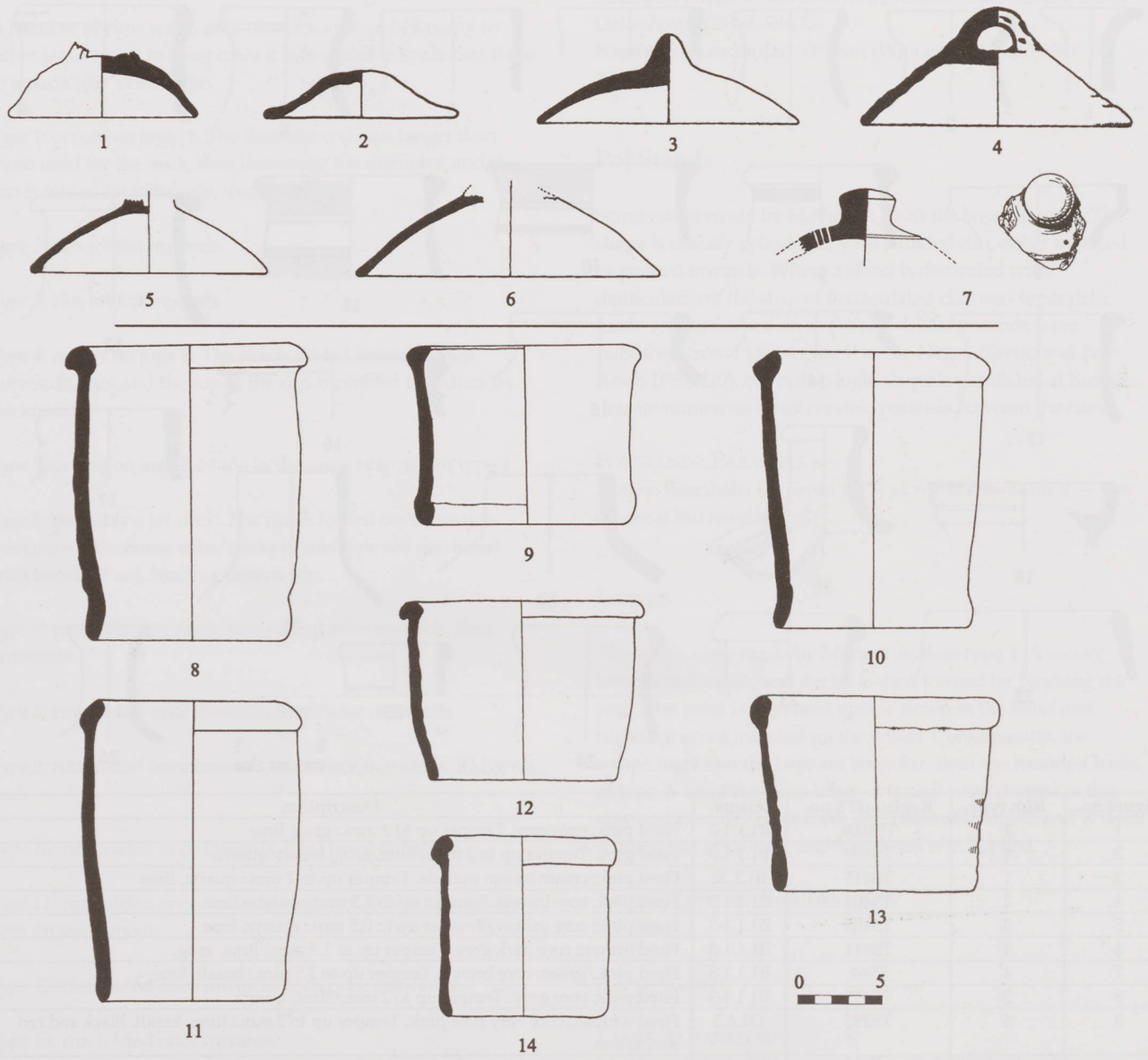


Figure no.	Type	Register/TS no.	Locus	Description
1	Lid	R1164	B3.20.4	Fired red. Lime, quartz and grog temper.
2	Lid	R1237	C21.2.1	Fired buff/orange; core grey. Lime temper.
3	Lid	R444	D2.8.16	Fired pink/buff. Temper up to 3 mm.: quartz, lime.
4	Lid	R613	D3.1.4	Fired white; core pink. Temper up to 1 mm.: quartz, mica. Outside dry-smoothed and turned beneath handle. Handle pulled.
5	Lid	R614	D3.1.4	Fired white; core very pale brown. Temper up to 2 mm.: quartz, mica. Upper surface turned.
6	Lid	R617	D3.1.4	Fired white. Temper up to 1 mm.: quartz, lime. Shaping marks left unsmoothed.
7	Lid	R1183	D3.2.7	Knob of lid. Fired yellow/buff. Basalt and grog temper. Three holes pierced in side.
8	Stand	R1179	A5.13.4	Fired red. Lime temper.
9	Stand	R1196	C21.1.6	Fired pinkish-buff. Lime temper.
10	Stand	R1197	A5.13.3	Fired orange.
11	Stand	R1198	A5.13.3	Fired buff/orange.
12	Stand	R1297	C23.2.9	Fired yellow/buff.
13	Stand	R1298	C23.2.9	Fired buff/yellow.
14	Stand	R1299	C23.2.9	Fired orange/buff.

Figure 9.62: Lamps A

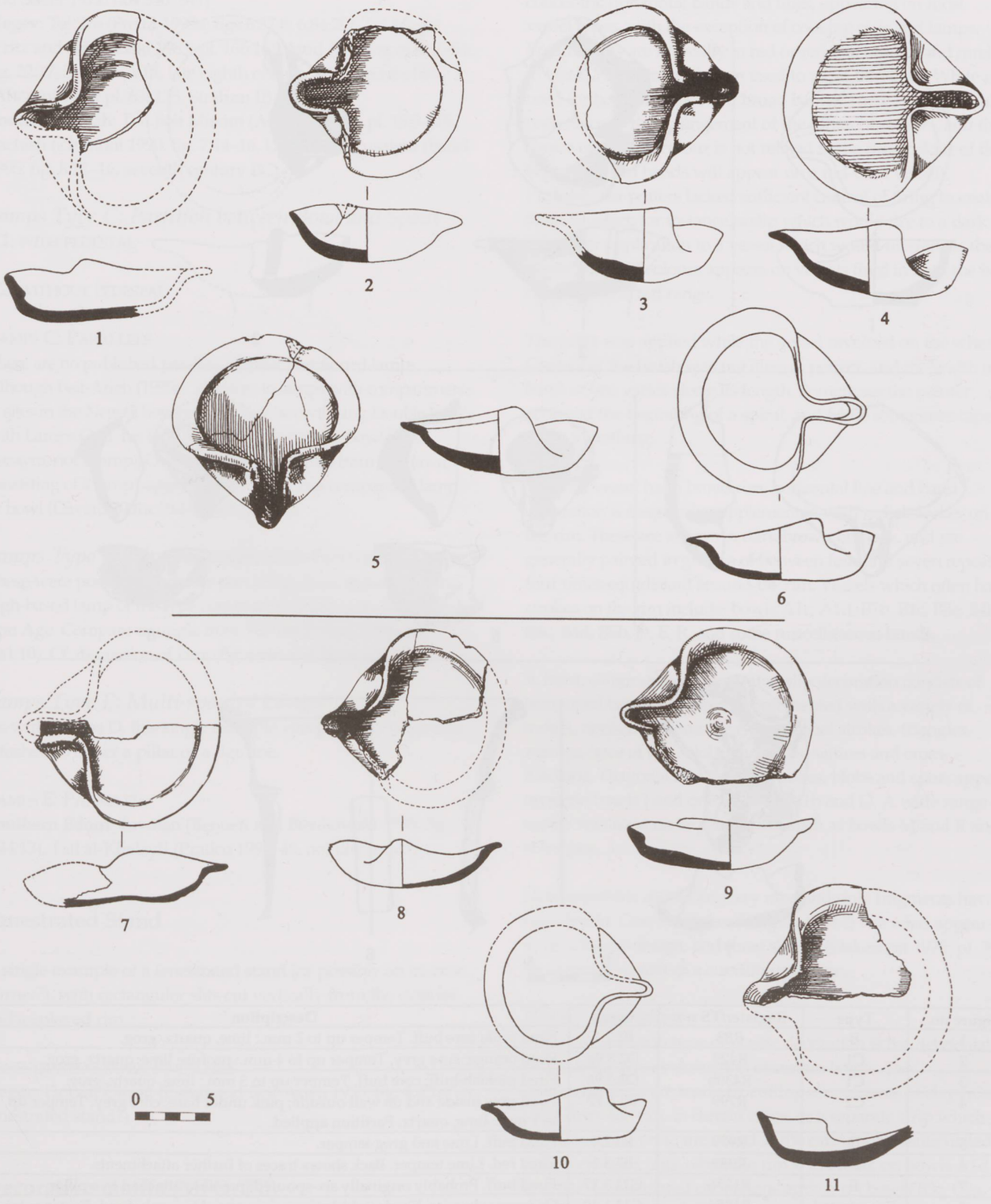


Figure no.	Type	Register/TS no.	Locus	Description
1	A1	R980	B3.2.2	Fired buff. Basalt temper.
2	A1	R433	D2.8.5	Fired pink. Temper up to 2 mm.: quartz, lime.
3	A1	R333	B3.1.11a	Fired buff. Temper up to 1 mm.: lime, quartz.
4	A1	R192	B3.2.2	Fired buff. Temper up to 2 mm.: quartz, lime, basalt.
5	A1	R183	B3.2.5	Fired pink.
6	A1	R100	B1.2.2c	Fired pink; core buff. Temper up to 2 mm.: quartz, lime.
7	A2	R511	B3.4.3	Fired buff; core brown. Temper up to 2.5 mm.: basalt, lime.
8	A2	R512	B3.4.	Fired pink. Temper up to 1 mm.: lime, grog.
9	A2	R649	B2.7.4	Fired red; core brown. Temper up to 3 mm.: grog, quartz, lime. Base scraped length-wise.
10	A2	R82	B1.1.3	Fired pink; core grey. Temper up to 2 mm.: profuse quartz, lime.
11	A2	R898	D2.8.5	Fired pink. Lime temper.

Figure 9.63: Lamps B, C, D, E, Fenestrated stand

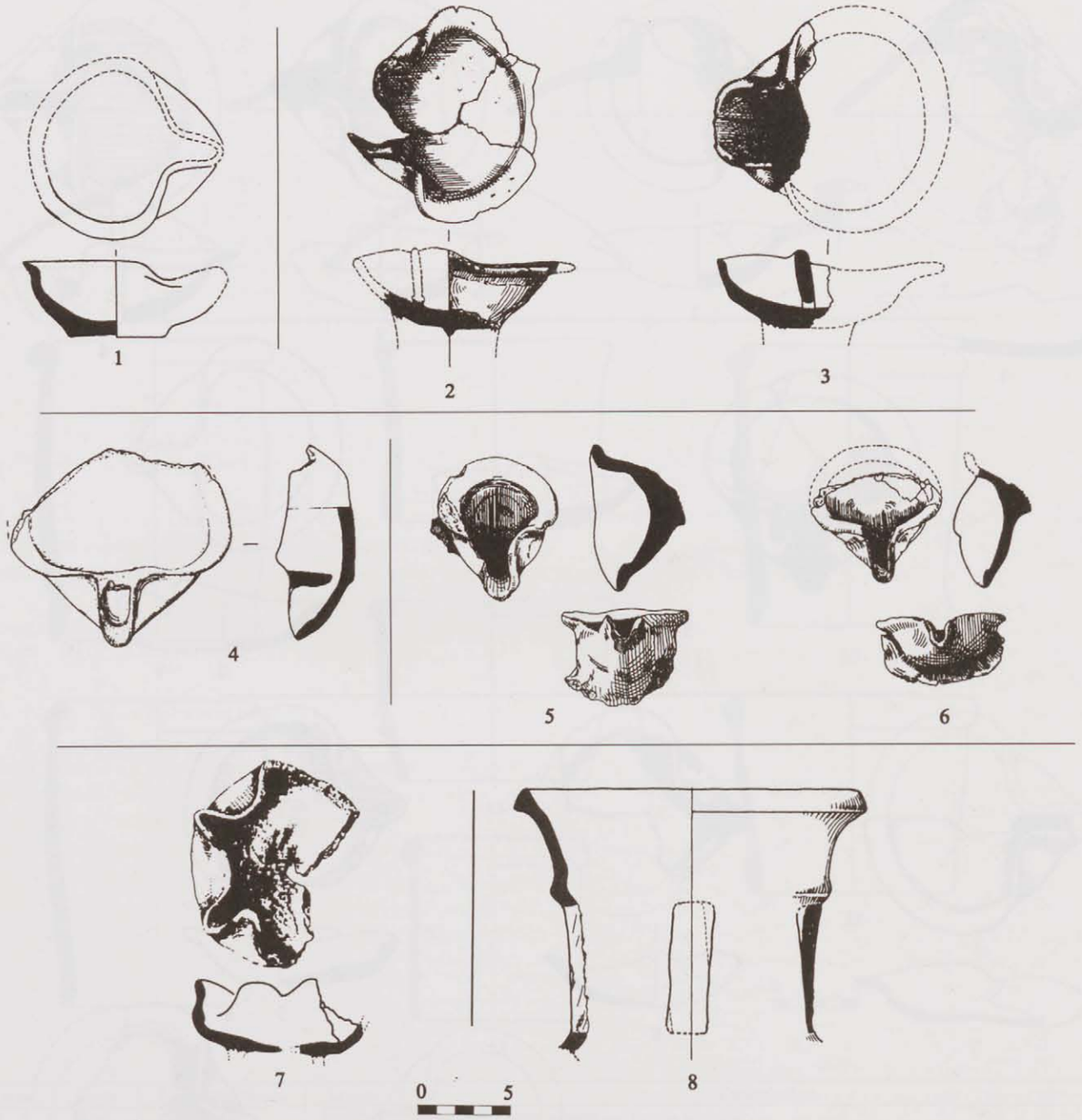


Figure no.	Type	Register/TS no.	Locus	Description
1	B	R83	B1.1.1	Fired pink; core buff. Temper up to 2 mm.: lime, quartz, grog.
2	C1	R429	D2.8.9a	Fired orange; core grey. Temper up to 4 mm.: profuse lime; quartz, grog.
3	C1	R430b	D2.8.9a	Fired pinkish-buff; core buff. Temper up to 3 mm.: lime, quartz, grog.
4	C2	R799	B3.4.12	Fired grey inside and on wall outside; pink under base; core grey. Temper up to 1 mm.: lime, quartz. Partition applied.
5	D	R979	B3.2.4	Fired buff. Lime and grog temper.
6	D	R989	B7.3.2	Fired red. Lime temper. Back shows traces of further attachments.
7	E	R1276	C21.3.17	Fired buff. Probably originally six-spouted; possibly attached to a pillar.
8	Fenestrated stand	R1254	C11.1.19	Or incense burner. Fired pinkish-grey; core grey. Unevenly fired. Rectangular slits cut vertically from exterior.

79:3–7; Tushingham 1972: fig. 15:11–15), Hisban (Lugenbeal and Sauer 1972: nos 540, 541)
Negev: Tel 'Ira (Freud 1999a: figs 6.57:8; 6.84:20), Tel Masos (Fritz and Kempinski 1983: pl. 166:16), Arad (Herzog *et al.* 1984: fig. 22:17, Stratum VIII, late eighth century BC), Beersheba (Aharoni 1973: pl. 63: 135, Stratum II)
Southern Judah: Tell Beit Mirsim (Albright 1943: pl. 15:5–10), Lachish (Zimhoni 1990: fig. 7:14–16, Level III), Jerusalem (Eshel 1995: fig. 8:11–16, seventh century BC)

Lamps Type C: Partition between Bowl and Spout

C1: WITH PEDESTAL

C2: WITHOUT PEDESTAL

LAMPS C: PARALLELS

There are no published parallels to these partitioned lamps, although Beit-Arieh (1995a: 34) refers to lamps with compartments at sites in the Negev; however, he may be confusing Double bowls with Lamps C (cf. his fig. 1:15, which is a Double bowl from Busayra, not a lamp). One 'double' lamp comes from Tall Jawa, consisting of a lamp supported on the rim of a comparable lamp or bowl (Daviau 2001a: 214–5 and fig. 3:12).

Lamps Type D: Simple Lamps with Pedestal Bases

These were possibly originally part of figurines, rather than the high-based lamp of the type common in Judah at the end of the Iron Age. Compare example from Tel 'Ira (Freud 1999a: fig. 6.61:10). Cf. discussion of lamp figurines in Chapter 10.

Lamps Type E: Multi-spouted Lamps

As with Lamps D, this single example was probably originally attached to either a pillar or a figurine.

LAMPS E: PARALLELS

Southern Edom: Tawilan (Bennett and Bienkowski 1995: fig. 6.34:13), Tall al-Khalayfi (Pratico 1993: 48, not illustrated)

Fenestrated Stand

A single example of a fenestrated stand (or possibly an incense burner?), with rectangular slits cut vertically from the exterior, and a splayed rim.

FENESTRATED STAND: PARALLELS

Negev: Horvat Qitmit (Freud and Beit-Arieh 1995: fig. 4.4:1–7, a fenestrated stand?)

Decorative motifs (MFO/PB)

Painted decoration

Approximately half of the bowls from Busayra were decorated, mainly with lines and bands of slip, and similar decoration appears also on many jars, jugs and a few other vessels.

The slips used for decoration fire red, brown or black, and occasionally a white-firing slip is used. The pigmented slips were applied with a brush to the white-hard vessel, and in general adhered well.

The most common type of decoration is an arrangement of concentric horizontal bands and lines, appearing on most vessel types, with the exception of cooking pots and lamps. Broad bands are normally in red or reddish brown, and rarely in black, which is most often used to paint thin lines. White is used for both thin lines and broad bands. There is no particular preference in the arrangement of the different colours, and the choice of applied colour is not related to the fired colour of the vessel (e.g. red bands will appear on a red-fired vessel). Probably the potters lacked sufficient control of firing to enable them to select, for instance, a slip which would fire to a dark colour for application to a vessel which would fire red, as the whole range of colours appears on vessels fired in both the buff range and the red range.

The paint was applied while the vessel revolved on the wheel. Control of the brush was not always perfect, and the width of a band or line varies along its length. Sometimes the painter achieved the beginning of a spiral, and a line sometimes tapers away to nothing.

Where a vessel has a broad rim, horizontal line and band decoration is frequently supplemented with radial strokes on the rim. These are always in dark brown or black, and are generally painted in groups of between four and seven repeated four times equidistant around the rim. Vessels which often have strokes on the rim include: bowls A1c, A1d, B1b, B1c, B3c, B4b, B4c, B4d, B5b, D, E, R, and some miscellaneous bowls.

A third, elaborate type of painted slip decoration consists of horizontal bands and lines supplemented with a variety of motifs, normally geometric e.g. diagonal strokes, triangles, zigzags, 'tree of life', blobs and spots, saltires and cross-hatching. Diagonal and vertical strokes, blobs and spots appear on some bowls J and on bowls M, N1b and O. A wide range of motifs was used on larger vessels, such as bowls M and R and some jars.

Non-geometric motifs are very rare, and only fragments have been found. One bowl sherd (Figure 9.36:2) has what appears to be a flower design, and three sherds (Oakeshott 1978: pl. 39: 5a–c) preserve part of a curvilinear design.

Plastic decoration

The most common type of plastic decoration is the denticulated fringe at the rim or carination of certain bowls. The denticulations were made by cutting away pieces of clay from a solid strip: the rim, in certain cases, or a separate strip which was smoothed on to the vessel at the carination. Denticulated rims were used only when the rim was broad, on bowls A1d and B1c. Denticulated carinations appear on bowls B3c, C2a, D and E and some miscellaneous bowls. Denticulations were also used to decorate some tall pot stands.

Denticulated decoration is found elsewhere in Edom, for example at Tall al-Khalayfi (Pratico 1993: pl. 37:1–7) and Tawilan (Bennett and Bienkowski 1995: fig. 6.2), but is particularly common in the Negev, especially at 'En Hazeva (Cohen and Yisrael 1995b: 27) and Horvat Qitmit (Freud and Beit-Arieh 1995: 253–54). Although denticulation is often regarded as diagnostic of 'Edomite' pottery (e.g. Beit-Arieh

1995a: 34; Freud and Beit-Arieh 1995: 253), the fact that it occurs apparently in even greater profusion in the Negev perhaps suggests that this was a form of decoration common over a wide area, including the Negev and southern Jordan, rather than being specific to one group. Denticulation seems to have developed from a less abstract 'petal' motif, and is found already in the ninth century BC on a ceramic incense altar from Arad Stratum X (Herzog *et al.* 1984: fig. 15).

'Pie-crust' decoration, made by pressing the thumb or finger into a strip of clay, which is then applied to the vessel, occurs only once at Busayra, on a bowl type D? (Figure 9.18:10). Impressed dots also occur only once, on part of an elaborate bar handle (Figure 9.19:1). A miscellaneous jar has a handle which may be intended to resemble a bird's head (Figure 9.51:2).

Seal impressions

These occur on two bowls J. On Reg. 503 (discussed at length in Chapter 10), a J2a bowl, are two rectangular seal impressions, one of a cow and a calf, the other of a stag. The stag seal impression, possibly from the same seal, appears also on the inside of a bowl type J3c (Figure 9.26:10).

Burnishing

Burnishing is not common at Busayra. Treatment similar to burnishing which is used on some bowls is discussed above under bowls A3. Continuous ring-burnishing appears sporadically on many bowl types and some jugs, but not consistently on any. More common is an irregular burnish consisting of single discontinuous lines, presumably decorative rather than functional in intention, almost always confined to the bands of red slip. Jugs H2 are closely burnished with a combination of vertical and horizontal burnish.

Notes on black slipped table wares from Busayra (Andrea M. Berlin)

Descriptions

Figure 4.8:8: Saucer, drooping rim

Single small rim fragment. Warm, clean pinkish brown fabric, no visible inclusions, fully fired. Faintly lustrous brownish black slip in and out, worn at rim.

Parallels

Apollonia-Arsuf (Fischer and Tal 1999: fig. 5.12.3, Refuse pit deposit, late fourth–late second century BC); Dor (Guz-Zilberstein 1995: fig. 6.3.12, Area C0, Phase 4a, second century BC); Gezer (Gitin 1990: pl. 35.13, Stratum IIC, early–mid second century BC, pl. 38.11, 12, Stratum IIB, c. 150 BC); Samaria-Sebaste (Crowfoot, Crowfoot and Kenyon 1957: fig. 37.2–5, from the Hellenistic Fort Wall fill, closed c. 150 BC); Tel Michal (Fischer 1989: fig. 13.1.9, Stratum V, third century BC); Tirat Yehuda (Yeivin and Edelstein 1970: fig. 9.5–9, c. 200–150 BC).

Figure 4.8:9: Saucer, folded rim

Two non-joining rim fragments. Granular but clean bright pinkish brown fabric, no visible inclusions, fully fired. Semi-glazed: thin, somewhat streaky, matt dull grey-black slip in, on upper wall only out.

Parallels

Dor (Guz-Zilberstein 1995: fig. 6.4.5, 6, Area C2, Phase 2 or 3, second century BC); Samaria-Sebaste (Crowfoot, Crowfoot and Kenyon 1957: fig. 37.10, from the Hellenistic Fort Wall fill, closed c. 150 BC); Tarsus (Jones 1950: fig. 178: D, E, bottom and middle levels of Middle Hellenistic Unit, third–early second century BC).

Figure 4.8:10: Bowl, incurved rim

Single small rim fragment. Granular grey-pink fabric, fully fired. Thin, faintly lustrous pale black slip in and out, streaky on outside.

Parallels

Gezer (Gitin 1990: pl. 33.15, Stratum III, late third–early second century BC); Dor (Guz-Zilberstein 1995: fig. 6.1.9, Area C2, Phase 3, third century BC); Samaria-Sebaste (Crowfoot, Crowfoot and Kenyon 1957: fig. 38.1, 2, from the Hellenistic Fort Wall fill, closed c. 150 BC); Tarsus (Jones 1950: fig. 180: B, middle level of Middle Hellenistic Unit, early second century BC).

Figure 4.8:11: Bowl, incurved rim

Single small rim fragment. Granular but clean light brown fabric, occasional tiny rounded white inclusions, wide light grey core. Faintly lustrous black slip in and out, metallic sheen on inside.

Parallels: as Figure 4.8:10, above.

Figure 4.8:1: Bowl, outturned rim

Single small rim fragment. Very clean, warm pink-brown fabric, no visible inclusions, fully fired. Hard, semi-lustrous black slip in and out.

Parallels

Possibly Attic, although this fragment's shallow, narrow ridge on the upper wall finds no parallel in the Attic corpus. It is certainly an eastern Mediterranean production, since neither the fabric nor the exterior ridge appears in the Campana corpus. The form is in general a standard Hellenistic type, as for example at Dor (Guz-Zilberstein, fig. 6.2, third–second century BC) and Samaria (Crowfoot, Crowfoot and Kenyon 1957: fig. 37.14–16, from the Hellenistic Fort Wall fill, closed c. 150 BC).

a) Kantharos handle (A20.2.1, not illustrated)

Single fragment preserving most of thumb rest and upper portion of vertical strut. Attic: very clean, warm pink-brown fabric, no visible inclusions, fully fired. Hard, semi-lustrous black slip in and out.

Parallels

Specific parallels are difficult to adduce, since they depend on the stance, which is difficult to be sure of in so fragmentary a piece. The spur appears to be essentially level. If so, then a reasonable parallel may be found in the Athenian Agora (Rotroff 1997: fig. 4.1, c. 325 BC). Kantharoi were exported in large numbers to the north-western Aegean; they are relatively common in late fourth–early third century BC deposits from Tinos (Queyrel 1986: Ac 4, pl. 93, c. 300–270 BC, Ba 2, pl. 114, c. 280–260 BC) and Samothrace (Kopcke 1992: nos. 48–51, Arsinoeion fill, closed c. 280 BC), and they appear occasionally on the mainland as well, as at

Figure 9.64: Black-burnished ware

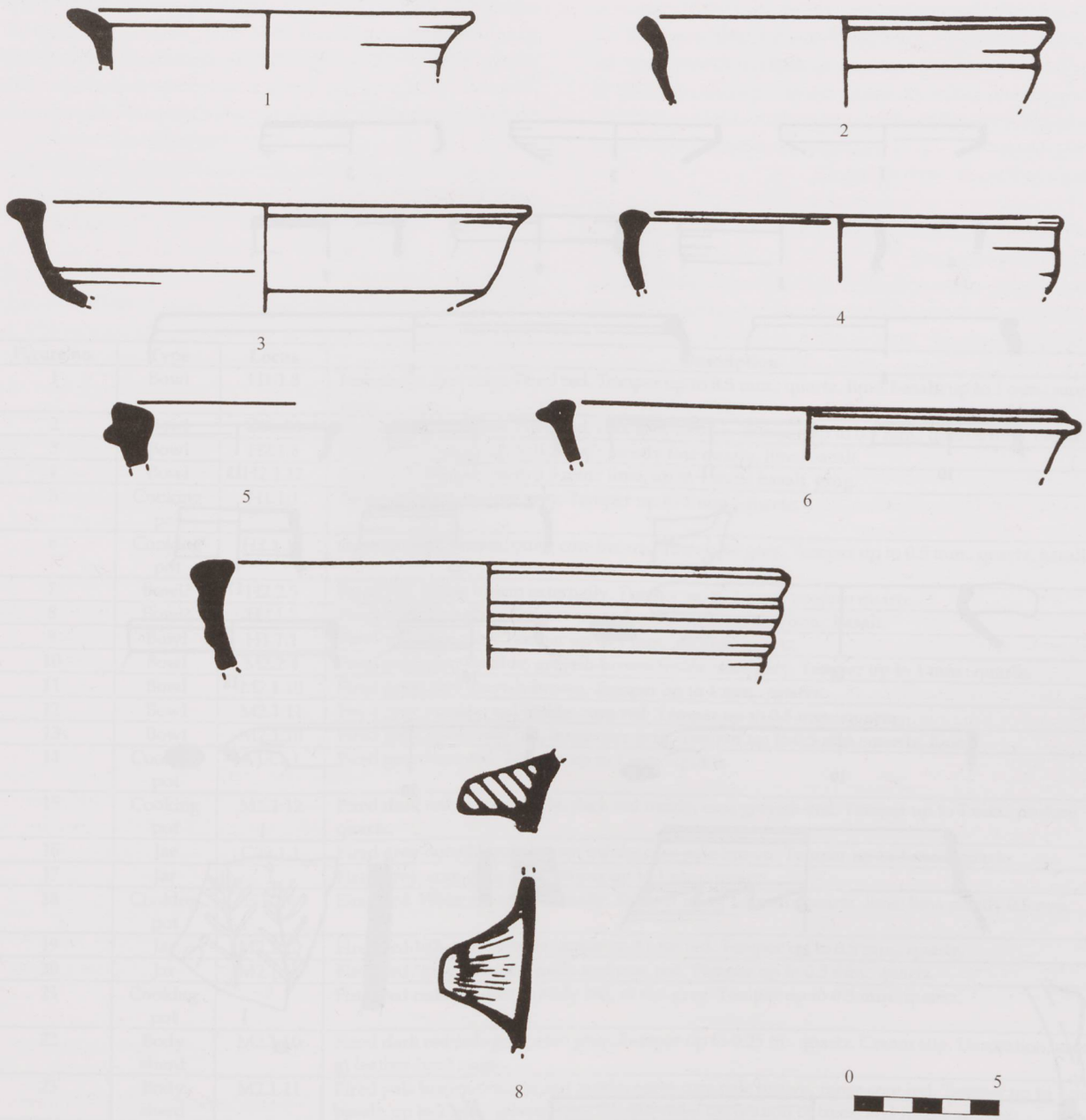


Figure no.	Type	Locus	Description
1	Bowl B	C10.6.2	Temper up to 0.25 mm.: lime; up to 1 mm.: quartz.
2	Bowl B	B3.2.m	Temper up to 1 mm.: quartz.
3	Bowl B	B3.2.m	Temper up to 0.5 mm.: quartz, lime; up to 2 mm.: grog.
4	Bowl D	B3.1.3	Temper up to 0.5 mm.: lime.
5	Bowl D	B3.4.20	Temper up to 0.5 mm: lime, quartz; up to 1 mm.: grog.
6	Bowl D	B3.2.m	Temper up to 0.5 mm.: lime, quartz; up to 4 mm.: grog.
7	Bowl D	B3.2.m	Temper up to 0.25 mm.: lime, quartz; up to 2 mm.: grog.
8	Handle	B3.2.m	Temper up to 0.5 mm.: lime; up to 1 mm.: grog.

Figure 9.65: Nabataean, Roman and Late Islamic pottery

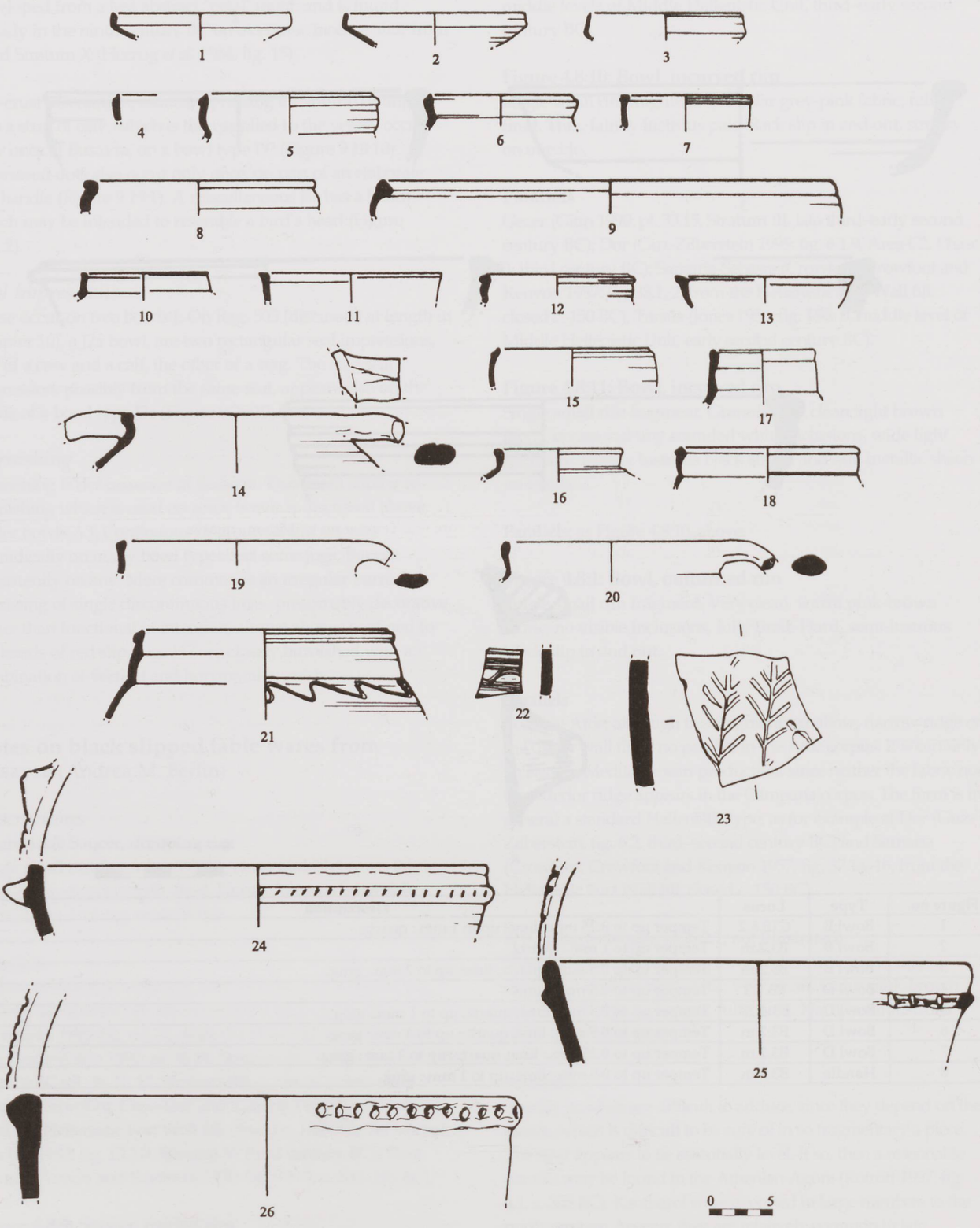


Figure no.	Type	Locus	Description
1	Bowl	H1.1.8	Nabataean fine ware. Fired red. Temper up to 0.5 mm.: quartz, lime, basalt; up to 1 mm.: rare grog.
2	Bowl	C11.4.1	Nabataean fine ware. Fired red; core grey-brown. Temper up to 0.5 mm.: quartz, lime, basalt.
3	Bowl	H2.1.8	Fired red. Temper up to 0.5 mm.: mostly fine quartz, lime, basalt.
4	Bowl	H2.1.12	Fired red. Temper up to 0.5 mm.: lime; up to 1 mm.: basalt, grog.
5	Cooking pot	H1.1.1	Fired pale brown; core grey. Temper up to 1 mm.: quartz.
6	Cooking pot	H2.1.12	Fired greyish-brown; outer core brown, inner core grey. Temper up to 0.5 mm.: quartz, basalt.
7	Bowl?	H2.2.5	Fired red. White bloom externally. Temper up to 1 mm.: profuse quartz.
8	Bowl?	H2.1.3	Fired buff; core grey. Temper up to 1 mm.: lime; up to 2 mm.: basalt.
9	Bowl	H1.1.1	Fired red; core grey. Temper up to 1 mm.: profuse quartz.
10	Bowl	M2.2.4	Fired pink-grey outside, greyish-brown inside; core grey. Temper up to 1 mm.: quartz.
11	Bowl	M2.1.10	Fired grey; core greyish-brown. Temper up to 1 mm.: quartz.
12	Bowl	M2.1.11	Fired grey outside, red inside; core red. Temper up to 0.5 mm.: quartz.
13	Bowl	M2.1.10	Fired grey; outer core red, inner core grey. Temper up to 0.5 mm.: quartz, lime.
14	Cooking pot	A13.1.1	Fired grey; core red. Temper up to 1 mm.: quartz.
15	Cooking pot	M2.1.12	Fired dark red/grey outside, dark red inside; core greyish-red. Temper up to 1 mm.: profuse quartz.
16	Jar	C23.1.1	Fired grey outside, pale brown inside; core pale brown. Temper up to 1 mm.: quartz.
17	Jar	?	Fired grey; core dark red. Temper up to 1 mm.: quartz.
18	Cooking pot	H1.1.6	Fired red. White bloom externally. Temper up to 1.5 mm.: quartz, lime; lime mostly 0.5 mm.
19	Jar	M2.1.10	Fired reddish-grey outside; inside and core red. Temper up to 0.5 mm.: quartz.
20	Jar	M2.1.11	Fired red/grey outside; inside and core red. Temper up to 0.5 mm.: quartz.
21	Cooking pot	?	Fired red outside; core at body red, at rim grey. Temper up to 0.5 mm.: quartz.
22	Body sherd	M2.1.10	Fired dark reddish-grey; core grey. Temper up to 0.25 m.: quartz. Cream slip. Decoration incised at leather-hard stage.
23	Body sherd	M2.1.11	Fired pale brown outside, red inside; outer core pale brown, inner core red. Temper up to 1 mm.: basalt; up to 2 mm.: quartz, lime. Mould-relief decoration of trees, and finger gouges.
24	Cooking pot	M2.1.2	Handmade. Fired buff/grey/brown; core brown, outer core red, inner core grey. Temper up to 3 mm.: lime, basalt. Ledge applied as separate strip of clay.
25	Cooking pot	M2.1.2	Handmade. Fired red/grey outside, black inside; outer core brownish-grey, inner core black. Temper up to 1 mm.: quartz; up to 7 mm.: lime. Ledge applied as separate strip of clay.
26	Cooking pot	M2.1.2	Handmade. Fired red; core dark grey. Temper up to 1 mm.: quartz, rare basalt; up to 2 mm.: lime. Buff slip or bloom. Ledge formed from folded rim.

Troy (Berlin 1999: no. 5, pl. 13, Quarry Dump, late fourth–early third century BC). They are essentially absent in Ionia, as far south as Tarsus (Jones 1950: 151), and quite infrequent in the south-eastern Mediterranean, where skyphoi and small bowls seem to have been preferred. At Dor, for example, there are 100 skyphos fragments to 15 kantharos fragments (Marchese 1995: 128); at Samaria there are only a handful as well (Crowfoot, Crowfoot and Kenyon 1957: fig. 46).

b) Bowl, incurved rim [also called echinus bowl] (A26.1.5, not illustrated)
Single small rim fragment. Attic: very clean, warm pink-brown fabric, no visible inclusions, fully fired. Hard, semi-lustrous black slip in and out.

Parallels
Although the fragment is very tiny, the stance suggests that this is the 'deep' version, which only comes into common production in Athens at the end of the fourth century BC (Rotroff 1997: fig. 63.996, 998, dated c. 300 BC).

c) Saucer, ring foot (B3.8.1, not illustrated)
Single fragment preserving entire ring foot. Granular, bright warm yellowish pink-brown fabric, occasional medium subangular white inclusions, fully fired. Thin, dull matte grey-black slip in, circular brick red stacking circle in central floor. Outside plain, with narrow wheel-scraped grooves and paring on lower wall. Neatly turned and trimmed foot. Nipple on underside.

Parallels
No parallel can be found in which all of the visible characteristics occur together. In general, the shape is consistent with the mass of table vessels produced throughout the south-eastern Mediterranean and Levant in the late third to mid-second centuries BC. The fact that the slip colour is still purposefully black argues against a later second-century date, while the stacking circle, dull finish, and unslipped exterior argue against a date earlier than the mid-third century BC.

Summary
The earliest pieces, which date to the later fourth century BC, are the two definitely Attic fragments (a and b); the possible third Attic piece (Figure 4.8:1) is probably about the same date. The presence of late Classical Attic table vessels east of the Jordan river is notable in and of itself, since while such imports are relatively common in Palestine, they are practically non-existent in Transjordan (Wenning 1981; 1990; Perreault 1986). The date of these fragments is interesting as well, since such imports are far more common from the mid-fifth through the mid-fourth centuries BC (Marchese 1995: 172). That particular era seems to be little represented at Busayra (there are very few fifth–fourth-century BC parallels), and it cannot be discounted that Busayra was deserted for a century or so.

The three saucers (Figure 4.8:8–9, c) and two bowls (Figure 4.8:10–11) all fit comfortably within the later third to mid-second centuries BC. These pieces certainly attest to some activity at the site into the Hellenistic period, though whether they represent actual occupation or simply opportunistic stopovers is impossible to discern. It is tempting to relate these fragments to activities within the larger region during the reign of Antiochus III (223–187 BC). At 'Iraq al-Amir, a monumental gate was constructed around this time, probably by a member of the Tobiad family (Gera 1990: 25); at Philadelphia (Rabbath-Ammon), military action by the king himself is attested (Polybius, *Histories* V.71.9). A group of material as scanty as this can add little more than the simple testimony of its own existence. However, as the sole representative of life at Busayra in an otherwise unattested era, this may be addition enough.

The later pottery

Some Nabataean, Roman and Late Islamic (Ottoman) pottery was found in Area H, in topsoil contexts in other areas, and in the poorly recorded Area M (cf. Chapter 1). Although some of the Nabataean and Early Roman pottery was found stratified in Area H, associated with reconstruction and use of the perimeter wall, all of the Late Roman pottery was found in topsoil. All the Late Islamic pottery comes from Area M, and was associated with the pilgrimage site there and the village cemetery.

Very little of this post-Iron II/Persian pottery was kept, and none was drawn at the time of the excavations. Figure 9.65 illustrates the main types that were found among Crystal Bennett's division of finds now housed at Liverpool Museum: most of these are from Areas H and M. The continuing lack of a large, published, stratified sequence of Roman pottery from southern Jordan, and the clear regional variation within Jordan in that period (as in all periods), makes it difficult to assess and compare small, essentially unstratified assemblages such as that from Busayra (cf. discussion in Bienkowski and Adams 1999: 160). Not all the types in Figure 9.65 have published parallels; but in general the Nabataean, Early and Late Roman assemblages are of a similar type and date to those from the soundings at Khirbat Dubab, just north of the Wadi Hasa, 33 km. north of Busayra, and from various sites in and around Petra, 45 km. to the south.

Nabataean/Roman
Figure 9.65:1–3 are characteristic Nabataean fine ware shallow bowls with an incurving rim, dated between the first century BC and the second century AD (Hammond 1973: no. 86; Schmid 1995: fig. 2:10–11). Stratified parallels close to Busayra come from Khirbat Dubab (Bienkowski and Adams 1999: figs 8:3, 19; 10:19–21). Several body sherds of painted Nabataean pottery were found (not illustrated), most closely resembling the painted decoration of the second half of the first century AD, with large, abstract and geometric motifs (Schmid 2001: 391 and fig. 11.22:8). Another Nabataean bowl, or possibly a cooking pot (Figure 9.65:8), is paralleled at as-Sadeh (Lindner, Farajat and Zeitler 1988: fig. 9:5). Four more Nabataean cooking pots (Figure 9.65:6, 14, 18, 21) are paralleled at as-Sadeh (Lindner, Farajat and Zeitler 1988: figs 9:2, 6, 7, 9; 10:1), Petra (Zeitler 1990: fig. 14:11), Dhiban (Winnett and Reed 1964: pl. 71:17), and Khirbat Dor (Weippert 1979: fig. 3:3*–7*). The as-Sadeh parallel to Figure 9.65:21 (Lindner, Farajat and Zeitler 1988: fig. 9:9) lacks the combed pattern, which might suggest a later date for the Busayra piece, possibly third century AD. Early Roman parallels to Figure 9.65:4 and 16 are found at Dhiban (Winnett and Reed 1964: pl. 71:2 [larger], 5), but third-century AD parallels for the same types can be cited from Jarash (Falkner 1984: nos 76 and 242), highlighting

the problem of regional variation and the lack of a comprehensive stratified sequence in southern Jordan as a basis for comparison.

Late Roman (third–fourth centuries AD) parallels can be found for the following:

Figure 9.65:5: Petra, az-Zantur (Gerber and Brogli 1995: fig. 20), Qasr Bshir (Parker 1987: fig. 94:36)
Figure 9.65:9: Jarash (Falkner 1984: no. 191)
Figure 9.65:17: Jarash (Falkner 1984: no. 226?, third century AD or earlier)

Late Islamic

Figure 9.65: 24–26: Handmade cooking pots with a black/grey core, decorated with finger indentations on a ledge that was either applied as a separate strip of clay or formed from a folded rim. Compare Late Islamic (Ottoman) handmade cooking pots from Shawbak (Brown 1988: fig. 14:53–54, p. 240 for description) and Khirbat al-Mu'allaq (Lindner, Knauf and Zeitler 1996: 124–25 and fig. 21). Apparently similar examples from Jarash are dated to the sixth and seventh centuries AD (Falkner 1984: nos 35, 50). Figure 9.65:23 is a body sherd from a Late Islamic storage jar, decorated with trees in mould-relief.

Discussion

The presentation of the Iron II/Persian pottery above divided the parallels into distinct geographical areas, in order to establish clearly the relationship of the Busayra pottery to neighbouring assemblages. Table 1 tabulates the data, to show

Table 9.1: Parallels to Busayra pottery from neighbouring regions. D = parallels with decoration similar to that on the Busayra types

Type	N. Edom	S. Edom	N. Jordan	Negev	S. Judah
Bowl A	x	D	x	D	x
Bowl B	x	D	x	x	x
Bowl C		D	x	x	x
Bowl D	x	D	x	x	x
Bowl E	x	D	x	x	x
Bowl F	x	x	x	x	x
Bowl G	x	x		x	
Bowl H	x		x	x	
Bowl J	x	D	x	D	x
Bowl K	x	x	x	x	x
Bowl L		x	x	x	x
Bowl M		D		D	
Bowl N		D	x	D	
Bowl O			x	D	
Bowl P		x			x
Bowl Q		x	x	x	
Bowl R		D	D		
Bowl S	x			x	
Double bowl			x	x	?
CP A	x	x	x	x	x
CP B	x	x	x	x	x
CP C	x		x	x	x
CP D	x	x	x		
CP E		x			
Jar A	x	x	x	x	x
Jar B		x		x	
Jar C		x	x	x	
Jar D	x	x	x	x	
Jar E	x		x	x	x
Jar F		x			
Jar G			x		x
Jars H		x		x	
Bottles/flasks		x	x	x	x
Jug A		x		x	x
Jug B	x	x	x	x	x
Jug C		D	x	x	x
Jug D	x	x		x	x
Jug E		x	x	x	x
Jug H			x		
Jug J	x	x			
Lids		x	x		
Pot stand				x	
Lamp A	x	x	x	x	x
Lamp B			x	x	x
Lamp C				?	
Lamp D				?	
Lamp E		x			
Fenestrated stand				x	

the geographical range of parallels for each broad ceramic type. Of course, the search for parallels is constrained by what has been excavated and published; in particular, few Iron Age sites have been excavated in northern Edom, in the vicinity of Busayra, while much from the Negev is still in the process of publication.

The majority of the Busayra pottery types have wide-ranging parallels to the basic shape, from Edom, northern Transjordan, the Negev and southern Judah. However, for some types, particularly those on which decoration is common at Busayra, parallels to the decoration are limited to Edom and the Negev: in particular, Bowls A and B with painted decoration, downturned rim and denticulation. For other types, such as Bowls C, D, E, J and N, decorated parallels are rare outside Edom.

Some pottery types appear to be limited to Edom and the Negev: Bowls G, M, S, Jars B and H, Lamps C and D (?). A few types seem to occur only in Edom: Jars A1 and F, Cooking pots E, Jugs J, and Lamps E. Some variants of Bowls B are not found outside Busayra.

It may be significant that, with the exception of Jars G, all the types which are not paralleled in southern Edom have parallels in the Negev, and most of those are also paralleled in northern Edom: Bowls H, O, S, Double bowls, Cooking pots C, Jars E, Lamps B, C, D, and the Fenestrated stand. This suggests an assemblage characteristic of northern Edom and the Negev, demonstrably different from that in southern Edom. Similarly, all types not paralleled in the Negev have parallels in either southern Edom or northern Transjordan or both: Bowls P and R, Cooking pots D and E, Jars F and G, Jugs H and J, Lids, and Lamps E. This reveals a complex mix of assemblages throughout Transjordan and the Negev, and makes attempts to define a characteristic 'Edomite' assemblage misleading (e.g. Beit-Arieh 1995a: 34). The Busayra pottery has particularly close links with assemblages in southern Edom and in the Negev, but is demonstrably different from both. There are also similarities with assemblages in northern Transjordan and southern Judah, but few parallels to the decoration.

Much of the Busayra pottery was locally manufactured, from local clays, but some appears to originate from the Petra area in southern Edom, some from the Wadi Arabah, while some wares cannot be provenanced (see Appendix 1). Among the unprovenanced wares are Bowls K, the imitation Assyrian bowls, which elsewhere in Transjordan appear to be locally made (Bienkowski 2000: 50–51). The black-burnished ware (cf. Figure 9.64), fired in a reduced atmosphere and burnished, originated in the Petra area, although it appears visually to be a variant of Ware 1.

Dating

There are some uncertain parallels with the ninth-century BC pottery from Khirbat an-Nahas and Barqa al-Hetiye in the Faynan area, but also distinct differences: in particular, the storage jars from those two sites are quite different and may well be a ninth-century type which is missing from nearby Busayra (see discussion above, under Jars A). This suggests that the Busayra pottery does not date as early as the ninth century BC.

There are many parallels with Beersheba Stratum II, which is now generally acknowledged to have been destroyed during Sennacherib's campaign of 701 BC, although some scholars attempt to date Stratum II into the seventh century BC (cf. brief overview in Singer-Avitz 1999: 11–12). Singer-Avitz (1999: 30–38 and figs 9–10) has highlighted the presence in Beersheba Stratum II of vessels with 'Edomite' characteristics, all made of clay originating in Judah. Clearly, if such vessels were being made in or around Beersheba by the late eighth century BC, it implies at least the same date for the pottery from Edom proper. This suggests that the Busayra pottery should be dated at least from the late eighth century BC.

The majority of parallels from Transjordan and Palestine, quoted above, date to late Iron II, the seventh and sixth centuries BC. Many of the parallels from the well-stratified site of Tall al-'Umayri near Amman are dated broadly Iron II/Persian, since there is clear evidence there that many of the Iron II forms continued virtually unchanged through most of the Persian period (Herr 1997: 244–6). There are also Persian-period parallels from Tall Nimrin, Tall Mazar, Tell el-Hesi and Gezer, with fourth-century BC parallels at Gezer for Cooking pots C and D.

The report above by Andrea Berlin on the black-slipped table wares dates three Attic sherds to the late fourth century BC, and five Hellenistic sherds to the late third century BC if not later. Two of the Attic sherds were stratified within Area A Phase 4. One of the Hellenistic sherds was also attributed to Area A Phase 4, while the others were found in post-Phase 4 contexts or were unstratified (see Chapter 4). Phase 4 was the final 'Iron II/Persian' occupation in Area A, ended by a massive fire. If the Attic and Hellenistic sherds were indeed stratified within Phase 4, it means that Phase 4 and the local pottery associated with it continued to c. 200 BC. This is considerably later than Bennett's estimate of the sixth century BC for the destruction and abandonment of Busayra (Bennett 1983: 17), and this evidence raises several possibilities.

The excavation and recording of Area A was problematic, its stratigraphy is not well understood (see Chapter 4), and it cannot be totally excluded that the Attic and Hellenistic sherds were from unrecognised later pits or some other post-Phase 4 deposit, in which case they cannot be used as evidence for the date of the 'Iron II/Persian' occupation and its associated pottery. On the other hand, there should be hundreds of local sherds dating to the fourth and third centuries BC that were associated with these few Greek forms, but the only other sherds in the same deposits were 'Iron II/Persian' (cf. Figure 4.8). Based on the lack of later pottery, Andrea Berlin (above) suggests the possibility that Busayra was deserted for 100 years or so from the mid-fifth century BC. However, there are possible fifth to fourth-century BC parallels to some of the local pottery, and it seems difficult to escape the conclusion that the Busayra pottery indicates strong continuity of forms from late Iron II to the end of the Persian period if not beyond. It may be that only the Hellenistic sherd in Area A Phase 4 is a stray, in which case the Attic sherds and other parallels would date the end of that phase, and the end of the lifespan of the local pottery, to c. 300 BC, the very end of the Persian period. This is the same timescale suggested by Sauer for the Hisban late Iron

IIC/Persian corpus (Sauer 1994: 247) and by Herr for the Tall al-ʿUmayri Iron II/Persian corpus (Herr 1997: 245). However, if it is accepted that the Hellenistic sherd attributed to Area A Phase 4 was indeed associated with that phase and dates its end to c. 200 BC, then the associated local pottery continued virtually unchanged to the end of the Early Hellenistic period. One sherd is not sufficient to redate a whole site, but four other Hellenistic sherds were also found in Area A, which is clear evidence of at least some activity at Busayra in that period. Similarly, Sauer left open the possibility that the Hisban late Iron II corpus extended into the Early Hellenistic period (Sauer 1994: 248), while Herr has noted a jug similar to Early Hellenistic forms at ʿUmayri (Herr 1997: 245).

The evidence from Bennett's excavations at Busayra is not conclusive enough to provide a definitive solution to these chronological problems, but it strongly suggests that the late Iron II/Persian occupation continued at least to c. 300 BC, if not to c. 200 BC, giving a lifespan for the occupation at Busayra and its associated pottery of late eighth century BC to c. 300/200 BC. This timespan of between 400 and 500 years seems very long for a pottery tradition, and there must have been some developments within that period. Some of the Persian-period forms cited above probably appeared only in the fifth or fourth centuries BC. The pottery from the three stratified phases in Area C (Figures 6.5, 6.7–12, 6.14–16), although a small sample size, gives a hint of some development in the corpus. Painted pottery was already present in the earliest Phase 2; Bowls K (imitation Assyrian bowls) and Cooking pots D, with Iron II/Persian-period parallels, appear in the following Phase 4; and most types, including painted decoration, appear to continue in the final Phase 6, with the possible introduction of some new forms, for example Jar G, a type with Persian-period parallels.

In conclusion, the Busayra pottery is a distinct regional corpus in northern Edom, dating between the late eighth century and c. 300/200 BC. Late Iron II forms appear to continue virtually unchanged to the end of the Persian period and perhaps into the Early Hellenistic period, with the probable addition of some new forms but no discernible break between the periods. Stratified Nabataean and Early Roman sherds testify to re-use of the site between the first century BC and the second century AD, while a few Late Roman sherds in topsoil indicate human presence in the third/fourth century AD. Some Late Islamic sherds from Area M are associated with use of the village cemetery and pilgrimage site in the Ottoman period.

10. THE SMALL FINDS

Leonie Sedman

Introduction

The basic information for this study was based upon the original finds register, drawing sheets and photographic records, compiled at the time of the excavations, and now held at Liverpool Museum. After each season of excavation, the small finds were distributed to museums in Amman, Karak, London, Oxford, Manchester, Dublin, Edinburgh, Toronto, Brussels and Atlanta. Most of these museums were visited during the course of this study, enabling many of the objects to be examined individually.

A number of the objects are now described as being of a different material or for a different use, as compared with the original register. This is because a number of different people compiled the registration records, and were sometimes unaware of the correct identification. For example, Crystal Bennett's personal notebooks show that she was aware that a carved object (Reg. 252) was shell, but it was entered in the register as 'bone or ivory'. For a full list of small finds, with registration numbers in consecutive order and noting original registration, see Sedman 2000.

In most cases, the identification of each object was by sight alone as scientific examination was unavailable. In some instances, museum staff gave expert opinions, or examined objects through a microscope, but no further analysis was carried out.

Most of the illustrations are from the excavation archive, with additional drawings and photographs by the writer (see Sedman 2000: iii, for full list).

The catalogue – explanatory notes

A supplementary series has been added to the catalogue. These objects were discovered with the finds stored at Liverpool Museum, but were not included in the original register of small finds. The registration number of these objects is prefixed by the letter S. In addition, some objects were discovered with the pottery at Liverpool Museum after the compilation of the catalogue; these have their original finds number, but have a prefix S within the Museum number (e.g. NMGM: 1993.180.S69).

The Busayra small find registration number has been put in parentheses; on the objects themselves this number is written within a rectangle. The stratigraphic references are enclosed in square brackets in the catalogue entries. Where the object has been examined, the description is followed by an asterisk (*) and the present location of the object (see Abbreviations), with the museum number (when available). 'CMB' indicates that the object is registered in the archive as being retained by Crystal Bennett, but has not been located. A number of these objects are noted as being 'sent for analysis' and may not have been retrieved after her death. #not seen, or #missing indicates objects which have not been examined for this study; the descriptions are from the original register. 'DoA' indicates those objects retained by the Department of Antiquities of Jordan.

Decorated sherds

Two of the decorated sherds from Busayra bear stamped motifs which have exact parallels amongst the ivories discovered at Arslan Tash and Nimrud. Both sherds were discovered in Area D, where the nature of the architecture reflected Iron II/Persian domestic occupation (see Chapter 7).

The largest of the impressed sherds, Reg. 503 (Plate 10.1), bears two stamped impressions approximately 1 cm. apart, one representing a cow with suckling calf, the other a grazing stag. It appears that the impressions continued around the vessel. The bowl was coated with red paint, apart from the band left plain to receive the impressions, and a narrow line both above and below the impressions, which was then painted with a 'ladder' design in black paint. The interior of the bowl appears to have been completely painted red.

The smaller sherd, Reg. 570 (Plate 10.2 a, b), bears one impression of a grazing stag. From the evidence of Reg. 503, this would have been one of a sequence of impressions forming a band of decoration around the dish. The rim has traces of a red paint stripe. On the reverse, there are two stripes of red paint and one of black.

Although the two stag impressions are extremely similar, a close examination of the photographs reveals that the impression on the larger sherd (503) is slightly more oblong in shape whilst that on Reg. 570 is almost square. However, when the distortion caused by the break in the pottery is taken into account, the difference is much slighter than first appears, although there are still enough differences to suggest that these two impressions were not made by the same stamp; for example the representation of the stag's hind legs is slightly more anatomically correct on no. 570, whilst the animal's fur and ribs are picked out in more detail on no. 503. Despite these differences, it would appear that the impressions are so nearly identical that they are likely to have been copied from the same template, possibly by the same person. Both of these sherds are from examples of the fine decorated pottery first found at Busayra which is often referred to as 'Edomite pottery' although Bienkowski (cf. Bienkowski and Sedman 2001) has argued for use of the term 'Busayra painted ware'.

With regard to shape, no. 503 has a gentle but pronounced inward curve from the rim downwards, which suggests that it is a fragment from a Bowl J (cf. Chapter 9). No. 570, however, has a different shape to the rim, suggesting that it may have come from a Bowl K, but the fragment is so small that it cannot be excluded that it also came from a Bowl J. All three impressions are without background detail, and in each case the motif is set in a rectangular frame.

Bennett (1982: 187) thought that the impressed sherds were of such high quality that they were 'almost certainly' imported, but Piotr Bienkowski (personal communication) now believes that that they were from examples of locally made pottery; however it is possible that the stamps used to make the impressions were

imported. At present, it is not known what the stamps were made of, but possibilities include stone, wood, ivory or bone, and terracotta. Muscarella (1980: 203) discovered evidence of bone, wood and ivory being worked in the same style and technique, and presumably by the same artisans, at Hasanlu in Iran, and this may have been the case elsewhere, especially as there were parallels between the ivories found at Hasanlu and those from Nimrud. The smooth finish and detailed designs make wood a strong possibility, and this would also reduce the likelihood of such a stamp surviving in an archaeological context; at present, no stamp of this size, known to have been used in this way, has been discovered. Stamps such as this would have been easy to transport and trade. It is possible that workshops sold examples of their most popular motifs reproduced in this way, although it is equally possible that artisans at Busayra copied imported templates for their own use. Either scenario would have enabled a wealthy consumer or member of royalty in southern Transjordan to import stamps which allowed them to own objects impressed with the same designs that they had seen or heard of, adorning the walls and furniture of foreign palaces.

Ceramic moulds have been discovered at Zinjirli, Cyprus and Ibiza, but they do not provide parallels for the small pictorial stamps used on the Busayra sherds (see Von Luschan and Andrae 1943: 24, pls 9I, 10a, examples not pictorial; Karageorghis 1960: 257, fig. 25 , terracotta mould from Kythera, Cyprus, showing winged being fighting with a lion; mould is good quality and pictorial, but 10 cm. long). Compare also Collon 1987: 141, fig. 595 (reproduced from Walters 1912: 245 and 243), which shows a seal impression of grazing stags on a sixth–seventh-century BC Etruscan bucchero from Italy. An Iron I jar handle from Khirbet ed-Der bears a pictorial impression of a bull, but this was over 5 cm. square, and probably an identification stamp rather than decoration (Zertal 1996: 208).

Catalogue of decorated sherds

The impressed sherds, Regs 503 and 570, have been published by Bennett (1975: 15, figs 8:9–10; 1978: 170; 1982: 187).

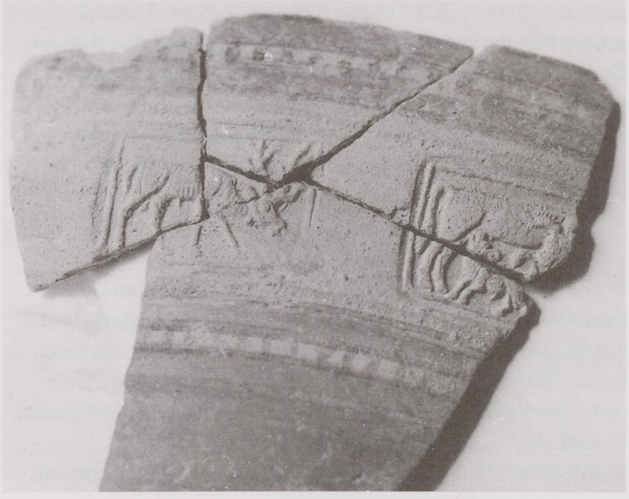


Plate 10.1: Reg 503, impressed sherd

Plate 10.1 (Reg. 503). Fragment of a very fine dish or bowl decorated with seal impressions of a grazing stag and a suckling calf. It appears that originally the impressions continued around the vessel. The bowl has been decorated with red paint and lines in black paint. The interior of the bowl appears to have been completely painted red. The fragment consists of six sherds, which were reassembled, but the glue has perished. If unbroken, the fragment would be 95 mm. long and 62 mm. at the rim, tapering to a point. The original drawings suggest a maximum diameter of approximately 140 mm. if the vessel had been complete. Very fine, buff ware with minute glassy grits (possibly quartz). Thickness of pottery: 3 mm. [D3.2.3] *Kar.



Plate 10.2: a, b: Reg. 570, impressed sherd

Plate 10.2:a, b (Reg. 570). Sherd from the rim of a very fine dish or bowl in buff/pink ware with a buff core. On what appears to have been the exterior of the vessel is a stamp impression of a grazing stag. From the evidence of Reg. 503, this would have been one of a sequence of impressions forming a decoration around the dish. The rim has traces of a red painted stripe. On the reverse are two stripes of red paint and one of black. The sherd is almost square, 27 mm. at the rim, and 28 mm. long. It is made from very fine buff ware. Thickness of pottery: less than 4 mm. The original drawing suggests a maximum diameter of approximately 160 mm. [D3.2.3] *Ash: 1974.287.

(Reg. 563). Fragment of orange/buff decorated pottery with a grey core and glassy grits. Traces of paint remain in dark grey lines around the fragment. Originally part of a piece of highly decorative pottery, perhaps a figurine or very large plastic decoration. Length: 46 mm. Diameter: 13 mm. [B3.1.7] *Kar.

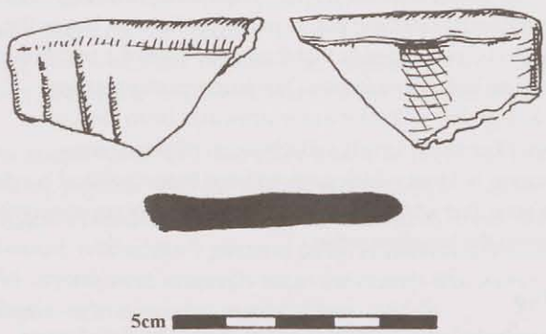


Plate 10.3: Reg. 630, sherd with incised lines

Plate 10.3 (Reg. 630). Corner of pottery object decorated with three incised lines. Buff ware with greenish white surface. Existing measurements: 48 mm. x 25 mm. at widest. Thickness at rim: 6 mm. [B3.7.6] *Edin.

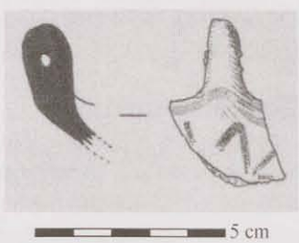


Plate 10.4: Reg. 1205, lamp handle with painted decoration

Plate 10.4 (Reg. 1205). Lamp handle with zigzag pattern painted in black on the outside of the vessel. Some traces of red paint remain. Red/buff ware with buff core. Length of fragment: 55 mm. Width of handle: 19 mm., pierced with a hole of 5 mm. diameter. [B3.3/6.6?] *Kar.

(Reg. 1228). Pottery sherd with circular incised decoration. Pink/buff ware. Length: 32 mm. Width: 23 mm. Thickness: 8 mm. [C21.1?] *Kar.

Parallels with carved ivories

It is possible to compare the impressions on the Busayra sherds directly with exact parallels on existing ivories.[1] The decorative motifs in question are all drawn from the artistic heritage of the Levant, and, although they are parallels of motifs seen on the Nimrud and Arslan Tash ivories, the ivories in question are considered to reflect Levantine iconography.

One of the ivories from Arslan Tash, in particular, appears to be an exact parallel to Busayra sherd Reg. 503, although the motif is reversed (Thureau-Dangin 1931: pl. XXXIX no. 71). Although examples of the cow and calf motif are known from as early as the Old Babylonian period, and the design appears to have been used continuously from then through to the Iron Age, the composition on the sherd is so similar to that on the ivories, they give the impression that one could have been copied directly from the other. There are many exact similarities between the example from Busayra and the ivories from Arslan Tash and Nimrud, including the angle of the cow's tail, the curl of the calf's tail, the row of lines along the cow's body, the cow's horns, the cow licking the calf, and the lines on the cow's neck. The representation of a grazing stag beside that of the cow and calf on the Busayra sherd also shares parallels amongst the ivories from Arslan Tash and Nimrud, and again the representation of the motif is almost identical.

On both examples from Busayra, the stag is striding forward with both the front and hind leg which is furthest from the viewer; however, in life, this would result in an unnatural gait. There is a parallel from Nimrud for the unnatural stance of the Busayra stags amongst the incised ivory plaques from room S4, Fort Shalmaneser (Mallowan 1970: 142–145, 43, pl. XXXV). One possible explanation for the animals in one-sided stance could be that the motifs were originally based on similar representations of animals, taken from monumental sculpture where this style of representation was common (for example, the camels on the Black Obelisk of Shalmaneser III), with the stance being altered by later artisans who were keen to represent the animals in a more natural pose; thereafter, examples of both versions would be in circulation simultaneously. However, these motifs were repeatedly copied over a long period of time, and by so many different hands, that the possibilities of being able to trace such developments is minimal; indeed, their distribution is so widespread that we will never know whether their original meanings survived for all their eventual owners, although we can probably guess that they did not, as grazing stags in the same pose as on the Busayra sherd are to be seen on a rug discovered in southern Siberia, in the frozen tomb (third or fourth century BC) of a nomadic Pazyryk chieftain (Ghirshman 1964: 360, fig. 466).

Parallels with other stamped sherds

The two sherds from Busayra belong to a small group of stamped vessels found in the Levant and Assyria; these other examples come from Tall Nimrin (Dornemann 1995), En Gedi (Mazar and Dunayevsky 1967), Tall ar-Rameh (unpublished, courtesy of F. Ninow), Tall Iktanu (unpublished, courtesy of K. Prag) and Nimrud (Herrmann and Curtis 1998).

The example from Nimrin is a large krater which is virtually complete, at present on display in the Amman Museum. It stands 33 cm. high, with a diameter of 34 cm., and is decorated with a continuous frieze, 8 cm. high (including the surround), placed a few centimetres below the rim.

The sherd from En Gedi appears to have come from a krater of a similar size, although the fragment does not include any rim, but the impressed figures have a maximum height comparable to those on the Nimrin jar (approximately 7 cm.).

The Tall ar-Rameh example is a rim sherd from a large pot. The sherd has a maximum measurement of c. 14 cm. at the rim,

[1] For a more detailed discussion with illustrations, see Sedman 2000: 9.

tapering to a point approximately 9.5 cm. below, and is calculated to have had a diameter of 34 cm. The impression is incomplete, but when compared to the En Gedi sherd it again would appear to be of a comparable size.

The Tall Iktanu sherd is a much more fragmentary example, but from the photographic evidence, would appear to be from a vessel smaller than the Nimrin, En Gedi and Nimrud examples, and of a finer ware. The entire sherd measures only c. 5.6 cm. x 4 cm. tapering to a point, with an impressed design only partially visible.[2]

The examples from Nimrud consist of a group of eight rim sherds from a jar, with pictorial impressions of a winged geni (indicating a maximum diameter of about 48.5 cm., although the shape of the body of the vessel is unknown), with four more sherds bearing variations on an impressed design incorporating a lotus and bud frieze with rows of rosettes (Herrmann and Curtis 1998).

The closest similarity in type amongst these impressed vessels is between the examples from Nimrin and Rameh (although decorated in the same style, the Busayra pots were much smaller, and the impressions on the Nimrud example were applied to a separate plaque of clay before being added to the vessel), as they are rim sherds from large vessels, with an impressed design applied directly to the surface, just below the rim. The En Gedi sherd is possibly part of this group, as it can be seen that it was originally part of a krater, but it does not include any rim. Of these, only the Nimrin krater survives completely enough for its original shape to be seen; it has straight, almost vertical sides, which curve steeply near the base, culminating in a pedestal base with a diameter about one-third of the diameter of the rim, giving the effect of a giant goblet with a very squat base. The sherd from Tall Iktanu is probably closer to the Busayra examples in size, though probably not of such fine ware.

The Busayra sherds came from vessels which were highly decorated with red and black paint in addition to the impressed designs; however, this was not the case with the other examples. Only the fragment from Tall ar-Rameh would appear to have had further decoration, in the form of a deep edging of red slip above the carination and a creamy slip below.

The motifs

In addition to the parallels with the ivories, the motifs on the sherds from Busayra, En Gedi, Nimrin, Rameh and possibly Iktanu have provided a completely different group of parallels, also paralleled by the drawings on pithoi at Horvat Teiman/Kuntillet 'Ajrud (Beck 1982). The motifs include cow and calf, stag/ibex, date palm/leafy bough, boar, Bes, lion, bull, ithyphallic figures. It would appear that a recurring theme emerges: a preoccupation — if nothing else — with fertility. Perhaps the decorative images on these objects reflect a need to invoke the blessing or protection not only of one's familiar gods, but also that of any other icon that might serve the same purpose — that the rain should fall, the crops grow, and one's children be born safely.

The parallels between the stamped sherds from Busayra and those from Nimrin, En Gedi, Tall ar-Rameh and Tall Iktanu are striking, not least due to the proximity of the sites, especially En Gedi, Iktanu and Rameh. The technique of impressing the designs directly onto the pot, in a straight line just below the rim of the vessel, suggests that they were part of a tradition rather than isolated examples. The iconography on these vessels, together with that in the drawings from Horvat Teiman (Kuntillet 'Ajrud), reflects a complicated cross-pollination of ideas which pays no heed to the political borders of the time, but which displays a common preoccupation with fertility in the broadest sense.

Dating

The impressed sherds from Busayra cannot be dated more closely than 'Iron II' at present, and the Tall ar-Rameh sherd was a surface find, but it is noteworthy that both the En Gedi and Iktanu examples come from contexts right at the end of the Iron Age, possibly at the beginning of the Persian period. The finds from Horvat Teiman have been dated to c. 800 BC. Even if one allows for a possibility for error of a few decades, these dates suggest a period of at least one hundred years during which these eclectic traditions flourished.

Discs (including furniture inlay)

A number of objects from Busayra were registered as 'discs' or 'counters', but it is probable that many of them were in fact pieces of furniture inlay reminiscent of that photographed *in situ* at Nimrud (Mallowan 1966: 396, fig. 323). More than 30 undecorated discs are registered as small finds; most of them were originally identified as bone, but the majority, if not all, are in fact cut from *Tridacna* or *Lambis* shells (see Chapter 12). The diameters of the discs range from 12 mm. to 29 mm.; in many cases it was extremely difficult to tell with the naked eye whether a disc was ivory or shell unless the distinctive ridges characteristic of the unworked shells were visible (see Plate 10.5).

Twenty-five such discs came from Area A (including two 'caches', one of five discs — Reg. 398, and one of 11 discs — Reg. 349), where a copper alloy chair fitting was also discovered (Reg. 1129). This may indicate that the inlays had originally been mounted onto furniture that decayed *in situ*. Their context suggests that the furniture may have been situated in the inner room of the possible temple (cf. Chapter 4).

A small disc from Area C (Reg. 1067), made of clear rock crystal, may also be a piece of inlay; one side is flat and the other has been polished into a slight cabochon shape. Three large pieces of unworked rock crystal (Reg. S.03 from Area A and Reg. S.04 from Area C) may have been the raw material for such objects. A group of rock crystal fragments from Area D (Reg. S.01) may support this suggestion, as it includes about 10

[2] These measurements and comparisons (Nimrin, En Gedi, Rameh, Iktanu) are approximate, having been reached via measurements taken from photographs (see Sedman 2000), with the accompanying scales.

examples which appear to have been worked (see Glass and Crystal, below).

In addition to the undecorated circular inlays, the excavations produced 27 pieces of bone inlay with incised decoration (Regs 907 and 631), a broken piece of thin flat worked bone with lotus flower and bud design (Reg. 676), almost certainly a piece of inlay, and a circular 'counter' incised with a 12-petalled flower (Reg. 529) which was registered as bone, but is most probably ivory, due to the way it had split into two horizontally.

The fragments of bone and ivory inlay (see Bone and Ivory, below), together with the worked rock crystal fragments, suggest a parallel with the finds reported from Room SW37 at Nimrud, where 'small pieces of inlay, of glass, frit, shell and rock crystal, were originally set in the champ-levé ivory plaques or in a wooden matrix' (Oates 1961: 2).

Catalogue of discs

(for shell discs, cf. Chapter 12)

CRYSTAL

(Reg. 1067). Small, circular piece of clear, polished rock crystal. Flat base, slight cabochon shape. Edges cut. Possibly a piece of inlay — it is very similar in shape to some of the other examples. Diameter: 11 mm. Maximum thickness: 4 mm. Very slight lime encrustation. [C20.3] *L NMGM: 1993.180.9.

BONE

(see Plate 10.5 for bone, ivory and shell discs; see also Bone and Ivory, Regs 529 and 1216)

(Reg. 854). Bone (or shell?) disc or counter. Slightly concave on one side. Diameter: 12 mm. Thickness: 3 mm. [A5.9.7] #missing.

(Reg. S.61). Half of a bone disc/counter. Diameter: 23 mm. Thickness: 4 mm. [A1.22.10] *L NMGM: 1993.180.143.

(Reg. S.62). Half of a bone disc/counter, very abraded. Diameter: 20 mm. Thickness: 2 mm. [A3.1.8] *L NMGM: 1993.180.144.

Pottery discs and shaped sherds

Busayra produced a quantity of sherds which had been deliberately shaped, not only as discs (which led to them being classified as lids) but also as triangles and rectangles (Plates 10.6–7). For parallels and discussion, including the suggestion that some of them may have been used for a system of accounting, see London in Herr *et al.* 1991: 417, and Bienkowski and Adams 1999: 160–1.

Plate 10.6:a (Reg. S.70). Sherd, shaped into an irregular rectangle. Maximum length: 83 mm. Maximum width: 45 mm. Thickness of ware: 6 mm. Orange ware with buff core. No context recorded. *L NMGM: 1993.180.S70.

Plate 10.6:b (Reg. S.71). Large rectangular sherd. Maximum length: 80 mm. Maximum width: 67 mm. Thickness of ware: 4–7 mm. Orange ware with buff core. No context recorded. *L NMGM: 1993.180.S71.

Plate 10.6:c (Reg. S.72). Sherd, in shape of irregular rectangle. Maximum length: 46 mm. Maximum width: 35 mm. Thickness of ware: 6 mm. Pinkish ware with buff core. Context: Area A, 1972. *L NMGM: 1993.180.S72.

Plate 10.6:d (Reg. S.73). Sherd, almost square: 42 x 40 mm. Thickness of ware: 7 mm. Grey/buff ware. No context recorded. *L NMGM: 1993.180.S73.

Plate 10.6:e (Reg. S.74). Rectangular sherd: 42 x 35 mm. Thickness of ware: 7 mm. Orange ware with buff core. No context recorded. *L NMGM: 1993.180.S74.

Plate 10.6:f (Reg. S.75). Large sherd, shaped into disc. Diameter: 72 mm. Thickness of ware: c. 15 mm. Red/orange ware with grey core; interior grey. [A5.9.6] *L NMGM: 1993.180.S75.

Plate 10.6:g (Reg. S.76). Triangular sherd, includes rim. Maximum length: 58 mm. Maximum width: 43 mm, tapering to point. Thickness of ware: 5–6mm. Orange/buff ware. [A3 or 4.1.7] *L NMGM: 1993.180.S76.



Plate 10.5: Shell and ivory discs

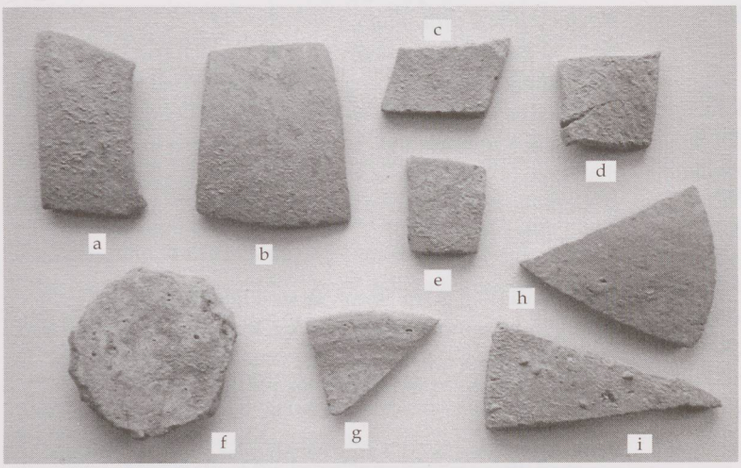


Plate 10.6: Shaped sherds

Plate 10.6:h (Reg. S.77) Triangular sherd. Both long sides: c. 80 mm. Shortest side: 68 mm. Thickness of ware: 6 mm. Orange ware with buff core. No context recorded. *L NMGM: 1993.180.S77.

Plate 10.6:i (Reg. S.78) Triangular sherd. Two long sides: c. 97 mm. Shortest side: 46 mm. Thickness of ware: 8 mm. Orange/buff ware with buff core. No context recorded. *L NMGM: 1993.180.S78.

(Reg. 8). Sherd, shaped into lid or counter. Buff ware with whitish/green surface. Diameter: 22 mm. Thickness: 5 mm. [A5.2.3] *Man: 1974.3.

(Reg. 12). Sherd, shaped into lid or counter. Pinkish buff ware, one side looks like it has black/grey paint over complete surface. Diameter: 24 mm. Thickness: 6 mm. [A5.1.4a] *Kar.

(Reg. 19). Pottery counter, 45 mm at widest. Thickness: 10 mm. [B1.1.3] *Emory Univ. #not seen.

(Reg. 22). Sherd, rounded and shaped for use as a counter or lid. Reddish pottery, with a buff/grey core. Lime encrusted. Diameter: c. 30 mm. Thickness: c. 5 mm. [A4.1.3] *Ash: 1973.377.

(Reg. 122). Sherd of red pottery, shaped for use as a lid or counter. Diameter: 20 mm. Thickness: 6 mm. [B1.2.2c] *Man: 1974.7.

(Reg. 124). Sherd of dark red-brown pottery, shaped into lid or counter. Incised on the concave face is a cross made of fine strokes just reaching the edges. On the convex side are six irregularly spaced hollows apparently executed after firing. Diameter: 19 mm. Thickness: 3 mm. [A3.1.8, 'fallen plaster'] Man: 1974.8.

(Reg. 371). Pottery lid or counter. Diameter: 50 mm. Thickness: 5 mm. [C3.7.2] *Emory Univ. #not seen.

(Reg. 447). Sherd, shaped for use as a lid or counter. Very fine red ware. Not perfectly circular. Maximum diameter: 30 mm. Min. diameter: 26 mm. Thickness: 2–3 mm. [C12.2.9] *Man: 1974.52.

(Reg. 453). Sherd, shaped for use as a lid or counter. Pink/buff ware with gritty inclusions — one side is buff, the other is pinkish. A slight indentation in the centre of the pink side could be the beginnings of piercing. Diameter: 18 mm. Thickness: 6 mm tapering to 4 mm. [A1.25.6] *BM: 136079 (1974).

(Reg. 481). Sherd, shaped for unknown use. Oval in shape. Pottery, grey on one side, red on the other. Length: 22 mm. Width: 20 mm. Thickness: 5 mm. [A1.2.6] *ROM: 974.107.13.

(Reg. 544). Sherd, shaped for use as a lid or counter. Buff pottery with gritty inclusions, and red paint on one side. Diameter: c. 17 mm. Thickness: 5 mm, tapering to 3 mm. [B3.6.2] *BM: 136080 (1974).

(Reg. 643). Sherd, shaped for use as a lid or counter. Red pottery. Circular. Diameter: 23 mm. Thickness: 5 mm. [B3.4.3] *ROM: 974.107.40.

Plate 10.7:d (Reg. 668). Sherd, shaped for use as a lid/counter. Grey/buff ware. Diameter: 40 mm. Thickness: 7 mm. [A5.7.1] *Edin: 1976.603.

(Reg. 682). Three pottery lids/shaped sherds.
a). Buff ware with creamy slip on one side. Diameter: 70 mm. Thickness: 7 mm.
b). Pink/red ware with buff/grey core and large grits. Diameter: 60 mm. Thickness: 18 mm.
c). Dark pink/grey ware with grey core. Diameter: 54 mm. Thickness: 7 mm.
[B2.7.4] *Edin: 1976.606.

Plate 10.7:e (Reg. 782). Sherd, shaped for use as a lid or counter. Red ware with a buff/grey core and inner surface. Diameter: 40 mm. Thickness: 10 mm. [B7.1.2] *Dub: WM577.

(Reg. 796). Two sherds, shaped for use as lids or counters. a). Pink/red ware. Diameter: 42 mm. Thickness: 9 mm. b). Very roughly shaped. Grey ware with orange paint on one side. Diameter: 45 mm. Thickness: 9 mm. [B2.7.2] *Edin: a). 1976.616. b). 1976.617.

Plate 10.7:k (Reg. 797). Very thick sherd, shaped for use as a lid or counter. Grey ware. Diameter: 50 mm. Thickness: 16 mm. [B2.7.2] *Edin: 1976.618.

Plate 10.7:b (Reg. 850). Sherd, shaped for use as a lid or counter. Quite fine ware with deep grooves from wheel-



Plate 10.7: Pottery and stone discs

manufacture. Buff ware with buff/grey core. Diameter: 35 mm. Thickness: 6 mm. [B3.6.12] *Dub: WM578.

Plate 10.7:h (Reg. 860). Sherd, shaped for use as lid or counter. Slightly unusual shape suggests it may have been made from the base of a lamp. Buff/orange ware. Diameter: 30 mm. Thickness: 6 mm. [B7.1.2] *Edin: 1976.625.

(Reg. 906). Sherd, shaped for use as a lid or counter. Buff/grey ware. Diameter: 45 mm. Thickness: 12 mm. [B7.4.5] *Edin: 1976.628.

(Reg. 933). Sherd, shaped for use as a lid or counter. Buff/orange ware with red paint remaining on one side. Diameter: 30 mm. Thickness: 5 mm. [D3.6.2] *Edin: 1976.630.

(Reg. 967). Sherd, shaped for use as a lid or counter. Pink/red ware. Diameter: 52 mm. Thickness: 12 mm. [A20.6] *Edin: 1976.631.

(Reg. 996). Sherd, shaped for use as a lid or counter. Red ware. Diameter: 40 mm. Thickness: 10 mm. [B6.3.6] *Edin: 1976.635.

(Reg. 1005). Oval, pierced disc or counter made from a sherd of rough grey ware. Possibly intended as an ornament for a necklace. Length: 28 mm. Width: 25 mm. Diameter of central hole: 7 mm. on one surface, 4 mm. on the other. Thickness: c. 7 mm. [B2.10.2] *L NMGM: 1993.180.19.

(Reg. 1008). Sherd, shaped for use as a lid or counter. Grey ware, with a creamy white slip on one side. Diameter: 50 mm. Thickness: 8 mm. [B3.6.+] *Edin: 1976.637.

(Reg. 1163). Sherd, shaped for use as a lid or counter. Pink/buff ware with a white slip visible on one side. Oval in shape. Length: 17 mm. Width: 14 mm. Thickness: 6mm. [B7.4.8] *L NMGM: 1993.180.20.

(Reg. S.25). Heavy sherd, possibly shaped for use as a lid. Diameter: 47 mm. maximum, 36 mm. minimum. Thickness: 15 mm. [A13.1.3] *L NMGM: 1993.180.129.

(Reg. S.26). Sherd, shaped for use as a lid or counter. Diameter: 27 mm. Thickness: 8 mm. [A13.1.3] *L NMGM: 1993.180.130.

Stone Discs

(Reg. 7). Three stone discs.

1) Diameter: 55 mm.
2) Diameter: 30 mm.
3) Diameter: 20 mm.

[A5.1.4] *Emory Univ. #not seen.

(Reg.137). Unevenly cut, chalky limestone disc. Diameter: 68 mm. Thickness: 18 mm. [A7+] *Kar.

(Reg. 289). Disc or counter in grey/yellow stone. Flat base with convex top. Chipped on one edge. Diameter: 20 mm. Thickness: 5 mm. [C12.2.1] *L NMGM: 1993.180.24.

(Reg. 424). Shaped limestone disc/counter. Creamy/buff stone. Diameter: 50 mm. Thickness: 7mm. [C1/C2 cleaning] *Edin: 1976.589.

Plate 10.7:c (Reg. 454). Disc/counter, made of creamy buff stone, probably limestone. Diameter: 20 mm. Thickness: 9 mm, tapering to 5 mm. [A1.5+] *Edin: 1976.590.

(Reg. 665). Quartz stone disc, possibly used as a polisher. One side chipped. Diameter: 45 mm. Thickness: 10 mm. [B6.1.1] #not seen.

(Reg. 813). Small circular stone counter. Pink tinge on edge. Lense-shaped. Diameter: 25 mm. Thickness: 13 mm. [B7.1.2] #not seen.

Plate 10.7:f (Reg. 823). Shaped limestone disc/counter. Creamy buff stone. Diameter: 56 mm. Thickness: 12 mm. [B2.8.1] *Edin: 1976.624.

(Reg. 1261). Fragment of a counter or weight in slate. Flat edge. Existing diameter: 30 mm. Thickness at centre approximately: 11 mm, reducing to 5 mm at edge. [C20.3.2] #not seen.

(Reg. 1265). Counter or weight. Approximately half remains. Streak of quartz visible in break. Edges cut. Diameter approximately: 53 mm. Thickness at centre approximately: 13 mm. Thickness at cut edge approximately: 4 mm. (cf. 1261) [C20.3.2] *Brussels. #not seen.

Wood

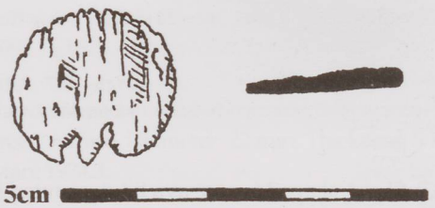


Plate 10.8: Reg. 399, wood disc

Plate 10.8 (Reg. 399). Wood disc or counter. Very fragile and worn. Broken and repaired. Diameter: 22 mm. Thickness: 2 mm. [A1.24.1] *Emory Univ. #not seen.

Bone and ivory

Ivory

Plates 10.9:a (Reg. 18). Ivory pin/bobbin/spindle? Very slightly curved with lattice design around top. Top is chipped on one side in the place where a thread notch would be on a spindle: for comparisons see Beth Shan (James 1966: fig. 114:1); Sarepta (Pritchard 1975: fig. 59:5); also, Megiddo (Loud 1948: pl.197:4,VII B and 197:13,VI). Length: 118 mm. Diameter: 7mm. tapering to 5 mm. [B1.1.3] *Kar.

Plate 10.10 (Reg. 85). Curved strip of elephant ivory — had been shattered, but repaired. Slight grey/black stain on one side. Maximum length: 69 mm. Maximum width: 14 mm. tapering to 9 mm. Depth: c. 13 mm. [B7.4.5] *Ash: 1975.412.

Plate 10.11 (Reg. 529). Small circular counter, has been split and glued back together. 'Daisy' pattern with 12 petals incised on top surface. Registered as bone, but is possibly elephant ivory. For comparisons see Tawilan (Bennett and Bienkowski 1995: 301, fig. 9.12:11); Nimrud (Barnett 1975: pl. XXIX s.46 and Herrmann 1986: pls 226–7); Tell Beit Mirsim (Albright 1941–43: pl. 60:13); Hasanlu (Muscarella 1980: p.128:248). Diameter: 17 mm. Thickness: c. 3 mm. [B3.6.2] *ROM: 974.107.19.



Plate 10.9:a: Reg. 18, ivory spindle?
b: Reg. 127, worked bone point
c: Reg. 26, fragment of a bone pin/bobbin?



Plate 10.10: Reg. 85, curved strip of elephant ivory

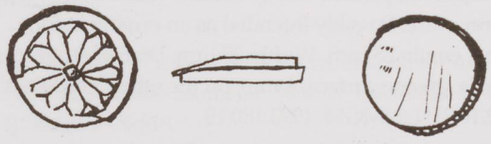


Plate 10.11: Reg. 529, ivory counter with 'daisy' pattern



Plate 10.12: Reg. 828, ivory wedge

Plate 10.12 (Reg. 828). Ivory wedge, probably elephant ivory. The widest edge has a raised ridge, possibly the remains of a decorative design. The whole wedge has a smooth patina. Length: 47 mm. tapering to c. 42 mm. Width: c. 13 mm. Thickness: 8 mm. tapering to 1 mm. [B2I.8.2] *BM: 136075 (1974).

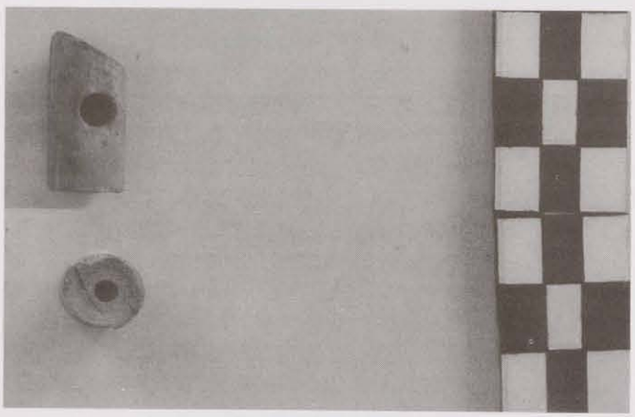


Plate 10.13: Reg. 1085, ivory object

Plate 10.13 (Reg. 1085). Ivory object, broken and repaired — had split longitudinally into strips. Appears to be a component of something else, but is apparently complete in itself. Cylindrical, with wedge-shaped top and holes pierced into side and base — perhaps the end fitted onto something else? Maximum length: 24 mm. Diameter: 11 mm. Diameter of side hole: 5 mm. Diameter of end hole: 3 mm. [B3.20.5] *L NMGM: 1993.180.31.

(Reg. 1216). Ivory disc with central hole. One surface is flat, the other slightly domed. Has been shattered — three parallel breaks — but glued together. Diameter: 24 mm. Maximum depth: 4 mm. Diameter of central hole: 3 mm. [C11.1.19] *Kar.

Bone

Plate 10.9:c (Reg. 26). Fragment of a bone pin/bobbin? Pierced at the top. Decorated with two pairs of incised rings on either side of the pierced hole. Was split longitudinally, but repaired. Some smooth patina remains, but some lime encrustation. Existing length: 32 mm. Diameter: 8 mm., tapering to 7 mm. Diameter of hole: c. 2 mm. [B1.1.3] *Ash: 1973.379.

Plate 10.9:b (Reg. 127). Worked bone point. Broken on one side. (Ivory?) Existing length: 81 mm. Thickness: 4 mm. [C2.1.1] *Emory Univ. #not seen.



Plate 10.14:a: Reg. 270, bone spatula
b: Reg. 317, bone spatula
c: Reg. 295, two pieces of worked bone

Plate 10.14:c (Reg. 295). Two pieces of worked split bone — possibly bird bone. Points broken in storage. Slightly lime encrusted. Maximum existing lengths — complete: 55 mm. and 52 mm. Maximum existing widths: 11 mm. and 10 mm. [B3.1.3] *Ash: 1973.399.

(Reg. 423). Fragment of split, worked bone. Broken into two pieces. One side is rough (inside of bone) the other smooth, possibly polished. Smooth surface is pitted and marked by grooves, possibly caused by worms/insects. Length: 90 mm. (20 mm. + 70 mm.). Width: 16 mm. [C1.4.3] *L NMGM: 1993.180.28.

(Reg. 862). Fragment of split worked bone, stained walnut brown. One side has been rough, the other polished and patinated. Maximum length: 34 mm. Width: 12 mm. Thickness: 4 mm. [A1.34.2] *L NMGM: 1993.180.37.

(Reg. 865). Vertebra from a large sea fish. One side has been broken off. Hole in centre. Creamy yellow in colour. Length, with broken piece attached: c. 65 mm. Central piece: c. 13 mm. in diameter, 14 mm. deep. [B7.1.2 pit] *BM: 136081B (1974).

(Reg. 870). Bone needle, possibly bird bone. End missing. Existing length: 70 mm. Maximum width: 3 mm., tapering to a point. Slightly encrusted. [B2.7.27] *Edin: 1976.626.

(Reg. 991). Jaw of a fish, unmodified. Length: 33 mm. Width: 47 mm. [B2.7.4] *Kar.



Plate 10.15: Reg. 1070, pierced astragalus

Plate 10.15 (Reg. 1070). Astragalus from sheep or goat. Pierced with three holes on one side, one on the other. Possibly used as a gaming piece or bead. May have been polished. See also Jerusalem (Eshel 1995: 154, fig. 32:19). Length: 31 mm. Width: 20 mm. Depth: 17 mm. Diameter of holes: 5 mm. [B3.20.5] *ROM: 975.416.50.

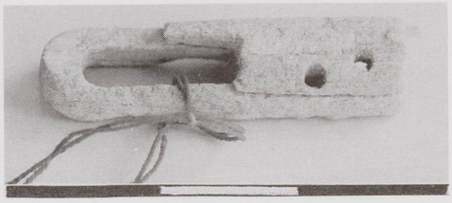


Plate 10.16: Reg. 1251, section of ivory or bone bobbin?

Plate 10.16 (Reg. 1251). Section of a loom bobbin? Appears to be ivory, but could be bone. Surface is pitted and eroded. Length: 52 mm. Width: 15 mm. Depth: broken, but 10 mm. existing. [C21.3.13] *Kar.

INLAY

Plate 10.17 (Reg. 631). Piece of bone inlay with guilloche design. For comparisons see Nimrud, Burnt Palace (Herrmann 1986: 27); Nimrud (Barnett 1975: CXIV–CXV); Hasanlu (Muscarella 1980: 128:247). Length: 45 mm. Width: 14 mm. Thickness: 3 mm. [B2.7.4] *DoA. #not seen.

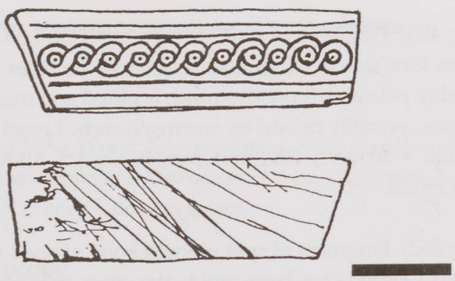


Plate 10.17: Reg. 631, bone inlay with guilloche design

Plate 10.18 (Reg. 676). Piece of bone inlay with lotus design, broken along one edge. Unbroken edges smooth. Reverse scored with irregular lines. For similar representations of flowers, see Lachish (Tufnell 1953: pl. 63:28) and Nimrud (Herrmann 1986: pls 224 and 225). Maximum remaining width: 16 mm. Maximum thickness: 2 mm. [B2.7.5] *Ash: 1974.289.

(Reg. 907). Fragments of bone inlay. Twenty-five pieces, some with carving. Traces of burning on some pieces. [B7.4.5] #not seen.

SPATULAE

For comparisons see Tawilan (Bennett and Bienkowski 1995: 83, fig. 9.11, including discussion); Beth Shan (James 1966: fig. 114:9); Hazor (Yadin *et al.* 1961: pl. CLXXXVIII:25,26,27); Jerusalem (Eshel 1995: 154, fig. 32:2, 22); Lachish (Tufnell 1953: 397, pl. 63:22–27).

Plate 10.14:a (Reg. 270). Bone spatula with smooth patina. Cracked, but complete. Slight lime encrustation on one side. Length: 60 mm. Maximum width: 21 mm. [B3.3.10] *Ash: 1973.395.



Plate 10.18: Reg. 676, bone inlay with lotus design

Plate 10.14:b (Reg. 317). Very thin piece of bone — has been the end of a spatula. Creamy coloured bone with open texture showing on one side. Existing length: 42 mm. Width: 23 mm. Thickness: 1 mm. [B3.2.17] *Kar.

(Reg. 696). Very thin bone spatula, polished on both sides. Damaged — split longitudinally. Length: 90 mm. Width: c. 8 mm. Thickness: 1 mm. [B3.7.7] *ROM: 974.107.49.



Plate 10.19:a: Reg. 1051, bone spatula
b: Reg. 1049. bone spatula with pointed end

Plate 10.19:b (Reg.1049). Bone spatula with pointed end. Complete, though repaired. Has been polished, but now quite eroded and encrusted. Length: 90 mm. Maximum width: 20 mm. Thickness: 3 mm. [C14.1.9] *Edin: 1976.640.

Plate 10.19:a (Reg. 1051). Fragment of a very thin bone spatula (now broken in half). One side is smooth and polished, the other is rougher. Length: 62 mm. Width: 19 mm. at widest, tapering to 15 mm. before curving down to edge. Thickness: 1 mm. (cf. Reg. 696). [B3.20.4] *Amm.

See also: Discs and Counters; Regs 349, 319, 854, 398, 351, 155, 455, 459, 1208 for shell discs originally registered as bone or ivory; and Reg. 252: incised drawing on shell — originally registered as bone.

Glass and crystal

Rock crystal

(see also Reg. 1067, rock crystal disc)

(Reg. S.01). Small bag of rock crystal fragments, largest: 38 mm. x 30 mm. Ten of these appear to have been worked, especially one which is semi-circular, with apparently retouched 'blade' edge: 26 mm. x 20 mm. Thickness: 6 mm. tapering to sharp edge. [D2.8.2] *L NMGM: 1993.180.106.

(Reg. S.03). Piece of rock crystal. Six-sided cross-section. Length: 99mm. Diameter: c. 50 mm. [A9.12, cleaning] *L NMGM: 1993.180.108.

(Reg. S.04). Two pieces of rough rock crystal. 90 mm. x 34 mm. x 41 mm. 69 mm. x 66 mm. x 35 mm. [C+ eastern edge] *L NMGM: 1993.180.109.

Glass

Plates 10.20 and 10.22 (Reg. 125). Fragment of a glass bracelet. Roman? Body of bracelet is translucent green with twisted-effect two-tone grey edging on both sides. Almost triangular in section. Existing length: 35 mm. Width: 13 mm. Thickness: 7 mm. [C1.1.1] *Ash: 1973.386.



Plate 10.20: Reg. 125, fragment of a glass bracelet

Plates 10.21:a–c and 10.22 (Reg. 126). Fragments of three glass bracelets, similar to Reg. 125.

a) Body of bracelet, green with black backing. Edging, paler green with black twists. Existing length: 39 mm. Width: 10 mm. Thickness 5 mm.
b) Body of bracelet, pale translucent green. Edging, twisted light and dark grey. Existing length: 19 mm. Width: 11 mm. Thickness: 5 mm.
c) Body of bracelet, bright translucent blue. Edging, dark blue twisted with pale, opaque blue/grey. Existing length: 18 mm. Width: 12 mm. Thickness: 6 mm. [C1.3.1] *Ash: 1973.387 a. b. c.

Plate 10.23 (Reg. 173). Glass bottle, broken in antiquity: only part of base and body extant. Circular wavy decoration in grey, yellow, blue, green and white. Compare pre-Roman sandcore

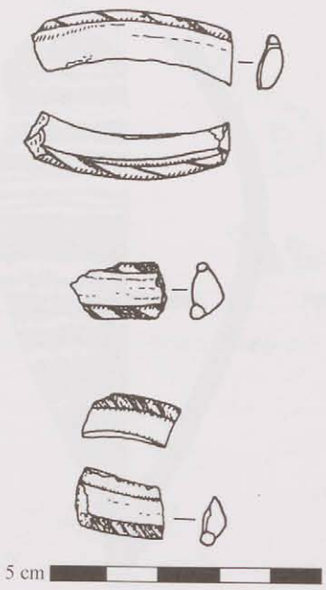


Plate 10.21:a–c: Reg. 126, fragments of glass bracelets



Plate 10.22: Photographs of Regs 125 and 126

glass vessels (second to first centuries BC); (Sotheby's sale catalogue, London, Fri. 20th Nov. 1987, nos 5, 9 and 12). Length: 135 mm. [B3.2.6] *DoA. #not seen: possibly at Yarmouk University.

(Reg. 863). Two fragments of iridescent glass — possibly Roman.

1) Curved, possibly part of a small scent bottle? Very pale, turquoise green/yellow with a slight pink hue. Maximum length: 15 mm. Maximum width: 11 mm. Thickness: 3 mm.
2) Very thin, triangular piece of glass. Pale green/pink. Length: 16 mm. Width: 18 mm. Thickness: 1 mm. [M2.2.12] *L NMGM: 1993.180.32.



Plate 10.23: Reg. 173, fragment of a glass bottle

(Reg. 868). Small, squarish piece of glass. Iridescent — whitish/green/pink/lilac/gold. Very thin and slightly curved. Possibly Roman, from a bottle or dish. Length: 14 mm. Width: 14 mm. Thickness: c. 1 mm. Slight lime encrustation. [M2.1.13] *L NMGM: 1993.180.10.

(Reg. 966). Fragments of ribbed glass, possibly part of Reg. 173. [B3.2.5] *DoA. #not seen.

(Reg. S.02). Piece of pale green, slightly iridescent glass. Appears to have been worked and retouched into a blade, reminiscent of a chipped stone tool. Length: 28 mm. Width: 11 mm. tapering to 8 mm. Thickness: 2 mm. [C3.3.2d] *L NMGM: 1993.180.107.

(Reg. S.05). Rim sherd from glass bowl. Bowl has had vertical decorative ridges around outside. Possibly Roman. Green/gold/pink/turquoise glass. Sherd roughly triangular. Length: 24 mm. Width: 26 mm. Thickness: 4 mm. tapering to 1 mm. at rim. [B9.3.7] *L NMGM: 1993.180.110.

(Reg. S.06). Triangular sherd of iridescent white/green glass. 34 mm. x 32 mm. x 25 mm. Thickness: 2 mm. [A1.23.3] *L NMGM: 1993.180.111.

(Reg. S.07). Fragments of iridescent dark blue/green/purple/gold glass. Largest piece: 36 mm. long, 15 mm. wide. Thickness: 1 mm. [B7.4.20] *L NMGM: 1993.180.112.

(Reg. S.08). Piece of bracelet, or small rim sherd. Pale green iridescent glass with four dark blue stripes. Width at rim: 7 mm. Length: 8 mm. Thickness: 2 mm. tapering to 1 mm. [C3.7.1] *L NMGM: 1993.180.113.

(Reg. S.09). Small fragment of pale green/pink iridescent glass. Part of a raised decorative pattern on one side. Approximately square in shape: 12 mm. x 13 mm. tapering to 10 mm. Thickness: <1 mm. [C20.2.1] *L NMGM: 1993.180.114.

(Reg. S.10). Iridescent glass rim sherd — dark blue/green/gold. Lime encrusted on one side. Width at rim: 11 mm. Thickness: 3 mm. at rim, tapering to 1 mm. [B4.1] *L NMGM: 1993.180.115.

(Reg. S.12). Two fragments of pale coloured white/pink/gold iridescent glass. Largest piece: 35 mm. x 31 mm. x 30 mm., triangular sherd. Thickness: 2 mm. Smallest piece: Length: 14 mm. Width: 10 mm. tapering to 3 mm. Thickness: 2 mm. [B5.1.29 *L NMGM: 1993.180.117.

(Reg. S.13). Small fragment of yellow/red glass, with red smears in body of glass. Sherd is roughly square. 11 mm. x 11 mm. Thickness: 2 mm. tapering to <1 mm. [A13.1.6] *L NMGM: 1993.180.118.

(Reg. S.14). Fragment of very thin, curved glass. Almost serpentine in shape. Iridescent, pale green/pink. Measurements: 22 mm. x 20 mm. x 20 mm. Thickness: 1 mm. [B2.6.3] *L NMGM: 1993.180.119.

Cf. also Reg. 1067 — Discs and Counters, and glass beads Regs 1249, 170, 1258, 805, 947, 1026, 1260 and 855.

Faience

Plate 10.24 (Reg. 851). Rim sherd of Egyptian faience chalice. Fragment almost triangular in shape, repaired. Surface quite badly eroded, but the remains of blue/green surface still visible, together with traces of brown linear colouring in the deeply incised design on the exterior. The edges are very smooth, so the chalice was obviously broken in antiquity. Previously discussed by Milward (1975); however, her suggested translation was based on an erroneous drawing. The original excavation drawing (Plate 10.24) is more accurate. It is possible that the characters on the right side of the fragment represent *d* over *i/y*, in which case the inscription would be syllabic writing, but too fragmentary to read.[3] Existing measurements: 30 mm. at rim, tapering to 1 5mm. Length: 20 mm. Thickness: 5 mm. [Removal of baulk: B6 and B8.1.2] *BM: 136071 (1974).

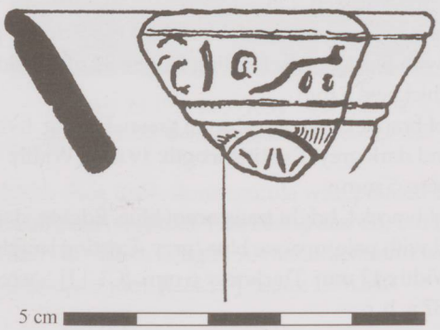


Plate 10.24: Reg. 851, fragment of faience chalice

[3] I thank Professor K.A. Kitchen for discussing this inscription with me.

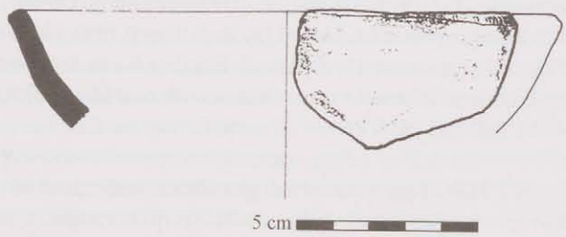


Plate 10.25: Reg. 688, faience sherd

Plate 10.25 (Reg. 688). Faience sherd. Surface shows traces of green colour with pink/brown hue. Length: 60 mm. Width at widest: 39 mm. [B2.7.2] *L NMGM: 1993.180.1.

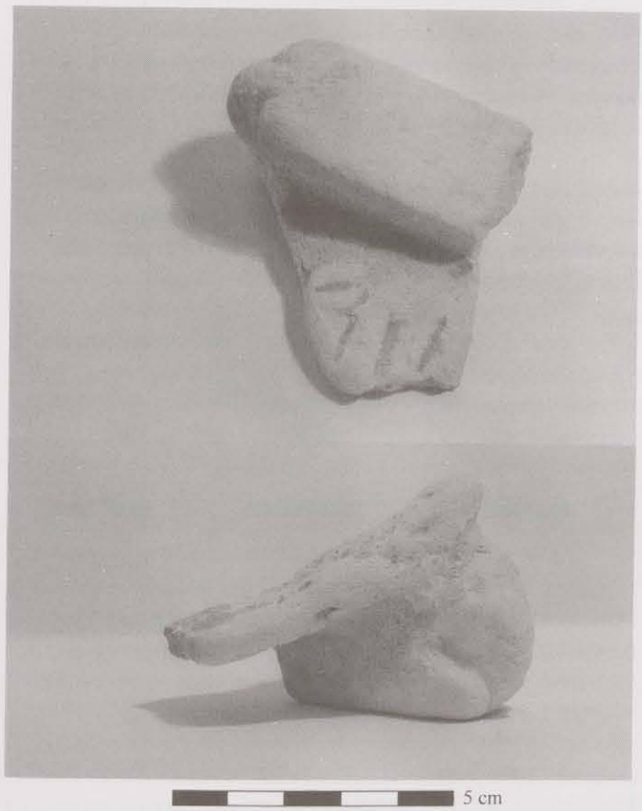


Plate 10.26: Reg. 998, faience fragment with incised decoration

Plate 10.26 (Reg. 998). Fragment of faience object with incised decoration. White, with traces of green surface still visible. Possibly part of base of dish. Existing measurements: 52 mm. x 34 mm. Height: 45 mm. [B2.7.4] *ROM: 975.416.19.

(Reg. *S.28). Fragment of faience matrix. Small traces of yellow/green glaze visible. Two grooves run along length of fragment. Length: 25 mm. Width: 13 mm. Thickness: 5 mm. [B1.2.2c] *L NMGM: 1993.180.132.

Beads

Plate 10.27 (Reg. 2). Three small perforated stones, possibly used as beads. Stones are very irregular, chalky, unpolished limestone. Not evidently shaped, but decorative objects. [+, top of well.] *Man: 1974.1.

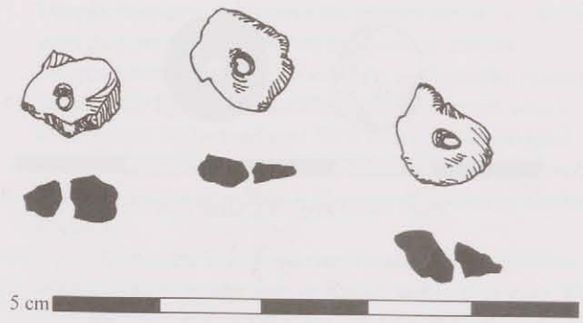


Plate 10.27: Reg. 2, perforated stone beads

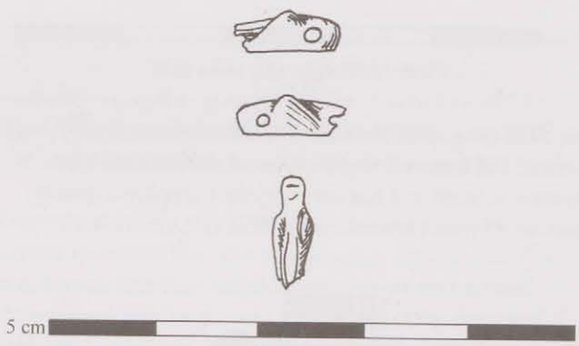


Plate 10.28: Reg. 28, coral bead

Plate 10.28 (Reg. 28). Small broken bead. Appears to be made of coral. Has been shaped — possibly as a snake's head. Possible parallel shape at Hazor (Yadin *et al.* 1961: pl. CCII:21). Existing length: 10 mm. Width: 3 mm. Depth: 4 mm. [A5.3.6] *Edin: 1976.579.

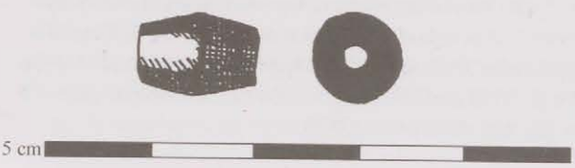


Plate 10.29: Reg. 36, barrel-shaped bead

Plate 10.29 (Reg. 36). Barrel-shaped bead. Pierced through centre. Sard (chalcedony). Length: 10 mm. [B1.2.2] *Emory Univ. #not seen.

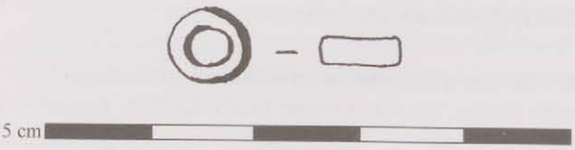


Plate 10.30: Reg. 170, glass bead

Plate 10.30 (Reg. 170). Bead made of opaque glass-like material. Turquoise in colour — could be faience, or even stone? Large central hole. Diameter: 4 mm. Depth: 2 mm. Diameter of central hole: 2 mm. [B3.2.2] *Kar.

Plate 10.31 (Reg. 283). Bead, in deep orange-red stone, most probably carnelian. Pierced through centre. Circular, but slightly uneven in shape. Diameter: c. 11 mm. Thickness: c. 9 mm. Diameter of central hole: 1 mm. [A1.22.14] *Ash: 1973.397.

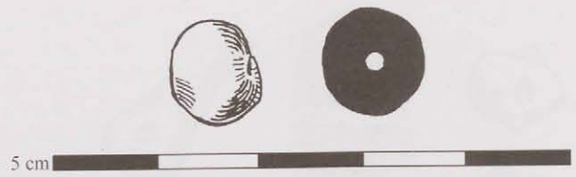


Plate 10.31: Reg. 283, stone bead

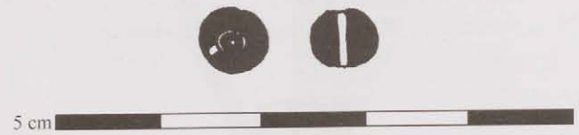


Plate 10.32: Reg. 632, stone bead

Plate 10.32 (Reg. 632). Dark brown, smooth stone bead. Almost spherical, but flattened slightly around pierced hole. Stone is extremely smooth and has very slightly transparent quality. Diameter: 13 mm. Depth: 11 mm. [B6.4.1] *Man: 1974.69.

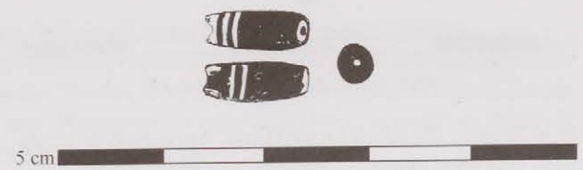


Plate 10.33: Reg. 734, agate bead

Plate 10.33 (Reg. 734). Agate bead, cigar-shaped and longitudinally pierced. Predominantly black, with grey/buff/brown striations in the stone at each end. Very smooth and polished. For similar examples see Tell Halaf (Oppenheim 1962: taf. 31:25); Megiddo (Lamon and Shipton 1939: pl. 90:54 and 55). Length: 25 mm. Diameter at centre: 9 mm. [B7.1.1] *ROM: 974.107.55.

(Reg. 805). Tiny iridescent glass bead. Surface has a dimpled effect. Pale green/pink/silver in colour. Diameter: 5 mm. Depth: 2 mm. Diameter of central hole: >2 mm. [B8.2.2] *ROM: 974.107.64.

(Reg. 855). Minute bead of cylindrical yellow glass, cut asymmetrically. Pierced. Length: 5 mm. Width: 4 mm. [M2.1.11] *L NMGM: 1993.180.36.

(Reg. 921). Complete bead in carnelian? Ovoid in shape. Length: 15 mm. Thickness: 8 mm. [A20.6.6] *DoA. #not seen.

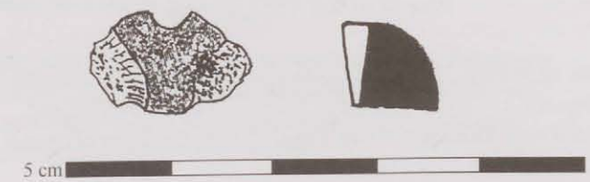


Plate 10.34: Reg. 943, amber bead

Plate 10.34 (Reg. 943). Fragment of a bead, made of a dark glassy, opaque material — amber? Broken longitudinally, and in section — dark brown in colour. Has had a design carved into it. Possible parallel at Deve Hüyük (Moorey 1980: 124, fig. 22:523: amber glass bead with 'eyes'). Existing measurements: Length: 16 mm. Width: 11 mm. Thickness: 8 mm. [A5.11.6] *L NMGM.1993.180.35.

(Reg. 947). Half of an opaque blue glass bead, with traces of yellow and turquoise still visible. Surface is quite rough. Diameter: 9 mm. Depth: 7 mm. [A20.6.7] *ROM: 975.416.25.

(Reg. 961). Small bead in carnelian. Biconical in shape and pierced through. Worn and chipped on one edge and slightly flattened on one cone. Width: 6 mm. Thickness: 5 mm. [A20.6.8] #not seen.

(Reg. 1026). Complete, but crumbly iridescent dark blue/pink/silver/green glass bead, with dimple effect on surface. Diameter: c. 10 mm. Depth: c. 5 mm. Diameter of central hole: 3 mm. [B6.3.20] *ROM: 975.416.25.

(Reg. 1249). Iridescent blue glass bead. Varies from dark to pale blue. Quite encrusted and chipped. Maximum diameter: 8 mm. Depth: 5 mm. Diameter of central hole: 1 mm. Cf. Reg. 1258 [C21.1.30] *Kar.



Plate 10.35: Reg. 1258, glass bead

Plate 10.35 (Reg. 1258). Glass bead with angular shape. Very iridescent, with blue/green/white/gold all visible in glass. Maximum diameter: 9 mm. Depth: 7 mm. Diameter of central hole: 3 mm. [C11.4.3] *Kar.

(Reg. 1260). Tiny, dark blue glass bead. Diameter: 3 mm. Depth: less than 2 mm. [C25.1.3] *Kar.

Terracotta figurines

The excavations at Busayra produced an assemblage of anthropomorphic and zoomorphic figurines which at the time were without parallel. They are all of types well known in Palestine and Transjordan, figurines of a naked pregnant female holding her breasts, male figurines and animal figures, usually horses and bulls. However, most of them did not appear to have the same character as other figurines of the same types which had previously been published, indeed they appeared to belong to a different artistic 'school'. For example, many of the figurines from Busayra have applied eyes and some of the horses have spectacular applied trappings. It is important to note, however, that although the Busayra figurines do have a 'feel' of being part of a homogeneous group, they are not all made by the same method or represented with identical features, and it is inevitable that one or two examples will not conform to any generalised statement made about the assemblage as a whole.

Many of the anthropomorphic and zoomorphic figurines were discovered in Area B, in a deposit which was originally identified as a dump (Bennett 1983: 11); however, this area is now thought to represent administrative, residential and storage facilities (see Chapter 5). Part of Area D, which represents domestic architecture similar to that uncovered in Area B, also produced a number of zoomorphic figurine fragments.

Anthropomorphic figurines

At first sight it is extremely difficult to make a confident identification regarding the gender of individual human figurines. For example, heads such as Regs 747 and 1003 do not appear to be overtly of either sex, while the features of Reg. 109 are so stylised that they cannot be positively identified. However, when the assemblage is considered as a whole, and individual examples are compared with groups of parallels, it is hoped that the following identifications will be viewed as the most feasible.

Female figurines

Where the relevant part of the body remains (there are a number of female heads without bodies), they are without exception naked and pregnant with both hands held to the breasts. None of the examples from Busayra are holding babies or tambourines, and none have outstretched arms. The bodies of the figurines are solid and appear to have been made in a deep mould. They are naturalistically modelled and care has been taken to represent the division of the arms from the torso, the legs from each other, and to represent the bulge of the stomach as it tapers to meet the groin, although they are not particularly detailed and the cumulative effect is impressionistic.

The heads of the female figurines share the impressionistic appearance of the bodies; despite many of them having apparently applied eyes and an attempt to sculpt the cheeks and mouth, the details appear to have been blurred by careful smoothing (e.g. Regs 969, 1003, and 747), alternatively, this could be the way they looked when turned out of the mould. They are often represented wearing a shoulder-length head covering, vaguely similar in shape to an Egyptian wig but not Egyptian in character, most probably explained as a lightweight cloak with a hood (e.g. Regs 285, 298, 457, 656, 747, 969). The most obvious exceptions to this are: Reg. 637, who is wearing a much squarer, Egyptian-style wig or head-dress; Reg. 190, who appears to have hair represented by incised lines; and Reg. 969, who appears to be wearing a plain coronet-shaped head-dress on top of the hood or cloak.

There is no single feature which sets these female figurines apart from those of the surrounding territories; it is the combination of specific attributes which does so:

- The figures are mould-made.
- The body is naturalistically modelled, with both legs represented.
- Every example holds both hands to cover the breasts.
- Every example is represented as pregnant.
- Most of the figures have protruding round eyes which give the impression of being applied but may be from the design of the mould.
- Despite frequent abrasion of the surface details, it can be seen that (on most examples) the features had an impressionistic appearance which is aesthetically pleasing.
- Most of the figures are wearing a cloak or hood, which covers most of the forehead, then drapes down to (and perhaps below — see Reg. 969) the shoulders.
- The ears are never visible — they are obscured by the head-covering.
- The colour of the ware is predominantly buff, sometimes with a pink or orange tone, and often with a grey core. There are a few exceptions to this, for example, Regs 457, 749, 776 and 965. It may be significant that Regs 776 and 965 have been noted as unusual examples (see above and below).

These figurines would probably all fit into Daviau's Type A1 (Daviau 2001b: 318) with regard to their method of manufacture; that is, possibly intended to be free-standing, 'formed in high relief with little or no detail on the back', although there are differences in details (see parallels, below).

Despite having the feel of being a coherent assemblage, it does appear that more than one sub-group is represented. This could mean that they had different uses or represented different subjects, or it could simply reflect the output of different workshops. The features which may indicate separate groups are as follows:

A The 'grotesque' group: Regs 637, 190 and 776 have eyes represented by heavy incision which gives a 'cowrie' effect.
B The heads with naturalistic faces and 'hooded' head covering: Regs 656, 747, 285, 298, 457 and 1003 which, if they belong to the same type as Reg. 969, came from naturalistically modelled bodies similar to Regs 765, 749, 928 and 627.
C Reg. 110, which is a naturalistic headless body as B above, but appears to have side locks which represent natural hair.
D Reg. 98, figurine head, eyes represented by a more almond-shape than those of B, and with a head-covering of a slightly more square, 'Egyptian' shape.
E Reg. 965, part of a torso and one arm. In the same pose as the other female figurines, but decorative lines of black paint remain. Also, the separation of the fingers is represented, unlike the other examples which all have cupped hands held across the breasts.
F Regs 1125 and 648, two fragments which consist of the legs only. They seem to be shaped almost like Egyptian *ushabtis*. However, as none of the other examples have the lower legs remaining, it is possible that this was a common shape.

It is impossible to make any general statements about complete figures, because none survive. It is reasonable to assume that the disembodied heads belonged to the headless figures, but with the collection scattered among many museum collections, it is not possible to make any attempts to match them with each other. The most complete examples have all been noted as exceptional:

Reg. 637 — noted as being of grotesque style, with exaggerated genital area.
Reg. 776 — survives to elbows and just above the waist, also of grotesque style.

Reg. 969 — survives to hips, noted as having coronet-shaped head-dress on top of cloak.

With regard to the heads, they break off at precisely the place where one cannot tell whether or not the head-covering or cloak would have culminated in the 'side lock' effect seen on body fragment Reg. 110. However, from the evidence of Regs 457 and 285, which each have a partially surviving shoulder, it appears that the cloak or hood rests in front of the shoulders, giving a side lock effect similar, but not identical to Reg. 110, which does seem to represent hair.

Problems of identification of female figurines

There have been numerous attempts to identify the meaning of the naked female figurines from the Levant (e.g., Pritchard 1943; see Kletter 1996: 10–27 for concise overview of discussions). Despite this, our knowledge remains limited regarding the nature of the individual goddesses in the first millennium BC, how they were worshipped and to what extent at any given time they could be identified with each other, or be interchangeable for different groups of worshippers. We do not even know for certain whether or not the figurines represent a divinity, or even if they all represent the same subject.

The term 'Astarte figurine' is inaccurate as it infers an identification which is unproven and is therefore misleading. Fragments of evidence, such as the Punic inscription from Zejtun (Frendo 1999: 24–35) which may read 'to Anat-Astarte' (if correct), may be helpful in showing that Anat and Astarte were worshipped as a composite goddess in the first millennium BC, but as far as the identity of the clay figurines from Transjordan are concerned, we are no wiser. Perhaps a more relevant clue is provided by the discovery of a scaraboid seal from Tawilan, which bears a design apparently incorporating a star and crescent, the emblems of the goddess Ishtar and the moon god Sin (Bennett and Bienkowski 1995: 79, 334, fig. 9.46). However, the discovery of a cuneiform tablet at Tawilan attesting to trading links with Harran, the centre of the cult of the god Sin, show that this idea must also be treated with caution as the seal may have originated there.

At present, no specific identity can be attributed with confidence to the female figurines from Busayra. Kletter has argued convincingly that the Judaean pillar figurines (JPFs) may represent Asherah (Kletter 1996: 80–81), although he is still justifiably cautious. If Kletter is right about the JPFs, does this mean that the Busayra figurines do not represent Asherah because they are undeniably different? Even this attempt to use 'negative evidence' cannot be relied upon, because we do not know whether or not the Edomites had parallel beliefs to the Judaeans whilst representing them artistically in a different way.

Kletter notes that 'Judean seals of the same period as the JPFs portray no comparable female figure' (1996: 81). However, at Busayra there is a high quality seal (Reg. 951) which portrays a figure flanked by scorpions. This could be another clue pointing to the possibility that the naked female holding her breasts represented a different entity to that represented by the JPFs, and that her significance at Busayra was different to that of her counterpart west of the Wadi Arabah. It is also important to note that the figurines from Busayra are not noticeably similar to published figurines found in northern Transjordan. One specific difference is the almost complete absence of any representation of the ears on the figurines from Busayra. The only exception to this is Reg. 33, a bearded apparently male figurine head, which has small applied ears.

Unfortunately, the best source of information regarding religious and spiritual thought in the Near East in Iron II is the Old Testament, which by its nature concentrates on Israel and Judah with only passing references to the beliefs of neighbouring peoples. It is interesting that there is no mention of Edomite 'abominations' or criticism of Edomite cult within the Old Testament, but if this has any significance, the present state of our knowledge on the subject does not allow us to interpret it.

Pritchard suggested that the motif of the nude female holding her breasts appeared first in Mesopotamia in the Halaf period (Pritchard 1943: 49). However, one of the Pre-Pottery Neolithic B lime plaster statues from 'Ain Ghazal is a female seen to be holding her breasts in the same pose as the Busayra figurines (Tubb and Grissom 1994: 437–47, fig. 35, 'Reema'). The statues from 'Ain Ghazal are from late eighth-millennium and early seventh-millennium BC contexts, considerably earlier than the lime plaster statuary discovered at Jericho (nearer to the end of the seventh millennium BC) (Rollefson 1987: 31), so it would appear that the female figure holding her breasts is, if not indigenous to Transjordan, then adopted much earlier than previously thought. At such an early stage of cultural development, can the female figure from 'Ain Ghazal be given a name, or are we back to the suggestions regarding 'mother goddess' and 'fertility goddess'? Also, can the figure from 'Ain Ghazal be accepted as a direct ancestor of the Busayra figurines? With such a large time span between the two, is it possible that the same figure retained her position and continued to be represented for over six thousand years? An answer to these questions must surely lie with the function of the terracotta figurines.

If the figurines were indeed representations of a well-known goddess, the discovery of the 'Ain Ghazal figure strengthens the case for her identity to be linked to the attributes of the 'Queen of Heaven', a very early fertility or earth goddess. It is equally possible, however, that the qualities represented by that goddess were transferred and absorbed into later versions of these goddesses, such as Inanna or Ishtar, so that the people of the Iron Age worshipped a deity which was a direct descendent of the figure at 'Ain Ghazal, but whose identity and attributes may have evolved some way from the original. It could also be said that the concept of the naked female holding her breasts is such a simple, universal posture that it could have occurred independently at several times and places.

If the Busayra figurines may represent a figure with a history stretching back into the PPNB, it is equally possible that the terracotta figurines do not represent a deity known to us, or that they do not represent a deity at all. As noted earlier, one of the female figurines from Busayra is different to the other examples in that the genital area is exaggerated to a high degree (Reg. 637, Plate 10.45), leaving the viewer in no doubt as to the fertility aspect of the beliefs represented. Unfortunately no photograph exists, and the drawing is inaccurate (the body of the figurine has been shortened considerably and the pubic area has been

'censored'). The term 'fertility', though technically accurate in this context, is possibly misleading. If the figurines (or some of them) were taken into the house as a 'good luck talisman', or were a representation of a relevant helpful spirit in an attempt to increase one's chances of safely producing a live birth, then in the broader sense, that is connected to 'fertility', but the connotations which that word suggests can give the impression of some sort of base cult, which misses the point entirely. Living at a time when being female entailed repeated pregnancies throughout a life much shorter than we have come to expect, it would be understandable if they had developed belief mechanisms with which to deal with fears which are primitive, but remain universal. The question is, are any of these figurines connected to such mechanisms? This would be the sort of superstition-based belief which could co-exist outside the official religion of an area, possibly being passed down through generations of women who — without the benefit of modern medical science — dare not reject it. If the figurines were intended to help in this way, they need not have been kept in the house, but could have been put in temples or shrines to represent the woman, and offer prayers on her behalf (for evidence of similar uses for human figurines, see Postgate 1994: 177). Woolley's discoveries of similar figures in graves at Deve Hüyük could point to the figures being personal possessions buried with their owner, but being such a long way from Busayra, we cannot know if their use was the same at that site (Moorey 1980: 103, fig. 17:435–6). At Busayra, archaeological clues to their uses are lacking, but they were mould-made, which indicates a level of mass-production and therefore common usage by at least a section of the community. The presence of one of these figures amongst the finds at Horvat Qitmit would suggest that, whatever the meaning of the naked female holding her breasts, her image was acceptable within the belief systems represented at that shrine.

In our attempts to identify and ascribe a function to the female figurines from Busayra, we are seriously disadvantaged by a lack of relevant textual evidence (Postgate 1994: 176), so there is a strong temptation to look for analogies, a course of action not without pitfalls, especially when dealing with objects which could be religious in nature (for a useful list of possible analogies see Kletter 1996: 68–72). Renfrew warns: 'There is the danger here that we may carry to the enquiry our own culturally-encapsulated, and therefore perhaps stereotyped view of what religion is' (Renfrew and Zubrow 1994: 47). However, Hodder is more positive: 'At one level ethnographic knowledge simply contributes to the historical imagination, inciting new perspectives and alternative theories' (1991: 148). It is with this in mind that an analogy from our own time may be relevant, to remind us that in attempting to identify and classify the figurines we may be limited by our own imagination. In Christian countries today, there are many churches, hospitals, schools and homes which contain statues or figurines of a woman, sometimes with an infant, sometimes alone; she is not a goddess nor technically divine, but is still seen by many to be a powerful conduit of prayer to the divine. If we did not know the meaning of these figures or the identity of this woman, would we ever guess? Small amulets bearing the image of St. Christopher would be equally enigmatic. It is surely preferable to refrain from arguing one theory too strongly at the expense of others when we cannot know which, if any, is correct.

Catalogue of female figurines

'Impressionistic' heads with naturalistic faces and 'hooded' head-covering

(Closest parallels at Tawilan [Bennett and Bienkowski 1995] and Horvat Qitmit [Beck 1995])



Plate 10.36: Composite photograph, Regs 298, 299, 285 and 190



Plate 10.37: Reg. 285, female figurine head

Plates 10.36 and 10.37 (Reg. 285). Head of a female figurine wearing a head-dress. Very slight traces of red paint visible. Features modelled — eyes implied by incised lines. Solid construction. Buff ware with buff core. Slight lime encrustation. Length: 38 mm. Width: 36 mm. Depth: 23 mm. [B2.2.2] *Kar.



Plate 10.38: Reg. 298, female figurine head

Plate 10.36 and 10.38 (Reg. 298). Figurine head. Pinkish grey pottery. Height: 30 mm. Width at base: 25 mm. [B3.2.12] *Emory Univ. #not seen.



Plate 10.39: Reg. 457, female figurine head

Plate 10.39 (Reg. 457). Head of female figurine. Appears to be wearing wig or head-dress. Mould-made, with back not flattened. Pink/red pottery with buff core and glassy grits. Existing length: 47 mm. Width: 29 mm. Depth: 29 mm. [A1.10.1] *Man.

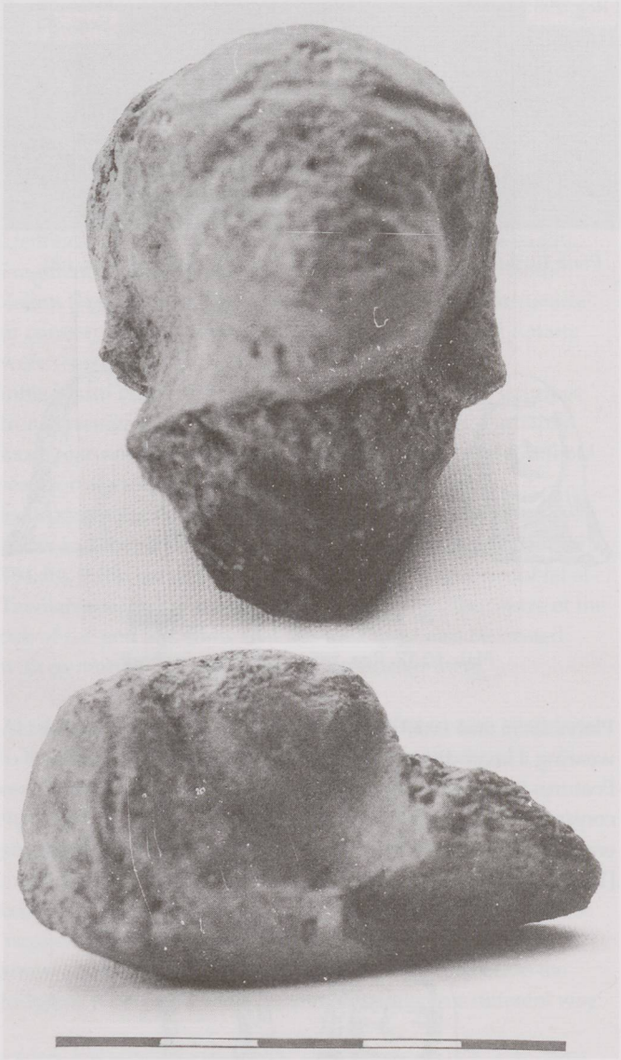


Plate 10.40: Reg, 656. female figurine head

Plate 10.40 (Reg. 656). Head of female figurine in solid pinkish clay with a grey core. Traces of black paint remain, depicting eyes. Cloak or head-dress/wig is represented by scored lines. Existing length: 55 mm. Width: 39 mm. Depth: 31 mm. [B2.7.4] *Ash: 1974.277.

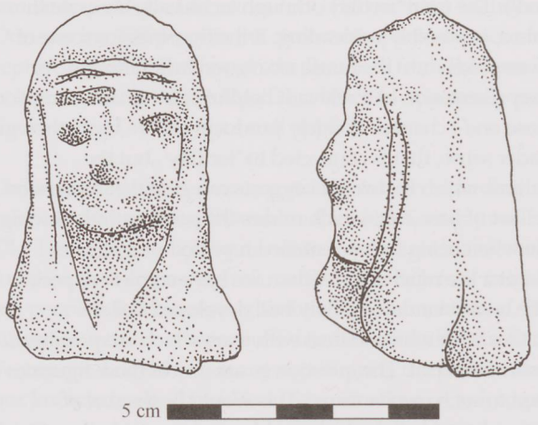


Plate 10.41: Reg. 747, female figurine head

Plate 10.41 (Reg. 747). Head of female figurine wearing a cloak or head-dress. Solid construction, probably made in a mould, indicated by ridge around side. Incised decoration. One eye damaged. Red/orange ware with dark grey core and chalky grits. Surface is quite rough. Existing measurements: Length: 71 mm. Width at head: 32 mm. Thickness at nose: 36 mm. [B6.2.5] *Edin: 1976.611.

Plate 10.42:a–e (Reg. 969). Top half of female figurine with hands holding breasts. Figure is pregnant and appears to be wearing a head-dress. Pink/buff ware with grey/buff core and glassy grits. Solid construction. Existing length: 70 mm. Width at elbows: 41 mm. Thickness at belly: 29 mm. [B6.3.1] *Kar.

Plate 10.43:a–c (Reg. 1003). Female figurine head. Solid construction. Pink/red pottery with grey core and small, glassy grits. Appears to be wearing a wig or head-dress. Nose is damaged. Large prominent eyes, possibly applied, but could have been moulded. Back of figure slightly flattened. Length: 42 mm. Maximum width: 33 mm. Depth: 27 mm. [B3.10.2] *ROM: 975416.34.

The 'grotesque' group (female)

Three of the female figurines from Busayra are of a noticeably more grotesque style than the others. It may be significant that one of these, Reg. 637, has an exaggerated genital area. This part of the figure is missing from the other two examples, but it is possible that these three belong to a sub-group, of a different category to the other female figurines. However, with such a small and incomplete sample this idea may be without foundation: these examples could easily represent the same subject as the other figurines, only in a more overt way; on the present evidence, we cannot know if these three were intended for a different use.

Plates 10.36 and 10.44 (Reg. 190). Head of female figurine. Traces of red paint remain on back of head and in incised hair. Solid construction — mould-made, flat 'plaque' shape. 'Coffee-bean' eyes possibly applied, but may have been moulded. Incisions depict wig, hair or head-dress. Existing length: 55 mm. Width: 44 mm. Maximum thickness: 23 mm. Buff surface on face — paint or slip. [B3.2.6] *Man: 1974.13.

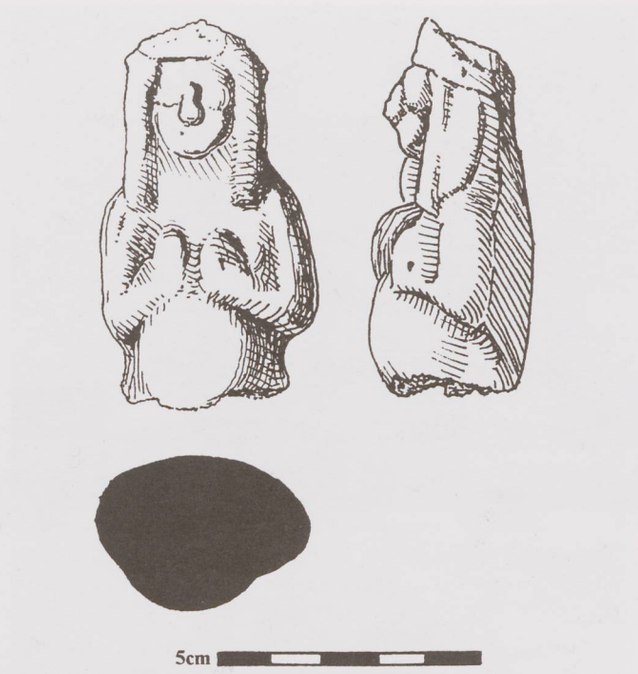




Plate 10.42:a–e: Reg. 969, top half of female figurine

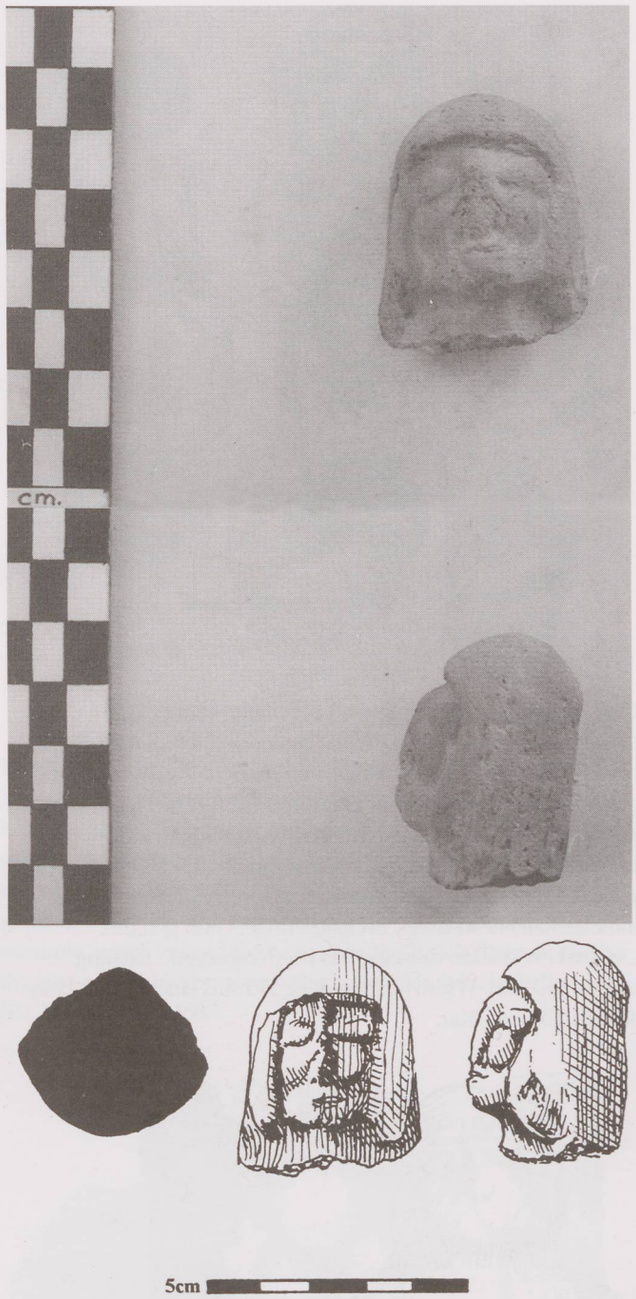


Plate 10.43:a–c: Reg. 1003, female figurine head



Plate 10.44: Reg. 190, female figurine head



Plate 10.45: Reg. 637, top half of female figurine

Plate 10.45 (Reg. 637). Fragment of female figurine in orange/buff ware with gritty inclusions and a buff core. Solid construction. Broken into three and repaired. Traces of black paint remain in vertical stripes around the figure. Figure is holding breasts. Eyes shown by heavy incision. The front of the face has been badly abraded. Hair or head-dress? Genital area is exaggerated and figure is obviously pregnant. Scored lines indicate hair/head-dress, necklace, fingers and genitals. Original excavation drawing has been 'censored'. Existing length: 110 mm. Width at shoulders: 57 mm. Thickness at belly: 40 mm. [B3.7.4] *Kar.

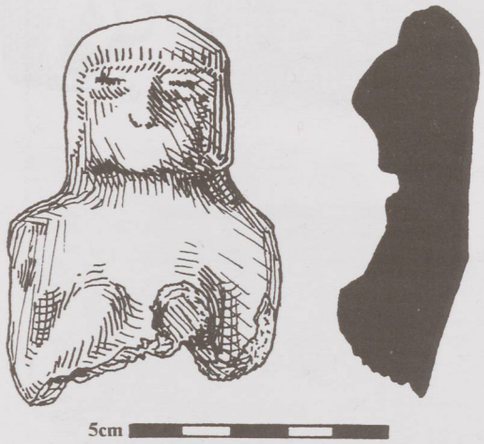


Plate 10.46: Reg. 776, top half of female figurine

Plate 10.46 (Reg. 776). Top half of female figurine. Red ware with dark grey core and very small grits. Has been broken and repaired on left shoulder. Back of figure is flat. Mouth not marked. Eyes are cowrie or 'coffee-bean' shape. Length: 71 mm. Width at shoulders: 53 mm. Thickness: 21 mm. at hands, 14 mm. at neck. [B7.1.2] *ROM: 974.107.61.

Other female figurines

Plate 10.47:a–c (Reg. 98). Head of figurine. Impressed in mould. Height: 35 mm. [B1.2.2e] *DoA. #not seen.

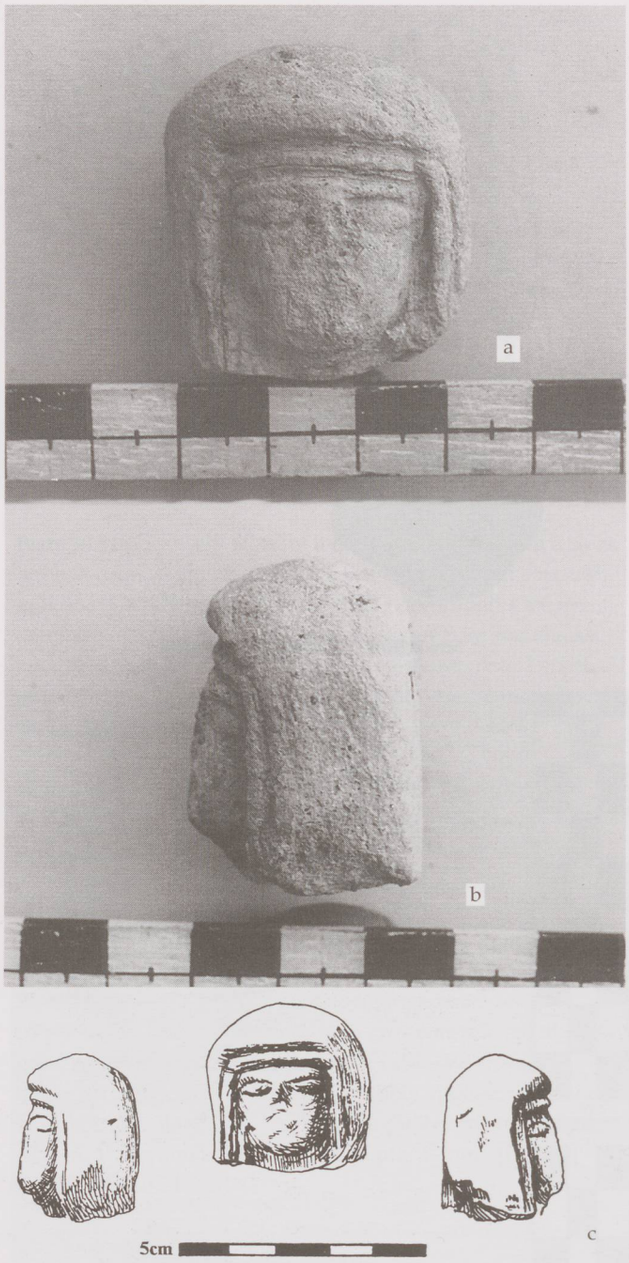


Plate 10.47:a–c: Reg. 98, figurine head

Plate 10.48:a–c (Reg. 110). Fragment of female figurine. Torso and arms only remain. Hands very abraded, but had been holding breasts. Figure will originally have had long hair falling below shoulders, represented by scored lines. Swollen abdomen, possibly indicating pregnancy. Solid, buff clay with glassy grit inclusions. Existing length: 56 mm. Existing width: 52 mm. Maximum depth: 26 mm. [B1.2.2c] *Ash: 1973.383.

Plate 10.49 (Reg. 627). Figurine of woman in pinkish buff pottery. Head and legs below the knees missing. Traces of paint around the neck and pink flush on back. Length: 90 mm. Width across shoulders: 50 mm. [B2.7.4] *DoA. #not seen.

Plate 10.50 (Reg. 648). Fragment of female figurine. Legs only, from hips to ankle, remain. Buff ware with large grits. May also have buff slip. Solid construction. Back of figure is flat. Existing length of fragment: 61 mm. Width: 36 mm. tapering to 13 mm. [B2.7.2?] *ROM: 974.107.42.



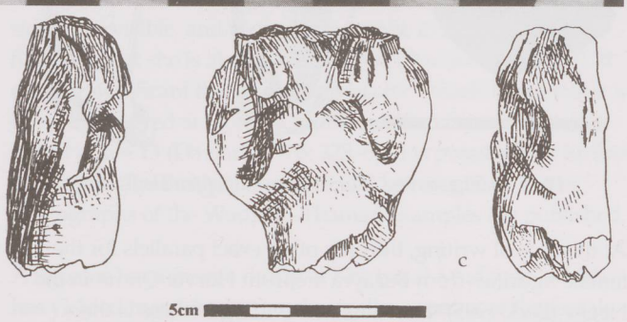


Plate 10.48:a–c: Reg. 110, female figurine fragment

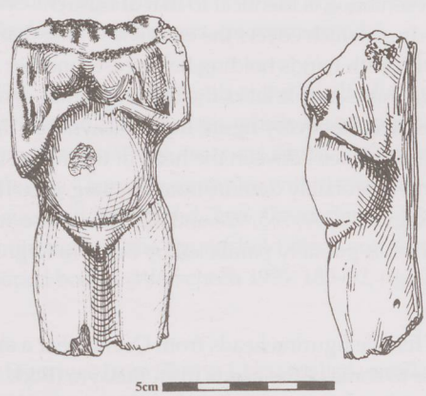


Plate 10.49: Reg. 627, female figurine fragment

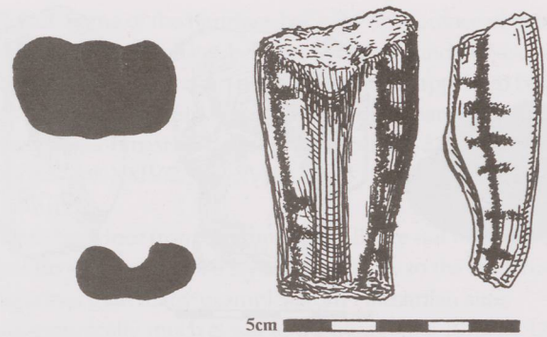


Plate 10.50: Reg. 648, female figurine, legs only

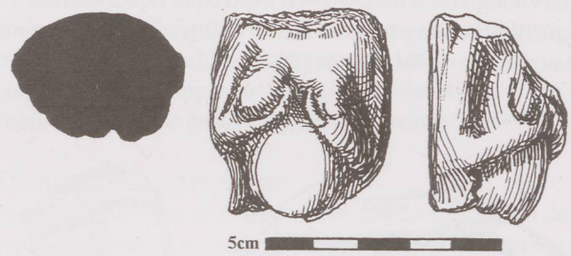


Plate 10.51: Reg. 749, torso of female figurine

Plate 10.51 (Reg. 749). Fragment of female figurine. Torso only — solid construction. Figure is represented as pregnant and hands are holding breasts. Appears to have been manufactured in a mould. Red ware with grey core. The back is smoothed, but not flat enough to be a plaque. Length: 43 mm. Width at shoulders: 37 mm. Thickness at belly: 28 mm. Note that on this example, when viewed from the side, the hands/breasts are the thickest area, while on some other examples, it is the belly. [B2.7.4] *Dub: WM587.

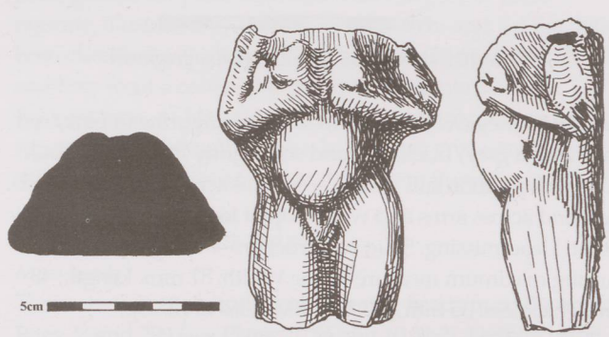


Plate 10.52: Reg. 765, female figurine fragment

Plate 10.52 (Reg. 765). Fragment of female figurine in creamy buff ware with large grey/black gritty inclusions. The head and the bottom of the legs are missing. Both hands are holding breasts, and swollen abdomen suggests pregnancy. Solid 'plaque' construction. Existing height: 9 mm. Width at elbows: 67 mm., at hips: 45 mm. Maximum thickness: 37 mm. [B6.3.4] *BM: 136066 (1974).

Plate 10.53 (Reg. 928). Torso of female figurine. Head and legs below hips are missing. Traces of black paint remain — in vertical stripes from the neck, one each down the left side, the centre and the right side of the body. Pink/buff ware with buff core/ grit and chalk inclusions. Figure is holding breasts and possibly depicts pregnancy. The back of the figure is flattened,

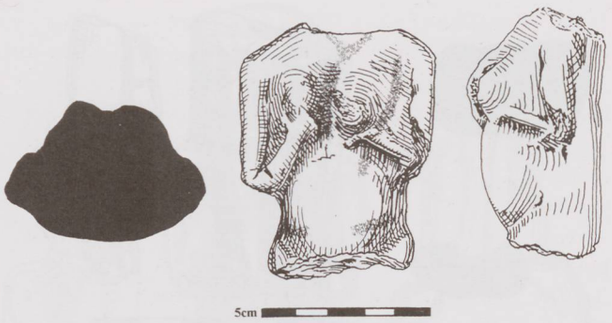


Plate 10.53: Reg. 928, female figurine torso

but not enough for it to have been the plaque type. Solid construction. Existing height: 72 mm. Width at elbows: 54 mm. Thickness across belly: 35 mm. [B7.4.7] *Kar.

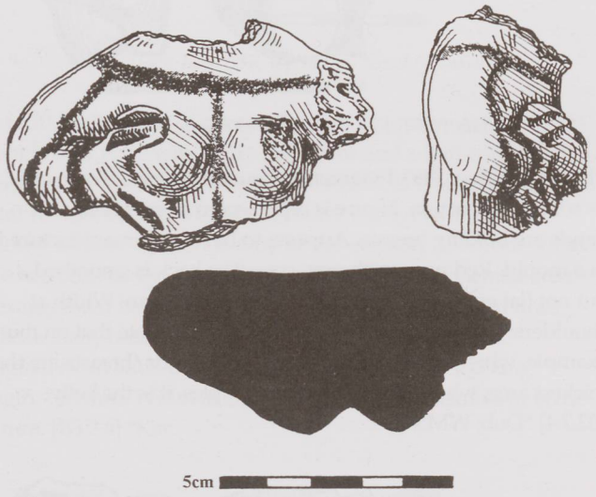


Plate 10.54: Reg. 965, female figurine fragment

Plate 10.54 (Reg. 965). Fragment of female figurine in pink/red ware with a grey/black core and small gritty inclusions. Black painted decoration still visible — in lines across chest, down chest and across arms and wrist. Top of torso and one arm only extant. Head missing. Solid construction — not plaque shape. Existing maximum measurements: Width: 81 mm. Length: 48 mm. Thickness: 35 mm. [B3.2.7] *BM: 136745 (1975).

Plate 10.55:a–e (Reg. 1125). Lower half of female figurine, broken at the hips. Newly damaged at the feet. Grey/buff ware with small gritty inclusions. Solid construction — back flattened; has never been freestanding. Existing length: 84 mm. Existing width at hips: 40 mm. tapering to 26 mm. at feet. [B7.5.6] *BM: 136747 (1975).

PARALLELS

An incomplete female figurine from Tawilan (Bennett and Bienkowski 1995: 80) seems almost interchangeable with Reg. 749 from Busayra. However, the reasons for this comparison are entirely subjective, relying on the similarity of the texture and colour of the ware in addition to the pose of the figure — as neither example retains the head it is not possible to state definitely that this is an exact parallel — although one would expect to find parallels between Busayra and Tawilan.



Plate 10.55:a–e: Reg. 1125, lower half of female figurine

At the time of writing, the only other exact parallels for the female figurines from Busayra are from Horvat Qitmit in the Negev (Beck 1995). The most outstanding of these is the complete nude female no. 107 (Beck 1995: 99–103). This figure had apparently been attached to a larger object; however, the artistic representation is identical to that at Busayra. She has the same head-dress which covers the ears, she is naked and pregnant with both hands holding her breasts and her legs are represented. This example lacks the bulging round eyes, but as previously stated, not every figure from Busayra has them. The strongest resemblance between the head of this figure and one from Busayra is probably demonstrated by Reg. 656. The body resembles Regs 969, 749, 765, 928 and 627. She is also wearing a necklace which is possibly paralleled by Busayra Reg. 190 (Plate 10.44).

A group of female figurine heads from Qitmit bear a striking resemblance to some of the heads from Busayra (Beck 1995: 106–7, fig. 3.75). Qitmit heads nos 112, 114–116 all have the same strong stylistic similarity to the 'cloaked' heads from

Busayra, Regs 285, 457, 747, 969 and 1003. They also seem to share the 'impressionistic' appearance of these Busayra figurines. There are no published photographs of these heads, but from the drawings it appears that nos. 114 and 116, at least, have the bulging rounded eyes reminiscent of a number of the Busayra figures.

There is one lower part of a female figurine from Qitmit (no. 110) which has a deep incision representing the genital area. This example is not as extreme as Busayra Reg. 637 (Plate 10.45), but it does reflect a similar approach (Beck 1995: 103, figs 3.70 and 3.72).

The following examples are of female figurines which may represent similarities to the Busayra female figurines, but the comparisons must be treated with caution.

Wadi ath-Thamad: A complete mould-made figurine was discovered within the regional survey area, at site 13 (Daviau 1997b: 226, fig. 1; 2001b: 320, fig. 1). The figure is pregnant, but is holding a disc in both hands, so is not in the same pose as the Busayra figurines. However, she is notable in that her hair (or head-dress) is represented by a cluster of applied blobs of clay which are very similar to those seen on some of the Busayra figurines. For example, Busayra Reg. 320 (Plate 10.74) is the head of an animal (possibly a horse) wearing a bridle which incorporates a number of applied blobs of clay; also, Regs 365 (Plates 10.61 and 10.72:a) and 527 (Plate 10. 63) are two unidentifiable, broken fragments both decorated with applied blobs which bear a strong similarity to the decoration on the figurine from Wadi ath-Thamad.

A figurine fragment was also found at site 13. The fragment is headless, and has no lower legs. She is pregnant and has two side locks visible, and is of a similar style to the Busayra figurines, but she is also holding a disc (Daviau 1997b: 227). It may be significant that anthropomorphic vessels comparable to those discovered at Horvat Qitmit and 'En Hazeva were also found at site 13 (Daviau 1997b: 225–6). It is possible that further parallels to the Busayra figurines will be recognised when photographs of the Wadi ath-Thamad examples are published.

A figurine head from a dump at Khirbat al-Mudayna (which has yielded many finds) may be similar to some of the female figurine heads from Busayra. It has a similar cloak-like head-covering and round, prominent eyes. However, from the published drawing (Daviau 1997b: 226, fig. 2) it is not possible to tell whether or not the ears are represented.

Balu'a: This site is located south of the Wadi Mujib, and while it has not produced any figurines which are exactly parallel to those from Busayra, there are some similarities in artistic representation. There are examples with the round, apparently applied eyes and the draped cloak/head-dress. However, the ears are represented, the figures hold discs, and they have thick pillar-shaped bodies (Worschech 1995: 185–92, figs 2 and 4, pl.16).

Sarepta: Figurines from Shrine 1 bear stylistic similarities to the head-covering represented on the Busayra figurines (Pritchard 1975: fig.41; 4 and 5).

Beirut: Some of the figurines have the appearance of being part of a 'transitional phase' between what is found at Busayra and figures from the Persian period. Also, they appear to be a collection of different types, with/without ears, arms held out, hands over breasts (Elayi and Sayegh 1998: 228, fig 49:42, pl. XVII:37, pl. XXIV:27, pl: XVII:37).

Tyre: Figurines from Stratum II and III are not exact parallels, but they bear more of a stylistic similarity to the Busayra figurines than many examples from Palestinian sites geographically much closer to Busayra (Bikai 1978: pl. LXXXI:2, 4 and 5; pl. LXXXII:12 and 15; pl. LXXXII:1 and 3).

Cf. also the cloak/hood of a Persian-period figure from Beer-sheba (Stern 1982: fig. 289:9), and two of the fifth-century figures of the Phoenician goddess Tanit recovered from the Shavei Zion shipwreck, which appear to have characteristics similar to the head-dresses of the Busayra figurines (Raban 1993: 958).

Dissimilar female figurines

Excellent examples of groups of female figurines which do not represent parallels to the Busayra figurines come from the excavations at Jerusalem (Ariel and De Groot 1996: pls 1–4), Tel 'Ira (Kletter 1999: 378, fig. 7.2:1,3,4,5) and Megiddo (Loud 1948: pl. 242:8,9,10; pl. 243:16,18). At Jerusalem the figures do not all hold their hands to their breasts, and those that do are placing the hands under the breasts rather than on them (Ariel and De Groot 1996: 124,pls 3, 7, 8); also the heads do not have any close similarity to the heads from Busayra, their eyes are mostly represented with careful impressions showing the upper and lower eyelids, and the hair looks like a short braided Egyptian-style wig. A group of figurines from Tel 'Ira shares the same treatment of the eyes and the short braided wigs. Also, both these groups are pillar figurines. This category of pillar figurine, illustrated by those from Jerusalem and Tel 'Ira, has been classified as Judaean pillar figurines (Kletter 1996: 28–30), and they form a coherent group quite separate from the Busayra type. At Megiddo, there are plaque figurines represented holding their breasts, but they are completely different in artistic character to those from Busayra.

Male and grotesque figurines

Male heads

There are two apparently male figurine heads from Busayra, Regs 33 and 299 (see Plates 10.56 and 10.31:2). Despite being extremely similar in profile, they each have a distinct character. Reg. 33 is the more naturalistic of the two. The eyes have the same rounded, protruding appearance of those belonging to some of the female figurines. The nose is large and possibly applied, and the ears are represented by small applied crescents. The figure wears a small 'goatee'-style beard. This example appears to have been hand-modelled. Reg. 299 has much larger, round applied eyes. The shape of the nose and chin/beard are very similar to Reg. 33 in profile, but the presence of a beard on this example is uncertain, although the shape of the chin suggests one. The enlarged brow and the nose appear to have been applied as a unit.

Grotesque style (male)

The Grotesque Style (Reg. 109) is represented by a fragment of an apparently male head which is distinctive due to its

method of manufacture (it is hollow and wheel-made), and, although similar, its features are more exaggerated than the other examples (Plate 10.58). It has very large, round (possibly applied) eyes, a very large pointed nose and a jutting chin (which may represent a beard). It appears to have a head-dress or hairstyle which hangs down at each side of the face; these features do not seem to represent ears. This object is also exceptional in that it parallels so many aspects of the assemblages at Horvat Qitmit and 'En Hazeva (Cohen and Yisrael 1995b, 1996).

Problems of identification of male and grotesque figures

There are no real clues as to the identity of the male and grotesque figures represented at Busayra, if they are viewed in isolation. Qos was a principal Edomite deity, but we know little about him and nothing about his cult (cf. Dearman 1995). The only information we have which may hint at the activities surrounding his worship are the 'shrines' at Horvat Qitmit and 'En Hazeva, and nothing in the architecture of those sites links them to Busayra. With present knowledge being so scant in this respect, it is only possible to make the following tentative suggestions:

1 That these figures represented priests or prophets and were used in shrines or temples to offer prayers to the god.
2 That they represented the worshipper himself in the act of prayer (Postgate 1994: 177).
3 That they represented the god himself (or his representative).
4 That they represented the same personage portrayed on some of the cult stands with similar facial characteristics — a short pointed beard, large nose and pronounced brow, and large bulging eyes.
5 That they are not male at all, but represent the hermaphrodite being represented on the figures from Ain Janin, 'En Hazeva and Tel 'Ira (see below).

A number of objects have been published which provide interesting connecting parallels for this group of anthropomorphic figures:

1 Head of an anthropomorphic lamp from 'Ain Shems (Grant 1931: 75, pl. XLV): This head has one very specific idiosyncrasy paralleling one of the anthropomorphic stands from 'En Hazeva. When viewed head on, the face is stylised but appears to be relatively anatomically normal (Glueck 1939: 37, fig. 20). However, when viewed in profile, the eye appears to be unnaturally low on the cheek. This effect is identical to that seen on the 'En Hazeva stand, which is represented holding a bowl (Cohen and Yisrael 1996: 45), and, to a lesser extent, on Busayra Reg. 109. The 'Ain Shems face also portrays a character with a pointed beard, large nose and pronounced brow, as seen at Busayra, Qitmit and Hazeva.

2 A group of three anthropomorphic objects published in the 1930s (Harding 1937: 253–5, pls IX, X and Glueck 1939: 35–7, fig. 19):
   a) A wheel-made figure of uncertain gender which, viewed from the side, has a profile which is reminiscent of those seen at Busayra, 'En Hazeva and Qitmit, with pronounced brow, large nose and pointed chin. The head is bald. Viewed from the front, this face is slightly different in that the applied eyes have each been highlighted by the application of a surrounding thin roll of clay. Although the face appears male, the figure has female breasts.
   b) A head from a lamp figure. It has unevenly applied eyes, and the nose is broken off. The mouth is incised, and it has a collar or necklace represented with indentations around the neck. The hair or head-dress is represented by deeply incised vertical grooves, similar in effect to the applied strands on two of the 'En Hazeva stands. The remnants of a lamp remain on the head.
   c) A lamp figure holding a disc. The apparently applied eyes have an interesting parallel in the figurine mould from Tawilan, noted earlier, in that they share the distinctive 'doughnut' or 'loomweight' shape. Facially, the figure parallels Busayra Reg. 33 (and its corresponding parallels) with its large nose, incised mouth, bulging eyes and pointed beard. It is interesting to compare this with the anthropomorphic stands at 'En Hazeva, in the representation of the figure's hair by a series of thick vertical 'strands', less separated from the head, but still reminiscent of those on the 'En Hazeva stands. There is a decorative row of incised holes along the brow, just under the lamp. The figure clasps a disc in both hands, and appears to have female breasts. If this figure is indeed from Busayra (see below), it provides a link between the Busayra figurines and those which hold discs (Khirbat al-Mudayna is a good example, see Daviau 1997b). For an example from the Negev, see Beit-Arieh 1998: 37; see also Beck 1999: 387–92. Regs 134, 156 and 979 from Busayra are damaged lamps which have been attached to a figure or base, but the exact nature of the bases is unknown.

These objects were reportedly discovered at Ain Janin, about 2 km. east of Busayra. As Busayra is the major Iron Age site in the vicinity, it was assumed that these objects were connected with the site. A number of objects from the excavations at Busayra are noted as being 'from Ain Janin', so this correlation is an acceptable one, although its accuracy should perhaps not be taken for granted.

3 Hermaphrodite figures: Examples a) and c) above may provide connecting parallels between Busayra, Tawilan and sites in the Negev. Both figures appear to be male, but have female breasts. One of the anthropomorphic stands from 'En Hazeva (the one restored holding a bowl) has a very definite 'goatee' beard, and yet appears to have small applied breasts. This identification is not certain, because due to their small size, the 'breasts' could be construed as nipples. The 'figure with tambourine' from Tel 'Ira has definite male and female characteristics (Beck 1999: 386, fig. 7.5). It has a number of similarities to figurines previously discussed. The large nose and prominent brow are reminiscent of the male figurines from Busayra and the figures from Ain Janin. The head-dress with vertical lines above the brow is very similar to the figurine mould from Tawilan, as are the full lips and the large nose. It is difficult to judge from the photograph, but the modern impression

taken from the mould from Tawilan may indicate an enlarged chin similar to the 'beard' on the Tel 'Ira figure, although that is uncertain (Bennett and Bienkowski 1995: 293, fig. 9.4). The back and sides of the head-dress of the Tel 'Ira figure are very similar to those of the female figurines at Busayra. The figure itself is very similar to a number of examples of a naked female holding a disc or tambourine (Beck 1999: 389, fig. 7.7), but in this case she is represented with a phallus. It is difficult to judge whether the ears have been portrayed with applied discs, or if they are earrings. This figure also has the 'collar' or 'necklace' similar to those seen on the damaged head from Ain Janin, the naked female figurine no. 107 from Qitmit, and Reg. 190 from Busayra. The hermaphrodite figures all carry discs or tambourines, which connects them to a number of naked and partly dressed female figurines carrying a similar object.

Identifying the subject represented by the hermaphrodite figures is problematic. Ishtar has been attributed with the power to 'encompass polar opposites: she is death and life, male and female' (Abusch in van der Toorn *et al.* 1999: 453), and has been described as having a beard (Beck 1999: 392). Two other suggestions have been Ishtar-Shaushga, described as being feminine and masculine together, and Ishtar-Kemosh, as mentioned in the inscription on the Mesha stela (*ibid.* 391–2).

What is evident from all these suggestions is that to transcend gender was a state thought to reflect power. Although extremely rare, hermaphroditism is a medical condition which must have occurred in the first millennium, as it does now. One wonders how such individuals would be viewed in Iron Age societies. It is possible that they may have been deemed 'special' and perhaps believed to have been 'chosen' as prophets or representatives for a particular deity. If this were the case, the tambourines (if that is what they are) held by these and other figures could possibly be explained by a passage in 1 Samuel 10:5: 'you will meet a company of prophets coming down from the high place with a harp, tambourine flute, and lyre before them, and they shall prophesy'.[4]

This connection has been noted previously in relation to the cult stand with musicians from Ashdod (Cohen and Yisrael 1996: 46). The Ashdod stand is from the tenth century BC, but there is no reason to suggest that its iconography did not reflect a long-lived tradition, as the stands themselves continued in a very similar form for centuries. The anthropomorphic figures could reflect the belief within a section of the community that this was the ideal form for a prophet, even if none had been seen for a generation or more.



Plate 10.56:a–f: Reg. 33, head of a bearded figurine

CATALOGUE OF MALE AND GROTESQUE FIGURINES

Plate 10.56:a–f (Reg. 33). Head of bearded figurine. Hair of beard suggested by slight scoring, just visible. The ears, eyes and possibly the nose have been created with plastic decoration. Solid, pinkish clay with a grey/black core and gritty inclusions. Slightly lime encrusted. Length from top of head to tip of beard: 31 mm. Width, ear to ear: 22 mm. Depth, nose to back of head: 27 mm. [B2.1.3?] *Ash: 1973.381.

Plates 10.36 and 10.57 (Reg. 299). Head of a male figurine in red ware with a buff core and small glassy grits. Traces of black paint remain across the brow. Eyes and nose are applied, but mouth only implied by faint line. Solid construction. Existing length: 34 mm. Width: 25 mm. Thickness from nose to back of head: 30 mm. [B3.2.12] *Kar.

[4] The lyre, tambourine and double flute were all represented among the terracotta models at Qitmit, see Beck 1993: 234.



Plate 10.57: Reg. 299, head of male figurine

Plate 10.58:a–f (Reg. 109). Grotesque head of figurine in buff ware with very small grits. Hollow construction — wheel made. Traces of black paint remain on hair and across brow. Eyes have been applied. Length from brow to neck: 32 mm. Width from ear to ear: 52 mm. Thickness of pot: 4mm. [B1.2.2c] *Kar.



Plate 10.58:a–f: Reg. 109, grotesque style of figurine head

PARALLELS

The closest parallels to these figurines are from Horvat Qitmit:

- Qitmit 'bearded man no. 60' (Beck 1995: 71–2, fig. 3.44) shares a facial similarity to Reg. 33 despite the former being larger, and manufactured on a wheel. This figure shares the rounded, protruding eyes, small applied ears and goatee beard.
- Qitmit 'male figurine no.117' and 'bearded man no.119' appear to have a generic similarity to the two male heads from Busayra, despite being individually of a different shape (*ibid*: 107–8, fig. 3.76 and 110, figs 3.79, 3.80). They share the goatee beard, the bulbous applied eyes, the large nose and the enlarged brow which extends down the side of the head, although no. 119 is more carefully modelled.
- Despite there being no equivalent figure from Busayra, the two 'double-pipe players' from Horvat Qitmit (Beck 1995: 108, fig. 3.78) and Tel Malhata (Beit-Arieh 1995b: 315, fig. 9.4) also bear the same generic similarity to the Busayra figures as noted above.
- A figurine head from Lachish has a slight similarity to Busayra Regs 33 and 299, having applied eyes and a possible beard (Tufnell 1953: plate 31:17).
- A terracotta male head from Makmish has a resemblance to Busayra Reg. 33, although the eyes are not applied but emphasised by incised lines (Stern 1982: 159,174, fig. 295:2).

Stylistically, the most similar to Reg. 109 from Busayra is the anthropomorphic cult stand from 'En Hazeva (Cohen and Yisrael 1995b: 24). The only detail which is dissimilar between the head from Busayra and that from 'En Hazeva is the absence of a representation of a mouth on the example from Busayra. Only the front half of the head is extant on Busayra Reg. 109, but it has been constructed in a similar way to the anthropomorphic stands from Qitmit and 'En Hazeva. Reg. 109 had an open top in the same manner as the anthropomorphic stands, and it is possible that it was originally part of a smaller version of one of those stands. Its top is flat and has a small lip. This could have been the top of the vessel, or, if the reconstruction of the 'En Hazeva stands is correct, it could be the base for a lamp or bowl. In the description of the restoration of the stands, Cohen and Yisrael state: 'Inside the round rim on the figure's head is a notch for attaching an offering bowl, which was used to burn incense or to present an offering to a deity' (Cohen and Yisrael 1996: 45). However, when the three stands are placed together, it can be seen that the denticulated tops do not fit into each stand in exactly the same way (*ibid*: 40; *idem*. 1995a: 24, 33). The stand which has been noted as similar to Busayra Reg. 109 has a top which fits so closely that the tips of the denticulation come down lower than the top of the stand. The stand representing a figure holding a bowl has the lowest part of the denticulation approximately even with the top of the stand, and the third example has a top on which the denticulation sits above the top of the stand.

Busayra Reg. 109 also bears a similarity to the Qitmit 'head of a man no. 59' (Beck 1995: 70–71, figs 3.42–3), which also shares the beard, round protruding eyes and the head-dress hanging

down the side of the face, but is much more roughly modelled and had been closed at the top.

Another parallel for the grotesque style comes from the Tophet at Carthage (seventh–sixth centuries BC) (Ferron and Aubet 1974: 47 fig. 320c). Of the examples discussed by Ferron and Aubet, no two figures were the same, this is also true of the figures from 'En Hazeva and Qitmit. Beck (1993: 233) noted that the similarity between the Carthage figures and those from Qitmit 'exceeds the presumed general resemblance between that group and Cypriot figures...a more direct contact between the Horvat Qitmit statues and Group 1c, without Cypriot intermediary should be considered'.

MISCELLANEOUS FRAGMENTS

(Reg. 30). Pottery cone, gaming piece? Pink/orange ware with buff/grey core. Slightly chipped at base. Similar in shape to Egyptian model of bread. Height: 25 mm. Diameter: 22 mm., tapering to point. [B1.1.3] *L NMGM: 1993.180.87.

(Reg. 123). Fragment of figurine with plastic decoration — circular blobs, graduating from larger to smaller. Surface underneath is not broken, so has it been a handle? Buff/pink pottery with buff/grey core. White and grey grits. Traces of a creamy slip. Existing length: 28 mm. — quite curved. Width: 24 mm. Thickness: 9 mm. Similar to Regs 365 and 527. [B1.2.2] *Kar.

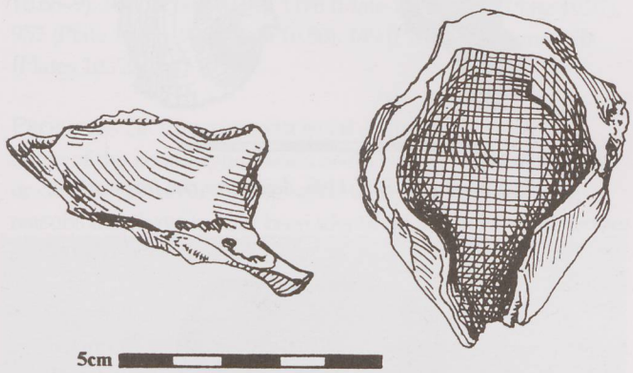


Plate 10.59: Reg. 156, damaged lamp

Plate 10.59 (Reg. 156). Small, damaged lamp. Originally attached to a base or figure. Length of lamp: 50 mm. Existing width: 43 mm. [A3.2.+] *Ash: 1973.372.

Plate 10.60:a, b (Reg. 262). Fragments from a hollow figurine? Very thin, smooth fabric. Buff ware. Consists of a group of three fragments which appear to have belonged to the same object. Initially, they appear to be the breasts from a very thin-walled hollow figurine, but on closer inspection this seems less likely as the shape of the largest fragment does not fit. It is possible that it belonged to a vessel with a female figure in very high relief, but that would not be a form with any known parallels. Beck suggested that they might have come from a vessel similar to the chalices decorated with pomegranates from Horvat Qitmit (1995: 156–8, figs 3.105–7). The thin ware and the form of the fragments would support this suggestion, although Beck herself noted that the 'breast-like' protrusions were much more extreme than any of the shapes on the

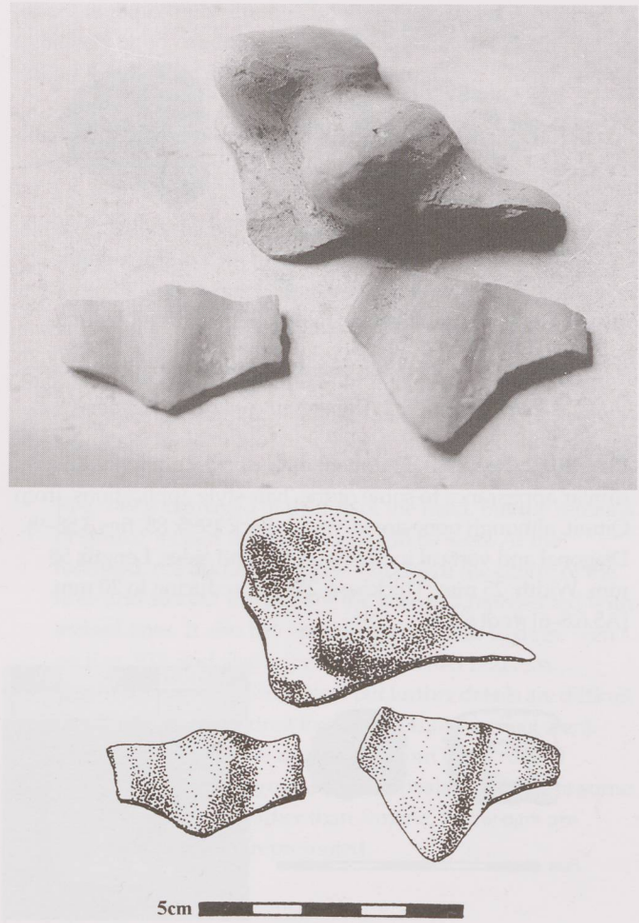


Plate 10.60:a, b: Reg. 262, fragments from hollow figurine

pomegranates from Qitmit. Kletter has also drawn a comparison between this and a similar fragment from Tel 'Ira (1999: 376, figs 7.1:7 and 7.2:6), although this fragment retains less of the surrounding area than the Busayra fragment, so no further information can be gleaned from this correlation. A drawing of a hollow figurine from Wadi ath-Thamad (Daviau 2001b: 322, fig. 6) suggests a similar construction, and may be a parallel, but the fragmentary nature of the Busayra example makes this difficult to discern [B3.2.9] *Kar.

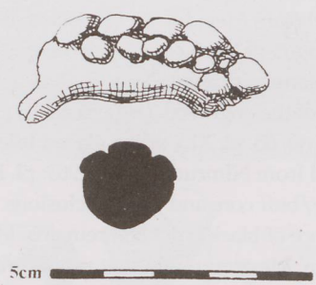


Plate 10.61: Reg. 365, fragment of plastic decoration

Plates 10.61 and 10.72:a (Reg. 365). Fragment of pottery decorated with applied blobs of clay. Very similar to Reg. 527. See parallel with decoration on figurine from Khirbat al-Mudayna (Daviau 1997b: 226, fig. 1). Pink pottery with buff core. Maximum length: 46 mm. Width: 18 mm. Depth: c. 17 mm. [B2.2.14–16] *Ash: 1975.407.

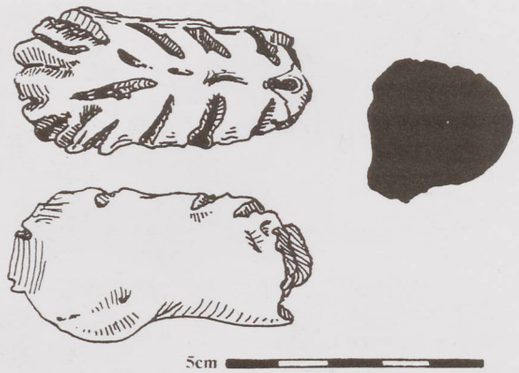


Plate 10.62: Reg. 491, fragment of plastic decoration

Plate 10.62 (Reg. 491). Fragment of plastic decoration with a similar appearance to some of the 'hair-style applications' from Qitmit, although none are identical (Beck 1995: 88, figs 3.58–9). Diagonal and vertical incisions on top and sides. Length: 58 mm. Width: 25 mm. Thickness: 25 mm. reducing to 20 mm. [A5.6.8–6] #not seen.

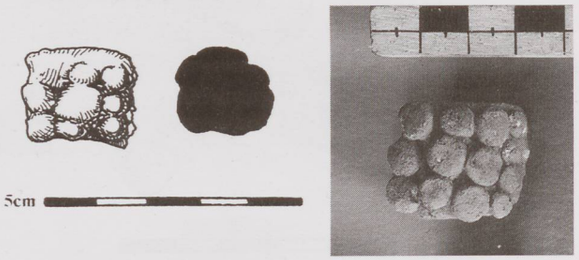
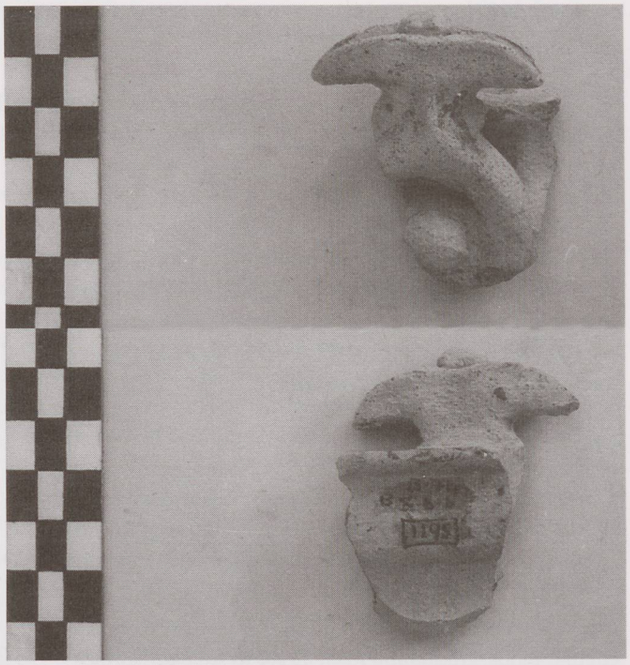


Plate 10.63:a, b: Reg. 527, fragment of plastic decoration

Plates 10.63:a, b (Reg. 527). Fragment of decorated pottery with applied decoration in the form of blobs of clay. See parallel with decoration on figurine from Khirbat al-Mudayna (Daviau 1997b: 226, fig. 1). Pink pottery with a buff and grey core. Length: 20 mm. Width: 18 mm. Depth: 16 mm. [D3.1.5] *Ash: 1975.408.

Plate 10.64:a–d (Reg. 1195) Decorative rim fragment bearing decoration with a strong similarity to that at the top of a cult stand from 'En Hazeva (Cohen and Yisrael 1995b: 9). Plastic decoration very large and almost separate from the pot. A similar decoration has also been noted by Beck (1995: 107, fig. 4a–b) on a bowl from Megiddo (Schumacher 1908: pl. 39:g). The Busayra fragment has a circular element which makes it reminiscent of some representations of pomegranates, such as those on some of the engraved *Tridacna* shells (Stucky 1974: no. 21, pl. XIII and no. 65, pl. XL), and a glazed brick panel of Shalmaneser III from Nimrud (Reade 1963: pl. IX). Creamy buff ware with grey/buff core and gritty inclusions. Creamy white slip and evidence of black paint still remains. Maximum length of sherd: 57 mm. Maximum width at rim: 37 mm., and at top of decoration: 43 mm. [B10.6.6] *Kar.

Plate 10.65 (Reg. 1206). Originally registered as 'shrine or portable altar fragment'. The photograph gives the impression that this may be a fragment of a figurine, with an arm bent across the chest, but the fragment is flat and thin, so is more likely to belong to a large pottery vessel or object with anthropomorphic relief decoration. The inside shows that it was slightly curved. Red/buff ware with a buff core and grey grits. Remnants



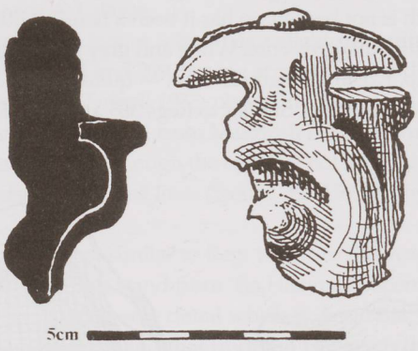


Plate 10.64:a–d: Reg. 1195, decorative rim fragment



Plate 10.65: Reg. 1206, large pottery fragment with relief decoration?

of a slip in pale beige. Fragment is basically triangular: 54 mm. x 47 mm. x 52 mm. Thickness: 18 mm. maximum. [? Baulk] *Kar.

(Reg. S.18). Baked clay object. Has been pierced (not in centre). Has been roughly square, but wider at the bottom. Brown/red pottery. Slightly more than half remains. Height: 22 mm. Width: 22 mm., tapering to 16 mm. Diameter of hole: 4 mm. [C?] *L NMGM: 1993. 180.123.

(Reg. S.20). Cone-shaped pottery object, smaller but similar to Reg. 30 above. Buff clay with creamy white flecks. Possibly gaming piece or model bread? Height: 18 mm. Diameter: 14 mm. tapering to 2 mm. [A9.6 and 7] *L NMGM: 1993.180.125.

(Reg. S.21). Fragment of figurine or heavily decorated pottery object. Buff/pink pottery with mixed grits of varying sizes. Triangular in section. Three small applied 'knobs' on smooth side. The other two sides have deep lines scored along their length. Length: 57 mm. Sides: 20 mm., 19 mm., 21 mm. [B7.5.3&4] *L NMGM: 1993.180.126.

(Reg. S.22). Broken fragment of decorated pottery. Buff/pink ware with small grits. Circular, pierced with hole in centre. Existing diameter of fragment: 35 mm. Height: 14 mm. Diameter of central hole: 8 mm. [B2.1.3] *L NMGM: 1993.180.127.

(Reg. S.23). Piece of roughly modelled, badly broken pottery, with pierced hole, c. 8 mm. Maximum length: 62 mm. Maximum width: 48 mm. tapering to 31mm. [B1.1.36] *L NMGM: 1993.180.127.

Zoomorphic figurines

Some of the zoomorphic fragments from Busayra are at present unique. These are a small group of heads from (mostly) hollow-spouted vessels, each with different ornate applied trappings: Regs 938 (Plate 10:81), 14 (Plates 10.67–8), 107 (Plates 10.68–9), 1047 (Plate 10.84), 1178 (Plate 10.86), 515 (Plate 10.77), 952 (Plate 10.82), 920 (Plate 10.80), 149 (Plate 10.71), and 320 (Plates 10.72:c and 10.74).

Problems of identification of animals

Some of the zoomorphic heads could equally represent horses or camels. However, despite uncertainty, for the following reasons they have mostly been identified as horses until further evidence proves otherwise:

- Regs 938 and 14 survive to the end of the neck and the beginning of the body; both have a flat, fin-shaped mane. The drawings (indicating the internal shape) suggest that both necks are too short to belong to camels.
- Reg. 938 has a small piece of 'saddle', or something similar, visible at the top of the base of the neck, echoed on Reg. 937, which is the rear end of a horse figurine. Reg. 937 also has a tail of the same artistic style as the mane of Reg. 938.
- It is possible that the amount of applied decoration representing trappings made it difficult for the potter to retain an anatomically accurate representation of a horse's head, e.g. Regs 320, 938.
- No zoomorphic body fragments found at Busayra were identified as belonging to camels.
- Comparisons with other groups of zoomorphic figurines, such as those from Jerusalem (Tchernov in Ariel and de Groot 1996: 86 and 127, pl. 6:10), show heads with similar proportions identified as horses, and again no camel bodies (although one of the heads is suggested to be that of a camel).

Unless otherwise stated, all examples are spouted, or hollow to the mouth.

Three of the zoomorphic heads are outstanding, due to their relatively good condition and applied decorative trappings: Regs 938, 320 and 14 (see catalogue entries).

Heads with more damage and less applied decoration, but which have the same flat-shaped mane seen on Reg. 938, are:

- Reg. 1047, which is not hollow to the mouth; it has a plain applied bridle with blinkers.
- Reg. 952, which has broken off just below the eyes; it has a row of applied blobs across the brow, and applied blinkers.

Regs 149 (Plate 10.71), 363 (Plate 10.75) and 1063 (Plate 10.85) are of interest because they all have incised decoration across the top of the head:

- Reg. 149 is damaged at the top of the head, but the remains of similar incised decoration can still be seen. At the forehead, the bridle is applied, but down the centre of the nose and around the front of the nose it is represented with incised lines. It also has applied eyes similar to those seen on Reg. 938, and also appears to have had blinkers.
- Reg. 363 has similar decoration, but further details are difficult to establish from the drawing (this example was not seen).
- Reg. 1063 is otherwise undecorated but has a row of incisions across the brow, which appears to represent some form of head-dress rather than a mane, as the ears are covered up and not represented.

Catalogue of zoomorphic figurines

Horse/animal heads

Plate 10.66:a–d (Reg. 6). Pottery object, possibly an unfinished animal figurine head. Pink/buff ware with a grey/black core.

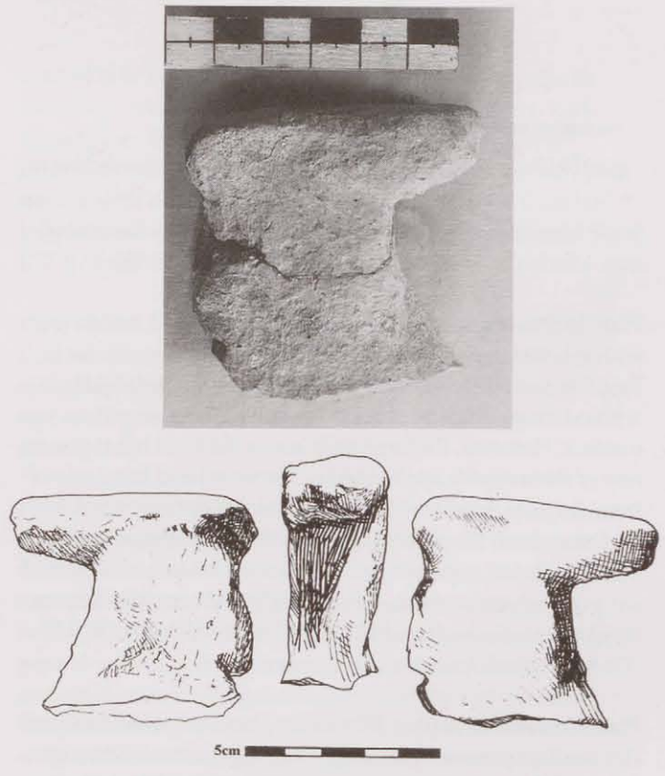


Plate 10.66:a–d: Reg. 6, possible zoomorphic head

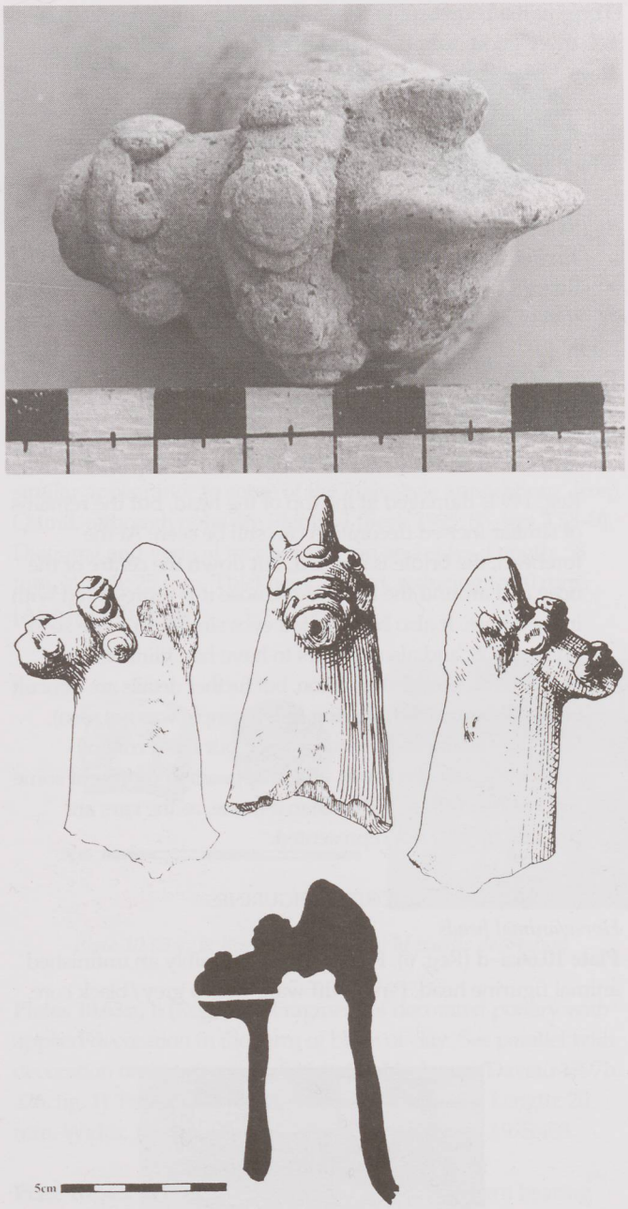


Plate 10.67:a–d: Reg. 14, horse's head fragment with applied decoration



Plate 10.68: Reg. 107, horse's head fragment with applied decoration

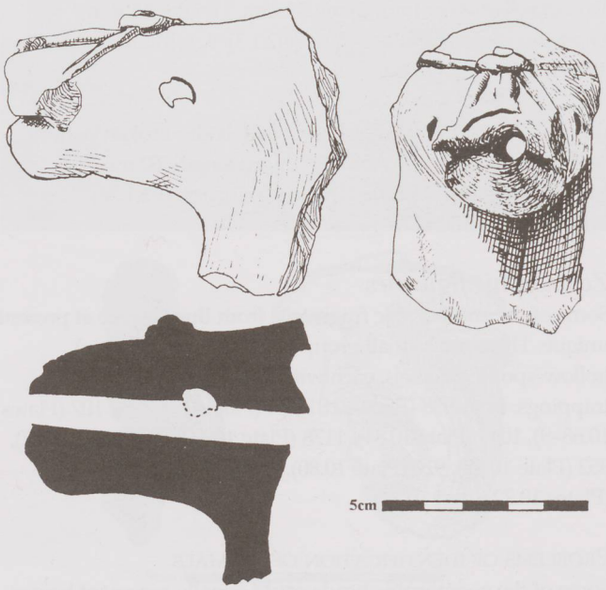


Plate 10.69: Reg. 107, horse's head fragment with applied decoration

Some lime encrustation. Chipped since excavation. Length: 60 mm. Maximum width: 25 mm. [A5.1.4] *Ash: 1973.375.

Plate 10.67:a–d and 10.68:b (Reg. 14). Horse's head, hollow with spouted mouth. This animal is physically very similar to Reg. 938, but has been given a much simpler applied bridle, with no straps connecting the straps across the nose and forelock. However, the large strap across the head has the same row of three double applied blobs. The nose-band has a row of three single blobs of clay. This example was not examined, but it appears from the photographs that this plainer style was intentional, and apparently no pieces were broken off. Traces of red pigment remain on the neck. Height: 110 mm. Width from tip of nose to back of head: 50 mm. Diameter: 50 mm. [B1.1.3] *DoA (Yarmouk University?). #not seen.

Plate 10.68 and 10.69 (Reg. 107). Horse's head fragment. Red/buff clay, with grey core and small grey/black grits. Pierced through from nose to back of head where it will have joined the hollow body, and also pierced through at eyes. Plastic decoration representing the bridle still remains, and also black painted decoration down the side of the head and across the front of the neck — representing trappings? It is possible that this example originally had a highly decorated bridle equivalent to that on Reg. 938; however, the top and back of the head are missing, leaving only the applied nose and face pieces. The existing measurement indicates that this would have been the largest example. Its surviving decoration consists of a large applied double blob on the nose between the eyes (which are pierced holes), leading from which are three applied straps which join the double applied straps around the front of the nose. The applied straps leading to the top of the head are damaged. Stripes of black paint on the side of the head and across the front of the neck may have represented further trappings. One side is very lime encrusted. Length from nose to break at back of head: 75 mm. Width across head: 50 mm. [B1.2.2c] *Kar.

Plate 10.70 (Reg. 118). Fragment of a hollow animal figurine, very rough or unfinished, head only remains. Possibly represents a sheep's head. Pink/buff ware with a buff core. Some lime encrustation. Existing measurements: Top of head to break: 32 mm. Nose to back of head: 25 mm. Width, ear to ear: 25 mm. [B1.2.2] *Ash: 1973.384.

Plate 10.71:a–f (Reg. 149). Fragment of an animal figurine. Horse's head, broken off at neck and at nose. Solid head, with

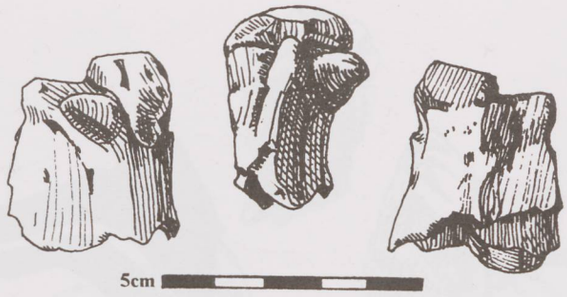


Plate 10.70: Reg. 118, fragment of hollow zoomorphic figurine



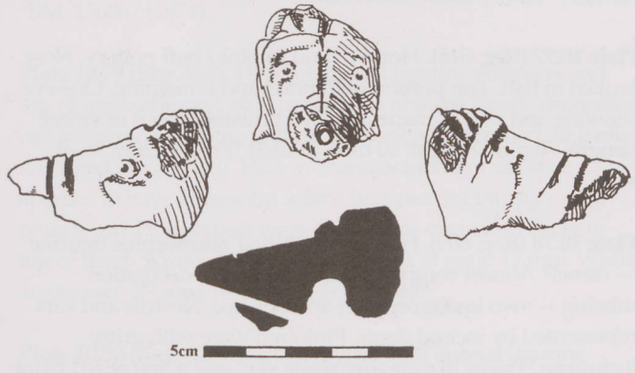


Plate 10.71:a–f: Reg. 149, horse's head fragment with incised decoration

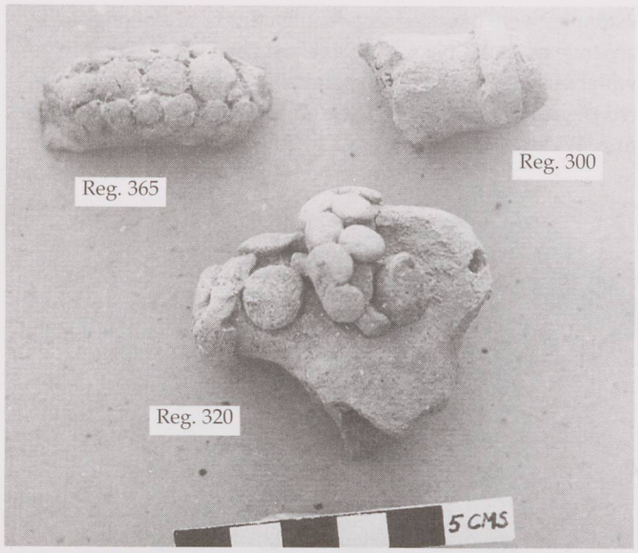


Plate 10.72:a: Reg. 365, fragment of plastic decoration
b: Reg. 300, nose from zoomorphic figurine, with plastic decoration
c: Reg. 320, horse's head with plastic decoration



Plate 10.73: Reg. 300, nose from zoomorphic figurine, with plastic decoration

pierced hole from mouth to meet hollow neck. Appears to have been wearing 'blinkers'. Bridle at nose is shown with incised lines, but at forehead is applied. Mane is deeply incised. Eyes are applied blobs, incised. Pottery has buff/pink surface with dark grey core and chalky inclusions. Existing length from nose to mane: 48 mm. Width at ears: 29 mm. [C2.2] *Man: 1974.9.

Plate 10.72:b and 10.73 (Reg. 300). Fragment of zoomorphic figurine. Horse's nose with applied bridle. Broken off below eyes. Pierced through to mouth. Pink/red ware with grey core and small glassy grits. Existing length: 32 mm. Width: 23 mm. [B3.1.3] *Man: 1974.49.

Plate 10.72:c and 10.74:a–e (Reg. 320). Head of a zoomorphic figurine. Registered as camel, but may be horse. Decorated with applied plastic decoration in form of ornate bridle. This example has features completely obscured by the applied bridle. A long piece of rolled clay appears to have been looped around under the nose, crossed over the bridge of the nose, and attached to the large band across the front of the head, which was decorated with two rows of applied flattened blobs of clay. Two further large flattened blobs were attached side by side, to the bridge of the nose. It also has a flat, fin-like mane. This example is not hollow to the mouth, so if the spouted

examples were intended for use, then this figure belongs to a separate category. Neck is hollow, but head solid. Buff clay with buff core, small glassy and chalky grits. Traces remain of red pigment (paint/slip?). Length from nose to back of head: 58 mm. Width at ears: 30 mm. [B2.2.10] *Edin: 1976.586.

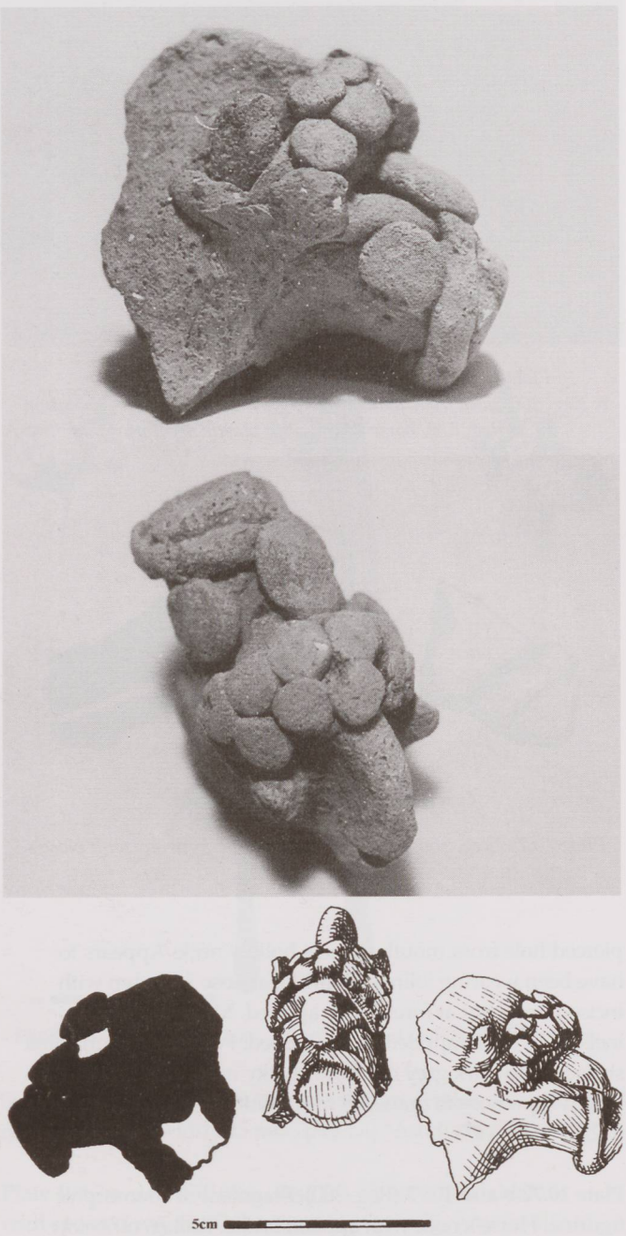


Plate 10.74:a–e: Reg. 320, horse's head with plastic decoration

Plate 10.75 (Reg. 363). Part of horse's head. Spouted vessel. Decoration between the ears. Pink/buff pottery. Height: 55 mm. Length from back of head to nose: 60 mm. [DII.6.5] *Emory Univ. #not seen.

Plate 10.76 (Reg. 469). Fragment of spouted figurine. Badly damaged horse's head. Appears to be flatter than it should be — possibly discarded during manufacture? Nose is broken off, as are the ears and everything below the head. Buff ware, with grey core and creamy slip. Chalky grits. Pinkish-buff patch on forehead may have been caused by plastic decoration breaking



Plate 10.75: Reg. 363, fragment of horse's head/spouted vessel

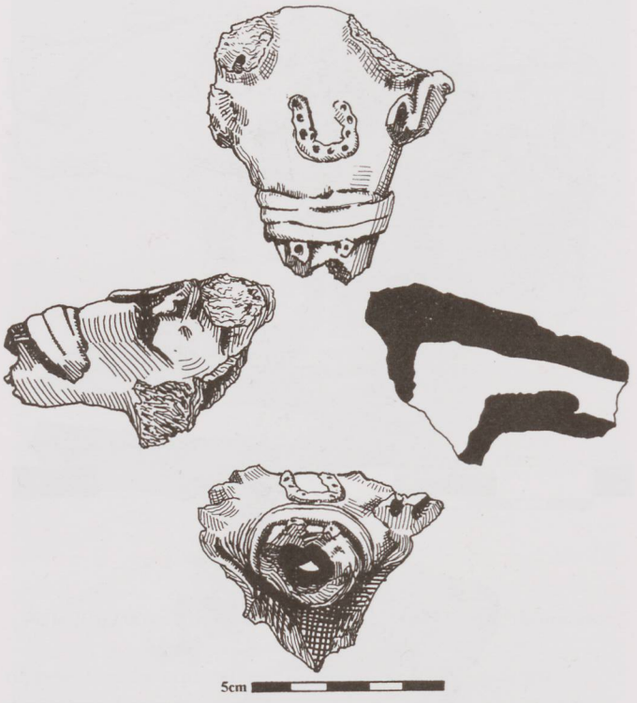


Plate 10.76: Reg. 469, fragment of horse's head/spouted vessel

off. Applied 'horseshoe' decoration on brow, and bridle around nose is extant. Head has been hollow through to nose. Existing length: 72 mm. Width: 63 mm. Maximum depth: 43 mm. [D3.1.2] *ROM.

(Reg. 492). Fragment of a badly broken figurine. Unrecognisable. Possibly part of a horse's head. Hollow. Length: 40 mm. Width: 30 mm. Diameter: 25 mm. [B3.4.3 or A1.11.7] *Emory Univ. #not seen.

Plate 10.77 (Reg. 515). Horse's head in pink/buff pottery. Nose broken in half. Top portion with noseband remaining. One eye showing and part of mane. Hollow, probably spout of vessel. Length: 70 mm. Height: 40 mm. [B3.4.3] *Emory Univ. #not seen.

Plate 10.78 (Reg. 809). Head of a spouted zoomorphic figurine — camel? Almost complete, but some plastic decoration missing — two knobs on nose, and one eye. Nostrils and ears represented by incised dents. Pink/red ware with gritty inclusions. Traces of a creamy white slip, and a line of red paint

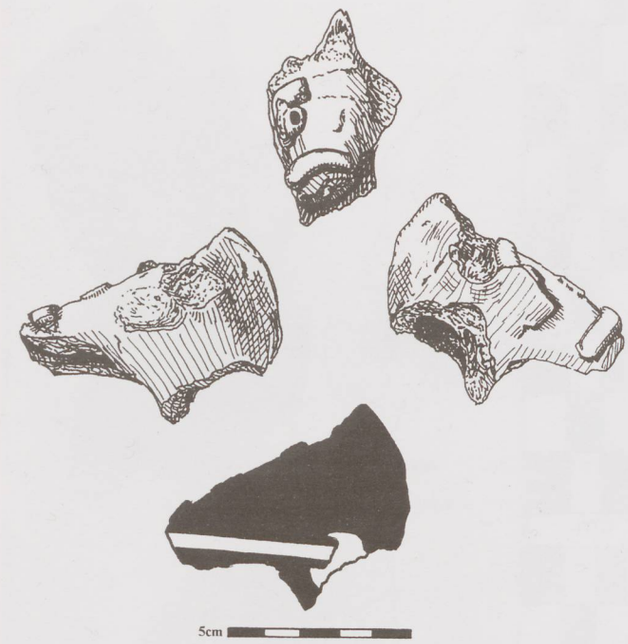


Plate 10.77: Reg. 515, horse's head fragment

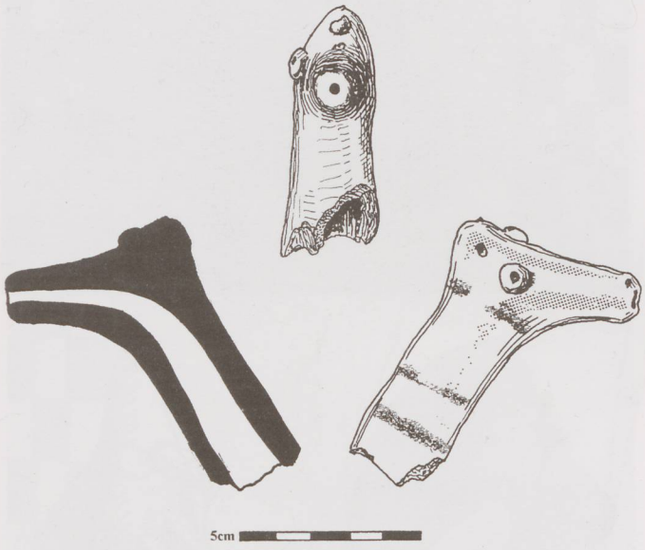


Plate 10.78: Reg. 809, spouted zoomorphic head with plastic decoration

from the top of the head to the nose. Some lime encrustation. Length from top of head to break at neck: 74 mm. Length from nose to back of head: 52 mm. Width, ear to ear: 23 mm. [M3.1.5] *BM: 136067 (1974).

Plate 10.79 (Reg. 908). Head of animal figurine with ears and top of mane chipped off. The remains of some plastic decoration can be seen on the nose and neck. Possibly unfinished, or badly damaged in antiquity. Hollow manufacture, but the nose appears to have been solid with a hole pierced through — to pour from? Pinkish buff ware. Quite lime encrusted. Nose to top of head: 57mm. Top of head to break at neck: 47 mm. Width across ears: 39 mm. [B7.4.4] *Ash: 1975.403.

Plate 10.80 (Reg. 920). Broken fragment of animal figurine. Horse's head with large applied nose band. Has been hollow

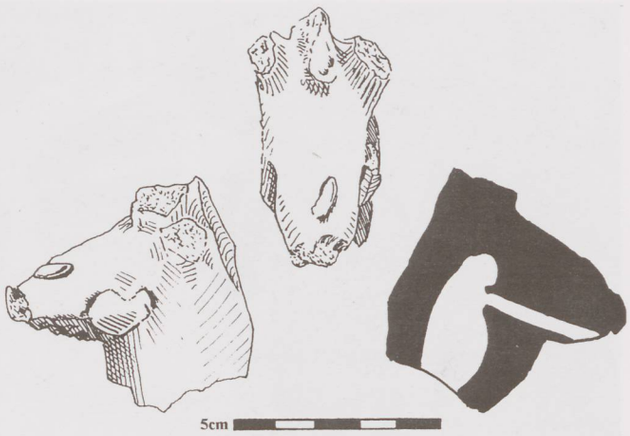


Plate 10.79: Reg. 908, zoomorphic figurine head

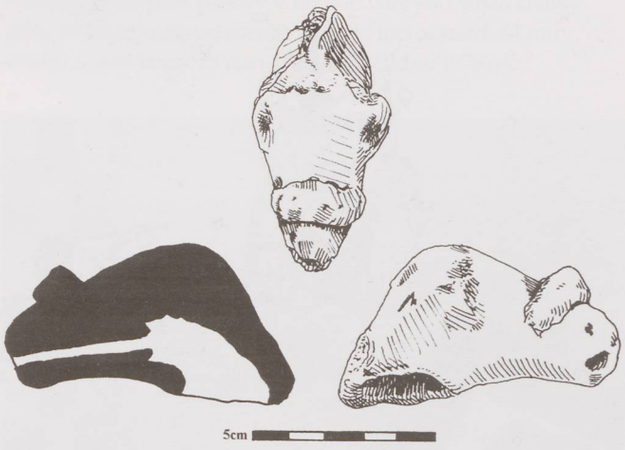


Plate 10.80: Reg. 920, fragment of zoomorphic figurine

up to neck, then pierced through solid head to mouth. Pink/red ware with grey core. Eyes/ears/mane etc., broken. Length from nose to back of head: 63 mm. Width at 'ears' c. 40 mm. [B7.4.6] *Man: 1975.52.

Plate 10.81:a–e (Reg. 938). Spouted zoomorphic figurine. This example is arguably the most spectacular in its combination of size and decorative elements. It is wearing an elaborate applied bridle with head-dress and blinkers, which incorporates two straps around the nose and a large piece across the forelock, connected by crossed straps which are fixed in the centre by a double (one on top of the other) slightly flattened blob of clay. There is a larger double blob of clay on the nosepiece, and a series of smaller ones across the forelock. The eyes peep out from the blinkers in a most anatomically unfeasible way (for camel or horse), and are made of small rings of clay. It has a flat, almost fin-like mane. Slight traces of black staining could indicate the presence of painted decoration. The body has been cylindrical. Broken off at end of neck, some evidence of 'saddle'. Traces of creamy slip remain. Pottery is buff ware with grey black grits, some quite large. Maximum length from top of head-dress to break: 140 mm. Length from back of mane to nose: 75 mm. Width of head: 53 mm. [D3.6.3] *Kar.

Plate 10.82:a–d (Reg. 952). Fragment of a zoomorphic figurine — horse's head. Bridle and eyes represented by plastic

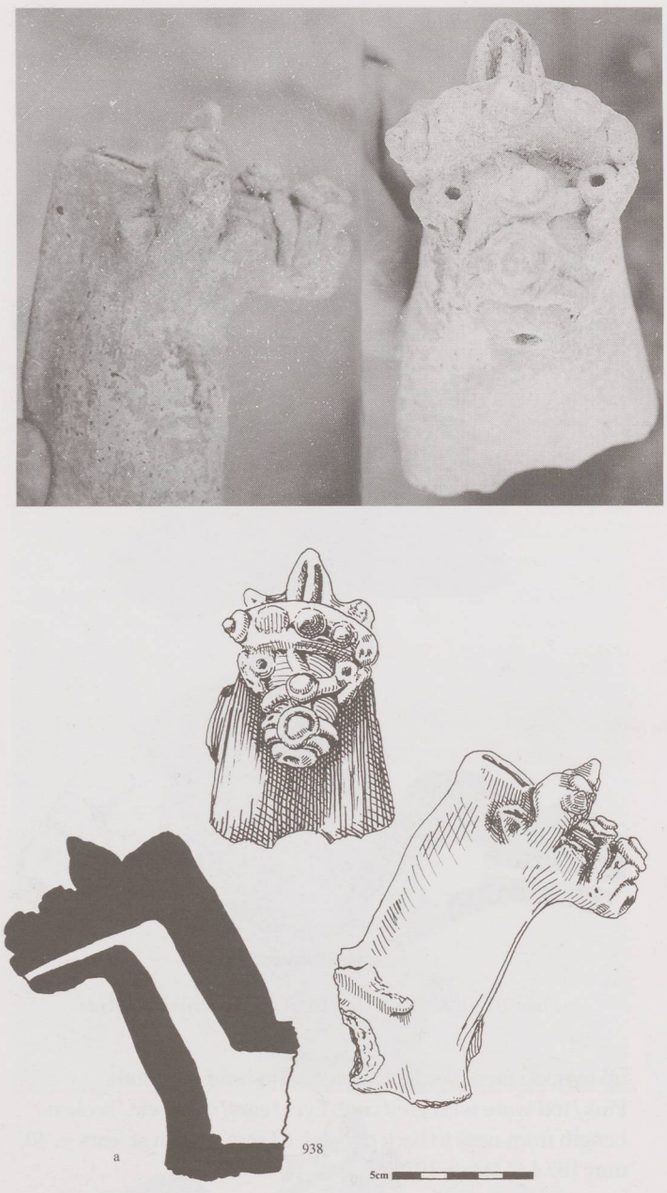


Plate 10.81:a–e: Reg. 938, spouted zoomorphic head with plastic decoration

decoration. High, solid mane. Ears and nose missing. Pink/red ware with gritty inclusions. Traces of black paint remain on the side of the head and ear. Quite a lot of lime encrustation. Existing length from mane to break at neck: 81 mm. Existing length from mane to break at nose: 48 mm. Existing width at ears: c. 30 mm. [B3.6] *BM: 136744 (1975).

Plate 10.83 (Reg. 1009). Fragment of an animal figurine, probably a horse. Neck/mane and part of ears remain. Buff pottery with buff core and large grits. Body and neck has been hollow, but head was solid. Traces of red paint visible on one side of mane. Existing measurements: Length: 118 mm. Width: 51 mm. [B3.1.4] *L NMGM: 1993.180.79.

Plate 10.84:a–d (Reg. 1047). Figurine fragment. Horse's head with applied bridle. Traces of paint can still be seen, black on the bridle, and a trace of red on the top of the forelock. Pink/red pottery with buff core and very tiny grits. The head is



Plate 10.82:a–d: Reg. 952, horse's head fragment with plastic decoration

of solid construction, but the neck has been hollow. Part of the bridle and one ear are missing. Length from nose to top of mane: 52 mm. Existing width at ears: 33 mm. [B3.20.4] *ROM: 975.416.48.

Plate 10.85 (Reg. 1063). Fragment of a spouted zoomorphic vessel — horse's head. Very plain, but with incised decoration

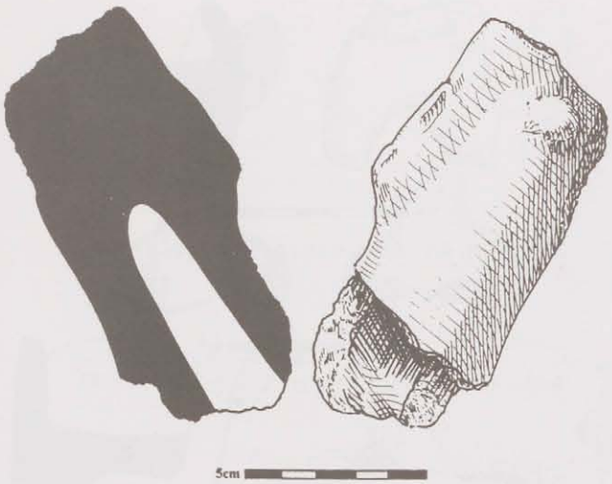


Plate 10.83: Reg. 1009, zoomorphic figurine fragment

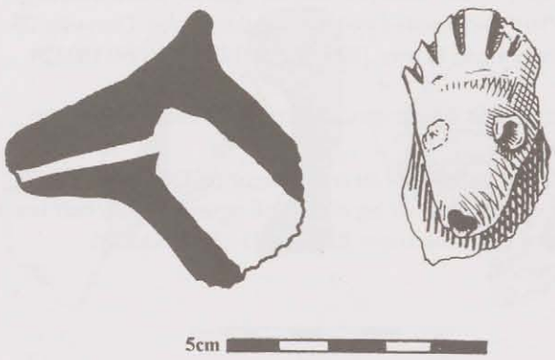


Plate 10.85: Reg. 1063, fragment of spouted vessel/horse's head

across the top of the head and applied plastic eyes — one missing. Buff/pink pottery with buff core and small chalky grits. Existing measurements: Nose to top of head: 44 mm. Width across head: 25 mm. [B2.10.54] *Edin: 1976.642.



Plate 10.84:a–d: Reg. 1047, horse's head fragment, with applied bridle



Plate 10.86:a–d: Reg. 1178, fragment of spouted zoomorphic vessel

Plate 10.86:a–d (Reg. 1178). Fragment of a spouted zoomorphic vessel, probably horse's head, in buff ware with gritty inclusions. The only features remaining are part of the plastic decoration — bridle, around nose and across forehead. Some lime encrustation. Existing length from nose to back of head: 49 mm. Existing width at back of head: 37 mm. Diameter of nose: 21 mm. [D3.2.19] *BM: 136748 (1975).

(Reg. S.19). 'Nose' from zoomorphic figurine. Pierced through. Grey/buff undecorated pottery. Height: 39 mm. Diameter: 28 mm. tapering to 12 mm. [B3.3/6.2] *L NMGM: 1993.180.124.

OTHER ZOOMORPHIC FRAGMENTS, AND UNIDENTIFIABLE FRAGMENTS

(Reg. 232). Fragment of an animal figurine. One surviving stump of leg. Hind left leg of ox/bull figurine? Pink/buff ware with grey core. Thickness: 20 mm. [B3.1.3] *L NMGM: 1993.180.S.64.



Plate 10.87: Reg. 249, fragment of hollow figurine

Plate 10.87 (Reg. 249). Almost unrecognisable fragment of hollow animal figurine. Legs and tail are broken off. Has possibly been a smaller version of Reg. 791. Pink ware, with buff core and thick white slip. Existing length: 57 mm. Width at 'hips': 52 mm. Diameter of 'body': 40 mm. [B3.2.6?] *Ash: 1973.374.

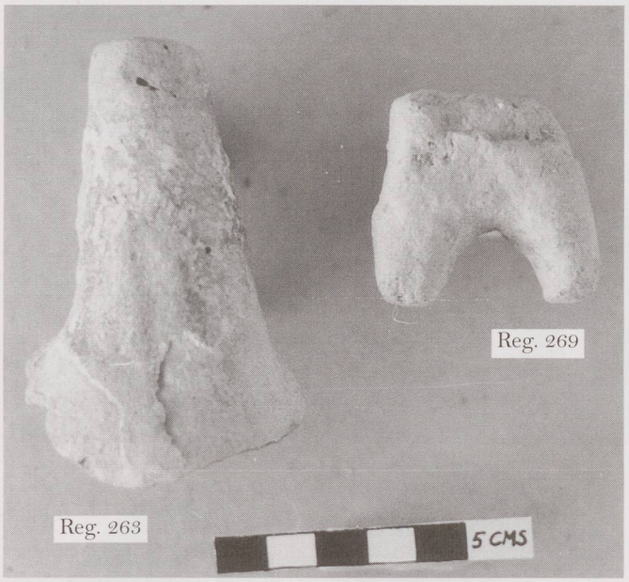


Plate 10.88:a: Reg. 263, leg from an ox/bull figurine
b: Reg. 269, two legs from an ox/bull figurine

Plate 10.88:a (Reg. 263). Leg from a large ox/bull figurine. Red ware. Thick white slip with dark red and black vertical lines painted on. Originally erroneously registered as 'pottery phallus'. Maximum existing length: 90 mm. Diameter of leg: c. 30 mm. [B3.2.9] *Ash: 1975.387.

Plates 10.88:b and 10.89 (Reg. 269). Two legs from an animal figurine — apparently the rear end. Impossible to identify the animal. Buff/grey ware with creamy buff slip. Height: 44 mm. Width at feet: 46 mm. [D2.1.3] *Dub: WM581.

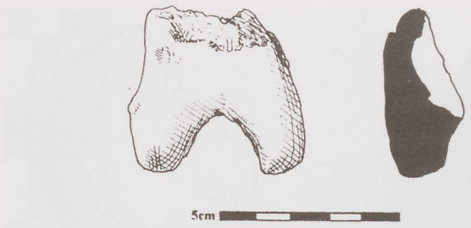


Plate 10.89: Reg. 269, two legs from an ox/bull figurine



Plate 10.90: Reg. 669, leg from zoomorphic figurine

Plate 10.90 (Reg. 669). Back leg of animal figurine. Has had cylindrical body. Buff ware with chalky grits. Length from foot to existing top: 55 mm. Existing width: 55 mm. [B6.3.2] *Edin: 1976.604.

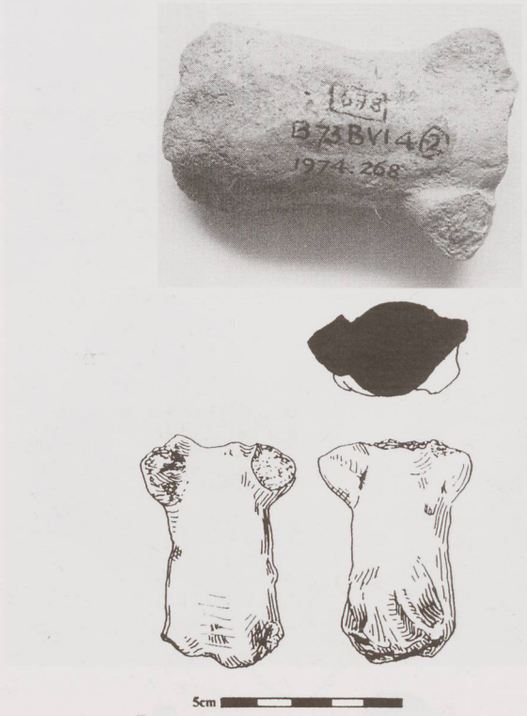


Plate 10.91:a–d: Reg. 678, fragment from an unidentifiable figurine

Plate 10.91:a–d (Reg. 678). Fragment of an unidentifiable figurine, anthropomorphic or zoomorphic. Pinkish ware with a buff/grey core. Existing length: 61 mm. Maximum width: 42 mm., minimum: 30 mm. Depth: c. 27 mm. [B4.4.2] *Ash: 1974.268.

Plate 10.92 (Reg. 748). Fragment of a figurine, difficult to identify. Solid construction. Green-surfaced pottery with buff core and large grits. Existing measurements: 47 mm. x 37 mm. [B7.1.2] *Man: 1975.49.

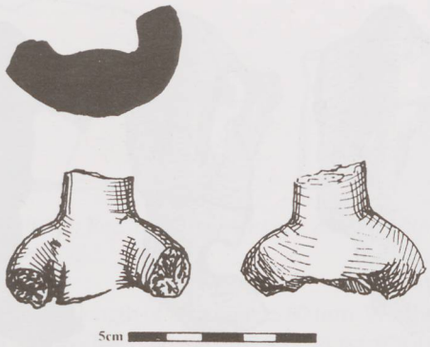


Plate 10.92: Reg. 748, Figurine fragment, unidentified

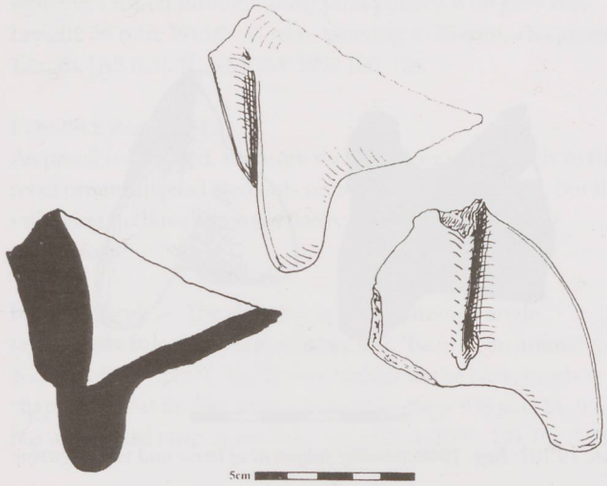


Plate 10.93: Reg. 791, fragment from ox/bull figurine

Plate 10.93 (Reg. 791). Fragment of an ox/bull figurine. Right hind leg and tail extant. Has had a cylindrical body. Traces of white slip visible. Smooth pink/red ware with a buff core. Length from top of tail to foot: c. 87 mm. Length of tail: c. 51 mm. [B2.7.2] *Ash: 1974.266.

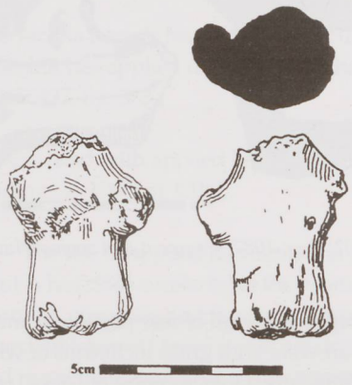


Plate 10.94: Reg. 890, fragment of a solid figurine

Plate 10.94 (Reg. 890). Fragment of a figurine of solid construction. Pink ware with grey core. Unrecognisable as animal or human. Existing measurements: 55 mm. x 40 mm. x 25 mm. [M2.1.11] *ROM: 974.107.70.

Plate 10.95 (Reg. 911). Rear of ox/bull figurine. Length: 65 mm. Width: 40 mm. [B7.4.4] *L NMGM: 1993.180.S66.

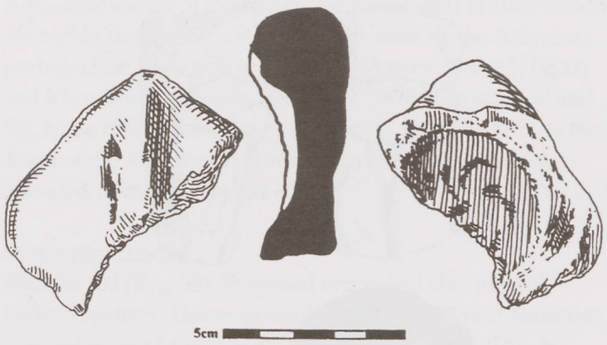


Plate 10.95: Reg. 911, figurine fragment

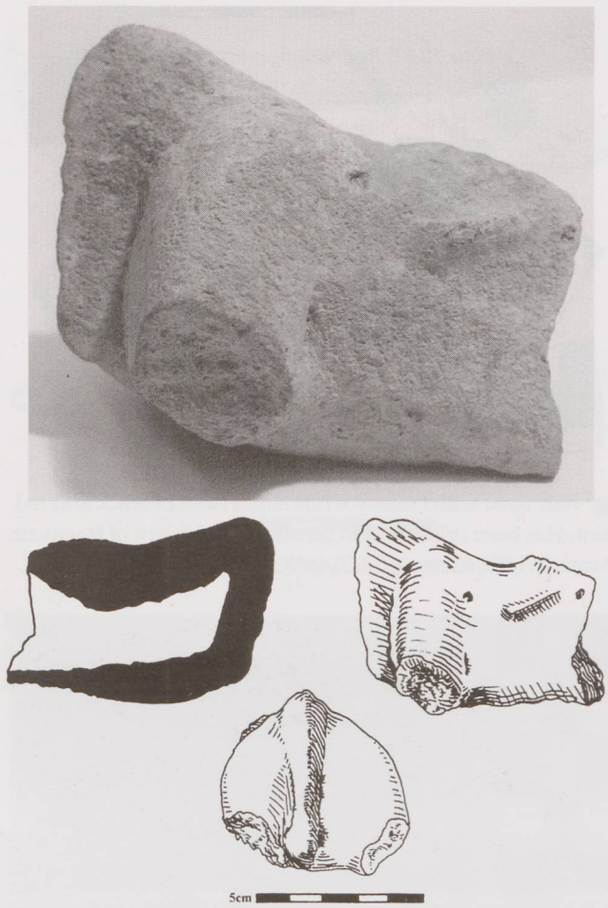


Plate 10.96:a–d: Reg. 937, rear-end of horse figurine, with possible saddle

Plate 10.96:a–d (Reg. 937). Figurine fragment. Rear end of horse — has had saddle and rider?, now broken off. Legs also missing below tail. Has been of hollow construction. One side heavily lime encrusted. Pink/red ware with large grits. Possible traces of creamy slip. Existing length: 72 mm. Width at rear: 59 mm. Depth: 53 mm. [B5.1.2] *ROM: 975.416.38.

Plate 10.97 (Reg. 973). Portion of a figurine in buff/pink ware. Broken at both ends and unidentifiable. Applied band around half of centre. Length: 68 mm. Thickness: 30 mm. Width: 40 mm. [B5.1.5] *DoA. #not seen.

Plate 10.98 (Reg. 1014). Fragment of animal figurine — impossible to identify. Possibly the tail of an animal-shaped

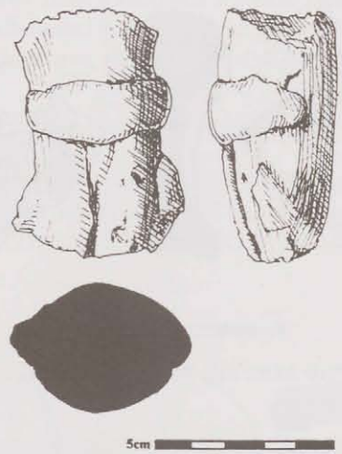


Plate 10.97: Reg. 973, figurine fragment

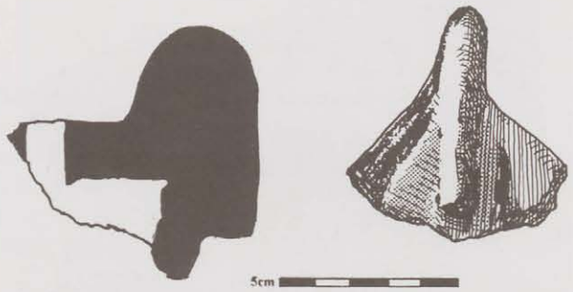


Plate 10.98: Reg. 1014, figurine fragment

jug? Buff ware with creamy white slip. Traces of black and red paint. Has been cylindrical in construction. Height of fragment: 69 mm. Width: 62 mm. [C3.20.4] *Kar.



Plate 10.99: Reg. 1022, fragment of zoomorphic figurine

Plate 10.99 (Reg. 1022). Body of a small animal figurine — possibly a horse. Solid construction. Remains visible of tail and saddle with incised decoration. Possible traces of red wash/paint on one side Red/pink ware with buff core and flint/glassy grits. Evidence of straw temper. Existing length: 67 mm. Width: 25 mm. Depth: 26 mm. [B2.7.4] *Edin: 1976.639.

Plate 10.100 (Reg. 1027). Tail end of large animal figurine. Traces of white, red and black paint thickly applied around body. Diameter of body may have been 90 mm. Body has been large and cylindrical — perhaps bull figurine. [B6.3] *Man: 1975.62.

Plate 10.101 (Reg. 1040). Rear end of animal figurine with different 'character' from others. Back slopes up from tail —

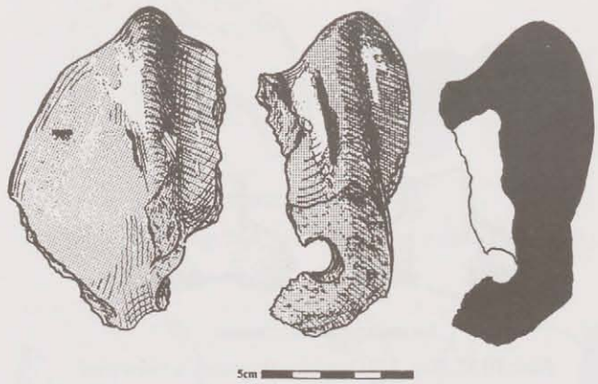


Plate 10.100: Reg. 1027, rear-end of a large zoomorphic figurine

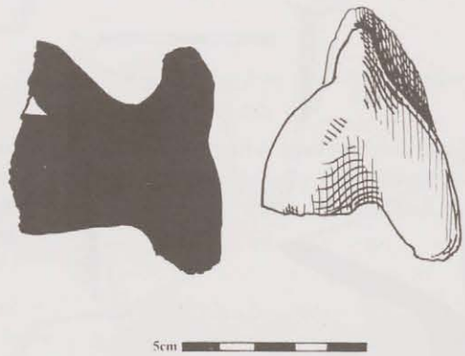


Plate 10.101: Reg. 1040, possible fragment of horse and rider figurine

perhaps indicating a rider? Solid construction. Buff/red ware with buff/grey core. Grits vary from large and chalky to very tiny. Height from foot to top of tail: 61 mm. Width of body at break: 30 mm. [B3.20.4] *Man: 1975.66.

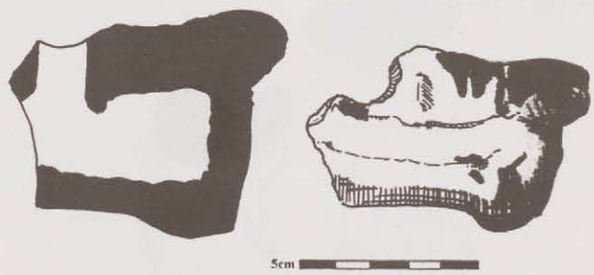


Plate 10.102: Reg. 1087, fragment of a zoomorphic figurine

Plate 10.102 (Reg. 1087). Half of rear portion of animal figurine. Rough pink/buff ware with gritty inclusions of white and grey. Hollow in manufacture. Hole in centre of back. Traces of saddle? Some traces of black paint remain, on the back and tail and down the side of the rear. Existing length: 76 mm. Diameter of body: 50 mm. Thickness of pottery: 10 mm. to 20 mm. [B2.9.7] *BM: 136746 (1975).

Plate 10.103 (Reg. 1088). Fragment of animal figurine. Possibly ox or bull, but unidentifiable. Part of the underneath of the rear and one leg only remain. Buff/pink pottery with a grey core. Glassy and chalky grits. Has been of hollow, apparently cylindrical construction. Creamy buff slip. Traces of burning on

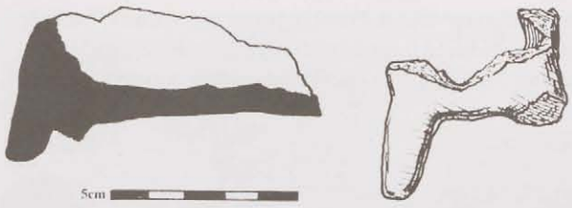


Plate 10.103: Reg. 1088, fragment of a zoomorphic figurine

interior. Existing length of fragment: c. 80 mm. Width: c. 47 mm. Length of existing leg: c. 40 mm. [B2.9.7] *ROM: 975.416.20.

(Reg. S.23). Fragment of pottery object, possibly part of animal figurine. Pierced through. Buff/pink pottery with grey core. Length: 39 mm. Width: 31 mm. tapering to 25 mm. Thickness: 19 mm. [A5.II.3]. *L NMGM: 1993.180. 128.

POSSIBLE PARALLELS

As previously stated, there are no known exact parallels to the most ornate applied elements on the Busayra figurines, but the following do have some similarity with elements of the assemblage:

Horvat Qitmit — The drawing is from a strange angle (apparently from the back), but no. 152, 'head of an animal (or zoomorphic vessel?)', looks very similar to the basic head-shape with flat fin-like mane of Busayra Regs 938 and 14. It also has an applied strip around the nose (Beck 1995: 139, fig. 3.93).

Jerusalem — This is a head from a spouted vessel which has an applied bridle and round applied eyes, similar to those on Busayra Regs 938 and 149. Unfortunately, the top of the head is missing, but it appears to have had a decorative strip above the brow (Ariel and de Groot 1996: 127, pl. 6:8).

Lachish — Horse's head with applied bridle similar to Busayra Reg. 1047 (Tufnell 1953: pl.32:11).

Nimrud — Terracotta horse's head from room S10. It has a thin snout-like nose, but has applied decoration on the harness (Mallowan 1966: 437, fig. 363).

Hazor — Horse's head with applied bridle similar to Busayra Reg. 1047 (Yadin *et al.* 1960: pl. CII:9).

Carchemish — The use of applied decoration on the horses from Carchemish has close similarity to the examples from Busayra. A number of vessels and figurines discovered by Woolley at Carchemish and Deve Hüyük are decorated in what he called 'snowman technique'. This consisted of the decorative application of small blobs of clay, together with rolled strips, similar to the technique used at Busayra, although the assemblage as a whole (which includes anthropomorphic figures) is of a different character to that at Busayra (Woolley 1921: pl. 20a,7). Woolley reported finding terracotta horses and horse and rider figurines in the graves of children at Carchemish (Moorey 1980: 100), which suggests that at least some zoomorphic figurines were toys; but the spouted heads from Busayra all give the distinct impression that they were intended for use as vessels for pouring liquid, and are of a different category to the solid animal figures.

A possible source of inspiration for the applied bridles could be the highly decorative horse trappings used by the Assyrians, portrayed on the reliefs at Nineveh (Moorey 1987: 13, fig.11) and Khorsabad (Albenda 1986: pls 27,28,49, figs 46,47,49 and 75). None of the examples from Busayra precisely reflects the detail of the Assyrian sculptures, but they could have been intended to create a similar effect.

OTHER FRAGMENTS

Plate 10.104 (Reg. 38). Fragment of a baked clay model? Reddish pottery. Unrecognisable, but was hollow. Maximum measurements: 51 mm. x 51 mm. x 31 mm. [B1.1.8] *Ash: 1973.382.

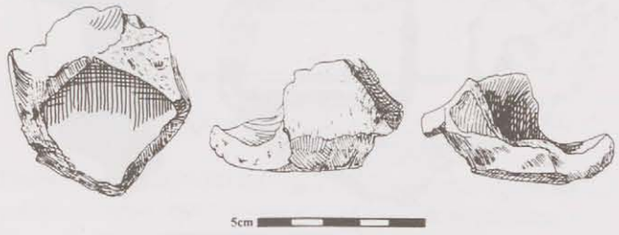


Plate 10.104: Reg. 38, fragment of a baked clay model?

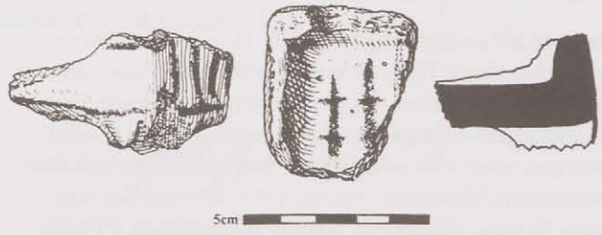


Plate 10.105: Reg. 340, fragment of a pottery object

Plates 10.105 (Reg. 340). Fragment of pottery object in pinkish red ware with a buff core and glassy grits. Cross-hatched design in grey/black paint can still be seen on both interior and exterior. Possibly the corner of a square pottery box or dish. Has had integral 'feet'. Existing measurements: 45 mm. x 41 mm. x 28 mm. deep. [B4.2.4] *ROM: 974.107.4.



Plate 10.106: Reg. 1000, fragments of a pottery object

Plate 10.106 (Reg. 1000). Originally registered as 'soul house or shrine'. Thirteen (20 when registered) pieces of pink/red pottery with grey core. Some pieces have creamy white slip.

Impossible to discern original shape. Largest piece 110 mm. long, 50 mm. wide. Thickness of wall 6–10 mm. [D3.10.3] *Kar.

Pottery boxes (coffins?)

These fragments of pottery objects, originally registered as 'altar or shrine fragments' or 'architectural fragments', are possibly ceramic coffins (see Zorn 1993: 216–24, figs 1 and 2).

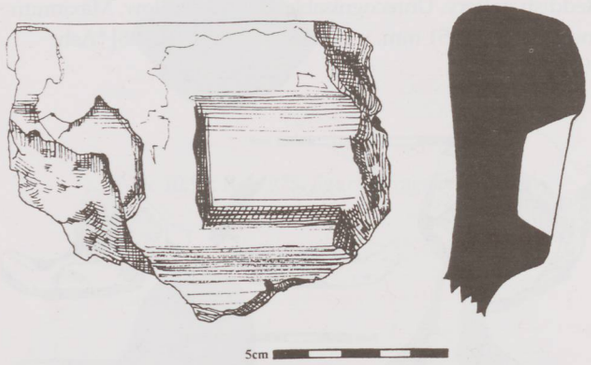


Plate 10.107: Reg. 120, possible ceramic coffin fragment

Plates 10.107 and 10.111:g (Reg. 120). Fragment of a heavy, baked clay object. The back was smoothed, so it was part of a heavy clay box or altar, not an architectural fragment. Very deep design of oblongs cut into the exterior. Made of solid, thick grey ware with a thick beige/buff slip. Some thick lime encrustation. Maximum existing width: 107 mm. Existing depth: 87 mm. Thickness: c. 40 mm. [B1.2.e] *Ash: 1973.371.

(Reg. 448). Pottery fragment, maybe part of very thick pottery box. The top edges slope outward and there is a slight ridge along the top. A rectangular depression — obviously part of a design — is on the outside surface. A very thick buff slip remains, though quite badly chipped. The fragment is triangular in shape: 148 mm. at its widest. Length: 84 mm. Thickness: 50 mm. Similar to Reg. 120. [B2.5.1] *Kar.



Plate 10.108: Reg. 244, possible ceramic coffin fragment

Plate 10.108 (Reg. 244). Pottery fragment, maybe part of very thick, heavy pottery box. Grey ware with grey grits. Deep oblong design cut into it. Possible traces of a creamy/buff slip. Maximum width of fragment: 70 mm. Length: 85 mm. Maximum thickness: 38 mm. Similar to Reg. 120. [B3.1.3] *Kar.

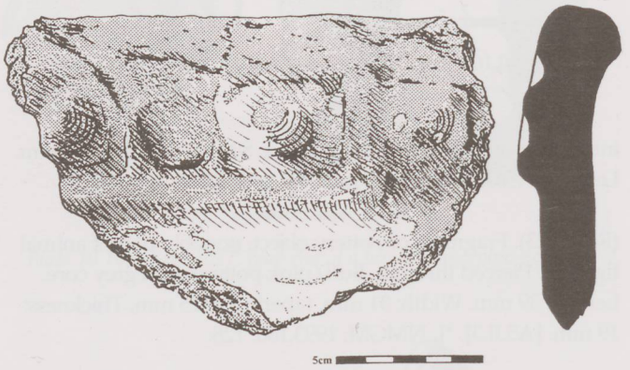


Plate 10.109: Reg. 916, possible ceramic coffin fragment

Plate 10.109 (Reg. 916). Originally registered as 'architectural feature' in brick, but appears to be part of a large, heavy pottery box. Deep, indented decoration around the top of the exterior — oblong indents with circular, raised 'knobs'. Thick white paint — apparently applied with a brush — on both sides. Pottery has dark grey core. Width at widest: c. 160 mm. Depth: 110 mm. Thickness: c. 27 mm. [A17.1.3] *L NMGM: 1993.180.74.

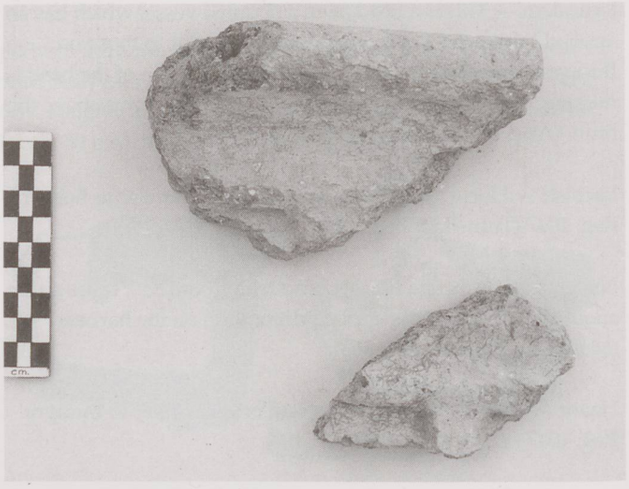


Plate 10.110: Reg. 916a and b, possible ceramic coffin fragments

Plate 10.110 (Reg. 916b). Very heavy, thick fragment of pottery with large chalky inclusions and evidence of straw temper. Thick cream/buff paint on interior and exterior. Has had rectangular decoration of deep depressions. Cf. 916a. Existing size of fragment: Width: 147 mm. Depth: 90 mm. Thickness: 55 mm. at rim, 28 mm. at body. [A60.1.3] *L NMGM: 1993.180.78.

Plate 10.110 (Reg. 916a). Fragment of heavy pottery box. Smaller fragment from same box as 916b. Marks remain from straw inclusions. Length: 104 mm. Width: 66 mm. Thickness: 28 mm. [A60.1.3] *L NMGM: 1993.180.80.

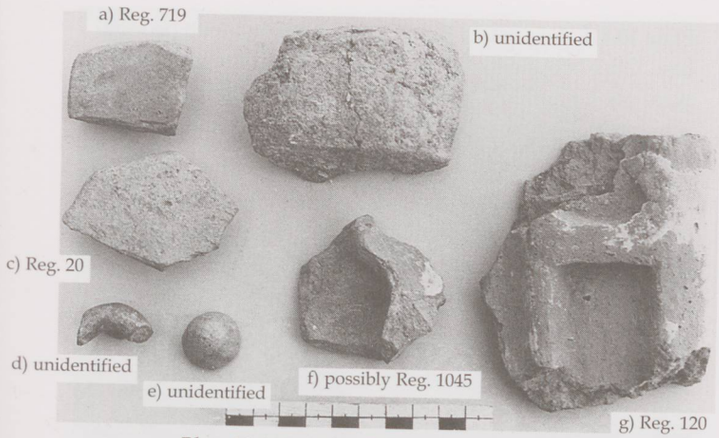


Plate 10.111:a: Reg. 719, fragment of a palette
b, d, e: Unidentified
c: Reg. 20, corner of a pottery palette
f: Possibly Reg. 1045
g: Reg. 120, possible fragment of a ceramic coffin

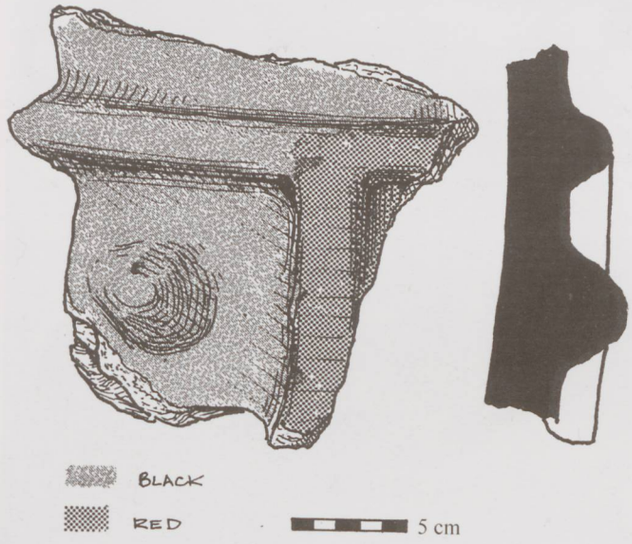


Plate 10.112: Reg. S.63, possible fragment of a ceramic coffin

Plate no. 10.112 (Reg. S.63). Large fragment of heavy pottery box. Very similar to preceding examples. Remains of black paint still visible on raised area. Approximate measurements: Length: 120 mm., width: 140 mm., maximum thickness: 40 mm. [D3.2.1A] *L NMGM: 1993.180.S63.

Palettes

Plate 10.111:c (Reg. 20). Corner of pottery palette made from pink/buff ware. Possibly the corner of an originally hexagonal palette. Length: 58 mm. Width: 44 mm. Thickness: 10 mm. [A1.3.1] *L NMGM: 1993.180.4.

(Reg. 138). Corner of pottery palette. Buff ware. Existing length: 46 mm. Width: 36 mm. Thickness: 9 mm. (Originally accidentally also registered as 20a.) [A5.5.2] *L NMGM: 1993.180.3.

Plate 10.113 (Reg. 936). Fragment of limestone palette. Existing radius: 25 mm. Depth: 30 mm. [A26.1.1b] *Emory Univ. #not seen.

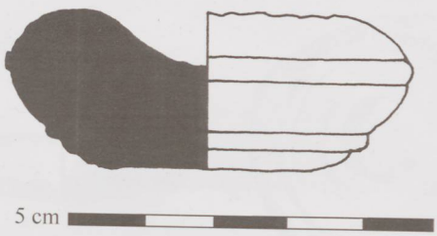


Plate 10.113: Reg. 936, fragment of stone bowl or palette

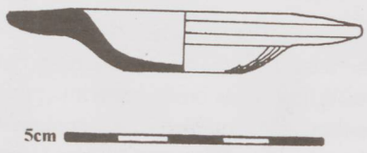


Plate 10.114: Reg. 148, alabaster palette or dish fragment

Plates 10.114 and 10.121:d (Reg. 148). Fragment of alabaster palette (or small dish?). External surface of stone contains brown/cream/white stripes. Inside is lime encrusted. Just over a quarter is extant. Existing diameter is 65 mm., originally slightly more. Compare similar example from Katef Hinnom (Barkay 1986: 34.) [A9.9.2] *Kar.

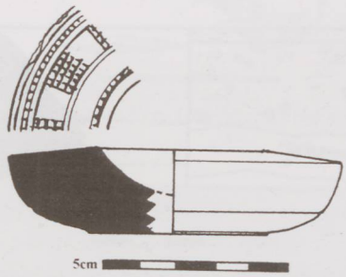


Plate 10.115: Reg. 369, palette fragment with incised geometric design

Plates 10.115 and 10.137:b (Reg. 369). Fragment of palette in smooth creamy white stone — calcite? (like alabaster, but not as smooth). Triangular segment/section remains. Geometric incised design on the flat rim and two incised lines around the outside — one at the base, the other 15 mm. from the rim. Compare with: Tawilan (Bennett and Bienkowski 1995: fig. 9.15:3 for almost identical example, and p. 85 for discussion). Also, Tell Beit Mirsim (Albright 1941–43: pls 30 and 57); Megiddo (Lamon and Shipton 1939: pl. 108:1, 7 and pl. 111: 29); Ramat Rahel (Aharoni 1962: pl. 10:3); Hazor Stratum VII (Yadin *et al.* 1960: pls CLXIV:15 and LXXVIII:7; Yadin *et al.* 1961: pl. CCXXXIII: 3 and 4); Tell en-Nasbeh (McCown 1947: pl. 106:1); Tel Halif (Seger 1983: 15), Dayr ʿAlla (Ibrahim and van der Kooij 1986: 131–43, pl. XV:3); Sultantepe (Lloyd 1954: 101–10, fig. 3). Possible diameter when complete: c. 90 mm. Existing measurements: width: 41 mm. tapering to 8 mm., depth: 23 mm., length from rim to centre: 42 mm. [A9.9–10+] *BM: 136070 (1974).

Plate 10.111:g (Reg. 719). Fragment of cosmetic palette. Quartz? Very slightly concave on upper side. Slightly lime encrusted. Length: 73 mm. Width: 53 mm. Thickness: c. 19 mm. [B3.2.19] *L NMGM: 1993.180.5.

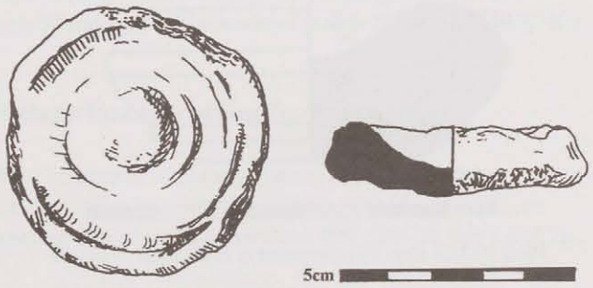


Plate 10.116: Reg. 807, pottery palette

Plate 10.116 (Reg. 807). Pottery palette. Uncertain whether or not it was custom-made or the base of a broken pot shaped for use as a palette. Wheel-made buff ware with apparent white slip. Edges are damaged, but otherwise complete. Appears to have traces of paint inside. Diameter: 50 mm. Depth: 11 mm. [B2.7.23] *Edin: 1976.619.

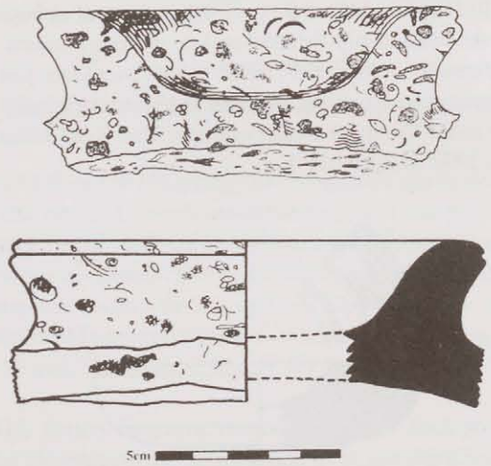


Plate 10.117: Reg. 936, fragment of stone bowl or palette

Plate 10.117 (Reg. 936). Approximately one-third of a stone bowl or dish. Due to shape, may have been a palette or similar. White, chalky fossiliferous stone. Grey/white in colour. May have been attached to a base, but broken. Indentation decorates exterior of rim. Has been smoothed/polished. Existing measurements: diameter: c. 116 mm., depth: c. 43 mm. [B5.1.2] *L NMGM: 1993.180.82.

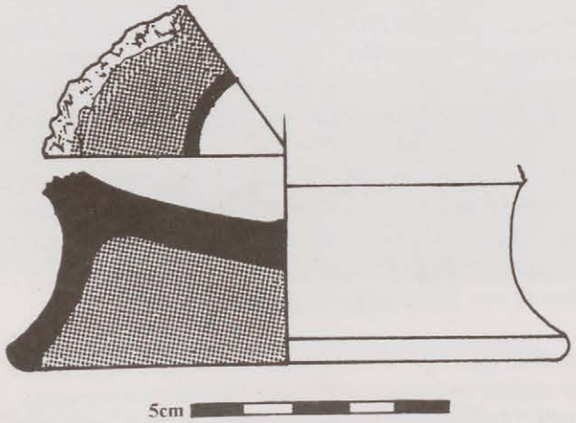


Plate 10.118: Reg. 1007, pottery fragment, used as palette

Plate 10.118 (Reg. 1007). Base fragment of bowl with pedestal base. Once broken, the base has been upturned and used as a paint pot for dark red paint. Originally, the inside of the bowl was painted red, with black rings, and a beige centre circle. [B2.7.4] *Ash: 1875.379.



Plate 10.119: Reg. 1080, fragment of a stone bowl or palette

Plate 10.119 (Reg. 1080). Fragment of stone bowl or palette. The exterior is decorated with three carved ridges around the top edge and near the base. Smooth stone, possibly steatite which is chocolate-brown with pink tinges. Measurements of fragment: 95 mm. x 40mm. x 25 mm. deep. [C3.21.2] *Kar.

Plate 10.120 (Reg. 1187). Fragment of stone bowl/palette. Less than half of a section remains. Grey/buff/pink/orange fossiliferous stone. Surface has been smoothed and polished. Exterior has been decorated with horizontal ridges. Existing size of fragment: 72 mm. x 5 0mm. Depth: 33 mm. [A20.10.5] *L NMGM: 1993.180.84.

(Reg. S.29). Curved sherd (from the bottom of a bowl?) with apparent traces of ochre in the bottom. Buff ware with chalky grits. Roughly triangular: 48 mm. x 52 mm. x 48 mm. Thickness: 12 mm. tapering to 6 mm. *L NMGM: 1993.180. 133.



Plate 10.120: Reg. 1187, fragment of a stone bowl or palette

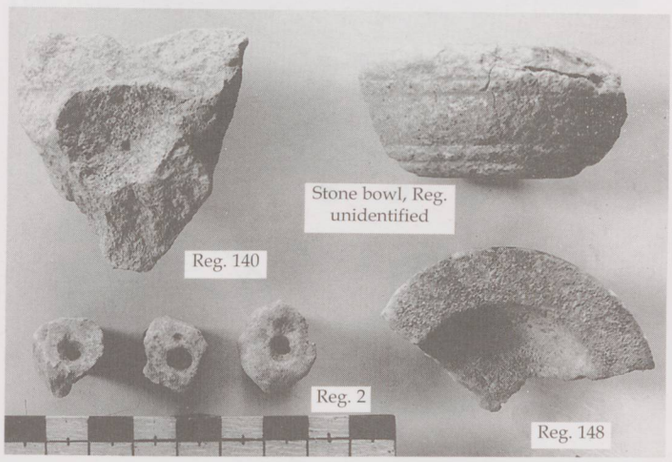


Plate 10.121:a: Reg. 140, corner of a limestone object
b: Not identified
c: Reg. 2, three stone beads
d: Reg. 148, fragment of alabaster palette or dish

(Reg. S.35). Rim fragment of palette in creamy white alabaster. Length of fragment: 40 mm. Width at rim: 28 mm. Maximum thickness: 11 mm., tapering to 5 mm. Transparent when held to light. [C10.5.1] *L NMGM: 1993.180.139.

Stone vessels and objects/plaster

See also some palettes (above).

Plate 10.122:a–d (Reg. 185). Fragment of a stone lion? White/buff chalky limestone. Animal has been sitting on base – only back leg and stomach remain. Two incised lines decorate the rump. Existing length: 88 mm. Depth: 54 mm. Width at base: 36 mm. [B3.2.6] *Kar.



Plate 10.122:a–d: Reg. 185, fragment of a stone lion

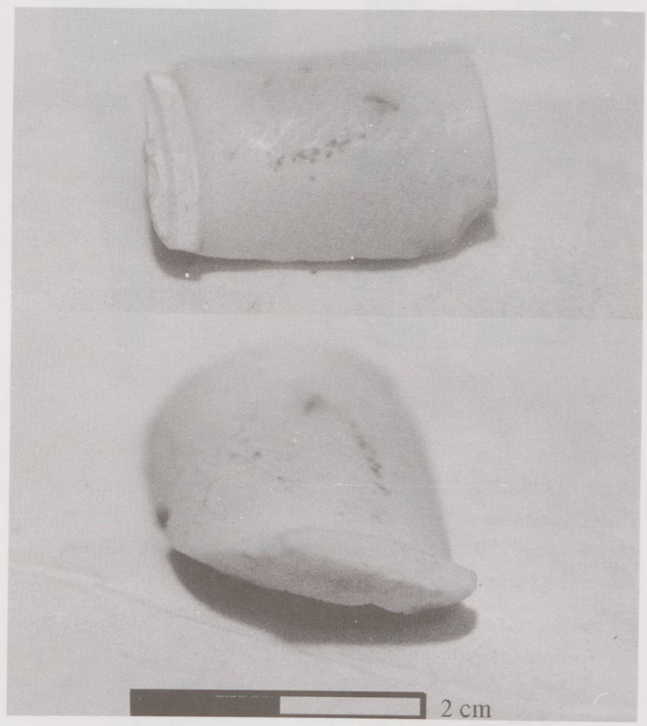


Plate 10.123:a, b: Reg. 675, fragment of a tubular object

Plate 10.123:a, b (Reg. 675). Fragment of tubular object. Appears to have had cartouche-shaped design on one side. Creamy/milky coloured material. At first glance, appears to be ivory, but on closer inspection is very smooth stone –

limestone? Existing measurements: Length: 24 mm. Width: 19 mm. Thickness: 2 mm. [D4.4.11] *Edin: 1976.605.

Altar

Plate 10.124 (Reg. 779). Square, chalky limestone altar with a small depression in the top, and two deep lines scored across the base. Originally had small 'feet' which are now badly damaged. Traces of red paint can still be seen on the top surface, and there are two small holes drilled in one side. Originally registered as a 'horned altar'. For similar examples with discussion, see Beersheba Stratum II (Singer-Avitz 1999: fig. 12; also, Aharoni 1973: pl. 52:3). Also, Gezer, from shaft tomb 153 (Stern 1982: 182–95, and p. 74 fig. 91:2). Compare also small stone altars from 'En Hazeva (Cohen and Yisrael 1995b: 27 and 37). Length and width: 79 mm. by 79 mm. Depth: 59 mm. Feet: c. 15 mm. [BIII.1.8] *Ash: 1974.297.

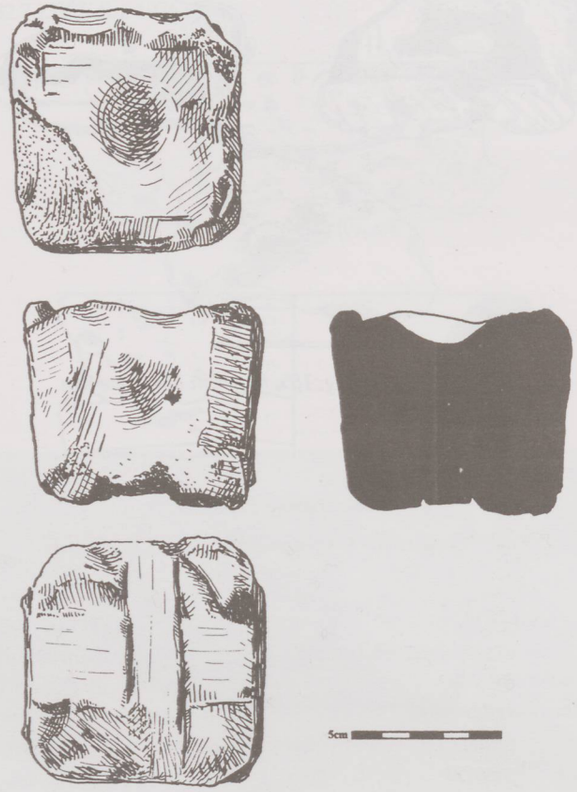


Plate 10.124: Reg. 779, small limestone altar

Stoppers

Plate 10.125 (Reg. 275). Bottle stopper? Stone with crystal core. Carved lines on the surface. Broken. Existing width: 25 mm. at centre. Height: 10 mm. tapering to 3 mm. [A26.2.9] *Emory Univ. #not seen.

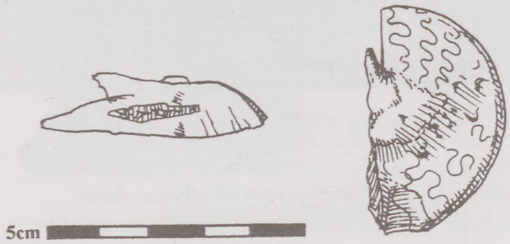


Plate 10.125: Reg. 275, bottle stopper?

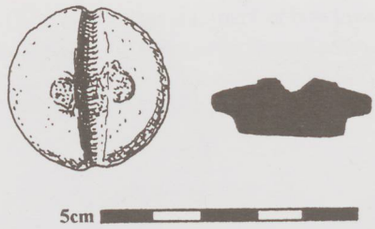


Plate 10.126: Reg. 301, limestone bottle stopper

Plate 10.126 (Reg. 301). White limestone bottle stopper. Shaped to fit into the top of a bottle. Indentation across the top. Small chip on edge. Diameter: 30 mm. Depth: 10 mm. [B2.2.5] *ROM: 974.107.3. Compare alabaster lid from Beth Shan (James 1966: 182–3, fig. 1:2); Hazor (Yadin *et al.* 1960: pl. CXXVI:15); Tall Jawa (Daviau 2002: fig. 2.135:2).

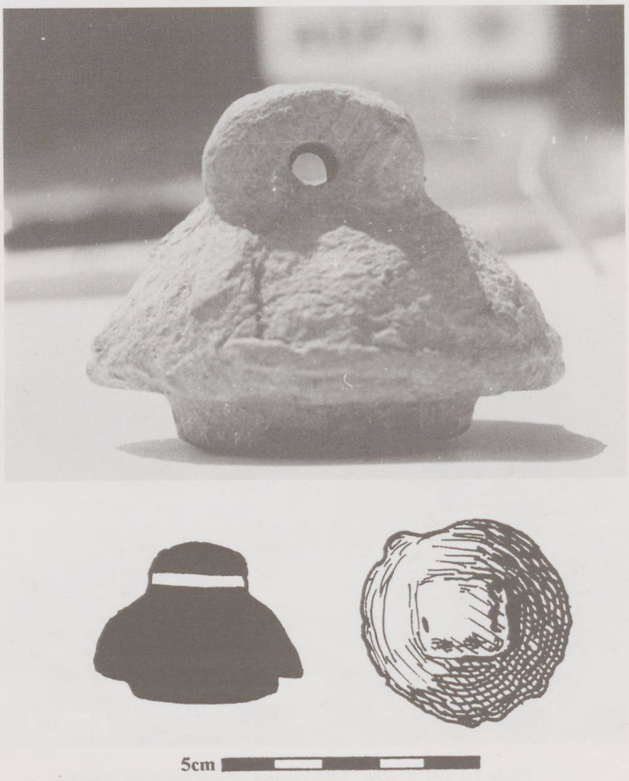


Plate 10.127:a–c: Reg. 1194, sandstone bottle stopper

Plates 10.127:a–c (Reg. 1194). Stopper in red/orange sandstone, with orange, red and cream striations very evident in the stone. Knob at top is pierced. Rim decorated with two ridges. For similar examples see: Lachish (Tufnell 1953: pl. 65:11); Beersheba (Singer-Avitz 1999: fig. 15:3); Tawilan (Bennett and Bienkowski 1995: fig. 9.24:3). Diameter: 39 mm. Height: 30 mm. Diameter of pierced hole: 40 mm. Surface quite eroded. [A20.10] *Kar.

Stone vessels

See also Palettes, Regs 141, 148, 369, 936, 1007, 1080, 1187 and S.35.

(Reg. 314). Fragment of dish in rough black volcanic stone (basalt?). Inside very flat. Outside decorated with four large ridges, starting from centre of base. Rim diameter: 360 mm. [B2.1.3] *Ash: 1973.372.

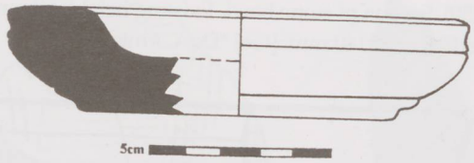


Plate 10.128: Reg. 324, fragment of a stone bowl or dish

Plate 10.128 (Reg. 324). Fragment of stone bowl/dish. Less than a quarter remains. Quite smooth stone — limestone or steatite? — pink/orange in colour, with pink/cream striations. Exterior decorated with two incised lines near rim and two near base. Existing width at rim: 89 mm. Depth: 30 mm. [C3.1] *Kar.

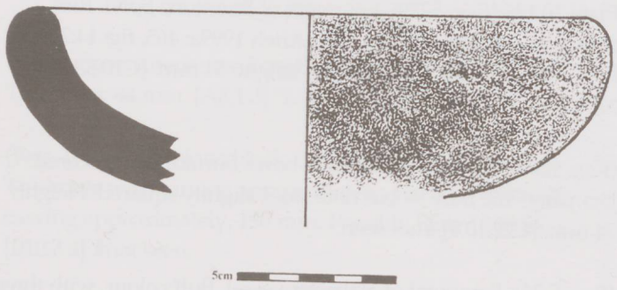


Plate 10.129: Reg. 439, fragment from the rim of a basalt bowl

Plate 10.129 (Reg. 439). Fragment from rim of basalt? bowl. Existing width: 96 mm. Depth: 76 mm. Thickness: 25 mm. tapering to 20 mm. [B3.2.18] *Ash: 1973.373.

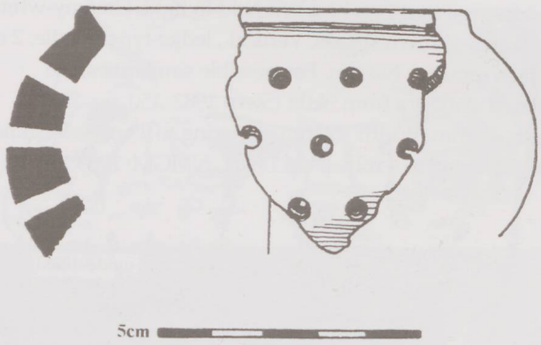


Plate 10.130: Reg. 681, fragment from a pierced stone bowl

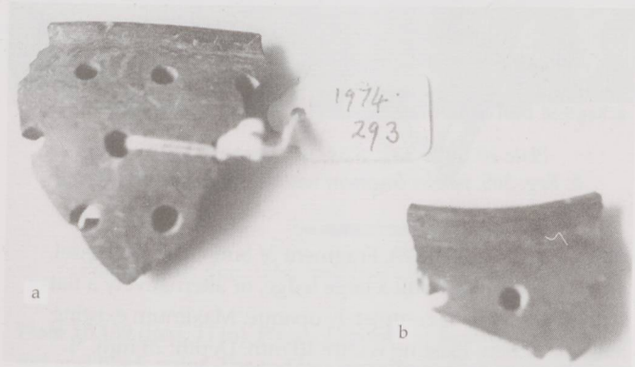


Plate 10.131:a: Reg. 681, rim sherd from a pierced stone bowl
b: Reg. 978, fragment of a pierced stone bowl

Plates 10.130 and 10.131:a (Reg. 681). Sherd from pierced steatite bowl, almost identical to Reg. 978, although complete vessel will have been smaller. Triangular in shape. Length: 43 mm. Width at rim: 38 mm. Thickness: 11 mm., tapering to 5 mm. at rim. [A1.10.9] *Ash: 1974.293.



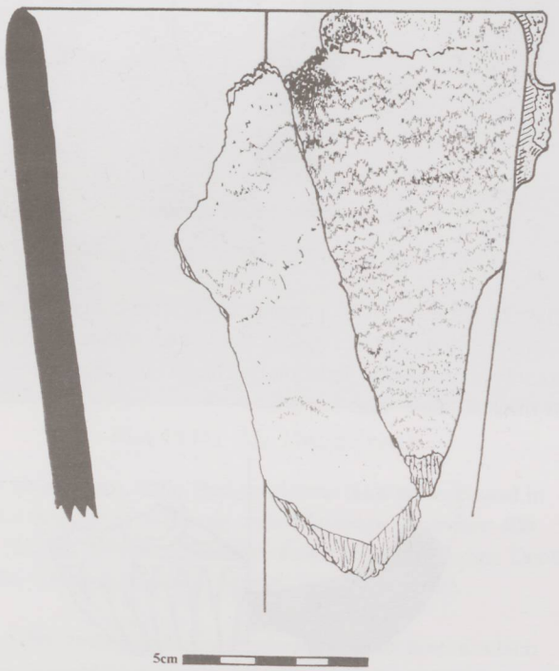


Plate 10.132:a, b: Reg. 919, fragment of a large stone jar

Plate 10.132:a, b (Reg. 919). Large jar. Part of the rim remains; may have had a lid. Existing fragment in two pieces, one encrusted on the exterior. Had handle, but most is snapped off. Length of fragment: 160 mm. Maximum width: 83 mm. Thickness: 10 mm. [B7.4.4] *Kar.

Plate 10.133 (Reg. 970). Loop handle (half), from stone vase or cup in alabaster. Brown and buff graining. Slightly lime encrusted and very smooth on inside of loop. Diameter of outside edge: 44 mm. Diameter of inside edge: 17 mm. Thickness: 15 mm. [B3.2.4] #not seen.

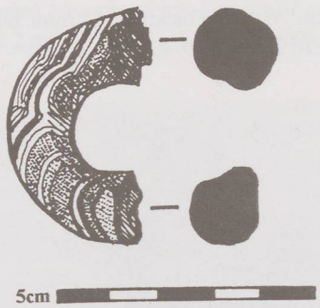


Plate 10.133: Reg. 970, fragment of an alabaster loop handle

Plate 10.131:b (Reg. 978). Rim sherd of steatite bowl, regularly pierced. Possibly part of incense burner. Colour varies from dark red on rim to ochre. Effect created by use of dark red paint. Measurement at rim: 32 mm. Depth: 25 mm. tapering to 13 mm. Thickness: 8 mm. tapering to 3 mm. at rim. [A60.+] *Ash: 1975.396.

(Reg 997). Fragment of flat-bottomed bowl of black vesicular volcanic stone. Appears to have had a ledge handle. Fragment measures 89 mm. x 66 mm. x 30 mm. deep. [B3.2.6] *Man: 1975.60.

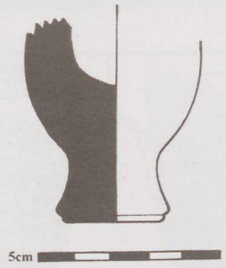


Plate 10.134: Reg. 1036, part of a marble pedestal base

Plate 10.134 (Reg. 1036). Fragment of marble pedestal base. Creamy white marble. Possibly from small goblet. Slightly lime encrusted on outside. Existing height: 56 mm. Diameter of base: 31 mm. [B3.20.4] *Kar.

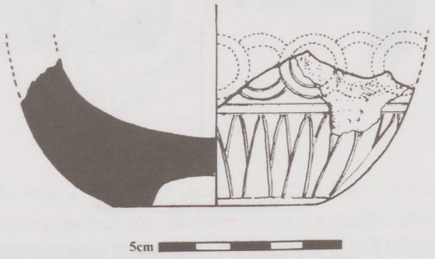


Plate 10.135: Reg. 1053, fragment of a stone bowl

Plate 10.135 (Reg. 1053). Fragment of stone bowl. Mottled grey/white in colour. Part of base only remains — no rim. Papyrus design decorates the outside surface. Base hollow. Possible traces of burning. Maximum existing size of fragment: 90 mm. x 61 mm. Maximum existing depth: 40 mm. Depth of sunken base: 8 mm. [B3.2.4?] *Kar.

(Reg. 1207). Section of stone bowl in two pieces. Orange striations in light grey stone. Diameter: 150 mm. Height: 35 mm. [C11.1.16] # not seen.

(Reg. 1250). Section of stone bowl. Existing height: 68 mm. Possible diameter: 140 mm. [C+] *DoA. #missing.

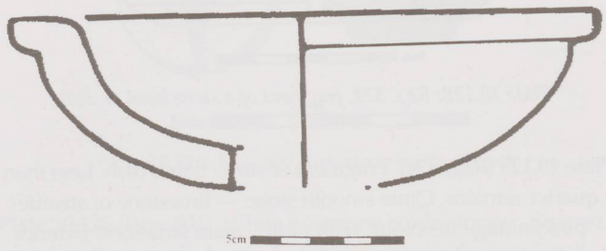


Plate 10.136: Reg. 1279, fragment of a stone bowl

Plate 10.136 (Reg. 1279). Fragment of limestone bowl. Rim chipped. Compare Tel ʿIra (Beit Arieh 1999a: 465, fig. 14:22:12). Rim diameter: 200 mm. Existing height: 54 mm. [C10.5.1] *L NMGM: 1993.190.

(Reg. 1284). Section of limestone bowl. Surface badly scored. Diameter: 160 mm. — but note sides slightly squared. Height: 74 mm. [C22.10.9] #not seen.

(Reg. S.36). Fragment of alabaster vessel. Buff colour, with three creamy white horizontal stripes, transparent when held to light. Possibly part of small vase or goblet, no rim. Length: 55 mm. Width: 23 mm. Thickness: 6 mm., tapering to 3 mm. [A1.22.6] *L NMGM: 1993.180.140.

(Reg. S.37). Fragment of bowl or goblet. Very smooth, marble-like stone, not transparent when held to light. Creamy-white with orange/brown stripes. Vertical , ledge-type handle, 2 mm. of which remains. No rim. For possible similarities, see imported alabastra from ʿAtlit (Stern 1982: 150, fig. 251). Length: 47 mm. Width: 29 mm., tapering to 23 mm. Thickness: 9 mm, tapering to 4 mm. [A26.1.6] *L NMGM: 1993.180.141.



Plate 10.137:a: Reg. S.38, fragment of a stone vessel
b: Reg. 369, palette fragment with incised geometric design

Plate 10.137:a (Reg. S.38). Fragment of buff-coloured vessel. Apparently a base, with a large ledge, or alternatively a flat-topped lid. Stone is completely opaque. Maximum existing length : 50 mm. Existing width: 40 mm. Depth: 28 mm. *L NMGM: 1993.180.142.

Possible architectural fragments

(See also Reg. 157 (inscribed objects))

Plate 10.138 (Reg. 913). Architectural fragment. Possibly part of a small column. Limestone. One deep horizontal line carved into the surface, and a series of more shallow vertical lines.

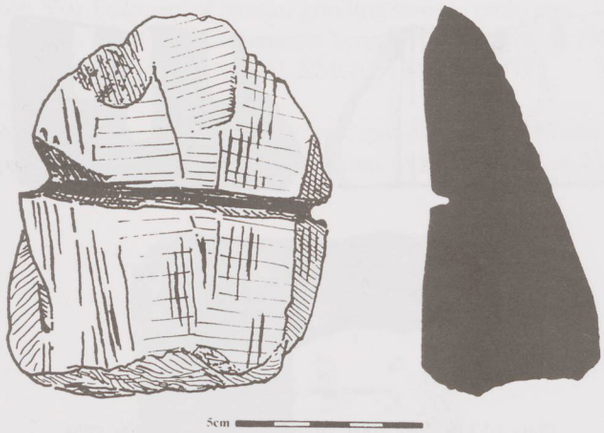


Plate 10.138: Reg. 913, architectural fragment

Existing measurements: Length: 96 mm. Width: 83 mm. Thickness: 44 mm. [A8.1.3] *L NMGM: 1993.180.73.

(Reg. 1045). Limestone block, carved with raised design. Thickness with carving approximately: 160 mm. Without carving approximately: 130 mm. Possibly Plate 10.111:f. [B10.3.4] #not seen.

(Reg. 1046). Worked limestone block, apparently worked on five sides and broken on the sixth. Maximum width: 260 mm. Height approximately: 340 mm. Possible carving on one side. [B10.2.11] #not seen.



Plate 10.139: Reg. 1116, limestone with painting of bull

Plate 10.139 (Reg. 1116). Piece of limestone bearing an image in red and black paint. The red has been applied over the black — possibly as a wash. The image is apparently that of a bull. Width of fragment: 135 mm. Length: 156 mm. Thickness: 26 mm. [B2.9.13] *Kar.

Plate 10.140 (Reg. 1184). Piece of painted limestone. Subject indistinguishable, but traces of black and red paint on plaster.



Plate 10.140: Reg. 1184, fragment of painted limestone

Almost triangular in shape. Width approximately: 250 mm. Length approximately: 190 mm. Thickness approximately: 40 mm., tapering to 20 mm. [B2.9.12] *DoA. #not seen.

(Reg. 1226) Piece of plaster, almost rectangular in shape. Two decorative horizontal grooves cut into surface. Length: 550 mm. Width: 40 mm. Thickness: 41 mm. [C102.1.7a] #not seen.

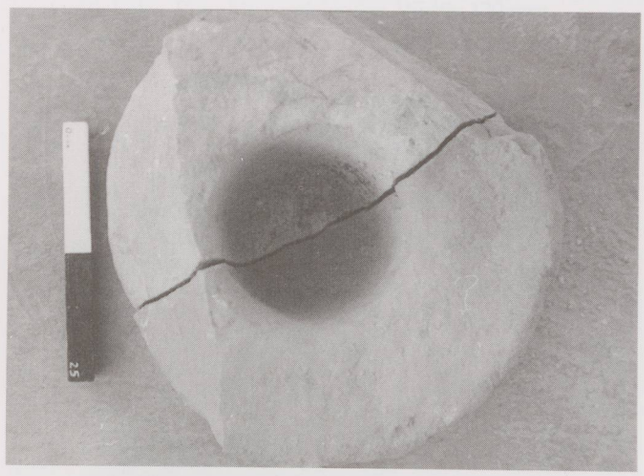


Plate 10.141: Reg. 1292, door socle

Plate 10.141 (Reg. 1292). Red sandstone door socle. Found in several fragments, two large ones. Maximum diameter: 400 mm. Height: 200 mm. Diameter of central hole: 170 mm. Depth of hole: 130 mm. Possibly burnt. [C22.1.2] #not seen.

(Reg. S.59). Two pieces of wall plaster, the smallest of which bears a decorative red geometric design. Compare with discussion of painted plaster at Horvat Teiman (Kuntillet ʿAjrud) (Beck 1982: figs 18–20). Painted fragment: Length: 73 mm. Width: 55 mm. Thickness: 18 mm. [possibly from Area C] *L NMGM: 1993.180. 166.

Stone rings

Plate 10.142 (Reg. 152). Stone? ring. Chalky white — limestone? Spiral line left by the drill that made it? Diameter: 26 mm. Diameter of inside: 18 mm. Width: 7 mm. [E cave 1.2] *Kar.

(Reg. 154). Stone? ring. Broken. Diameter: 15 mm. Width: 30 mm. Possibly **Plate 10.143**. [A5.5.+ clearing up] *Emory Univ. #not seen.

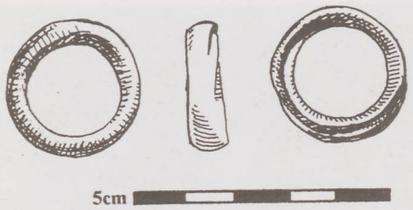


Plate 10.142: Reg. 152, stone ring?

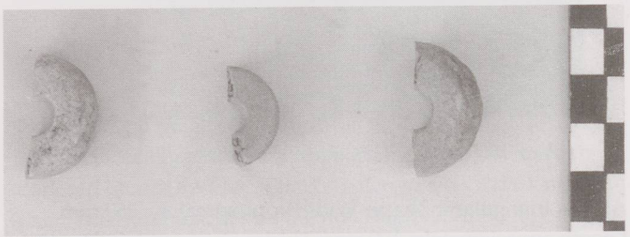


Plate 10.143: Stone ring fragments, possibly including Reg. 154

Possible games

Plate 10.144 (Reg. 292). Shaped piece of chalky limestone. Squarish in shape, perhaps a gaming piece? Slight chip on one surface. Size: 24 mm. x 21 mm. x 10 mm. thick. [C12.1] *Man: 1974.28.

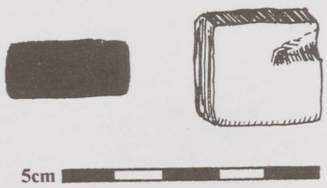


Plate 10.144: Reg. 292, limestone gaming piece?

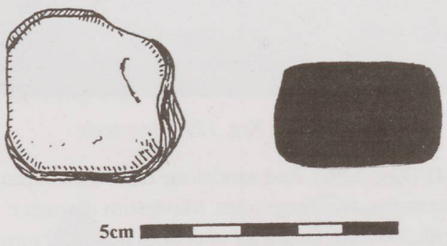


Plate 10.145: Reg. 445, stone weight or gaming piece

Plate 10.145 (Reg. 445). Piece of creamy white shaped stone. Quite heavy, possibly weight? or gaming piece. Beige/brown lines through the middle — calcite-type stone. Roughly circular in shape, and quite thick. Diameter: c. 34 mm. Thickness: 21 mm. [B2.6.10?] *L NMGM: 1993.180.65.

(Reg. 532). Conical, slightly curved stone object. Possibly a fossil? Possibly used as a gaming piece? Decorated around the edge near the base with three incised lines. Lime encrusted, also some crystalline encrustation. Grey/green/ochre in colour. Almost triangular in section. Compare object from Tawilan (Bennett and Bienkowski 1995: 311, fig. 9.22:7. Existing length: 32 mm. Diameter: 18/16 mm., at smallest end: 9 mm. [A1.11.4] *L NMGM: 1993.180.33.

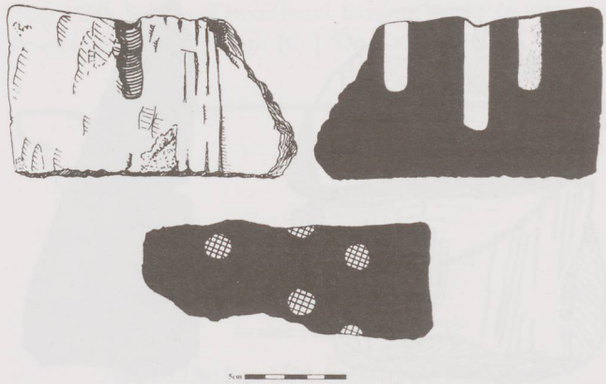


Plate 10.146: Reg. 1001, limestone object, possible game

Plate 10.146 (Reg. 1001). Block of smooth chalky limestone, with a series of holes bored into it. Broken. Marks visible where stone has been cut. Original size and shape unknown due to damage. Tentatively a piece of the 'game of 58 holes' — broken during manufacture? Compare example in British Museum, WA 90 963, from Nineveh; also Megiddo (Loud 1948: pl. 268: 4–5). Existing measurements: Length: 144 mm. Width: 53 mm. Depth: 81 mm. Depth of holes: 10 mm. Diameter of holes: 14 mm. [A60.6.5] *L NMGM: 1993.180.76.

(Reg. S.60). Large, roughly triangular plaster fragment with incised 'chequerboard' pattern, very irregular and carelessly executed. See Hübner 1992: 67–70 and p. 222, figs. 25 and 28; also Hazor: Yadin *et al.* 1960: pl. LXXVIII; 1961: pl. CCCXXXV:5); Megiddo**:** Loud 1948: pl. 268:6; Persepolis: Curtis and Finkel 1999: 46, figs 2 and 3. Fragment measures c. 240 mm. x 280 mm. x 190 mm. *L NMGM: 1993.180.167.

Mortars

(Reg. 160). Segment of limestone mortar, less than a quarter extant. Roughly triangular in shape, buff/pink in colour. Existing measurements: 150 mm. x 150 mm. x 130 mm. Depth: 70 mm., tapering to 35 mm. [A6/7.+] *Kar.

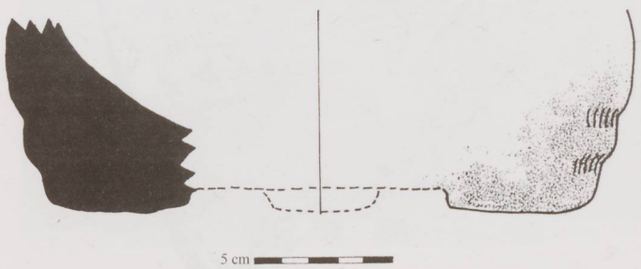


Plate 10.147: Reg. 369a, basalt mortar fragment

Plate 10.147 (Reg. 369a). Fragment of dark grey basalt mortar. Part of base and one foot only remains. The foot is square in shape, and there are two indented lines around the exterior edge. Existing measurements: 115 mm. x 77 mm. x 65 mm. deep. [B2.2.10] *ROM: 974.107.5.

Plate 10.148:a (Reg. 467). Small mortar of grey vesicular volcanic stone. Smudges of red are visible in the surface, suggesting it could have been used to grind pigment. Base is slightly squared, measuring 86 mm. x 77 mm. Depth: 60 mm. [C11.1.12] *ROM: 974.107.39.

(Reg. 553). Fragment of mortar/grinding stone in pink/grey limestone. Existing measurements: Length: 155 mm. Width: 120 mm. Depth: 40 mm. [A5.6.2] *L NMGM: 1993.180.77.

(Reg. 642). Stone mortar. Concave top, cone-shaped base. Width approximately: 180 mm. Height: 100 mm. [A20.2.6] #not seen.

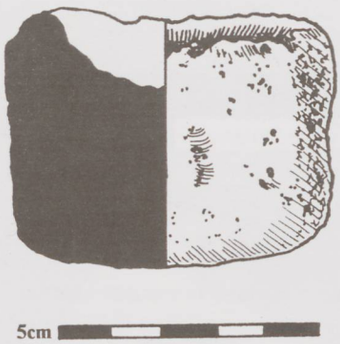


Plate 10.148:a: Reg. 467, small volcanic stone mortar

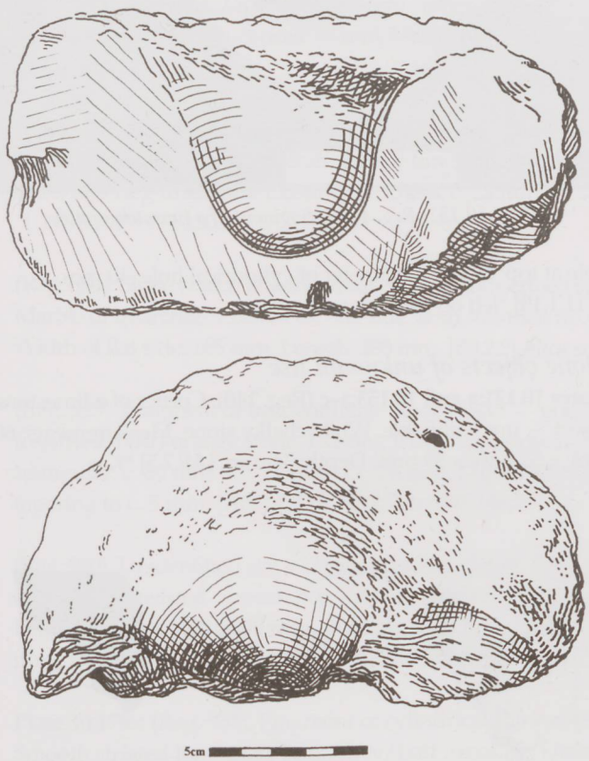


Plate 10.148:b: Reg. 912, limestone mortar fragment

Plate 10.148:b (Reg. 912). Approximately half of mortar in very rough limestone. Broken and very badly worn on exterior. Three holes visible on and near top edge. Pink tinge visible in stone. Existing diameter approximately: 180 mm. Diameter of centre groove: 65 mm. tapering to c. 30 mm. at bottom. Height: 95 mm. maximum/ 80 mm. minimum. Very rough uneven base. [B7.4.4] #not seen.

Plate 10.149 (Reg. 953). Fragment of mortar of heavy, smooth grey stone, with traces of pink colour in a small area. Existing measurements: Length: 129 mm. Width: 87 mm. Depth: 65 mm. [A5.11.6] *L NMGM: 1993.180.75.

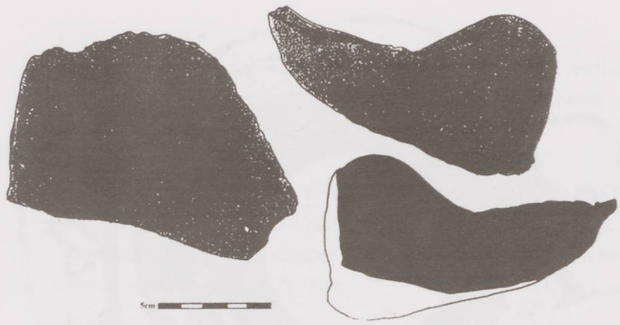


Plate 10.149: Reg. 953, stone mortar fragment

(Reg. 1006). Fragment of mortar in limestone. Edges very uneven and streaky inside and out. Deep red patch on one corner and chip on opposite side of base. Interior fairly smooth. Flat base. Overall width: 230 mm. Diameter of bowl: 165 mm. Height: 60 mm. [B10.3.4] #not seen.

(Reg. 1071). Fragment of limestone mortar. Bowl very smooth. Slightly pink tinges. Two natural holes on one edge. Width approximately: 265 mm. Diameter of bowl approximately: 125 mm. Height approximately: 70 mm. [C14.2.19/1a?] # not seen.

(Reg. 1131). Fragment of mortar in very coarse limestone. Flat base with holes. Roughly semicircular. Width: 130 mm. Diameter: 850 mm. Thickness: 60 mm. [A8.5.7] #not seen.

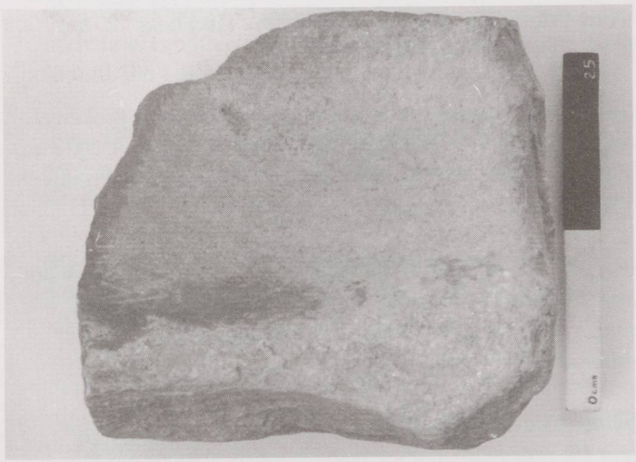


Plate 10.150: Reg. 1289, limestone mortar

Plate 10.150 (Reg. 1289). Limestone mortar. Badly burnt and damaged. Length: 275 mm. Width: 265 mm. Height: 170 mm. [C22.1.15] #not seen.

Querns

Plate 10.151 (Reg. 893). Basalt quern, associated with possible Roman threshing floor. Part of rim broken. Open both ends. Height: 330 mm. Diameter: 530 mm. Two ledge handles: 1) Height: 160 mm. Width: 190 mm. Breadth: 200 mm. 2) Height: 200 mm. Width: 200 mm. Breadth: 85 mm. Lower rim diameter: 430 mm. [A1.35.5] *DoA (missing). #not seen.

(Reg. 1073). Fragment of quern in limestone. Broken, and vaguely triangular in shape, one side and base curved. Width at broken edge: 250 mm. Existing length: 180 mm. Thickness at centre: 60 mm. [B7.6.5] #not seen.

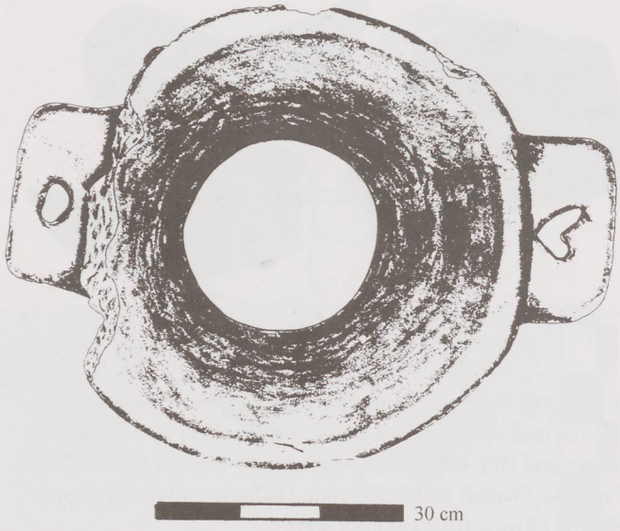


Plate 10.151: Reg. 893, basalt quern

(Reg. 1121). Basalt quern. Broken in antiquity and repaired. Large chip out of side and pieces of white stone embedded in rock. Centre hole narrows and widens. Diameter approximately: 160 mm., but slightly flattened on one side. Diameter of centre hole: 60 mm. narrowing to c. 30 mm. Thickness: 70 mm. [B7.5.9] #not seen.

(Reg. 1133). Fragment of quern in limestone. Very uneven and worn. Width: 400 mm. Length: 240 mm. Thickness: 120 mm. [C11 – cleaning] #not seen.

(Reg. 1189). Fragment of saddle quern in limestone. Broken at one end. Shallow bowl. Very worn. Diameter of bowl: 300 mm. Width of quern: 350 mm. Thickness: 10 mm. Height at centre: 120 mm. [B7.5.9] #not seen.

(Reg. 1190). Fragment of saddle quern in limestone. Very worn and rough. Base flat in centre and curved at edges. Length: 520 mm. Width: 320 mm. Height: 220 mm. maximum, 110mm. minimum [B7.9.5] #not seen.

Stone and plaster rollers

(For the possibility of these being cylindrical loom weights, see Barber 1991: 99, 100)

(Reg. 11). Plaster roller? Length: 55 mm. Height: 55 mm. Diameter: 40 mm. [A21.2.2] *DoA. #not seen.

(Reg. 903). Fragment of limestone roller. Chipped and broken. Flint embedded in broken edge. Grooved at complete end. Surface smooth. Length: 380 mm. Diameter: 130 mm. [B10.2.+] #not seen.

(Reg. 1113). Almost complete roller in limestone. One surface sliced and one end broken but still showing traces of groove. Opposite end groove almost intact. Length: 295 mm. Diameter: 185 mm. Diameter of groove: 60 mm. Depth of groove: 40 mm. [B9.1.5] #not seen.

Plate 10.152 (Reg. 1235). Fragment of limestone roller. Cylindrical hole at one end, very smooth inside. Length: 360 mm. Diameter: 180 mm. Depth of hole: 60 mm. Diameter of hole at top: 80 mm. Diameter of cylindrical hole: 40 mm. [C11.1.19] *left on site. #not seen.

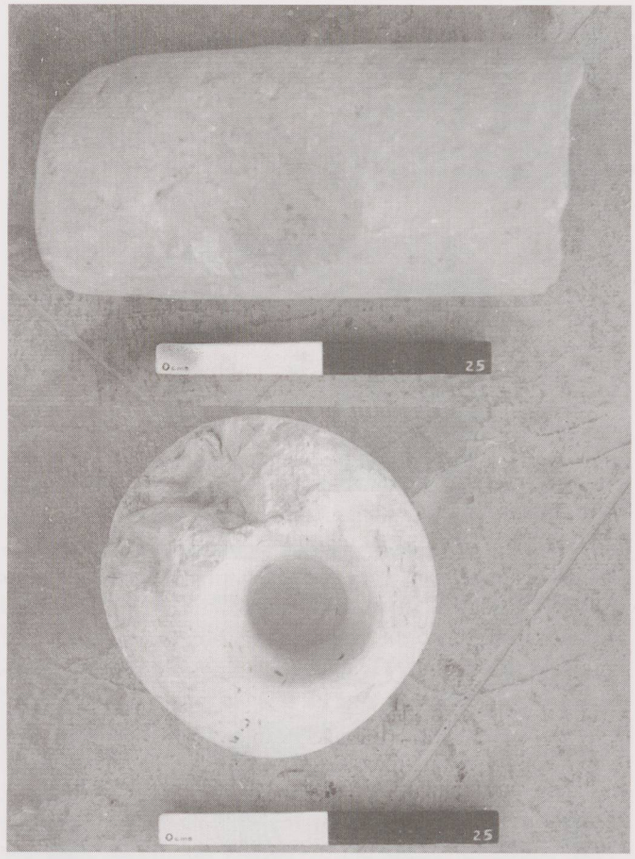


Plate 10.152: Reg. 1235, fragment of a limestone roller

Stone objects of unknown use

Plates 10.121:a and 10.153:a–c (Reg. 140). Corner of a limestone object – unidentifiable. White chalky stone. Measurements: 60 mm. x 52 mm. x 59 mm. Depth: 34 mm. [A9.7.5] *Kar.

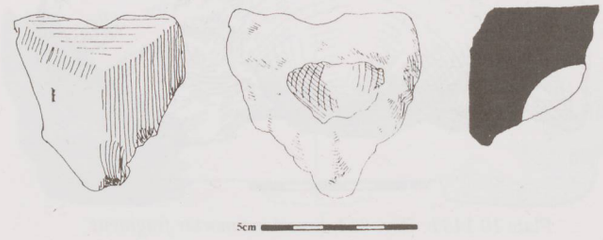


Plate 10.153:a–c: Reg. 140, corner of a limestone object

(Reg. 167). One end of a cylinder of pinkish limestone, with light engraving, pierced longitudinally. A horizontal line is incised around the circumference at the base and another about 10 mm. above; two series of lightly scratched zig-zags fill the space between. This is not a seal, but might be a whetstone. Its age is indeterminate. Length: 26 mm. Diameter at end: 23 mm. Diameter of piercing: 8mm., 6 mm. at broken end. [+ near Area B] Kar.

(Reg. 302). Limestone object, could possibly be a small container. Diameter: 32 mm. Depth: 23 mm. [C12.1.1] *Man: 1974.29.

(Reg. 554). Stone object, use unknown. Intensely burnt. Broken in antiquity. Hole bored on one side. Maximum width: 135 mm. Diameter of hole: 35 mm. Height: 45 mm. [A5.6.2] #not seen.

(Reg. 641). Stone object. White/buff limestone, smooth and chalky surface. Flat-based, finger-like shape. Broken at both ends. Use unknown. Length: 52 mm. Width: 15 mm. Height: 13 mm. [B2.7.4] *L NMGM: 1993.180.86.

(Reg. 767). Rough stone object. Pink in colour, with indentation on centre and both sides. One side has two white marks. Slightly lime encrusted, with traces of burning on one edge. Trefoil shaped. Length: 87 mm. Maximum width: 80 mm. Height: 45 mm. Compare Reg. 774. [B8.2.2] #not seen.

(Reg. 774). Half of object in hard, black stone (basalt?). Top and bottom smooth and concave at centre. Diameter: 45 mm. Height: 50 mm. [B7.1.2] #not seen.

(Reg. 781). Fragment of stone object. Pink/red tinge in stone at one end could possibly be traces of paint. Existing length: 83 mm. Width: 36 mm., tapering to 26 mm., where a hole may have been pierced. Thickness: 38 mm. [A27.1.6] *L NMGM: 1993.180.68.

(Reg. 824). Fragment of stone object, broken and split in half. Original shape not evident. Buff, chalky limestone. Width: 73 mm., tapering to 46 mm. Existing thickness: c. 25 mm. [B2.8.1] *L NMGM: 1993.180.71.

(Reg. 834). Stone object, possibly massebah or uninscribed stela? Marble or quartzite? Convex on one side, with rounded tip. Width of flat side: 165 mm. Length: 280 mm. [B8.2.2] #not seen.

(Reg. 929). Fragment of unidentifiable stone object — possibly fossilised. Buff/orange stone. Existing shape approximately triangular: c. 80 mm. x c. 74 mm. x c. 76 mm. Depth: 37 mm., tapering to c. 5 mm. [A8.3.4?] *L NMGM: 1993.180.83.

(Reg. 930). Unidentified stone object, possibly a fossil. Buff/grey colour. Has 'twisted' appearance. Existing measurements: Length: 83 mm. Width: 40 mm., tapering to 23 mm. Depth: 35 mm., tapering to 24 mm. [A5.11.6] *L NMGM: 1993.180.85.

Plate 10.178:c (Reg. 931). Fragment of cylindrical stone object. Smooth striated limestone, pink/grey/buff in colour. Diameter: c. 35 mm. Depth: 17 mm. [B7.2] *Edin: 1976.629.

(Reg. 1232). Piece of stone, possible remnants of raised design and pigment. Length: 85 mm. Thickness: 34 mm. Width: 68 mm. [A8.1a.7] *L NMGM: 1993.180.S.68.

(Reg. 1290). Piece of wedge-shaped limestone, with right-angled cut in top. Worked? Base: 190 mm. Apex: 60 mm. Height: 220 mm. [C20.10.7] #not seen.

(Reg. S.31). Piece of flat broken limestone with two carved grooves. Length: 70 mm. Width: 55 mm. Thickness: 11 mm. tapering to 6 mm. *L NMGM: 1993.180.135.

Volcanic rock

A number of objects were registered as trachite, but as this identification was uncertain, the descriptions have been changed to 'vesicular volcanic rock'.

(Reg. 161). Registered as 'piece of pumice' but much too heavy — vesicular basalt? Dark grey fabric with many bubbles. Roughly triangular in shape: 110 mm. x 105 mm. x 105 mm. Depth: 60 mm. [A25.1.2] *Kar.

(Reg. 605). Piece of vesicular volcanic rock. Width: 60 mm. Height: 27 mm. [B3.4.2] #not seen.

(Reg. 625). Piece of vesicular volcanic rock. Width: 45 mm. Height: 45 mm. Length: 60 mm. [B2.7.4] #not seen.

(Reg. 628). Piece of fine vesicular volcanic rock. Width: 50 mm. Height: 40 mm. [B2.7.4] #not seen.

(Reg. 673). Piece of pumice. Length: 44 mm. Width: 41 mm. Depth: 27 mm. [B3.4.19] *L NMGM: 1993.180.45.

(Reg. 677). Piece of vesicular volcanic rock — broken into three pieces. Grey, with creamy encrustation. When complete, piece was 87 mm. long and 67 mm. wide. [B3.2.19] *L NMGM: 1993.180.39.

(Reg. 777). Piece of triangular-shaped vesicular volcanic rock, fairly fine. Length c. 70 mm. Maximum width: 45 mm. Height: 35 mm. [B6.4.3] #not seen.

(Reg. 820). Large piece of vesicular volcanic rock, possibly used as a rubber. Length: 120 mm. Height: 40 mm. tapering to 30 mm. [A11.3.1] #not seen.

(Reg. 833). Piece of very coarse vesicular volcanic rock, possibly used as a rubber. Curved on top. Length: 90 mm. Width: 130 mm. Height: 50 mm. [B8.2.3] #not seen.

(Reg. 852). Half of polisher in pumice. Signs of burning on one side, which is very smooth. Height: 60 mm. Thickness: 20 mm. [B8.2.3] #not seen.

Plate 10.154 (Reg. 872). Complete rubber, vesicular volcanic rock. Ovoid, with rounded edges; flat on lower surface, curved on the upper. Length: 120 mm. Width: 95 mm. Thickness: 45 mm. [B6.2.3] #not seen.

(Reg. 896). Fragment of rubber, vesicular volcanic rock. Flat base. Existing length: 185 mm. Maximum width: 180 mm. Maximum thickness: 45 mm. cf. Reg. 834. [A50.1] #not seen.

(Reg. 1042). Fragment of rubber, vesicular volcanic rock. Very badly worn and uneven. Flat base. Length: 205 mm. Width: 150 mm. Height: 70 mm. [B6.3.20] #not seen.

Plate 10.155 (Reg. 1048). Possible rubber, vesicular volcanic rock, oval with flat base. Length: 58 mm. Width: 39 mm. Depth: 24 mm. [C3.20.8] *L NMGM: 1993.180.46.

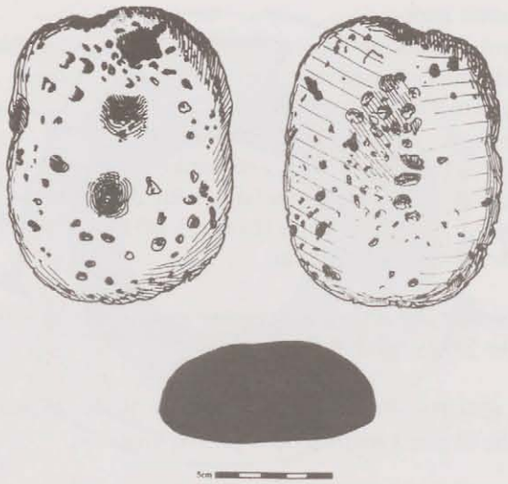


Plate 10.154: Reg. 872, complete rubber, volcanic rock



Plate 10.155: Reg. 1048, possible rubber, volcanic rock

(Reg. 1068). Fragment of pumice. Height: 40 mm. Width: 70 mm. cf. Reg. 673. [B3.20.4a?] #not seen.

(Reg. 1147). Fragment of vesicular volcanic rock, slightly irregular in shape. Maximum length: 73 mm. Width: 60 mm. Depth: 42 mm. [C14.2.1a] *L NMGM: 1993.180.62.

(Reg. S.34). Small stone ball, surface slightly crystallised. Possibly volcanic tuff. Beige in colour. Diameter: 21 mm. [C14.3+] *L NMGM: 1993.180.138.

Crucible

(Reg. 1041). Fragment of crucible in unidentified stone. Exterior very smooth and traces of rim at top. Colour ranges from deep red to yellow. Interior also very smooth and similarly coloured. Broken at edge. Height: 120 mm. Thickness at base: 70 mm. Thickness near rim: 30 mm. Width of rim: 30 mm. [C14.1.6] #not seen.

Grinding/polishing/rubbing tools

For general comparison, see Jerusalem (Ariel and de Groot 1996: 196–200, figs 25, 26, 28, 29).

(Reg. 162). Oval, flat-based limestone grinding stone. Both ends chipped. Stone is cream/pink in colour. Length: c. 160 mm. Width: 100 mm. Depth: 40 mm. [A5.5+] *ROM: 974.107.1.

(Reg. 367). Polisher/rubbing stone. Creamy buff limestone. Bun-shaped, both sides smooth and with evidence of wear, one side more scratched. Small chip on one side. Length: 95 mm. Width: 86 mm. Thickness: 46 mm. [B2.5.3] *Edin: 1976.587.

(Reg. 422). Fragment of polisher or whetstone in brown flint. Flattened and oval, but one end broken off. Existing length: 58 mm. Width: 43 mm. Thickness: 29 mm. [C1.4] *L NMGM: 1993.180.72.

(Reg. 458). Pinkish-grey stone pounder. Traces of paint on base and side. Diameter: 60 mm. Height: 45 mm. [C+ east side] #not seen.

(Reg. 482). Stone grinder with flat base. Length: 250 mm. Height: 60 mm. [B3.4.2] #not seen.

(Reg. 545). Portion of grinder in rough stone. Curved top, flat base. Diameter: 130 mm. Length: 140 mm. Height: 60 mm. [A5.6.2] #not seen.

(Reg. 549). Fragment of stone polisher. Traces of red colouring on one side. Length: 50 mm. Width: 80 mm. Thickness: 25 mm. [B3.7.1] #not seen.

(Reg. 623). Heavy smooth limestone rubbing stone. Pink/grey stone — slightly chipped. Base very flat and smooth. Length: 90 mm. Maximum width: 58 mm. Thickness: 40 mm. [B6.1.1] *Man: 1974.67.

(Reg. 665). Smooth, flat, almost circular stone, possibly used as polisher. White/pink quartz. One side chipped. Diameter: c. 47 mm. Thickness: c. 14 mm. [B6.1.1] *L NMGM: 1993.180.23.

(Reg. 666). Grey stone — possibly used as polisher or grinding implement. Base slightly smoothed and polished. Irregular in shape — slightly conical. Circumference: 53 mm. Depth: 43 mm. [B4.1.2] *L NMGM: 1993.180.41.

(Reg. 671). Sharpening stone or hone in limestone. Curved top, flat base. Length: 50 mm. Width: 15 mm. Height: 1 3mm. [B2.7.4] #not seen.

(Reg. 695). Circular, flat stone used for grinding or rubbing. Red stone. Diameter: 90 mm. Depth: 23 mm. [B7.1.1] *ROM: 974.107.48.

(Reg. 808). Half of polisher in dark red stone. Broken in antiquity. Diameter: 75 mm. Thickness: 35 mm. [B8.2.2] #not seen.

(Reg. 839). Broken flint nodule — possibly naturally split stone, or perhaps used as polisher. Creamy white, has been oval in shape. Existing length: 66 mm. Maximum thickness: 48 mm. [B10.2.8] *L NMGM: 1993.180.67.

(Reg. 841). Polisher in pinkish grey stone. Base highly polished. Length: 75 mm. Height: 50 mm. [B8.2.3] # not seen.

(Reg. 858). Rubber in very rough marble. Length: 95 mm. Width: 55 mm. Thickness: 40 mm. [B2.9.7] #not seen.

(Reg. 871). Fragment of stone polisher. Grey stone, possibly limestone, with flint nodules. Approximately one third remains. Existing measurements: 108 mm. and 63 mm. to broken edges. 32 mm. at widest, in centre. [B7.1.5] *L NMGM: 1993.180.81.

(Reg. 875). Rectangular rubber in pinkish-grey sandstone. Surfaces more or less squared and parallel. Length: 60 mm. Width: 45 mm. Thickness: 35 mm. [B8.2.2] #not seen.

(Reg. 878). Split pink/grey stone — may possibly have been a rubber? Length: 69 mm. Width: 65 mm. Existing depth: 35 mm. [B6.2.3] *L NMGM: 1993.180.63.

(Reg. 1011). Fragment of red granite polisher/grinding stone. Less than half remains — may have been oval or circular. Existing length: 90 mm. Width: 50 mm. Thickness: 34 mm. [B3.20.2] *L NMGM: 1993.180.70.

(Reg. 1043). Fragment of limestone rubber. Badly damaged. Flat base. Length: 230 mm. Width: 145 mm. Thickness: 85 mm. [C14.1.5] #not seen.

(Reg. 1062). Polisher? Black granite with pink tinge. Possibly a pebble, but base is flattened and could have been used as a polisher. Irregular shape, but basically oval. Length: 51 mm. Width: 41 mm. Depth: 28 mm. [B3.20.4] *L NMGM: 1993.180.43.

(Reg. 1072). Fragment of grinder in haematite. Lime encrusted. Flat base. Length: 210 mm. Thickness: 50 mm. tapering to 15 mm. Width: 130 mm. narrowing to 60 mm. [B7.5.6] # not seen.

(Reg. 1086). Fragment of rubber in sandstone. Probably about half is extant. Stone has grey/pink hue. Existing measurements: Length: 76 mm. Width: 77 mm. Depth: 34 mm. [B7.5.7] *L NMGM.1993.180.47.

(Reg. 1112). Fragment of limestone rubber. Flat base, stone very rough. Width: 140 mm. tapering to 80 mm. Thickness: 42 mm. tapering to 20 mm. [B7.5.7] # not seen.



Plate 10.156: Reg. 1118, sandstone hone

Plate 10.156 (Reg. 1118). Sandstone hone, elliptical in shape. Stripes visible in stone. Length: 67 mm. Thickness: 15 mm. [B8.5.9] # not seen.

(Reg. 1128). Approximately half of polisher in very smooth, chalky limestone. White/buff colour. Existing measurements: Length: 41 mm. to break. Width: 60 mm. Thickness: 39 mm. [B2.10.5] *L NMGM: 1993.180.69.

(Reg. 1282). Rubbing stone or pounder. Basalt or granite. Base: 45 mm. Height: 46 mm. [C11.1.15+16/C11.4.9] *L NMGM: 1993.180.S.67.



Plate 10.157: Reg. 1285, fragment of a limestone grinder

Plate 10.157 (Reg. 1285). Fragment of limestone grinder. Length: 250 mm. Width: 180 mm. Height: 80 mm. [C11.4.2] #not seen.

(Reg. 1291). Rectangular limestone pounder. Shows signs of burning. Length: 140 mm. Width: 70 mm. Thickness: 70 mm. [C23.2.8] #not seen.

(Reg. 1306). Sharpener or polisher, limestone or sandstone. Pink/buff, quite crumbly. Length: 82 mm. Width: 53 mm. Thickness: 30 mm., tapering to 24 mm. [C11.2+] *Kar.

Polishers and pebbles

A number of these do not appear to have had any practical use, although some have a smooth surface which indicates use as a polisher.

(Reg. 31). Smooth oval stone, possibly used as a polisher? Crystalline stone — colour of dark treacle. Length: 53 mm. Width: 44 mm. Depth: 29 mm. [B1.1.3] *Kar.

(Reg. 165). Wadi pebble. Brown with beige/grey flecks. Smooth and polished. Length: 25 mm. Width: 20 mm. Thickness: 10 mm. [A1.22.6] *L NMGM: 1993.180.34.

(Reg. 606). Wadi pebble. Oval and quite flat. Beige/buff quartz-like stone. Length: 44 mm. Width: 35 mm. Depth: 19 mm. [C11.1.12] *L NMGM: 1993.180.52.

(Reg. 608). Wadi pebble. Quite irregular in shape. Chalk/flint. Length: 53 mm. Width: 43 mm. Depth: 27 mm. [C11.1.12] *L NMGM: 1993.180.53.

(Reg. 609). Wadi pebble. Buff/beige. Flat and oval in shape. Length: 51 mm. Width: 39 mm. Depth: 14 mm. [B3.6.2] *L NMGM: 1993.180.51.

(Reg. 769). Wadi pebble in cream coloured stone, possibly used as polisher. Width: 30 mm. Length: 45 mm. [B7.1.2] #not seen.

(Reg. 954). Wadi pebble — used as polisher? Red/brown stone with pitted surface. Length: 58 mm. Width: 48 mm. Depth: 26 mm. [B3.6] *L NMGM: 1993.180.42.

(Reg. 1028). Wadi pebble — used as polisher? Possibly quartz — beige/brown in colour with pinkish hue in parts of stone. Oval in shape. Length: 79 mm. Width: 42 mm. Depth: 42 mm. [B2.7.2] *L NMGM: 1993.180.40.

(Reg. 1089). Wadi pebble. White stone, smooth and ovoid. Length: 38 mm. Width: 30 mm. [B3.20.5] *L NMGM: 1993.180.50.

Slingstones/pounders

These were mostly made of chipped flint, and were usually registered as 'slingstones' although it is more likely that they were used as pestles or pounders (a number have one smoothly worn surface which clearly indicates such use). For further discussion see Bennett and Bienkowski 1995: 88, fig. 9.44. Also, a number of similar objects were classified as weights at Jerusalem (see Ariel and de Groot 1996: 208–9, figs 31–37 and pls. 14–16).

See also 'Stone tools' Reg. 32, basalt pounder.

(Reg. 4). Fragment of chipped flint 'slingstone' or pounder. Perhaps less than one third remains. Diameter: c. 63 mm. [A21.1.2] *Edin: 1976.578.

(Reg. 158). Approximately half of flint 'slingstone', pale grey in colour. Approximate diameter: 62 mm. [C10.2.2] *Kar.

(Reg. 294). Approximately half of grey flint 'slingstone'. Approximate diameter: 80 mm. [C3.1] *Kar.

(Reg 366). Slingstone/pounder, flat based and worn. Diameter: 40 mm. Height: 45 mm. [C3.6.24] *Emory Univ. #not seen.

(Reg. 396). 'Slingstone' of dark grey flint. About a quarter is chipped off. Approximate diameter: 72 mm. [B2.4.8] *Kar.

Reg. 622). Complete slingstone /pounder in grey stone. Flat base, almost circular. Diameter: 60 mm. [B6.1.1] #not seen.

(Reg. 626). Flint slingstone/pounder, damaged and uneven. Diameter: 50 mm. [A20.2.5] #not seen.

(Reg. 629). 'Slingstone' in flint. Very smooth and spherical. Possibly a pounder. Maximum diameter: 79 mm. [B6.1.1?] *L NMGM: 1993.180.56.

(Reg. 701). Flint slingstone/pounder. Uneven and chipped. Diameter: 60 mm. [B6.3.4] #not seen.

(Reg. 764). Twelve limestone slingstones/pounders of graded sizes and varying shapes. All very rough and some harder than others. All irregular and one halved. [B10.1.11–14] #not seen.

(Reg. 775). Slingstone/pounder in red stone. Almost oval in shape and chipped at both ends. Length: 63mm. Width: 43 mm. Height: 50 mm. [B8.2.2] #not seen.

(Reg. 840). Almost spherical 'slingstone' in chipped flint. More probably a pounder or grinder, but no surface is noticeably smoother. Diameter: c. 50 mm. [B6.1.2] *L NMGM: 1993.180.55.

(Reg. 853). Fragment of 'slingstone'/pounder, in very dark red/purple smooth stone. Core appears to be flint. Original diameter c. 66 mm. [B8.2.3] *L NMGM: 1993.180.60.

(Reg. 857). Flint slingstone/pounder. Chipped on one side. Diameter: 60 mm. [B8.2.2] #not seen.

(Reg. 859). Complete flint slingstone/pounder. Slightly flattened shape. Diameter: 48 mm. [B6.2.3] #not seen.

(Reg. 974). Fragment of chipped flint pounder? Very rough and badly damaged. Maximum diameter: 75 mm. Depth: c. 50 mm. [B3.2.5] *L NMGM: 1993.180.59.

(Reg. 975). Fragment of 'slingstone/pounder'. Brownish stone with yellow/pink hue. Length: 51 mm. Width: 40 mm. [A1.5.1] *L NMGM: 1993.180.44.

(Reg. 976). Fragment of pounder? in chipped stone/flint. Original diameter c. 65 mm. [B3.2.5] *L NMGM: 1993.180.61.

(Reg. 1029). Fragment of chipped flint pounder? Probably less than half is extant. Diameter: c. 65 mm. [B2.7.2] *L NMGM: 1993.180.1029.

(Reg. 1030). Fragment of pounder? Made of chipped flint. Maximum diameter: 65 mm. [B3.2.7] *L NMGM: 1993.180.57.

(Reg. 1039). Pounding or grinding implement — not completely spherical — top and bottom slightly flattened and bottom edge slightly smoother. Fossiliferous stone, light and dark grey in colour. Circumference: 60 mm. Depth: 50 mm. [B8.4.3 or B10.4.3] *L NMGM: 1993.180.38.

(Reg. 1069). Pounder or pestle. Grey/white chipped flint. Deep indentation/drill hole? in one surface. Not spherical, edges slightly squared. Circumference: 60 mm. Depth: 56 mm. [B7.5.6] *L NMGM: 1993.180.48.

(Reg. 1074). 'Slingstone' in flint — probably pounder or grinder. One side badly chipped. Original diameter c. 70 mm. [B8.4.8] *L NMGM: 1993.180.54.

(Reg. 1177). Pounder or pestle. One side quite badly lime encrusted. Made of grey chipped flint. Very roughly spherical, but with flattened surfaces. Maximum diameter: 56 mm. [B2.9.15] *L NMGM: 1993.180.49.

(Reg. 1281). Pounding or grinding implement. Grey/pink chipped flint, slightly sub-spherical in shape. Diameter: 52 mm. Depth: 49 mm. [C11.4.9] *Dub: WM807.

(Reg. 1286). Slingstone/pounder in flint. Maximum diameter: 60 mm. [C22.10.3] #not seen.

(Reg. 1287). Three slingstones/pounders. Limestone? Compare rough stones used as pebble floor in C21.3. [C11.1.19] #not seen.

a) Maximum diameter: 55 mm.
b) Maximum diameter: 60 mm.
c) Triangular, maximum length: 52 mm.

Stone tools

At Busayra, none of the prehistoric finds were from loci which suggested that they were *in situ*.

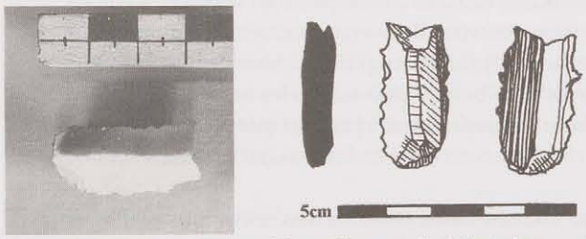


Plate 10.158:a: Reg. 16, bilaterally retouched blade fragment

Plates 10.158:a (Reg. 16). Bilaterally retouched blade fragment. Upper Palaeolithic to Early Bronze Age. [B1.1.3] *L NMGM: 1993.180.95.

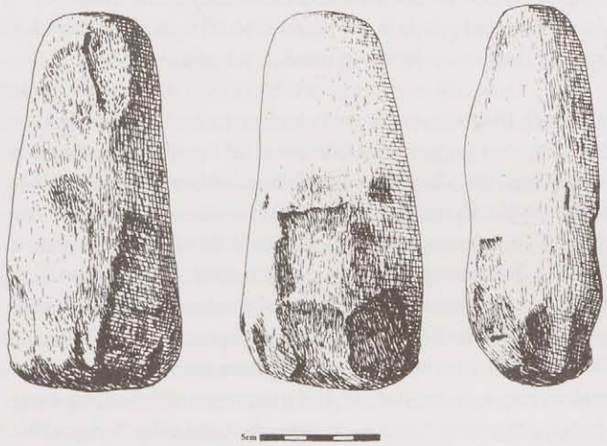


Plate 10.159: Reg. 32, basalt pounder

Plate 10.159 (Reg. 32). Basalt pounder, very heavy. Black/grey in colour. Some chips, possibly from antiquity. Length: 160 mm. Width: 74 mm. tapering to 50 mm. Thickness: 60 mm. tapering to 40 mm. [B1.1.1 topsoil] *Kar.

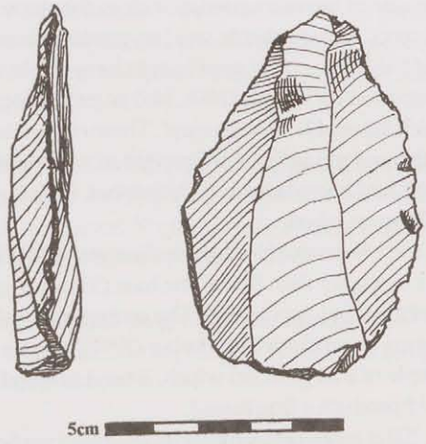


Plate 10.160: Reg. 633, Middle Palaeolithic flake

Plate 10.160 (Reg. 633). Complete Middle Palaeolithic Levallois flake. Grey/white flint. Length: 78 mm. Maximum width: 49 mm., tapering to point. Cf. Middle Palaeolithic handaxe from Wadi Dana (Barker *et al.* 1999: 257–8, fig. 1 and p.281). Thickness: maximum 11 mm., tapering to point, minimum 2 mm. [B6.3.1] *L NMGM: 1993.180.89.



Plate 10.161: Reg. 636, retouched flake

Plate 10.161 (Reg. 636). Retouched flake. [B6.2.4] *L NMGM: 1993.180.93.

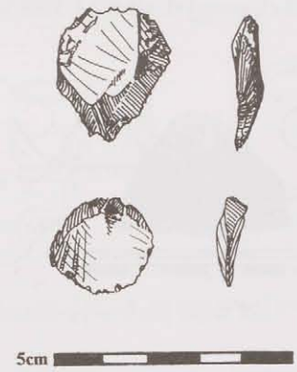


Plate 10.162: Reg. 663, two flints

Plate 10.162 (Reg. 663). Two flint objects. Circular flake; and retouched flake. [B6.4.2] *L NMGM: 1993.180.91.

(Reg. 685). Three flakes. One burnt. [B3.4.19] *L NMGM: 1993.180.97.

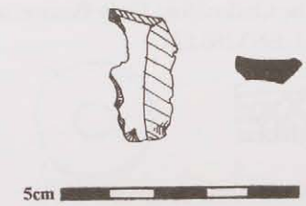


Plate 10.158:b: Reg. 687, sickle blade

Plate 10.158:b (Reg. 687). Sickle blade, heavily retouched. Backed. Heavily modified. Chalcolithic/EB style? Length: 28 mm. Width: 14 mm. Thickness: 5 mm. [B2.7.6] *L NMGM: 1993.180.90.

(Reg. 689). Retouched flake, scraper. [B10.1.7] *L NMGM: 1993.180.92.

(Reg. 838). Basalt hand axe. Complete except for small chip at base. Base highly polished. Length: 90 mm. Width: 40 mm. [B8.2.3] #not seen.

(Reg. 874). Backed and bi-truncated retouched blade. Chalcolithic. Like sickle blade, but no sickle-gloss, unused, or lightly used. [B6.3.8?] *L NMGM: 1993.180.96.

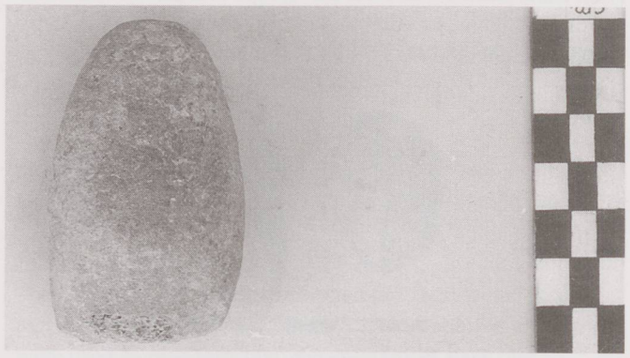


Plate 10.163: Reg. 1132, ground stone axe

Plate 10.163 (Reg. 1132). Ground stone axe, re-used as a hammer stone. Igneous rock. Length: 66 mm. Width: 39 mm. Thickness: 33 mm. [C11 cleaning] *L NMGM: 1993.180.66.

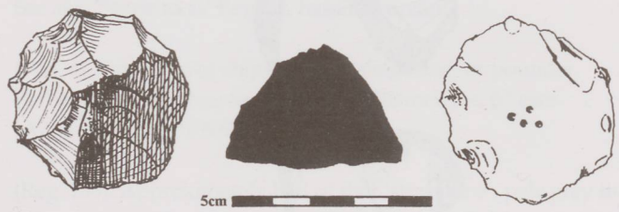


Plate 10.164: Reg. 1155, single platform pyramidal core

Plate 10.164 (Reg. 1155). Single platform pyramidal core, heavily battered around edges. Flat base has four small, shallow (1 mm. diameter) drilled holes in the centre — re-use long after initial manufacture. Epipalaeolithic to Bronze Age. Diameter of base: c. 44mm. Height: 29 mm. [A5.13.4] *L NMGM: 1993.180.88.

(Reg. S.15). Small denticulated sickle blade. Truncated and backed. Sickle-gloss along one edge, and retouched down the opposite edge. Could be Chalcolithic, Early Bronze, or Iron Age. [E.1.3] *L NMGM: 1993.180.120.

Whorls and weights

Spindle whorls with incised decoration

The Busayra excavations produced a number of distinctive decorated spindle whorls. They are made from an attractive smooth limestone in various shades of pink, cream and grey, sometimes showing strata of all three, and are distinguished by their decorative incised designs, placed between two incised lines just inside each edge of the outer surface. The predominant shape is cylindrical, but a few are asymmetrical or conical. Fifteen out of the 21 spindle whorls discovered at Busayra fall into this category — Regs 23, 34, 35, 37, 121, 392, 584, 694, 700, 751, 959 (a and b), 1153, S.17 and 1245 (three of the remaining six are idiosyncratic in their own way; Regs 108 and 895 are both exceptionally large and made of soft white limestone, and Reg. 463 is a pierced fossilised sea urchin).

Notably, this was also the most common type at Tawilan, where 15 examples out of 19 were of this type (Bennett and Bienkowski 1995: 89, fig. 9.29), and at Umm al-Biyara, where 14 examples were found (Bennett 1966: pl. 25b, otherwise unpublished). Although not unique, this type is uncommon at other Iron II sites in the Levant. The following sites produced further examples, but proportionately fewer in number: Tel 'Ira produced three examples out of a total 31 whorls, and Jerusalem produced two examples out of a total 78 whorls. Four examples were discovered during the soundings at Ghrareh, whilst Tel Masos, Tell Beit Mirsim and Beth Shan each produced two examples. It seems from present evidence that these particular whorls predominate at sites in the areas most closely associated with Edomite settlement.

The question has been raised as to whether these objects are spindle whorls at all: at Jerusalem they are described as 'doubtfully identified' (Shamir 1996: 149). However, according to Barber 'a round, centrally pierced object significantly larger than 2cm across is far more likely to be a whorl than a bead; and the burden of proof would fall to those wishing to assign so large an object to the category of bead rather than whorl' (Barber 1991: 51–2). The central holes in the objects from Busayra also fall within the range of 3 to 10 mm., considered normal if they are to be designated as whorls.

The whorls themselves can provide clues to the types of fabric they were used to create. The diameters of the whorls range from 19 to 33 mm., yet where enough of the whorl remains to measure the diameter of the central hole, all but two examples measure 8 or 9 mm. This means that most of the whorls were intended for a spindle of the same size, but due to their different diameters they would spin at different speeds, thereby producing yarns of varying texture (Barber 1991: 53). The two exceptions, Regs 694 and 959:b, both have a central hole with a diameter of 6 mm., and the possible ivory spindle, Reg. 18, has a diameter of 7 mm., tapering to 5 mm. According to the measurements quoted by Barber (1991: 52), 7 to 8 mm. is considered normal for the central hole of a whorl, only occasionally being larger, so most of the Busayra whorls have a central hole which is considered large, while the two exceptions have one which is considered to be small. These measurements, together with the weight of the whorls, can also be used to calculate the type of textiles being made.

Whorls made of heavier material, such as the stone whorls from Busayra, were probably used to produce linen, although they could also have been used to spin long-staple wool. Such whorls are cited by Shamir (1996: 149) as producing 'a tight spin which is suitable for the warp'. These suggestions could be given a firmer foundation if the weight as well as the size of all the whorls had been measured. At present, only Regs 1153 and 77 have been weighed:

- Reg. 1153 is unusual in that the diameter at the top (20 mm.) is smaller than that at the base (33 mm.), giving the whorl a conical appearance. The central hole has a diameter of 9 mm. It weighs 36.4 g. Barber (1991: 52) uses the example of a 33 g. whorl which, if used to spin long wool, would produce a fine thread.
- Reg. 700 is more problematic, as it is not complete; slightly more than half is extant. Its existing weight is 8 g., perhaps representing a weight of 15 g. or less, if complete.

These spindle whorls may have been desirable objects in their own right despite being utilitarian. Barber noted that: 'Anything fancier than a simple round disc or blob with a centred hole is unnecessary. And most spindle whorls the world over are of just these simple shapes perhaps with a bit of decoration to make them pretty or auspicious' (1991: 303). The question here is whether or not the decorated limestone spindle whorls from Busayra are unusual enough to take them outside this definition of the ordinary. It would appear that they are. The stone chosen to make them is always the same type of smooth, coloured limestone in the same colours, which provides an attractive polished surface. They have been carefully cut into very specific shapes, decorated with very similar incised designs and then given a finish worthy of a decorative object.

The possible Old Testament reference to Edomite trade with Tyre (also discussed by Homès-Fredericq 1987: 89–96; Bartlett 1989: 216; Knauf 1992: 51) may provide a clue. The problem presented by this text (that the names of Aram and Edom can become indistinguishable from each other if the original Hebrew letters were not written with precision) has been previously discussed (e.g. Lindsay 1976: 30). Lindsay quoted from Haran (1968: 204) who had suggested that 'the goods mentioned are not what we should expect of Edom (emeralds, purple, embroidered work, fine linen and agate) and that therefore we should retain Aram'; however, in the light of the finds from Busayra, demonstrating its trading links with Arabia and the Red Sea (reflected especially by the *Tridacna* shells), these goods are exactly what we would expect of Edom. The inclusion of fine linen and embroidered work in the list of goods purveyed by Edomites (Ezekiel 27:16) is especially interesting in relation to the spindle whorls from Busayra, Tawilan and Umm al-Biyara. Lindsay also quotes from Ginsberg (Lindsay 1976: 24, n.12) stating that 'there was no Aram in existence in the reign of Jehoakim', which relates to the late seventh to early sixth centuries BC — the date reflected by many of the parallels with the Busayra small finds. If the reference is indeed to Edom, then textiles were an important aspect of their trade. It is possible that Edomites were not just middlemen, but that they manufactured distinctive luxury textiles which were a valuable export.

Catalogue of whorls and weights

Limestone whorls

Plates 10.165:c and 10.166 (Reg. 23). Circular spindle whorl in smooth, chalky pink-coloured limestone with slight patina. Outside decorated with incised parallel zigzag lines. Diameter: 26 mm. Diameter of central hole: 8 mm. Thickness: 18 mm. [B1.1.3] *Ash: 1973.378.

Plate 10.167 (Reg. 34). Smooth pink limestone spindle whorl. Very regular in shape and slightly polished. Design incised into exterior surface. Diameter: 29 mm. Depth: 19 mm. Diameter of central hole: 8 mm. [B1.1.3 or 2] *Man: 1974.6.

Plates 10.165:b and 10.168 (Reg. 35). Stone spindle whorl with lattice design. Diameter: 20 mm. Height: 10 mm. [B1.1.3b] *Emory Univ. #not seen.

Plates 10.165:e and 10.169 (Reg. 37). Pink limestone spindle whorl with incised design around outside. Pink/cream strata in stone. Diameter: 33 mm. Depth: 19 mm. Diameter of central hole: 8 mm. [B1.2.2] *Kar.

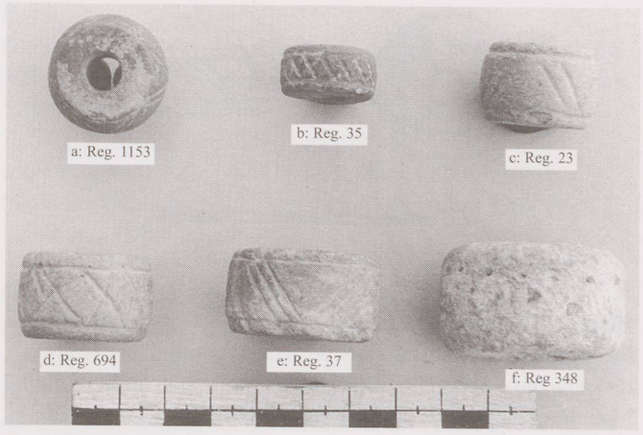


Plate 10.165:a: Reg. 1153, spindle whorl with incised design
b: Reg. 35, spindle whorl with incised design
c: Reg. 23, spindle whorl with incised design
d: Reg. 694, spindle whorl with incised design
e: Reg. 37, spindle whorl with incised design
f: Reg. 348, spindle whorl fragment

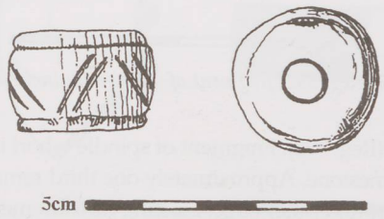


Plate 10.166: Reg. 23, spindle whorl with incised design

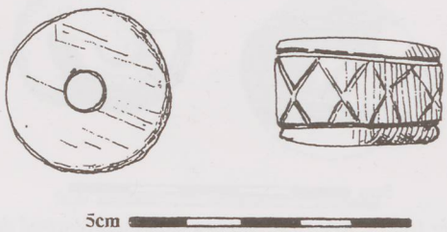


Plate 10.167: Reg. 34, spindle whorl with incised design

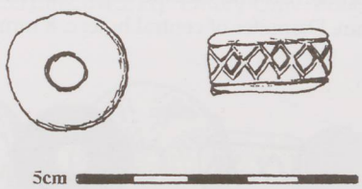


Plate 10.168: Reg. 35, spindle whorl with incised design

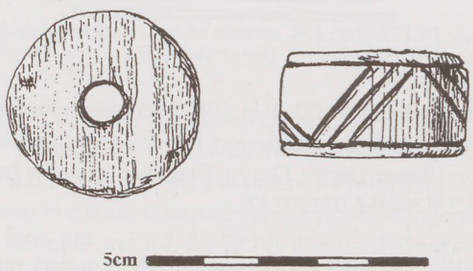


Plate 10.169: Reg. 37, spindle whorl with incised design

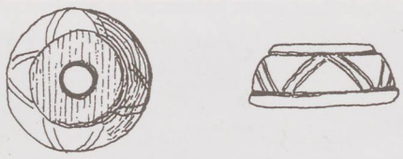


Plate 10.170: Reg. 121, spindle whorl with incised design

Plate 10.170 (Reg. 121). Circular spindle whorl in smooth pink limestone. Asymmetrical in shape. Incised parallel zig-zag lines decorate the outside edge. Some lime encrustation on top surface. Maximum diameter: 27 mm., tapering to 20 mm. Diameter of central hole: 8 mm. Thickness: 12 mm. [B1.2.2c] *Ash: 1973.385.

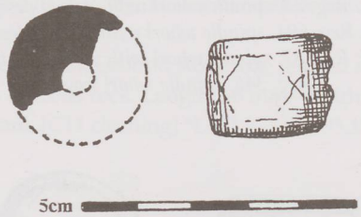


Plate 10.171: Reg. 392, fragment of whorl with incised decoration

Plate 10.171 (Reg. 392). Fragment of spindle whorl in smooth pink/buff limestone. Approximately one third remains. Incised decoration around outer edge. Existing measurement: 18 mm. Thickness from central hole to outside edge: 8 mm. [C3.7] *Dub: WM579.

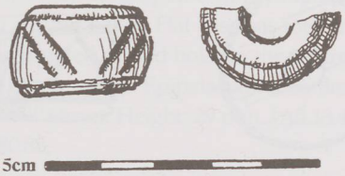


Plate 10.172: Reg. 584, half of a whorl with incised design

Plate 10.172 (Reg. 584). Half of pink limestone spindle whorl. Incised decoration around outside edge. Diameter: 25 mm. Depth: 16 mm. Diameter of central hole: c. 8 mm. [B3+] *ROM: 74.107.29.

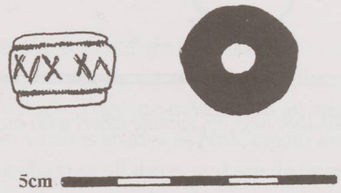


Plate 10.173: Reg. 694, spindle whorl with incised design

Plates 10.165:d and 10.173 (Reg. 694). Complete limestone spindle whorl with incised design. Pink/red striated stone. Diameter: 19 mm. Depth: 12 mm. Diameter of central hole: 6 mm. [B6.2.3] *ROM: 974.107.47.

Plate 10.174 (Reg. 700). Half of spindle whorl in dark pinkish-grey limestone. Incised design of two asymmetric lines

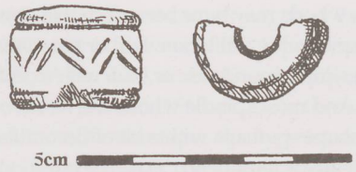


Plate 10.174: Reg. 700, half of a whorl with incised design

decorates the circumference. Slightly lime encrusted. Diameter: 24 mm. Diameter of central hole: 8 mm. Depth: 18 mm. Existing fragment weighs 8.7 g. — represents approximately half of complete whorl. [B7.1.1] *BM: 136072 (1974).

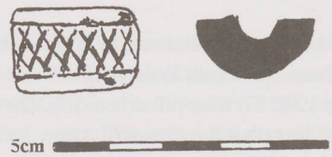


Plate 10.175: Reg. 751, half of a whorl with incised design

Plates 10.175 and 10.178:a (Reg. 751). Half of spindle whorl with incised design. Pink/red limestone. Diameter: c. 22 mm. Depth: 15 mm. Diameter of central hole: c. 8 mm. [B7.1.2] *Edin: 1976.612.

(Reg. 959a). Half of grey limestone spindle whorl. Stone quite rough. Some lime encrustation. Incised design around the outside edge. Diameter: c. 28 mm. Depth: 18 mm. Diameter of central hole: c. 8 mm. [B3.2.2] *ROM: 975.416.26.

(Reg. 959b). Half of pink limestone spindle whorl. Decorated with incised lines around outer edge. Diameter: c. 21 mm. Diameter of central hole: c. 6 mm. Depth: 17 mm. [B3.2.2] *ROM: 975.416.27.

Plates 10.165:a and 10.176:a–e (Reg. 1153). Complete spindle whorl/loom weight in pinkish limestone with grey flecks. Quite heavy. Almost conical in shape, decorated with incised irregular design. Maximum diameter: 33 mm. tapering to 7 mm. Diameter of central hole: c. 9 mm. Depth: 25 mm. Weight: 36.4 g. [B7.5.9] *BM: 136752 (1975).



Plate 10.177: Reg. 1245, spindle whorl with incised design

Plate 10.177 (Reg. 1245). Complete spindle whorl in dark grey stone, decorated around the outside edge with incised asymmetric lines in a criss-cross pattern. Diameter: 28 mm. Thickness: 19 mm. tapering to 17 mm. Diameter of central hole: 8 mm. [Found at Ain Janin — presented by Abu Sulayman] *Kar.

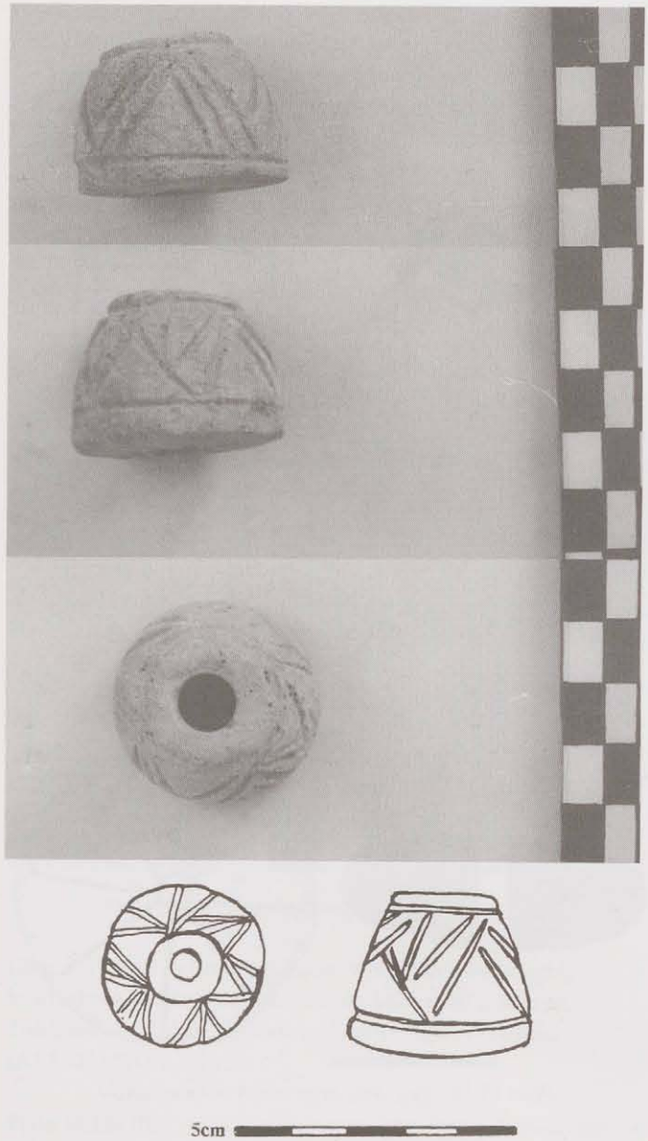


Plate 10.176:a–e: Reg. 1153, spindle whorl with incised design

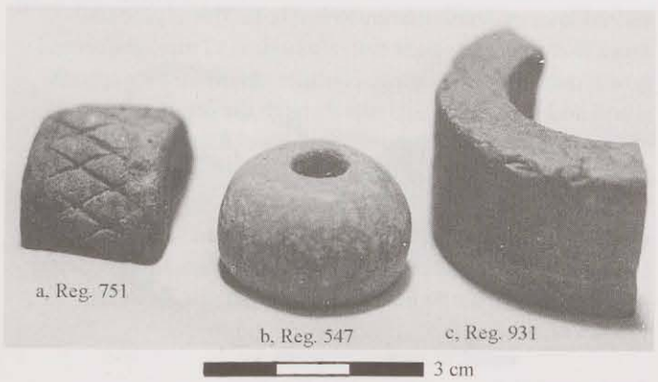


Plate 10.178:a: Reg. 751, half of a whorl with incised design
b: Reg. 547, smooth stone spindle whorl
c: Reg. 931, half of a cylindrical stone object

(Reg. S.17). Approximately one third of spindle whorl, decorated around the outside edge with a series of three incised lines. Fine-grained, smooth grey limestone. Approximate diameter if complete: 18 mm. Diameter of central hole: c. 5 mm. Width: 10 mm. *L NMGM: 1993.180. 122.

PARALLELS

For parallels see Tawilan (Bennett and Bienkowski 1995: 89, fig. 9.29), Umm al-Biyara (Bennett 1966: pl. 25b), Tel 'Ira (Beit-Arieh 1999a: 469–70, figs 14.26:11–13), Jerusalem (Shamir 1996: 149, 167, fig. 22:20–21), Ghrareh (Hart 1988: 96), Tel Masos (Fritz and Kempinski 1983: pls 111:6 and 171:4), Tell Beit Mirsim (Albright 1941–43: pl.32:12–13), Beth Shan (James 1966: figs 110:10 and 118).

Other spindle whorls

Plates 10.165:f and 10.179 (Reg. 348). Spindle whorl fragment, very large, but light. Made of soft buff/white chalky limestone. Approximately one quarter is extant. Shape has been flat and circular, with square-cut circumference and central hole. Slight encrustation of a brownish linear appearance, also on the broken surfaces, indicating it was broken in antiquity. [D2.5.11] *BM: 136074 (1974).

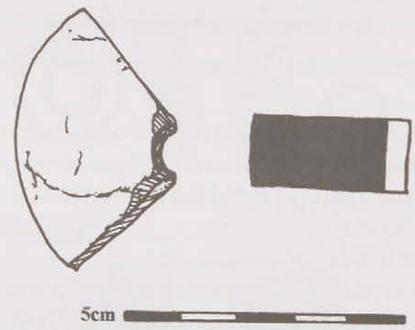


Plate 10.179: Reg. 348, spindle whorl fragment

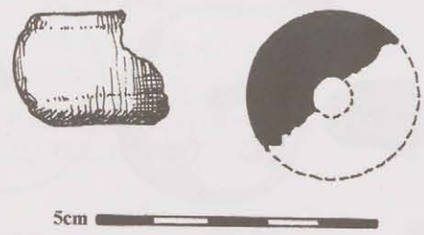


Plate 10.180: Reg. 391, spindle whorl fragment

Plate 10.180 (Reg. 391). Spindle whorl fragment. Grey stone. Total diameter: 35 mm. [B4.2.11] *Emory Univ. #not seen.

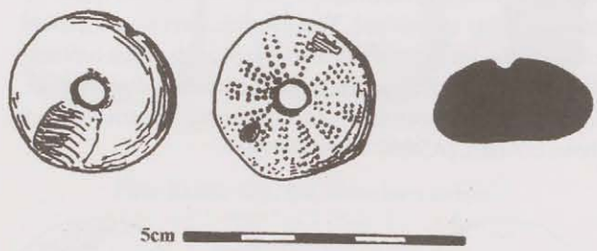


Plate 10.181: Reg. 463, spindle whorl made from fossil sea urchin

Plate 10.181 (Reg. 463). Spindle whorl, made from a circular fossilised sea urchin, pierced with a central hole. Slightly chipped and lime encrusted, but otherwise complete. Grey/green in colour. Compare similar whorl from Jerusalem (Shamir 1996: 149 and 167, fig. 22:19), discussed along with the incised limestone whorls as 'questionably identified'. Diameter:

29 mm. Thickness: 15 mm. Diameter of central hole: 5 mm. [A11.1.2] *Dub: WM439.

Plates 10.178:b and 10.182 (Reg. 547). Complete small smooth stone spindle whorl, flat on one side and rounded on the other. Mottled and variegated in colour — orange/pink/grey. Very smooth stone, possibly limestone. Compare Megiddo (Lamon and Shipton 1939: pl. 94:3–4), Hazor (Yadin *et al.* 1961: pl. CLXXXVIII:13, similar in shape, but larger). Diameter: 20 mm. Thickness: 12 mm. Diameter of central hole: 5 mm. [A20.5.2] *Edin: 1976.596.

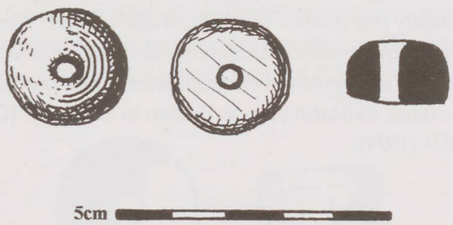


Plate 10.182: Reg. 547, smooth stone spindle whorl

(Reg. 960). Half of spindle whorl in pink/beige stone. Plain, doughnut shape. Diameter: 26 mm. Diameter of central hole: 8 mm. Thickness: 9 mm. [B3.6] *L NMGM: 1993.180.15.

Questionable whorls

For discussion relating to the maximum likely size of the central hole of spindle whorls, see Barber 1991: 51–2.

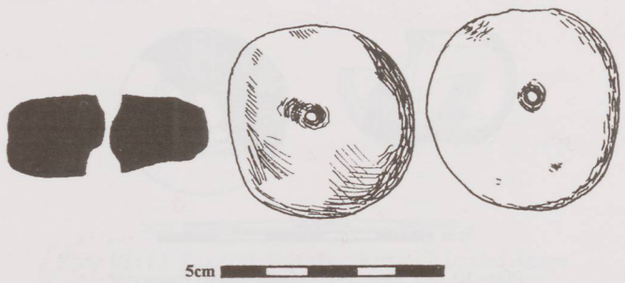


Plate 10.183: Reg. 5, limestone whorl/loom weight

Plate 10.183 (Reg. 5). Limestone spindle whorl/loom weight. Rough stone, rough and irregular shape — hole not quite central, possibly unfinished. This identification is in question because of the irregular shape and the placing of the central hole — it would not spin effectively. Maximum diameter: 45 mm. Minimum diameter: 42 mm. Thickness: 18 mm. Diameter of hole: c. 7 mm. [A5.1.3] *Man: 1974.2.

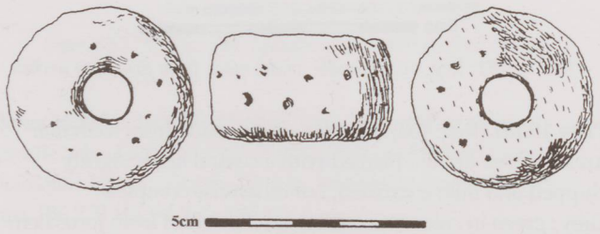


Plate 10.184: Reg. 108, large stone spindle whorl

Plate 10.184 (Reg. 108). Large, light, chalky limestone spindle whorl? Quite badly chipped, but complete. Decorated with lines of drilled holes around the outside and along the edges. Creamy white in colour. Diameter: 41 mm. Thickness: 29 mm. Diameter of central hole: 13 mm. [A4.1b.3] *Kar.



Plate 10.185: Reg. 670, stone core, possible unfinished whorl

Plate 10.185 (Reg. 670). Stone core. Buff/brown/grey limestone. Possibly an unfinished whorl. Diameter: 37 mm. Depth: 27 mm. (cf. Reg. 931) [B6.1.2] *ROM: 974.107.43.

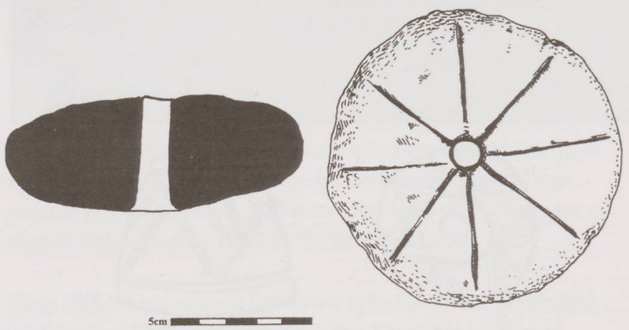


Plate 10.186: Reg. 895, large whorl or loom weight

Plate 10.186 (Reg. 895). Large spindle whorl or loom weight in buff limestone. One side is rough, the other is decorated with incised lines emanating from central hole. This is probably more likely to be a weight than a whorl; at 12 mm., the central hole is outside the size range considered normal for a spindle whorl and the central hole cuts through the object at an angle, so it would not spin effectively as a whorl. Diameter: 107 mm. Diameter of central hole: 12 mm. Depth: 40 mm. [D2.8.5] *Kar.

(Reg. 1064). Unfinished spindle whorl or loom weight. Rough, but obviously shaped piece of chalky limestone. Creamy white in colour. Diameter: 39 mm. Depth: 26 mm. [B2.7] *ROM: 975.416.47.

Loom weights

Plate 10.187 (Reg. 397). Fragmentary loom weight, crumbly clay. [B2.4.9] *Edin: 1976.588.

(Reg. 528). Loom weight of dark grey vesicular volcanic stone with large air bubbles. Object is rectangular and elongated with hole pierced through at one end. Similar in shape to Reg. 826. Length: 68 mm. Width: 39 mm., tapering to 34 mm. at the top (pierced) end. Thickness: 36 mm., tapering to 24 mm. at the top. [B3.6.2] *Dub: WM821.

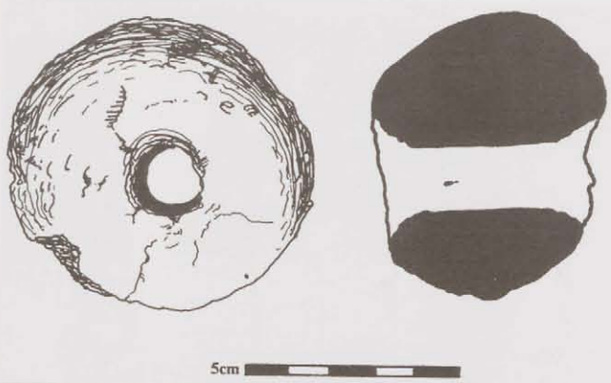




Plate 10.187: Reg. 397, fragmentary loom weight

(Reg. 531). Half of limestone loom weight in very roughly hewn stone. Existing measurements: Diameter: c. 60 mm. Thickness: c. 17 mm. Diameter of central hole: c. 17 mm. [A1.11.15] *Man: 1974.59.

Plate 10.188 (Reg. 568). Clay loom weight. Buff-coloured clay, damaged, but still in one piece. Existing diameter: c. 50 mm. Diameter of central hole: c. 25 mm. Thickness: c. 25 mm. [B3.4.10] *Ash: 1974.281.

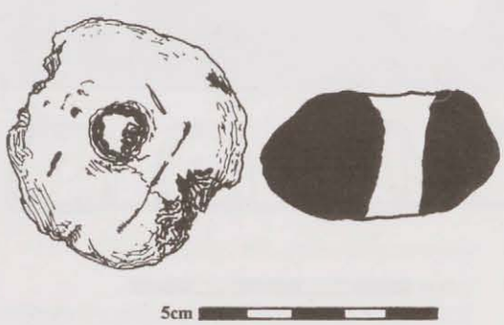


Plate 10.188: Reg. 568, clay loom weight

Plate 10.189 (Reg. 576). Two pieces of loom weight. Very crumbly, buff clay. Traces of burning. Diameter: 65 mm. Height: 40 mm. [B3.1.7] #not seen.

Plate 10.190 (Reg. 607). Stone loom weight, one side chipped, but otherwise complete. Circular, but 'flattened' into bun-shape. One side has slightly indented ridge around off-centre hole. Smooth limestone, buff with pink/grey flecks. Maximum

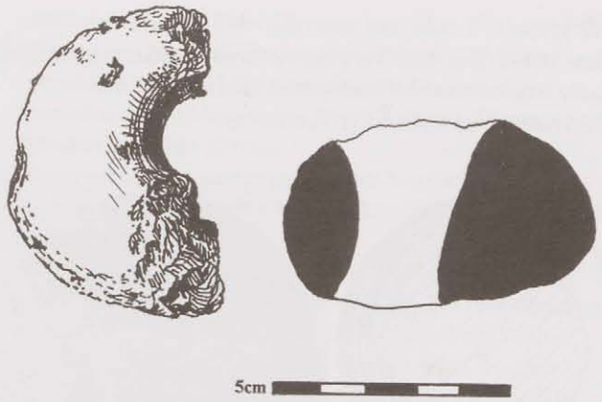


Plate 10.189: Reg. 576, two pieces of a loom weight

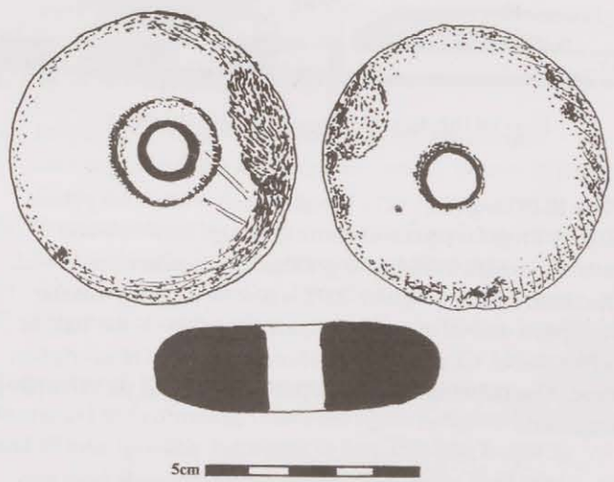


Plate 10.190: Reg. 607, stone loom weight

diameter: 68 mm. Diameter of central hole: 8 mm. Thickness: 21 mm. [A1.32.4] *Dub: WM229.

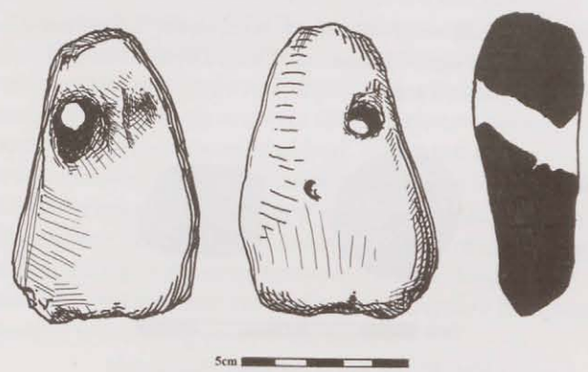


Plate 10.191: Reg. 826, stone loom weight

Plate 10.191 (Reg. 826). Loom weight in dark grey stone. Pierced at top. Uneven base. Length: 85 mm. Thickness: 30 mm. at top, tapering to 15 mm. [B8.2.2] #not seen.

(Reg. 972). Baked clay loom weight. Orange/buff in colour. Very rough doughnut shape. Diameter: c. 72 mm. Thickness: c. 37 mm. Diameter of central hole: c. 18mm. [B3.2.7] *Edin: 1976.632.

Weights

Plate 10.192 (Reg. 129). Very heavy, large circular metal weight. Badly lime encrusted. Possibly lead. Diameter: 61 mm. Thickness: 10 mm. [C1.1.F1] *Kar.



Plate 10.192: Reg. 129, circular weight, possibly lead

Plate 10.193:a–g (Reg. 621). Weight in soft white chalky stone. Slightly irregular square measuring 15 mm. each side and pierced through. Weight: 9.5 g. Originally registered as a bead. Discussed by Bartlett (1989: 227), where he suggests that the inscription was an incomplete rendering of *nṣp* — the 'half' or lighter shekel. Cf. also Plate 11.15 and discussion of inscription there. Also published by Puech (1977: 15–7, fig. 5, pl. VIA). [D+] #not seen.

(Reg. 662). Half of spherical marble or weight made from grey smooth stone, with pink core. Compare complete weight from Umm al-Biyara (Bennett 1966: pl. XXIV:b); also, Jerusalem (Ariel and de Groot 1996: fig. 38:10, and Tushingham 1985: 430–1 and 199–204, figs 78 and 79). Diameter: 18 mm. [A11.2.3] *Ash: 1975.413.

(Reg. 917). Small weight of smooth black stone. 'Cabochon' shape. Possibly agate? Diameter: 20 mm. Depth: 12 mm. [B7.4.5] *ROM: 975.416.37.

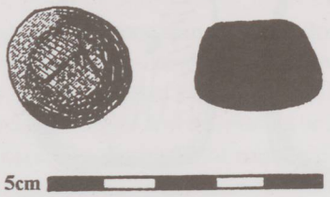


Plate 10.194: Reg. 1154, black stone weight

Plate 10.194 (Reg. 1154). Weight in black stone. Narrower at top, which is scratched. Base very smooth and slightly curved. Compare weight from Jerusalem (Ariel and de Groot 1996: 221 and 231, pl. 15:6, fig. 38.3); also Beersheba (Aharoni 1973: pls 70:6, 73:10, from stratum II). Diameter of top: 15 mm. Diameter of base: 22 mm. Height: 13 mm. [B7.5.9] *DoA. #not seen.

(Reg. 1270). Small weight of creamy beige stone — steatite? Diameter: 21 mm. Maximum depth: 13 mm. [C20.3.3] *Kar.



Plate 10.193:a–g: Reg. 621, weight with inscription

Metal

Jewellery from an unregistered burial

Plate 10.195:a–c (Reg. 153). Seven bronze/copper alloy objects. Originally registered as 153 a–c, but now registered as Reg. 153:1–7 in the collection of the Royal Museum of Scotland, Edinburgh (*Edin: 1976.581).

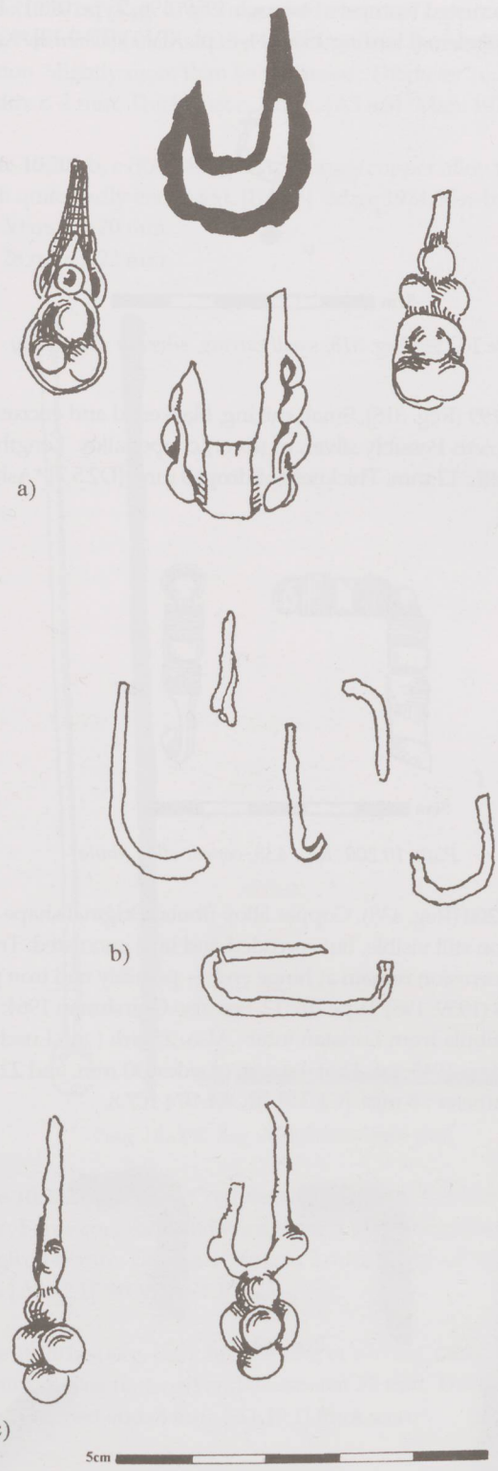


Plate 10.195:a–c: Reg. 153, copper alloy jewellery

Crystal Bennett's personal notebook dated 4 July 1972 contained the following entry: 'Tunnel is a burial with earrings'. This context was numbered as E.1.3 cave, but was not properly recorded (cf. Chapter 1); the earrings were registered as small finds. Reg. 153 consists of two damaged but recognisable earrings, (a) and (c), and a group of bronze fragments which are possibly pieces of plain earrings (b); their context on the site has not been located.

1) Reg. 153 (c) — 'mulberry'-type earring, with the drop made up of five hollow balls. Cf. Tel 'Ira (Beit-Arieh 1999a: 396–7); similar example at Katef Hinnom, Jerusalem (Barkay 1986: 29); see also Maxwell-Hyslop 1971: 210 and 227–8 for possible Iranian and Elamite influence. Encrusted and corroded, but holding shape. Existing length: 37 mm. Maximum width: 10 mm.
2) Bronze fragment, straight, with ends bent at right angles. Corroded and encrusted. Existing length: 25 mm. Width of wire: 2 mm.
3) Reg. 153 (a) — copper alloy hollow 'boat-shaped' earring decorated with applied balls; an added piece of contrasting metal is wrapped around the centre of the drop. Wire filigree of the contrasting metal has been used to create decorative curls on the outside edges of the earring. The contrasting metal is possibly silver. Existing length: 29 mm. Maximum width: 21 mm. Maximum thickness: 10 mm. Cf. Tel 'Ira (Beit-Arieh 1999a: 397–8). For examples of similar shape and basic design, see Maxwell-Hyslop 1971: pls 213 (earring from Al Mina) and 214; described on p. 230 as 'normal boat-shaped Phoenician type'. See also Petrie 1928: pl. I:17.
4) Fragment of copper alloy/bronze hook. Broken and corroded. Existing measurements: Length: 17 mm. Width: c. 1 mm.
5) Fragment of earring. Some encrustation and corrosion. Existing length: 26 mm. Maximum width: 3 mm.
6) Fragment of copper alloy. Length: 2 mm. Width: 1 mm.
7) Fragment of copper alloy. Length: 8 mm. Width: 1 mm.

Unnumbered. Remains of bronze hook in two pieces. Encrusted and corroding. Diameter: 1 mm. Lengths: 13 mm. and 15 mm. (possibly belonging to Reg. 153) [site E cave 1].

DISCUSSION OF PARALLELS

Tel 'Ira (Freud 1999b: figs 8.2:5 and 8.3, also figs 4.29:10 and 4.29:13) — The two most complete earrings (153c and 153a) have almost identical parallels from Tomb 14 at Tel 'Ira. Tomb 14 was dated to the late eighth/early seventh century BC, and had ceramic parallels to Beersheba Stratum II and Horvat Qitmit (Freud 1999b: 150–1). The boat-shaped earring is of the same basic construction, with decorative elements consisting of small, applied metal balls and filigree wire which winds around them. The only apparent difference between the example from Busayra and that from Tel 'Ira is that the Busayra earring has three metal balls enclosed in filigree on the side of the lower part of the drop, whilst the Tel 'Ira example has only one, and the Tel 'Ira earring has a row of blobs along a 'cuff' at the top of the drop; however, the basic design and decoration are identical. The mulberry earring from Busayra is identical to one in the group from Tel 'Ira.

Ephesus (Maxwell-Hyslop 1960: pl. XI:7) — A gold earring from Ephesus (c. seventh century BC?), said by Maxwell-Hyslop to be the lunate shape in its most developed form, has the same basic shape as the Busayra and Tel 'Ira examples, with a 'cuff' of raised blobs at the top of the 'boat' section, identical to that seen on the Tel 'Ira and Gerar earrings.

More elaborate examples, again of gold, come from Al Mina and Amrit, classified as normal boat-shaped Phoenician type by Maxwell-Hyslop (1971: 229–30, pls 213–4), and are dated seventh–sixth centuries BC.

Meqabelein (Harding 1950: pl. XV:2 and 4) — A very similar group of earrings was discovered in this tomb, which can be dated any time between the late seventh and early fifth centuries BC, with Stern (1982: 79–80) preferring a mid-sixth-century BC date.

Gerar (Petrie 1928: pl. I:17) — A gold earring published by Petrie (dated by him to the Twentieth Dynasty) may be a parallel shape, but the detail is difficult to see as the metal is extremely corroded. However, close inspection of the photograph suggests the presence of a 'wrap-around' section, decorative applied balls, filigree decoration and a 'cuff' of raised blobs around the top of the 'boat' part of the earring, all identical to features seen on the Tel 'Ira earring (see above).

Personal adornment

Plates 10.197 and 10.209:a (Reg. 21). Bronze earring — has been in four pieces — now repaired. Length: Top/bottom: 21 mm. Width of drop: 5 mm. [B1.1.3] *Man: 1974.5.

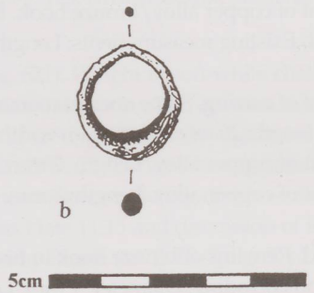


Plate 10.197: Reg. 21, bronze earring

Plate 10.209:c (Reg. 132). Two earring fragments. Pale blue/green/white patina — silver? Both very curved, c. 10 mm. long: 2 mm. and 1 mm. thick. [B1.3.6] *Kar.

(Reg. 151). 'Bronze bracelet.' Perhaps incomplete. Somewhat corroded. Diameter: 35 mm. Width: 2 mm. [E.1.3 cave] *? #not seen.

Plate 10.210:a. 87 (Reg. 166). Fragment of long, heavy bronze pin. Possibly a kohl stick. Existing length: 95 mm. Diameter: 3 mm. [C10.3.4] *Man: 1974.10.

(Reg. 171). Metal object, part of copper alloy earring. Corroded and broken. [C11.1.3] *Emory Univ. #not seen.

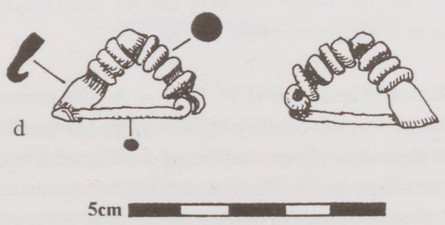


Plate 10.198: Reg. 297, copper alloy fibula

Plate 10.198 (Reg. 297). Copper alloy brooch/fibula. Broken — spring can still be discerned, but quite badly corroded and encrusted. Pin broken off and missing since drawing was made. Existing length: 21 mm. — both sides. Diameter: 6 mm. — but encrusted (compare Stronach 1959: 196, Type III6:1). See also Meqabelein (Harding 1950: 44–8, pl. XIV:1) [B3.2.12] *Kar.

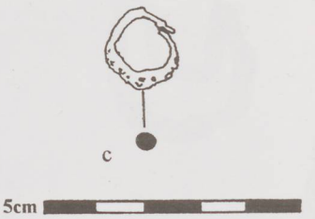


Plate 10.199: Reg. 318, small earring, silver or silver alloy

Plate 10.199 (Reg. 318). Small earring, blackened and encrusted, but complete. Possibly silver, or silver/copper alloy. Length: 15 mm. Width: 12 mm. Thickness of drop: 3 mm. [D2.5.7] *Ash: 1973.400.

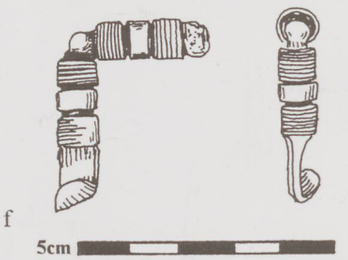


Plate 10.200: Reg. 438, copper alloy fibula

Plate 10.200 (Reg. 438). Copper alloy fibula. Original shape and decoration still visible, but corroded and lime encrusted. Traces of iron corrosion remain at hinge end — possibly had iron pin? Stronach (1959: 198) Type III7:12. See also Ghirshman 1964: 377, no. 514, fibula from Luristan tomb. Also, Zinjirli (von Luschan and Andrae 1943: taf. 43:a). Length of sides: 30 mm. and 22 mm. Diameter : 6 mm. [C1.3.7] *ROM: 974.107.8.

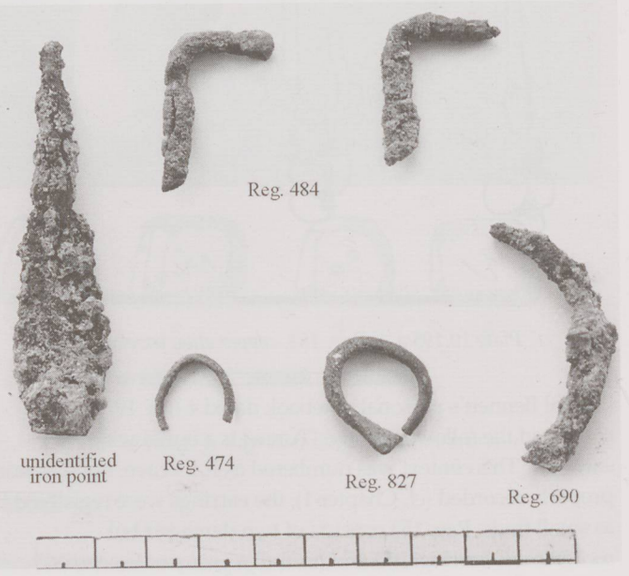


Plate 10.201:a: Unidentified
b, c: Reg. 484, two copper alloy fibulae
d: Reg. 474, part of a copper alloy ring
e: Reg. 827, bronze ring or earring
f: Reg. 690, curved iron nail

Plate 10.201:d (Reg. 474). Fragment of bronze/copper alloy ring. Some black encrustation — evidence of burning? Oval in section. Slightly more than half remains. 'Diameter': c. 15 mm. Width: c. 2 mm. Thickness: c. 1 mm. [A5.6.5] *Man: 1974.55.

Plate 10.201:b, c (Reg. 484). Two bronze/copper alloy fibulae. Both quite badly encrusted. [B3.4.3] *Man: 1974.56 a–b.

a) 30 mm. x 20 mm.
b) 28 mm. x 22 mm.

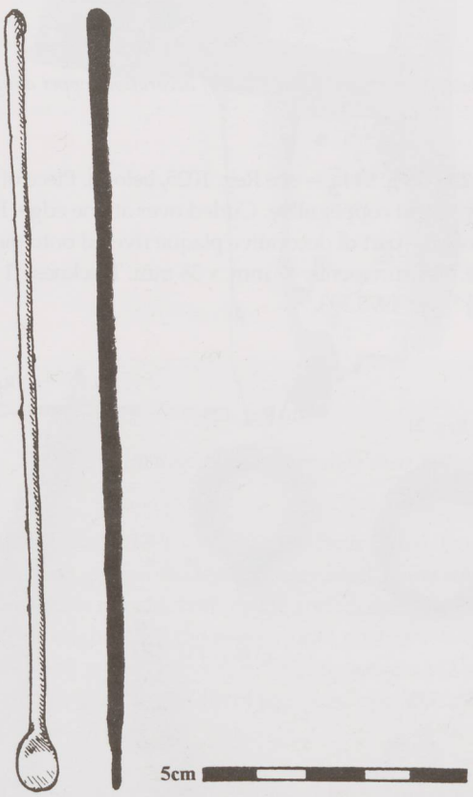


Plate 10.202: Reg. 546, bronze kohl stick

Plate 10.202 (Reg. 546). Complete copper alloy/bronze 'kohl stick'. Some corrosion and encrustation, but well preserved. Length: 149 mm. Diameter of stick: 3 mm. Width of 'spoon': 7 mm. [A20.2.1] *ROM: 974.107.23.

Plate 10.201:e (Reg. 827). Bronze ring or earring, fairly lime encrusted. One flattened end. Diameter: 12 mm. Thickness: 4 mm. Flattened end: 5 mm. [A1.19.1] #not seen.

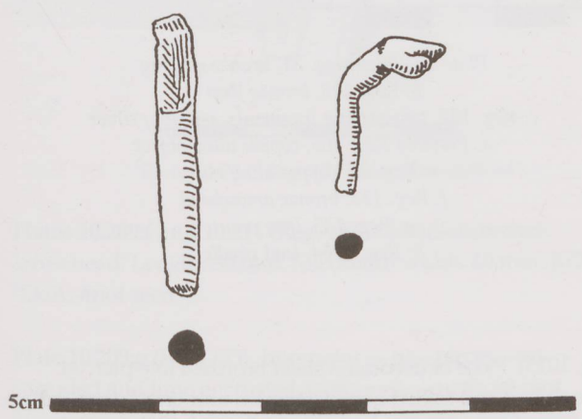


Plate 10.203: Reg. 939, sheet copper alloy, two fragments

Plate 10.203 (Reg. 939). Two fragments of sheet copper alloy, possibly part of brooch? One piece straight, the other bent almost at right angle. Straight piece: 27 mm. long, 4 mm. diameter. Bent piece: 17 mm. long, 2 mm. diameter. [A5.11.6] *Ash: 1975.391.

(Reg. 957). Very fine bronze pin. Possibly part of brooch. Slightly eroded and bent at one end. Length: 64 mm. Thickness: 2 mm., tapering to 1 mm. at point. [A5.11.6] *DoA. #not seen.

Furniture fittings of copper alloy

Plate 10.204 (Reg. 322). Bronze/copper object. Purpose unknown. Height: 50 mm. Diameter: 40 mm. Two handles? of different lengths, with nails. Corroded. [A25.3.10] #missing.

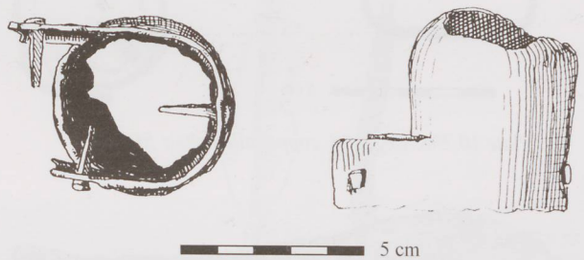


Plate 10.204: Reg. 322, copper alloy object

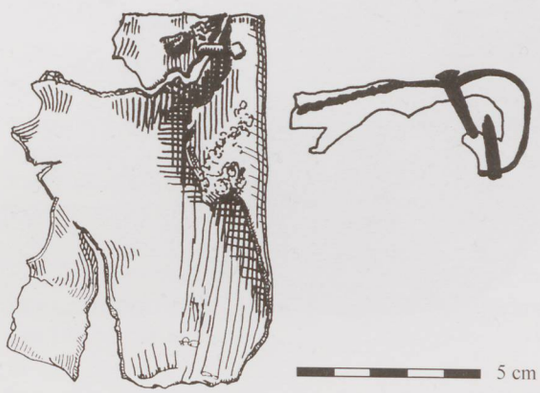


Plate 10.205: Reg. 526, copper alloy, nine pieces, one rivet visible

Plate 10.205 (Reg. 526). Nine pieces of copper. Badly corroded and lime encrusted. One large, folded piece with rivet visible in fold. Use unknown. (part of Regs 485 and 500?) [A5.6.15] *? #not seen.

Plate 10.206 (Reg. 658). Two copper alloy chair fittings. Corroded and lime encrusted. Compare metal socket from Megiddo (Loud 1948: pl. 188:14.).

1) Angle bracket of sheet copper with nails for attachment, cylindrical, with top half opening out to form a bracket. Nail square in section. Diameter of cylinder: c. 46 mm. Existing length of cylinder: c. 118 mm. Length of bracket: c. 96 mm. Existing length of nail: c. 20 mm. *Ash: 1974.270.
2) Hub of sheet copper with nails for attachment. Slightly squashed — no longer circular. Four nails, as above. Diameter of base: 51 mm. Depth: 60 mm. [A25.3.8] *Ash: 1974.269.

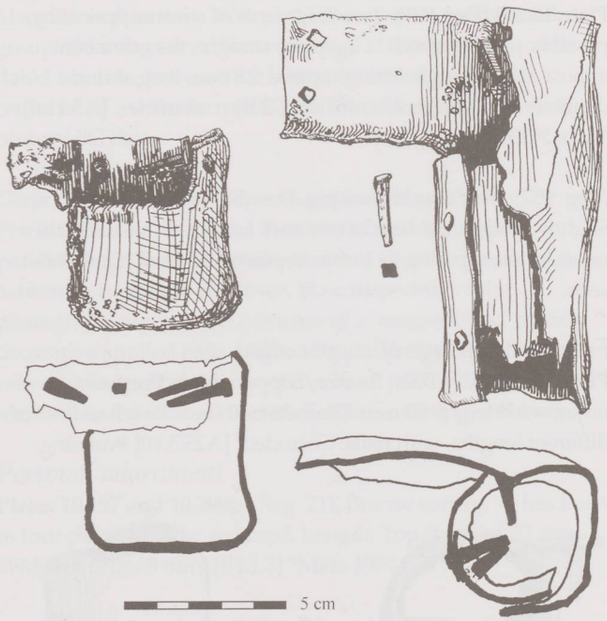


Plate 10.206: Reg. 658, copper alloy chair fittings

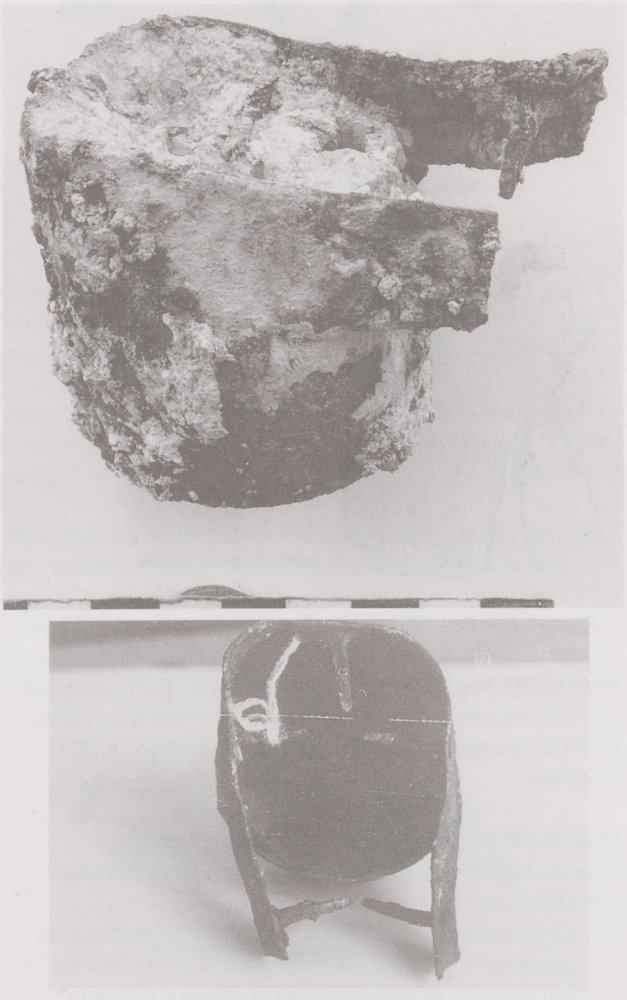


Plate 10.207:a, b: Reg. 780, copper alloy fitting

Plate 10.207:a, b (Reg. 780). Copper alloy fitting with five square-sectioned rivets remaining. Diameter of base: 50 mm. Depth of fitting in centre: 56 mm. Corroded. [A5.7.9] *Kar.

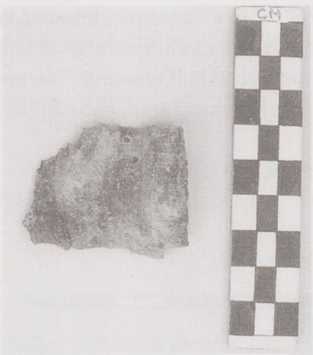


Plate 10.208: Reg. 944a, piece of decorative copper alloy

Plate 10.208 (Reg. 944a — see Reg. 1025, below). Piece of decorative sheet copper alloy. Curled over at one edge. Pierced once. Probably part of decorative plaque riveted onto piece of furniture. Measurements: 47 mm. x 38 mm. Thickness: 1 mm. [A5.11.6] *Ash: 1975.393.

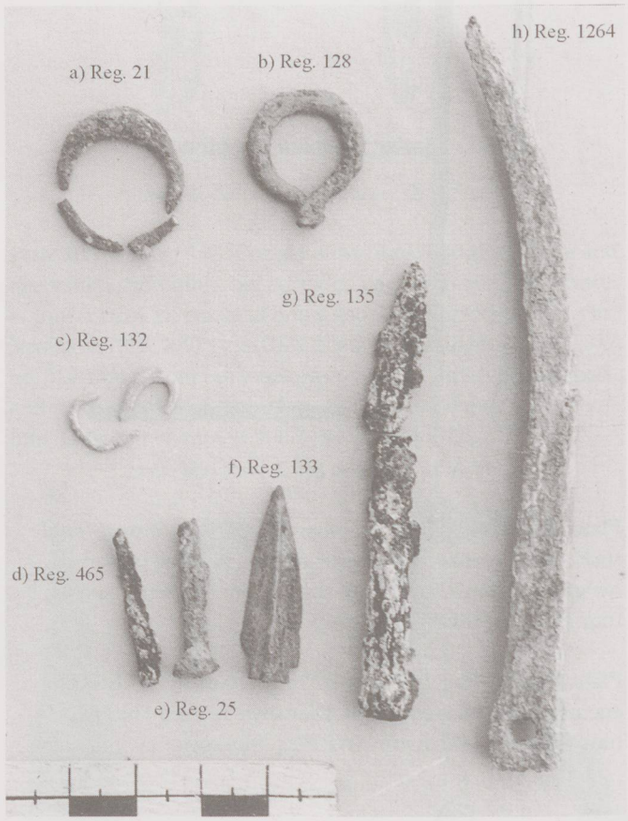


Plate 10.209:a: Reg. 21, bronze earring
b: Reg. 128, bronze loop
c: Reg. 132, two earring fragments, possibly silver
d: Possibly Reg. 465, copper alloy object
e: Reg. 25, copper alloy nail
f: Reg. 133, bronze arrowhead
g: Reg. 135, iron point
h: Reg. 1264, lead needle

(Reg. 1025). Piece of decorated sheet bronze. Hole pierced through end and folded over. Corroded and lime encrusted. Width: 46 mm. Length: 36 mm. [B8.4.5] *? #not seen.

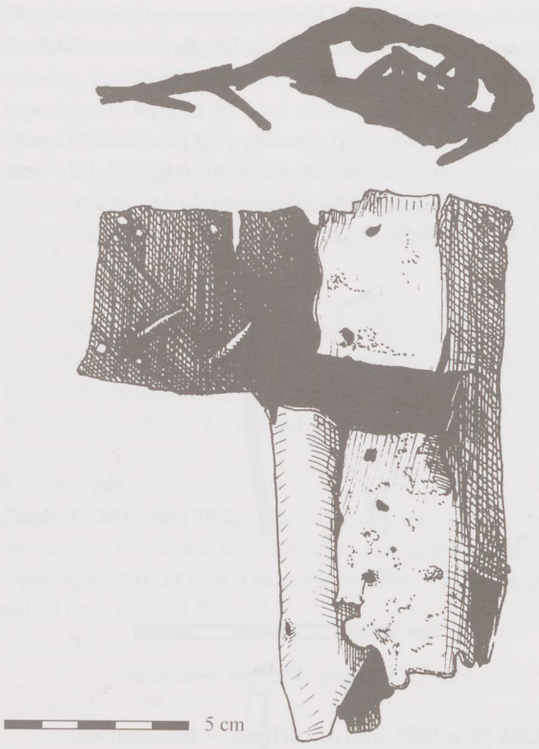


Plate 10.210: Reg. 1129, copper alloy chair fitting

Plate 10.210 (Reg. 1129). Copper alloy chair fitting. Extremely squashed and quite corroded and encrusted. Some square-sectioned rivets remain, both inside and on open bracket. Holes pierced, through which the rivets would go. Possible evidence of mineralised wood on exterior. Existing length: 142 mm. Width at top: 109 mm. Width of squashed cylinder: 60 mm. (cf. Reg. 658 above). [A8.5.10] *Kar.

Arrowheads, points, and blades of iron and copper alloy

(Reg. 9). Flat and broken piece of iron. Appears to be tip of quite heavy blade. Heavily corroded and encrusted. Existing measurements: Length: 42 mm. Width: 24 mm. Thickness: 7 mm. [A5.1.4] *Man: 1974.4.

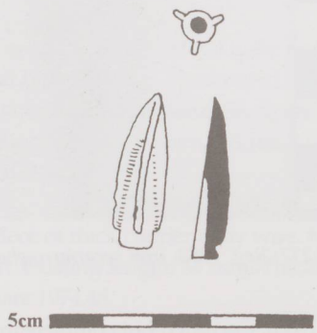


Plate 10.211: Reg. 133, bronze arrowhead

Plates 10.209:f and 10.211 (Reg. 133). Complete bronze arrowhead. Length: 30 mm. Maximum width: 10 mm. [C2.2.1] *DoA. #not seen.

Plate 10.209:g (Reg. 135). Iron point in two pieces, very corroded and lime encrusted. Composite length: 68 mm. Thickness: 8 mm. tapering to 2 mm. Largest piece: 42 mm. Smallest: 26 mm. [A9.7.5] *Ash: 1973.389.

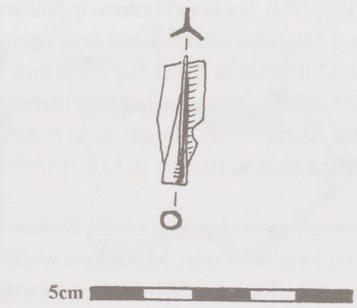


Plate 10.213:b: Reg. 271, incomplete socketed trefoil arrowhead

Plate 10.213:b (Reg. 271). Incomplete, torpedo-shaped arrowhead. Length: 20 mm. Height: 5 mm. [A26.1. baulk] #not seen.

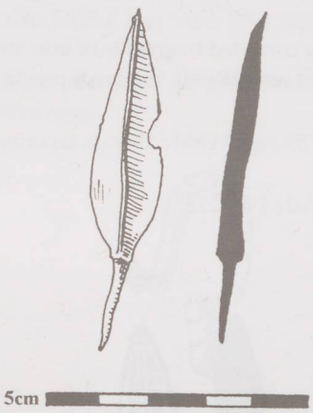


Plate 10.212: Reg. 279, bronze, leaf-shaped arrowhead

Plate 10.212 (Reg. 279). Copper alloy arrowhead. Leaf-shaped, with raised midrib. Complete, apart from small chunk out of side of blade. Long, thin tang. Length: 62 mm. Maximum width: 12 mm. tapering to point. Thickness at midrib: 3 mm. [D2.5.4] *ROM: 974.107.2.

(Reg. 281). Iron blade. Very encrusted and corroded. Existing measurements: Length: 85 mm. Width: 16 mm. Thickness: 7 mm. [B3.2.4] *Edin: 1976.584.

(Reg. 280). Fragment of iron arrowhead. Lentoid in section. Existing length: 50 mm. Width: 18 mm. tapering to 5 mm. Thickness: c. 6 mm. [A1.22.6] *Ash:1974.284.

(Reg. 364). Iron spear/arrow head, broken at tang and tip. Corroded and encrusted. Existing length: 77 mm. Existing widths, at widest: 19 mm., at tang: 6 mm., at tip: 7 mm. Existing thickness: c. 4 mm. at tip, c. 9 mm. at centre, c. 7 mm. at tang. [D2.6.6] *Ash: 1973.403.

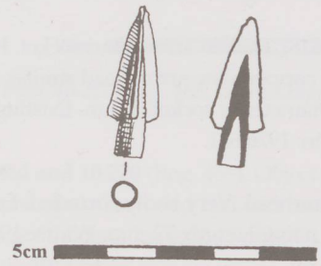


Plate 10.213:a: Reg. 372, bronze socketed trefoil arrowhead

Plate 10.213:a (Reg. 372). Socketed bronze trefoil arrowhead with hollow tang. Slightly corroded and lime encrusted. Cleuziou type F.17 (Cleuziou 1977). See also Deve Hüyük, (Moorey 1980: 65 and fig. 10); also, Tawilan (Bennett and Bienkowski 1995: 82, fig. 9.7:2). Length, tang to tip: 28 mm. Maximum width of blades: 10 mm. [C12.4.3] *Ash: 1974.283.

(Reg. 393). Extremely corroded iron blade. Broken in two and repaired. Existing length: 78 mm. Maximum width: 9 mm., tapering to 3 mm. Thickness: c. 10 mm., but corrosion very thick. [D2.8.2] *ROM: 974.107.6.

(Reg. 394). Fragment of iron blade (tear-shaped in section). Extremely corroded and lime encrusted. Existing length: 44 mm. Width: 25 mm. tapering to 22 mm. Thickness: c. 8 mm. [A1.23.3] *Ash: 1974.290.

(Reg. 401). Two very corroded fragments of iron arrowheads.
Largest — Length: 94 mm. Width: 15 mm. tapering to 2 mm. Thickness: 4 mm.
Smallest — Length: 59 mm. Width: 15 mm. tapering to 2 mm. Thickness: c. 5 mm.
[D2.8.4/D2.8.2–4] *Ash: 1974.278.

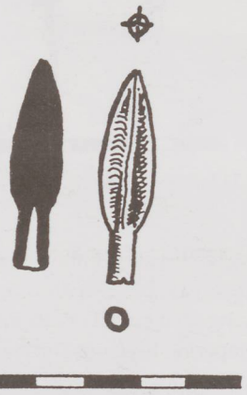


Plate 10.214: Reg. 661, socketed bronze arrowhead

Plate 10.214 (Reg. 661). Complete socketed bronze arrowhead. Length: 40 mm. Width: 10 mm. [A11.2.3] *DoA. #not seen.

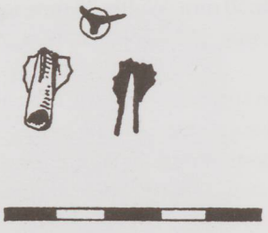


Plate 10.215: Reg. 818, broken arrowhead socket

Plate 10.215 (Reg. 818). Broken arrowhead socket. Has probably been a trefoil 'F17' copper alloy arrowhead similar to Reg. 372 (Cleuziou 1977). Diameter of socket: 5 mm. Existing length: 15 mm. [A27.1.1] *Edin: 1976.621.

(Reg. 861). Iron spearhead. Very badly corroded. Long leaf shape, tapering to point. Length: 72 mm. Width: 19 mm. [B7.1.2. pit] #not seen.

(Reg. 935). Fragment of metal blade, appears to be iron. Metal is split and extremely corroded. Existing length: 74 mm. Width: 20 mm. Thickness: 8 mm. [A20.6.7] *Man: 1975.53.

(Reg. 944). Copper alloy strip, possibly part of a blade? Tapers slightly and has small chunk cut out of one edge. Slightly bent. Length: 38 mm. Width: 6 mm. Maximum thickness: 2 mm. [A5.11.6] *Man: 1975.54.

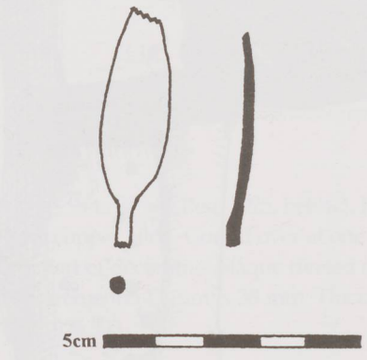


Plate 10.216: Reg. 992, iron arrowhead

Plate 10.216 (Reg. 992). Iron arrowhead — has been leaf-shaped, but tip and tang broken off. Heavily corroded and encrusted, but original shape is still visible. Existing length: 46 mm. Maximum width: 16 mm. [B6.3.8] *Man: 1975.59.

(Reg. 993). Very badly corroded iron blade. Existing measurements: Length: 68 mm. Width: 17 mm., tapering to 2 mm. Thickness: c. 10 mm. [A60.6.3] *ROM: 975.416.29.



Plate 10.217: Reg. 1083, iron spear/arrowhead

Plate 10.217 (Reg. 1083). Corroded but complete iron spearhead/arrowhead. Traces of wooden hafting remain adhered to tang. Length: 103 mm. Maximum width: 6 mm., tapering to point. Thickness: c. 5 mm. — but corrosion is very thick. [B2.9.77. From cave fill.] *ROM: 975.416.31.

(Reg. 1225). Iron spear or arrowhead, quite encrusted and corroded. Broken at tang and tip, original shape lost. Existing length: 51 mm. Maximum width: 18 mm. Thickness: 7 mm. (cf. Reg. 1083.) [C21.1.18] *Kar.

(Reg. 1244). Iron arrowhead, very corroded and encrusted. Broken at both ends, but difficult to estimate how much is missing. Existing length: 52 mm. Width: 14 mm. at centre, tapering to 5 mm. at one end and 7 mm. at the other. [C21.3.12] *Kar.

(Reg. 1268). Piece of bronze? Possibly part of sword or saw. Length: 43 mm. Width: 11 mm. Thickness: 1 mm. [C23.1.1] #not seen.

(Reg. 1305). Iron arrowhead, very badly corroded. Solid tang, no barbs — may have been leaf-shaped. Existing length from tang to broken tip: c. 32 mm. Existing maximum width: 22 mm. [C+ (eastern edge)] *L NMGM: 1993.180.25.

Copper alloy fragments

Plates 10.209:e and 10.218 (Reg. 25). Copper alloy nail with end broken off. Encrusted and corroded. Circular in section. Existing length: 24 mm. Diameter of head: 6 mm. Diameter of nail: 3 mm. [B1.1.3] *Kar.

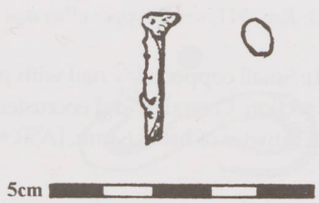


Plate 10.218: Reg. 25, copper alloy nail

Plate 10.209:b (Reg. 128). Bronze loop. Fragment of ring or chain. Broken at twist. Some encrustation. Diameter: 18 mm. [C1.2.2] *Emory Univ. #not seen.

(Reg. 142). Bronze deposit. Many pieces of bronze, large and small. Burnt in antiquity. Large amount of metal still intact. [A7.2.1] #not seen.

(Reg. 165). Copper alloy pin with hooked end. Intact, apart from tip. Fragile and lime encrusted. Existing length: 46 mm. Width: c. 2 mm. [C10.3.4] *Ash. 1973.393.

(Reg. 169). Copper alloy pin. Metal quite well preserved, sharp end intact but broken at top. Point circular in section, but becomes squarer towards the end. Some encrustation and dark green patination. Length: 60 mm. Width: 4 mm. tapering to 1 mm. [C11.1.3] *Kar.

(Reg. 274). Piece of thick copper alloy wire. May have been a hook. Broken. Existing length: 34 mm. Thickness of wire: 2 mm. [D2.1.10] *Man: 1974.48.

(Reg. 276). Smelted copper fragments. [A25.4.7] *Ash: 1974.275.

Plate 10.219 (Reg. 321). Two fragments of badly corroded copper alloy. Possibly a mis-casting (split at back) or part of rim of metal bowl/vessel? 1) Length: 43 mm. Width: 55 mm. Thickness: c. 4 mm. 2) Very irregular. Length: c. 63 mm. Width: c. 50 mm. tapering to c. 20 mm.

(Reg. 339). Unidentifiable bronze pieces. [A25.4.18] #not seen.

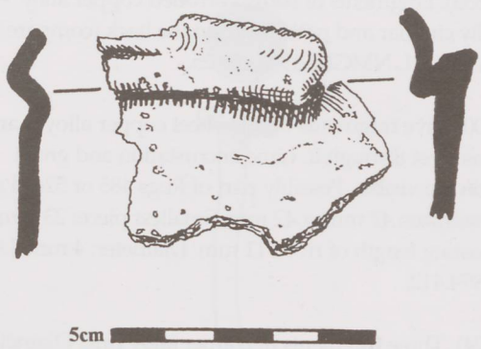


Plate 10.219: Reg. 321, two fragments of corroded copper alloy

(Reg. 352). Copper fragments, very corroded and completely unrecognisable. [A25.4.11a] *Ash: 1974.288.

(Reg. 353). 'Piece of copper.' Length: 43 mm. Width: 25 mm. [A25.4.10] #not seen.

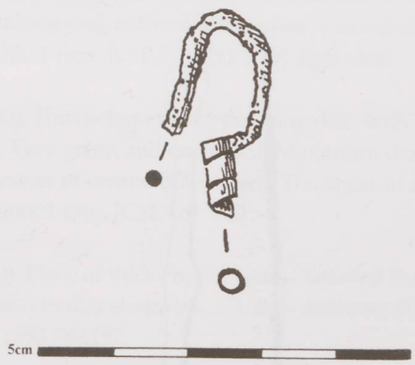


Plate 10.196: Reg. 437, copper alloy hook

Plate 10.196 (Reg. 437). Copper alloy hook. Made from one piece of thick wire, but one end flattened and coiled round for attachment. Quite encrusted and corroded, but still holding original shape. Length: 27 mm. Diameter of wire: 1.5mm. Width of coil: 4 mm. [D2.8.12] *Man: 1974.51.

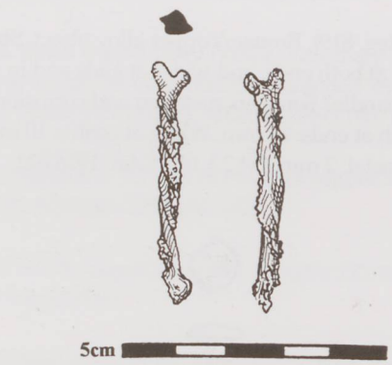


Plate 10.220: Reg. 465, twisted copper alloy

Plates 10.209:d and 10.220 (Reg. 465). Object made of bronze/copper alloy. Corroded and encrusted. May be twisted. Original use not evident. Length: 45 mm. Diameter: 5 mm. [D3.1.2] *Man: 1974.54.

(Reg. 485a). Fragments of badly corroded copper alloy – originally circular and patterned? on the back (compare Reg. 526). [A5.6.6] *L NMGM: 1993.180.25.

(Reg. 500). Five fragments of thin sheet copper alloy. Largest piece has rivet through it. Lime encrustation and green corrosion are visible. Possibly part of Regs 485 or 526? Largest piece measures: 47 mm. x 42 mm. Smallest piece: 23 mm. x 16 mm. Existing length of rivet: 11 mm. Diameter: 4 mm. [A5.6.8] *Ash: 1974.412.

(Reg. 624). Three fragments of copper alloy ring. Diameter: c. 22 mm. Width: c. 5 mm. Thickness: 1–2 mm. [A1.32.6] *Man: 1974.68.

(Reg. 672). Fragment of bronze, use unknown. Badly corroded and encrusted. Slightly triangular in shape. Width: 30 mm. Length: 35 mm. [A5.7.5] #not seen.

(Reg. 718). Piece of copper wiring, slotted at one end, flattened at the other. L-shaped. Length: 30 mm. Width: 5 mm. [B7.1.15] #not seen.

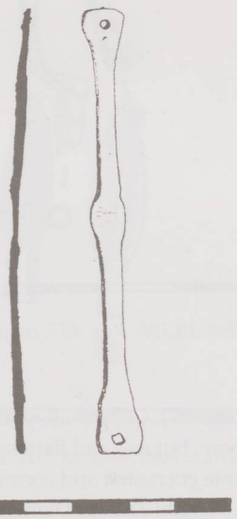


Plate 10.221: Reg. 819, copper alloy object

Plate 10.221 (Reg. 819). Bronze/copper alloy object. Strip of metal, pierced at both ends, and wider at ends and in middle – perhaps a handle? Some encrustation and corrosion Length: 122 mm. Width at ends: 13 mm. Width at centre: 10 mm. Thickness of metal: 2 mm. [M.2.1.10] *Edin: 1976.622.

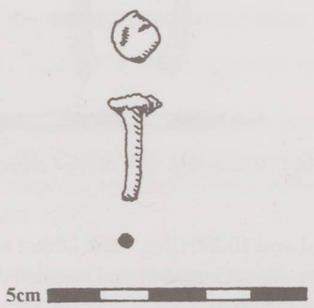


Plate 10.222: Reg. 832, copper alloy nail

Plate 10.222 (Reg. 832). Copper nail, flat-headed and broken at end. Overall length: 20 mm. Width of head: 9 mm. Width of shank: 4 mm. [A1.19.2] #not seen.

(Reg. 867). Piece of curved copper alloy. May have been rounded, but now flattened. Length: 22 mm. Width: 4 mm. Thickness: 3 mm. [M.2.1.12] *Man: 1974.81.

(Reg. 940). Fragment of copper alloy nail. Probably about half remains (pointed end). Square in section. Existing length: 24 mm. Width: 3 mm. tapering to c. 1 mm. [A50.+] *Ash: 1975.397.

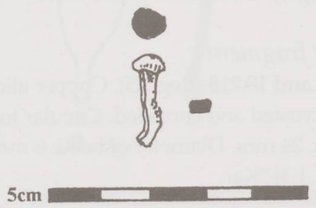


Plate 10.223: Reg. 941, small copper alloy nail

Plate 10.223 (Reg. 941). Small copper alloy nail with point broken off. Square in section. Corroded and encrusted. Length: 8 mm. Width: 3 mm. Diameter of head: 6 mm. [A50.+] *ROM: 975.416.33.



Plate 10.224: Reg. 942, three pieces of copper alloy

Plate 10.224 (Reg. 942). Three pieces of badly corroded, lime encrusted copper alloy. Two pieces have tiny rivets extant. Approximate measurements: 28 mm. x 18 mm., 32 mm. x 12 mm., 26 mm. x 22 mm. Maximum diameter of rivets: 3 mm. [A1.17.9/19] *Ash: 1975.409.

(Reg. 946). Copper alloy strip, shaped into small ring. Possibly earring, now slightly misshapen. Lime encrusted and corroded. Width: c. 2 mm. Thickness: 1 mm. Diameter of 'ring': 8–9 mm. (cf. Reg. 153b) [A5.11.3] *Ash: 1975.406.

Plate 10.225 (Reg. 948). Fragment of sheet copper alloy, possibly from rim of metal vessel. Existing measurements: 39 mm. x 12 mm. Thickness: 3 mm. at rim, to 1 mm. where body of vessel would start. [A5.11.5] *Ash: 1975.394.

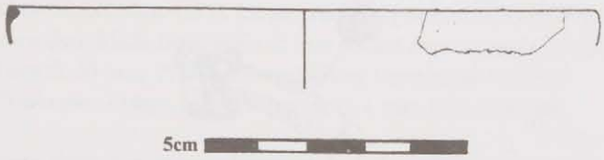


Plate 10.225: Reg. 948, fragment of sheet copper alloy

(Reg. 949). Two pieces of twisted, corroded, lime encrusted sheet copper alloy. Measurements: 42 mm. x 9 mm. and 20 mm. x 11 mm. [A50.+] *Ash: 1975.389.

(Reg. 956). Fragment of very thin pierced copper alloy with both ends bent and one end twisted. Corroded and lime encrusted. Length: c. 42 mm. Width: c. 11 mm. Thickness: c. 1 mm. [A60.4.3] *Ash: 1975.395.

(Reg. 962). Strip of sheet copper alloy. Some corrosion and slight lime encrustation. Existing length: 65 mm. Width: 11 mm. tapering to 7 mm. Thickness: c. 2 mm. [A20.6.8] *Ash: 1975.405.

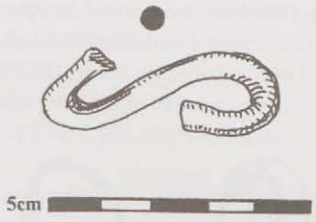


Plate 10.226: Reg. 971, piece of copper wire

Plate 226 (Reg. 971). Piece of copper wire in the shape of an 'S'. Length: 20 mm. Thickness: 2 mm. (cf. Reg. 1010) [B3.4.13] #not seen.

(Reg. 994). Five fragments of sheet copper alloy. Irregular shapes, corroded and lime encrusted. Largest: c. 28 mm. x 21 mm. Smallest: c. 16 mm. x 8 mm. Thickness: c. 1 mm. [A30.2.5] *Ash: 1975.411.

(Reg. 1010 a, b). Two quite heavy copper alloy loops. Both flattened in section. Length: a) 22 mm. b) 19 mm. Width of both: 3 mm. [A12.4.9] *Man: 1975.61 a, b.

(Reg. 1114). Crushed and unidentifiable fragments of thin copper alloy, approximately 1 mm. thick. [A8.5.1] *Ash: 1975.390.

Plate 10.227 (Reg. 1119). Heavy copper alloy nail with circular section. Almost complete, but corroded and encrusted, with bent and possibly damaged point. The head may have been covered with thin layer of metal. Length: 86 mm. Diameter of head: 21 mm. Diameter of nail: 6 mm. [A20] *ROM: 975.416.32.

(Reg. 1148). Fragments of very thin sheet copper alloy. One piece has hole pierced. [A20.6.7] *L NMGM: 1993. 180.26.

(Reg. 1176). Strip of slightly curved copper alloy. Very lime encrusted and corroded. Length: 45 mm. Width: 7 mm. Thickness: 3 mm. [A9.12.4] *Ash: 1975.404.



Plate 10.227: Reg. 1119, heavy copper alloy nail

(Reg. 1253). Copper pin. Complete, but broken at centre. Hooked at one end, pointed at the other. Corroded. Length: 57 mm. Width: 1 mm. [C10.5.1/C11.1.19] #not seen.

(Reg. 1280). Thin octagonal copper alloy disc, with hole pierced in centre. Very green and encrusted. Maximum diameter: 23 mm. Diameter of central hole: 4 mm. Thickness in area without encrustation: 1 mm. [C11.4.8] *Kar.

(Reg. S.50). Piece of thick copper wire. Flattened in section and curved into circular shape of c. 23. mm diameter. [D2.8.3] *L NMGM: 1993.180.157.

(Reg. S.51). Thin strip of sheet copper alloy. Length: 48 mm. [D2.1.8] *L NMGM: 1993.180. 158.

(Reg. S.52). Three thin fragments of sheet copper alloy. Two fragments have been pierced with hole of <1 mm. diameter. [E.Cave 1] *L NMGM: 1993.180. 159.

(Reg. S.53). Small fragment of sheet copper alloy. 18 mm. x 18 mm. x 19 mm. [A5.9.6] *L NMGM: 1993.180.160.

(Reg. S.54). Small copper alloy needle with sharp end broken off. Existing length: 39 mm. Width at flattened 'eye' end: 5 mm. Thickness: 1 mm. [A13.1.2] *L NMGM: 1993.180. 161.

(Reg. S.55). Shapeless droplet of mis-cast copper alloy. [C22.16.1] *L NMGM: 1993.180. 162.

(Reg. S.56). Small copper alloy nail. Length: 13 mm. [C22.2.8] *L NMGM: 1993.180.163.

(Reg. S.57). Semi-circular piece of copper alloy. Possibly part of fibula. Hole visible at one end. Length: c. 32 mm. Diameter: c. 6 mm. [B2.10.5] *L NMGM: 1993.180.164.

(Reg. S.58). Copper alloy/bronze object. Possibly armour scale. Two holes pierced on flat edge. Chip on one corner. Slightly encrusted and corroded. Similar examples are published from Hazor (Yadin *et al.* 1961: pl. CCCLXI:15).

Iron fragments

(Reg. 1). Piece of iron slag. 25 mm. x 20 mm. [A10.1.1] *L NMGM: 1993.180.64.

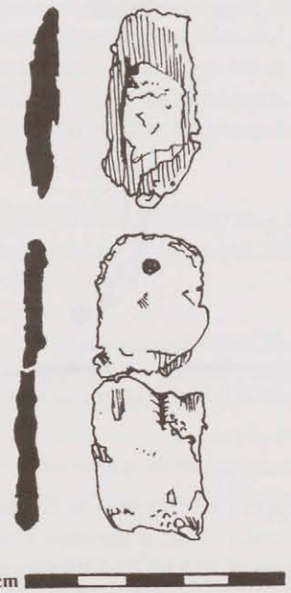


Plate 10.228: Reg. 15, three fragments of corroded iron

Plate 10.228 (Reg. 15). Three fragments of corroded iron. [Between baulk: A5.2.2/A5.4.3] *Emory Univ. #not seen.
Length: 25 mm. Width: 20 mm.
Length: 37 mm. Width: 15 mm.
Length: 28 mm. Width: 20 mm.

(Reg. 136). Remains of iron nail? Too corroded and encrusted to see original shape. Existing length: 24 mm. Thickness: 3 mm. tapering to 2 mm. [A5.5.5] *Kar.

(Reg. 168). Iron fragment. Lime encrusted. Length: c. 40 mm. Thickness: c. 8 mm. [C11.1.3] *Ash: 1973.398.

(Reg. 282). Three fragments of iron, very corroded and encrusted. Two smallest pieces are flat and unidentifiable. Largest piece may have been nail. Largest piece: 44 mm. long, 11 mm. wide at top. [A4.1.8] *Man: 1974.27.

(Reg. 395). Fragment of unidentified iron object. Extremely corroded and lime encrusted. Remains of rivets visible on reverse. Length: 54 mm. Width: 33 mm. tapering to 24 mm. Thickness: c. 6 mm. [D2.8.2] *Ash: 1974.280.

Plate 10.229 (Reg. 425). Two pieces of extremely corroded iron.

1) Thin piece with circular cross-section, wound around three times in shape of spring. Diameter of wire: 3 mm.
2) Curved, thick nail with both ends broken off. Circular in section. Length: 74 mm. Diameter: 8 mm., but very thick corrosion. [D2.4.1] *ROM: 974.107.7.

(Reg. 480). Extremely corroded and encrusted iron nail. Not possible to see original shape. Length: 27 mm. Width: 14 mm. tapering to 3 mm. [D3.1.4] *Man: 1975.47.

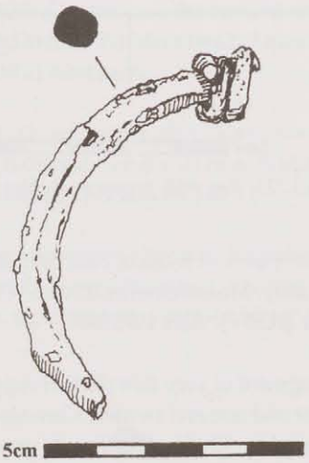


Plate 10.229: Reg. 425, two pieces of corroded iron

(Reg. 569). Two fragments of metal pin (iron?). Badly corroded and broken. Length: 16 mm. and 11 mm. Diameter: c. 2 mm. [B3.4.13] *L NMGM: 1993.180.29.

Plate 10.201:f (Reg. 690). Iron nail, curved and possibly square in section. Very lime encrusted and corroded. Length: c. 70 mm. Thickness: c. 8 mm. tapering to 3 mm. [B2.7.8] *Ash: 1974.276.

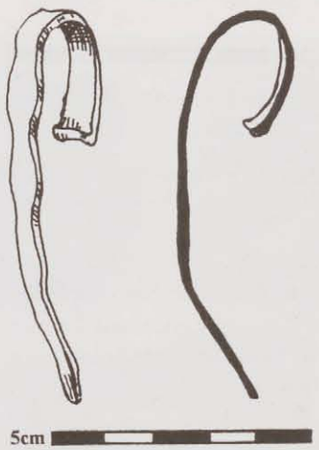


Plate 10.230: Reg. 950, strip of flat metal, possibly iron

Plate 10.230 (Reg. 950). Strip of flat metal, has appearance of iron, but extremely well preserved. Curved at widest end, but possibly not intentional. One end broken off. Existing length: c. 75 mm., to curve. Width: tapering from 8 mm. to 3 mm. Thickness: 2 mm. [+] *ROM: 975.416.30.



Plate 10.231: Reg. 1271, large iron nail or rivet

Plate 10.231 (Reg. 1271). Large, thick iron nail or rivet. Heavy, corroded. Made from piece of iron folded over. Slightly curved. Length: 69 mm. Width: 20 mm. at top, tapering to 4 mm. Thickness: 10 mm. at top, tapering to 4 mm. [C11.4.3] *Kar.

(Reg. S.39). Top of large iron nail or bolt. Possible traces of wood adhering to corrosion. Length: 24 mm. Diameter of head: 13 mm. [D2.1.11] *L NMGM: 1993.180.146.

(Reg. S.40). Fragment of iron. Bent into L-shape. Maximum length: 26 mm. Width: 6 mm. [A12.4.3] *L NMGM: 1993.180.147.

(Reg. S.41). Fragment of iron. Length: 37 mm. Width: 6 mm. tapering to 1 mm. [B7.5.6] *L NMGM: 1993.180. 148.

(Reg. S.42). Fragment of iron nail. Length: 36 mm. Diameter: 7 mm. [D2.5.15] *L NMGM: 1993.180.149.

(Reg. S.43). Fragment of iron nail. Length: 44 mm. Diameter: 5 mm. *L NMGM: 1993.180.150.

(Reg. S.44). Fragment of flattened iron nail. Length: 35 mm. [B3.2.4] *L NMGM: 1993.180.151.

(Reg. S.45). Fragment of iron nail. Length: 27 mm. Diameter: 9 mm. tapering to 2 mm. [D2.5.9] *L NMGM: 1993.180.152.

(Reg. S.46). Fragment of iron with rivet attached. Flat fragment: 28 x 30 x 35 mm. Length of rivet: 21 mm. [B3.2.11] *L NMGM: 1993.180.153.

(Reg. S.47). Large iron nail. Length: 65 mm. Diameter: 6 mm. [D2.8.15] *L NMGM: 1993.180.154.

(Reg. S.48). Fragment of iron. Length: 52 mm. Diameter: 9 mm. [C11.1.3] *L NMGM: 1993.180.155.

(Reg. S.49). Heavy fragment of iron. Length: 3 mm. Width: 10 mm. tapering to 2 mm. [B4.1.2] *L NMGM: 1993.180. 156.

Gold

(Reg. 1238). Small quantity of gold leaf mixed with crumbly buff/white clay. Largest pieces: 8 mm. x 11 mm. and 22 mm. x 11 mm. [A8.1a (7)] *Kar.

Lead

See also Reg. 129, weight, possibly lead, **Plate 10.192**.

Plate 10.209:h (Reg. 101). Lead, square-sectioned 'needle' with eye at head. Slightly curved/bent, with grey/white corrosion. Length: 113 mm. Width: 10 mm., tapering to point. Thickness: 7 mm. [A3.1.8 or 10] *ROM: 974.107.71.

(Reg. 1264). Pin, apparently of lead. Slightly damaged at top. Slightly flattened in section. Almost completely covered with lime encrustation. Length: 45 mm. Width: 5 mm. at top, tapering to 1 mm. Thickness: 8 mm. [C11.4.2] *Kar.

(Reg. 1269). Droplet of split lead. Length: 29 mm. Maximum width: 15 mm. [C25.1.1] *L NMGM: 1993.180.11.

(Reg. S.63). Droplet of split lead. 27 mm. x 20 mm. x 24 mm. [A50.1] *L NMGM: 1993.180. 145.

Coins

Plate 10.232 (Reg. 3). Byzantine coin of Anastasius I (c. AD 491–518). Weight: 18.49 g. Diameter: 33 mm. Ref: Hahn type 28B, c. AD 517–518 [Found in well, near western wall of school.] *Ash.



Plate 10.232: Reg. 3, Byzantine coin

(Reg. 400). Coin. [B4.1] *Emory Univ. #not seen.

(Reg. 866). Very small bronze coin. Lime encrusted and undecipherable. Maximum diameter: 9 mm. [M2.1.21] *L NMGM: 1993.180.8.



Plate 10.233: Reg. 999, Byzantine coin

Plate 10.233 (Reg. 999). Byzantine coin. Maximum diameter: 29 mm. [B7.5+] *L NMGM: 1993.180.7.

(Reg. 1060). Coin. Ptolemaic, eagle and head. [A20.10.+] #not seen.

(Reg. 1061) Very small bronze coin. Badly worn and marking undecipherable. Maximum diameter: 13 mm. [C21.1.3] *L NMGM: 1993.180.6.

(Reg. 1149). Coin. Unidentified. #not seen.

(Reg. 1182). Coin. Ptolemaic, mid-third century BC? [C14] #not seen.

Miscellaneous

(Reg. 13). Piece of blue mineral. Blackened on one side. Length: 32 mm. Width: 14 mm. tapering to 5 mm. Thickness: 7 mm. [A21.2.2] *Kar.

(Reg. 30). Pottery cone/gaming piece? Pink/orange ware with buff/grey core. Appears to be complete, though slightly chipped at base. Height: 25 mm. Diameter: 22 mm., tapering to point. [B1.1.3] *L NMGM: 1993.180.87.

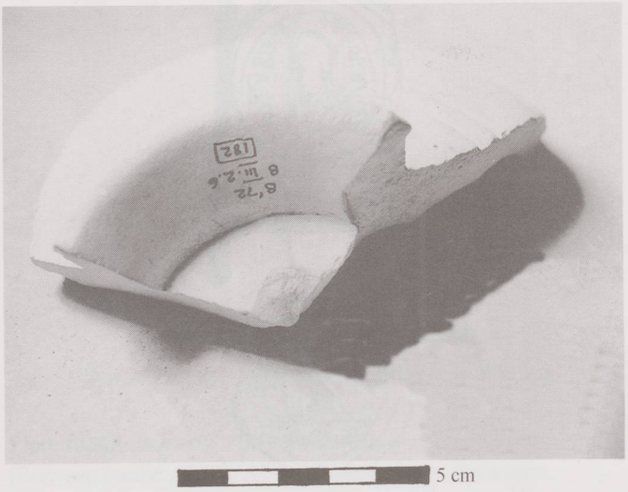


Plate 10.234: Reg. 182, pedestal bowl fragment, stone/pot?

Plate 10.234 (Reg. 182). Fragment of stone or pottery bowl. Exterior decorated with two rows of horizontal ridges. Existing width at rim: 108 mm. Depth of pedestal base: 35 mm. See pottery bowl from Jerusalem (Tushingham 1985: 366, fig. 14: 22). [B3.2.6] *Kar.

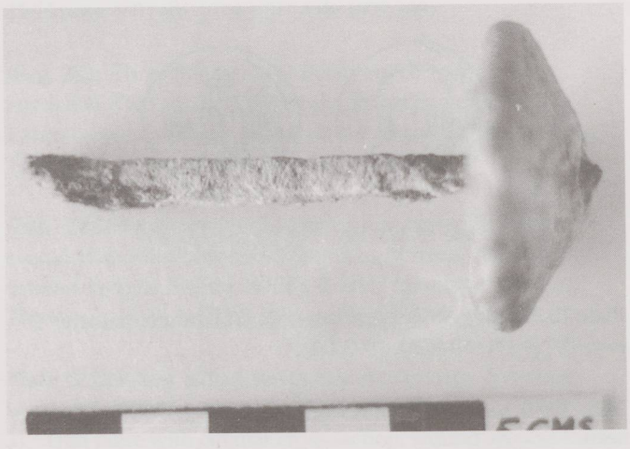


Plate 10.235: Reg. 291, stone and metal object

Plate 10.235 (Reg. 291). Stone and metal object. Has appearance of stud or nail, but could possibly be connected with textile manufacture. Square-sectioned pin is iron, but end is dark green /grey smooth stone (steatite?) Lime encrusted. Diameter of top: 33 mm. Maximum depth of top: 11 mm. Existing length of pin: 64 mm. Thickness of pin: 5 mm., flattened at end. [C12.1.1] *Kar.

(Reg. 462). Clay object, use unknown. Shell-shaped. Few stones imbedded, and base has appearance of burning. Diameter: 40 mm. Height: 120 mm. [A20.3.+] #not seen.

(Reg. 641). Stone object. White/buff limestone, smooth and chalky surface. Flat based, finger-like shape. Broken at both ends. Use unidentified. Length: 52 mm. Width: 15 mm. Height: 13 mm. [B2.7.4] *L NMGM: 1993.180.86.

Plate 10.7 (Reg. 782a). Very rough clay stopper? Slightly concave. Yellow/buff ware. Diameter: c. 40 mm. Thickness: c. 16 mm. [B7.1.2] *L NMGM: 1993.180.22.



Plate 10.236: Reg. 968, sherd with green glaze

Plate 10.236 (Reg. 968). Very irregular body sherd, has been glazed but only very heavily encrusted crazing remains. Pale green in colour with brown encrustation. Some grey/black grits visible. Maximum measurements: Length: 60 mm. Width: 46 mm. Thickness: 10 mm. [B3.2.4] *Amm.

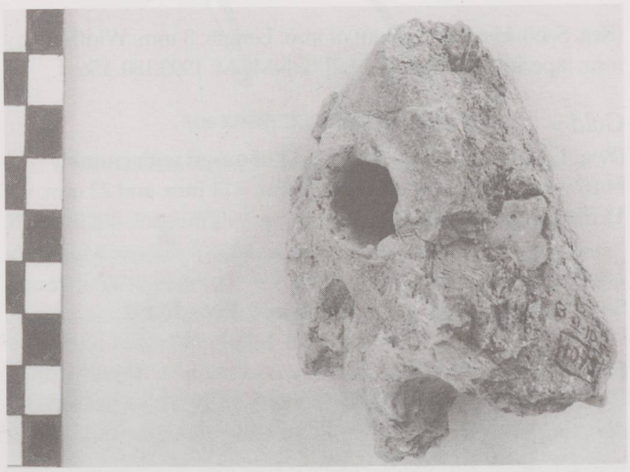


Plate 10.237: Reg. 1075, burnt clay fragment

Plate 10.237 (Reg. 1075). Heavily burnt clay fragment (from a kiln?). One hole pierced through and traces of another on edge. Stone embedded in base. Curved on one side. Very fragile and crumbly. Length: 75 mm. Width: 55 mm. Diameter of hole: 15 mm. [B2.10.5] *L NMGM: 1993.180.S.65.

(Reg. 1288a) Mud brick. Pinkish clay, heavily burnt. Length: 300 mm. Width: 250 mm. Thickness: 130 mm. [C23.2.5] *Left on site.

(Reg. 1288b). Mud brick. Pinkish clay, heavily burnt. Triangular. Length: 195 mm. Width: 145 mm. Thickness: 100 mm. [C23.2.5] *Left on site.

(Reg 1302b). Mud brick. Incomplete, very pliable. Length: 340 mm. Width: 230 mm. Depth: 150 mm. Brownish clay — purer than Reg. 1302a. [A20.8.5] *Left on site.

(Reg. 1302a). Mud brick. Complete but broken. Very pliable. Yellow, with limestone inclusions. Length: 350 mm. Width: 365 mm. Depth: 150 mm. [A20.8.5] *Left on site.

(Reg. *S.11). Piece of bracelet, appears to have been made of wood? — with black metallic paint finish. Length: 26 mm. Width: 7 mm. Thickness: 4 mm. [H2.1.4] *L NMGM: 1993.180.116.

(Reg. *S.23). Piece of roughly modelled, badly broken pottery, impossible to identify. Part of pierced hole remains. Similar in appearance to Reg. 1075. Length: 62 mm. Width: 48 mm. tapering to 31 mm. Thickness: 25 mm. [B1.1.36?] *L NMGM: 1993.180.127.

(Reg. *S.30). Large glazed body sherd. Green/grey core with traces of very thick iridescent glaze remaining on exterior. Possibly part of Reg. 968. Length: 78 mm. Width: 44 mm. Thickness: 10 mm. [?] *L NMGM: 1993.180.134.

Conclusions

The small finds from Busayra did not include a large number of luxury or high status objects, but they did provide numerous hints of a prosperous lifestyle, in the impressed sherds, spouted zoomorphic vessels, engraved shells, gold leaf and fragments from inlaid furniture, together with the high quality spindle whorls and possible evidence of workshops. These objects and their parallels illustrate the presence of a wide-reaching trade, exchange and manufacture of luxury or desirable objects, and the overwhelming impression is that Busayra was certainly not an outpost, but an active participant.

Evidence for the possible presence of workshops at Busayra is provided by the pieces of rock crystal, a small block of elephant ivory and the caches of unworked *Tridacna* shells. However, these finds could just as easily be the result of a trade in raw materials, supplying the cities of Judah or the Phoenician coast (although some of the rock crystal was worked, some unworked and some partially worked). It is also possible that itinerant craftsmen moved freely in the area, buying raw materials from local populations, making the same or similar products wherever they went, and utilising the trading contacts of each area they visited.

At present, the only exact parallels to the female figurines from Busayra are from Horvat Qitmit. These figures reflect the fertility theme seen in the discussion of the iconography of the impressed sherds and the drawings from Horvat Teiman, displaying the continuation of a long-established tradition. It is possible that the style of some of them echoes that of figurines from the Persian period, especially some from sites on the Phoenician coast. In her study of the finds from Horvat Qitmit, Beck 1995: 183 noted the absence of the 'typical Transjordanian tambourine-holding figure'; these figures are also absent from Busayra. However, if the lamp figures from Ain Janin are to be associated with Busayra, then they provide a link for that site to the female figures holding a disc from other sites in Transjordan and Palestine (e.g. Daviau 1997b: 225–6), and also to the hermaphrodite figures. Recently published information from the Wadi ath-Thamad excavations suggests that further parallels may yet be discovered between the figurines from Busayra and those from Moab (Daviau 2001b). While the examples so far published do not appear to share the physical similarities of those from Busayra and the Negev, there are many interesting parallels regarding the general theme of these assemblages: female figurines of similar construction (Daviau 2001b: 318–19), with possibly similar hairdos, and plastic decoration, together with hollow statues which parallel those from Ain Janin and the Negev (Daviau 2001b: 322).

The grotesque-style head of a figure from Busayra (Reg. 109) has parallels at Horvat Qitmit, 'En Hazeva and also at Carthage. Some of these parallel figures have similarities to the male figure represented at Busayra, with goatee beard and pronounced brow, nose and eyes.

Parallels with sites in the Negev

The most significant point about the small finds from the following three sites is that they all provide close parallels to Busayra but not necessarily to each other:

Horvat Qitmit — The juxtaposition of the naturalistic and the grotesque within the assemblage of figurines closely echoes that at Busayra, with parallels for the 'cloaked' female figurines, an example of a naked female holding her breasts, parallels for the male figurines and the grotesque style head.

'En Hazeva — There are a number of parallels for the grotesque style figures, the male with the goatee beard, fragments of plastic decoration (especially Reg. 1195) and the figures from Ain Janin.

Tel 'Ira — This site produced the hermaphrodite figure with stylistic similarities to the Busayra and Ain Janin figures, the unidentified fragments from a figurine or vessel (Reg. 262), two decorative limestone spindle whorls and the two earrings which parallel those from the burial at Busayra.

Horvat Qitmit and 'En Hazeva have both been identified by their excavators as Edomite shrines. Both contained anthropomorphic cult stands, but the stands themselves from each site are not closely similar to each other. Furthermore, the 'shrine' at 'En Hazeva did not contain any of the human and animal figurines so evident at Qitmit. So why are the finds at these sites different from each other, and why does Busayra provide parallels for both of them? It would seem that these findings are consistent with the suggestion that Busayra was an important centre within a tribal kingdom (see Chapter 14). If Busayra was the base of central authority and/or a communal

marketplace, its material culture would reflect that of the tribes under its auspices (and the tribes who traded with them) — the individual shrines at Qitmit and Hazeva, however, would each reflect the material culture of the tribe for whom it was a base: this might explain why the assemblages from Qitmit and Hazeva had parallels with Busayra, but less so with each other, even though a stylistic similarity is evident. The similarities between the finds from excavations at Busayra, Tawilan and Umm al-Biyara, together with the parallels from the Negev, strongly suggest the presence of a recognisable regional material culture, perhaps with local variations, based in (but not confined to) the area known as Edom, its homogeneity facilitated by extensive trading links and the attentions of successive ruling empires.

11. INSCRIBED MATERIAL

Alan Millard

The variety of inscribed material yielded by the excavations at Busayra illustrates the uses made of writing in this Edomite centre, although the pieces are meagre and fragmentary, like many of the other finds from the site, and supply little information in themselves. Beside a seal inscribed with its owner's name and the imprint of another inscribed seal on a bulla which once sealed a papyrus document, there are words and names incised or scratched on pots and on a stone vessel, ink-written ostraca and an inscribed weight. Most of the pieces have already been published, and the present study is based upon those earlier ones, notably the edition of nine items by Emile Puech (1977), and on additional descriptive notes, drawings and photographs by Leonie Sedman, supplemented by observations on particular pieces in Oxford and Manchester from Roger Moorey and Kay Prag. The writer has not examined the objects at first hand. The variety of letter shapes, of writing surfaces and of means of writing precludes close palaeographical dating. The seventh century BC seems appropriate for all the Iron Age examples.

Formal inscriptions

Plate 11.1 (Reg. 157). Fragment of pink limestone, perhaps from an offering stand. H 13.5 cm., W 6.5 cm. From C10.2.2. Kar.

Parts of two letters remain, engraved below the 'pie-crust' decoration beneath the rim. The first is part of *l*, the second *k*. As Puech observed, they may be part of a personal name including the element *mlk*, or of the noun *mlk* preceded by the preposition *l*, 'to' or 'for the king'. They could equally be the start of other terms beginning *lk* or a noun or name preceded by the preposition *l*, 'to' e.g. *lkmš*. The letter *k* is noteworthy, for its form with an apparently triangular head is normally found in Ammonite inscriptions, not in Edomite texts, allowing the reconstruction *lm*]*lk*[*m*, 'for Milcom'.

Puech 1977: 11, pl. IVa, no. I; Bartlett 1989: 222.

Plate 11.2 Nabataean altar. DoA.

The inscription on one face was read by J. Starcky and J.T. Milik as: *dnh bmś' dy 'bd 'rqs br wtqt dy nn* [*b*]*tn*, 'The altar which Uriqos from Batanea, son of Wotiqot, made'. Note that the reading of the place name is uncertain. The name Uriqos, 'Qos is my light', is unique.

Bennett 1975: 2, pl. VIIa; Starcky 1975: 16; Teixidor 1975: 290, no. 147.

Plate 10.24 (Reg. 851). Egyptian chalice: triangular fragment from the rim of a faience chalice with relief decoration on the outer face, traces of blue-green glaze remain on the eroded surfaces. W 3.1 cm., H 2.1 cm., T 0.5 cm., original D c. 7–8 cm. From baulk between B6 and B8.1.2. London: BM WAA 136071.



Plate 11.1: Fragment of pink limestone, perhaps from an offering stand. Reg. 157

The relief decoration shows the upper part of a papyrus flower. Above it is an incuse line of Egyptian hieroglyphs in a black painted band. Milward (1975) read them as *'nh mi R' dt*, 'given life like Re forever', part of a royal title. However, more recent examination of the drawing by L. Sedman (Plate 10.24) casts doubt on that reading. Instead, K.A. Kitchen, orally, suggests the signs read *sbk-r'*, 'Sobek-Re', followed by a lotus flower.

Bennett 1975: 4; 1983: 13.

Seal and seal impression

Plate 11.3 (Reg. 856). Seal of brown stone, scaraboid in form, pierced longitudinally, back chipped, edges worn. L 1.4 cm., W 1.1 cm., greatest T 0.8 cm. From B2.7.4. Amm.



Plate 11.2: Nabataean altar

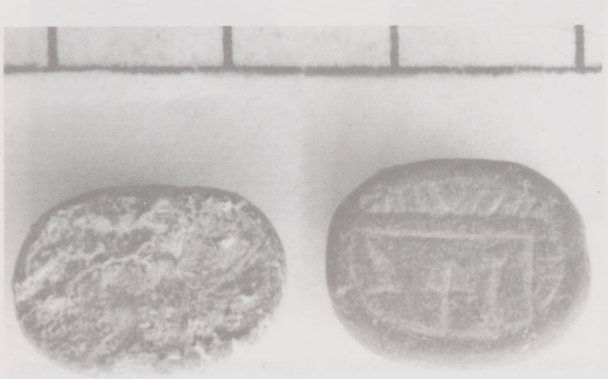


Plate 11.3: Seal of brown stone. Reg. 856

The major part of the engraved surface is occupied by three letters: *l t w*. The space remaining at the end is separated by a vertical line and filled with two short horizontal strokes. About one-third of the field lies above the letters and is ruled off by two parallel horizontal lines and above them a series of oblique strokes, the two innermost meeting as a V. The inexpert engraving appears to have been made with a simple sharp point.

The name was thought by Puech to be possibly Indo-Aryan, Anatolian, (Neo-)Hittite, Luwian or Hurrian, rather than Semitic, an opinion, he felt, the absence of patronym or profession supported, raising questions about the presence of a foreign person in Busayra. However, an Arabic etymology may be proposed and the occurrence of one name alone is by no means unusual (cf. the seals *lqws'* from Aroer, *lšmʿl* from Tafila, Avigad and Sass 1997 nos. 1055, 1064). On the basis of the script, Puech proposed a late eighth or early seventh-century BC date; Herr suggested c. 700 BC, noting Ammonite traits in the *w* and the *t* .

Puech 1977: 17,18, pl. VIb, no.VII ; Herr 1978: 167; fig. 78.8; Vattioni 1978: 242, no. 320; Israel 1979: 173, no. 9; Herr 1980: 29–31; Bartlett 1989: 215, no. 8; Bordreuil 1992: 163; Vanderhooft 1995: 152, no. 4.
(Not in Avigad and Sass 1997.)

Plate 11.4 (Reg. 368). Seal impression on a bulla of brown clay with string marks and faint imprints of papyrus fibres on the reverse, fingerprints on the edges, possibly burnt. L 1.5 cm., W 1.3 cm., T c. 5 mm. From B4.2.11. Amm.

The impression was made by a seal in a metal mount, the stone engraved with four registers divided by double horizontal lines and enclosed with a single oval line. The top register shows three rectangular designs, probably buildings. Divided between the



11.4: Seal impression on bulla. Reg. 368

other registers is an inscription read upon discovery as: *lmlkl//bʿbd//hmlk*, 'Belonging to *Mlklbʿ*, servant of the king'.[1] The formulation is well known from many West Semitic seals, including that of the Edomite 'Qos-ʿanal, servant of the king' impressed on many pots found at Tall al-Khalayfi (Avigad and Sass 1997, no. 1051). However, the personal name *mlklbʿ* is unique and the element *lbʿ* is unknown in West Semitic onomastics. André Lemaire proposed the name be read as *mlkbʿl*, 'the illiterate engraver' having transposed the last three letters by mistake, an opinion accepted by others (Lemaire 1975: 18, cf. 1993: 12, n. 9; Ohana and Heltzer 1978: 56; Israel 1986: 76). Later, Scott Layton, also supposing an error by the engraver, proposed to read *lmlkl/{bʿl}bd/hmlk*, taking the first two letters of line two as an uncorrected error and the name as Malki-el, with the initial *ʾaleph* of *ʾel* quiescent, as it is in some other names (Layton 1991). Emile Puech, rejecting the idea of an error, adduced a Thamudic name *lbʿt*, of unknown meaning, as a parallel and also asked if the element *lbʿ* might be a verbal form with emphatic *l* prefixed, known from two other West Semitic names (Puech 1977: 12–13). After reviewing these proposals, B. Sass concluded the name is 'unparalleled' and none of the corrections suggested is 'simple' (Avigad and Sass 1997: 511).[2] Lemaire's characterisation of the engraver as 'illiterate' was based on the inverted form of *daleth* which has since been recognised as a characteristic of Edomite script (Lemaire 1993: 5; Vanderhooft 1995: 146–7). An engraver's error left uncorrected on the seal of a royal official seems unlikely. It would imply both a careless or illiterate engraver, an owner who could not read his seal and recipients who would recognise it despite the mistake. It is best to treat the name *mlklbʿ* as contain-ing a unique element, one of several inexplicable terms found in ancient West Semitic personal names. Van der Kooij (1987) argued for reading *lmlkl/bʿbt/hmlk*, but without explaining it. However, the inverted *d* is now adequately attested in other Edomite texts (see Lemaire 1993: 5), so his reading can be discarded.

Lemaire 1975: 18–19; Lemaire 1993: 11, 12, n. 9; Bennett 1974a: 18–19, pl.VIb; Teixidor 1975: 272 no. 58, p. 76; Puech 1977: 12–13, pl. IVb, c, no. II; Herr 1978: 163–4, fig. 78.3; Vattioni 1978: 242 no. 319; Israel 1979: 173, no. 6; Herr 1980: 29–31; Bennett 1983: 10, 11; Bartlett 1989: 212–13, no. 3; Layton 1991; Bordreuil 1992: 163, fig. 1013.39; Vanderhooft 1995: 151–2, no. 2; van der Kooij 1987: 114, fig. 12; Avigad and Sass 1997: 388, no. 1050.

Ostraca

Plate 11.5 (Reg. 1191). Roughly triangular sherd of pinkish-buff ware, with white grits and grey core, bearing traces of the ends of two lines of writing in black paint on the outer face. 6.4 x 6.3 x 5.1 cm., T 0.8 cm. From C14.1.12. Amm.

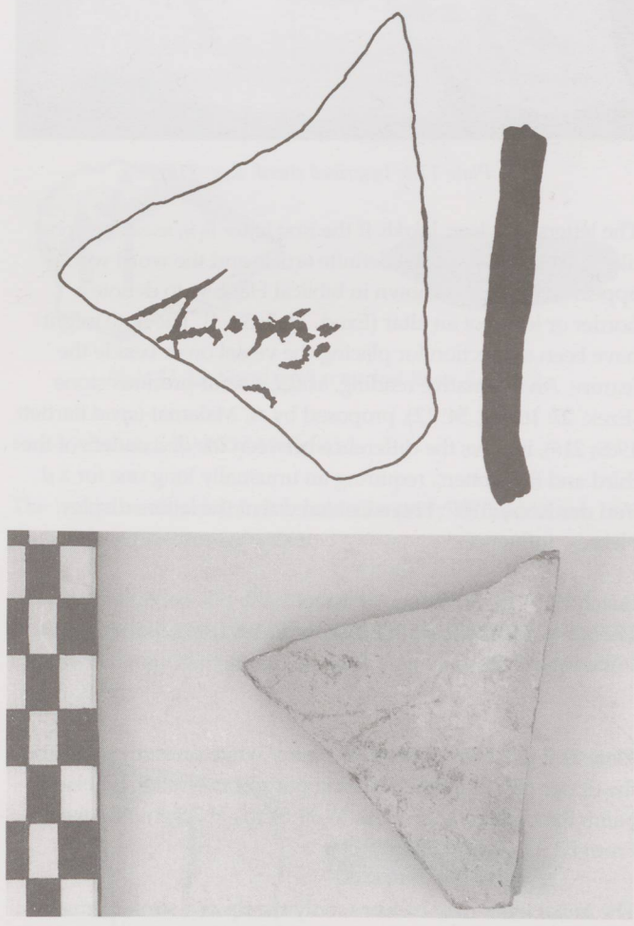


Plate 11.5: Inscribed sherd. Reg. 1191

[1] The inscription was read by M. Miller, *apud* Bennett 1974: 18, 19, fig. 17, pl.VIb.

[2] If an error is suspected, perhaps the first *ʿayin* may be treated as a mistake for *ʾaleph*, giving the element *lbʾ*,'lion'.

Puech tentatively read the traces of line 1 as the end of *n* or *m*, less likely *k* or *b*. In line 2 he suggested *ḥ ṭ*]*n kr* 1 X 2, 'wheat: 1 kor, 2 seah', with X being a symbol for the seah measure similar to that in the Hebrew papyrus from Wadi Murabba'at. The kor was about a donkey-load, but the system of weights current in Edom is unknown, so calculating the amounts is fruitless. However, he offered an alternative: *yy*]*n kd* 1 X 2, 'jug of wine 1 X 2', with X again being a symbol for a measure. Puech saw the formulation as similar to that in Achaemenid Aramaic ostraca from Tel Beersheba, but earlier examples can be seen in, for example, Arad Ostraca 35, 112.[3]

Puech 1977: 19–20, pl. VId, no. IX; Bartlett 1989: 216, no. 3; Vanderhooft 1995: 142.

Plate 11.6 (Reg. 816). Sherd of wheel-made creamy-white ware bearing the end of one line of writing in black paint. L 5.3, W 2.8 cm., T 0.5–0.6 cm. From B2.7.27. Amm.

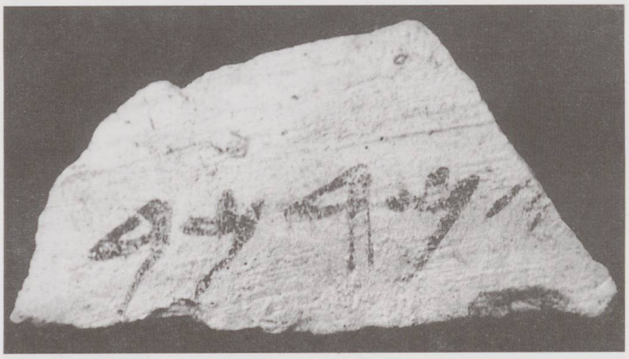


Plate 11.6: Inscribed sherd. Reg. 816

The letters are clear:]*hkrkb*. If the first letter is *h*, as seems most likely, then it may be the definite article and the word would appear to be a term known in biblical Hebrew to denote a border or ledge of an altar (Exod. 27: 5; 38: 4). The note might have been a direction for placing the vessel on or beside the feature. An alternative reading, *hkdkd*, a semi-precious stone (Ezek. 27: 16; Isa. 54: 12), proposed by A. Malamat (*apud* Bartlett 1989: 216), ignores the difference between the descenders of the third and fifth letters, requiring an unusually long one for a *d*. Van der Kooij (1987: 114) considered that the letters display Hebrew influence.

Puech 1977: 17, pl.Vb, no. VI; Israel 1979: 173, no. 8; Bartlett 1989: 216, no.2; Millard in Bienkowski 1991: 144; Vanderhooft 1995: 141, no. 2.

Plate 11.7 (Reg. 889). Sherd of creamy white uniform ware from the upper part of a bowl, bearing parts of two letters in black paint, the beginning of a line. W 11.5 cm., H 7.3 cm., T 0.6 cm. From B2.9.7. Ash 1974.250.

The initial letter may be *b* or *r*, only the tip of a stroke remains of the second.

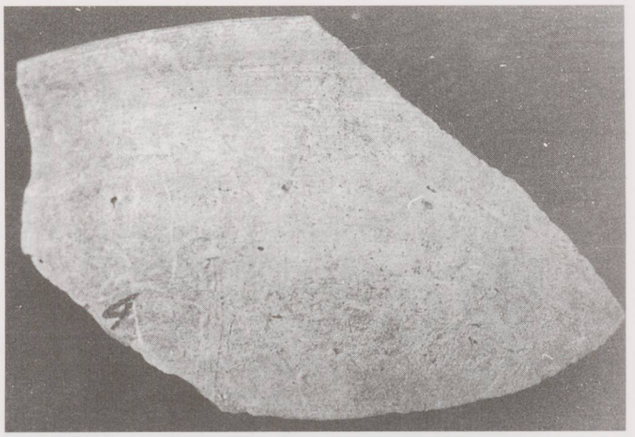


Plate 11.7: Inscribed sherd. Reg. 889



Plate 11.8: Inscribed sherd. Reg. 766

Plate 11.8 (Reg. 766). Sherd from a storage jar, bearing two lines of writing in black ink. L 11 cm., H 5 cm. From A5.7.6. ROM 974.107.59.

Although several letters are recognisable, no sense has yet emerged from this ostracon. It reads: (1st line) *r š q* x x *q w*/*k t*? *ḥ* (2nd line) *p ṭ n* x. The pattern of other documents might suggest a note of consignment in the first line and a quantity in the second.

Graffiti

Plate 11.9 (Reg. 583). Section of a bowl of smooth buff ware with concentric lines of black paint (cf. Figure 9.33:12). On the central part of the body words were scratched after firing of which five letters remain. Rim D 27 cm. From B3.1.7. DoA.

The remaining letters are: ...]*rk*/*qws*. The last three letters give the name of the Edomite god Qos and it would be easy to suppose that was the theophoric element of a proper name such as *brkqws* or *ybrkqws*, 'Qos has blessed' or 'May Qos bless', as suggested by Puech. However, there is a space between the second and third letters with a lighter incision which could be a word-divider. Taking that into account, the graffito may be interpreted as part of a prayer ...*b*]*rk*/*kws*, 'may Qos be blessed'[4] or an address to Qos, the *k* being the second person singular

[3] See Renz and Röllig 1995: 294, 403.

[4] Cf. Renz and Röllig 1995: 59, Kuntillet 'Ajrud (9): 7.

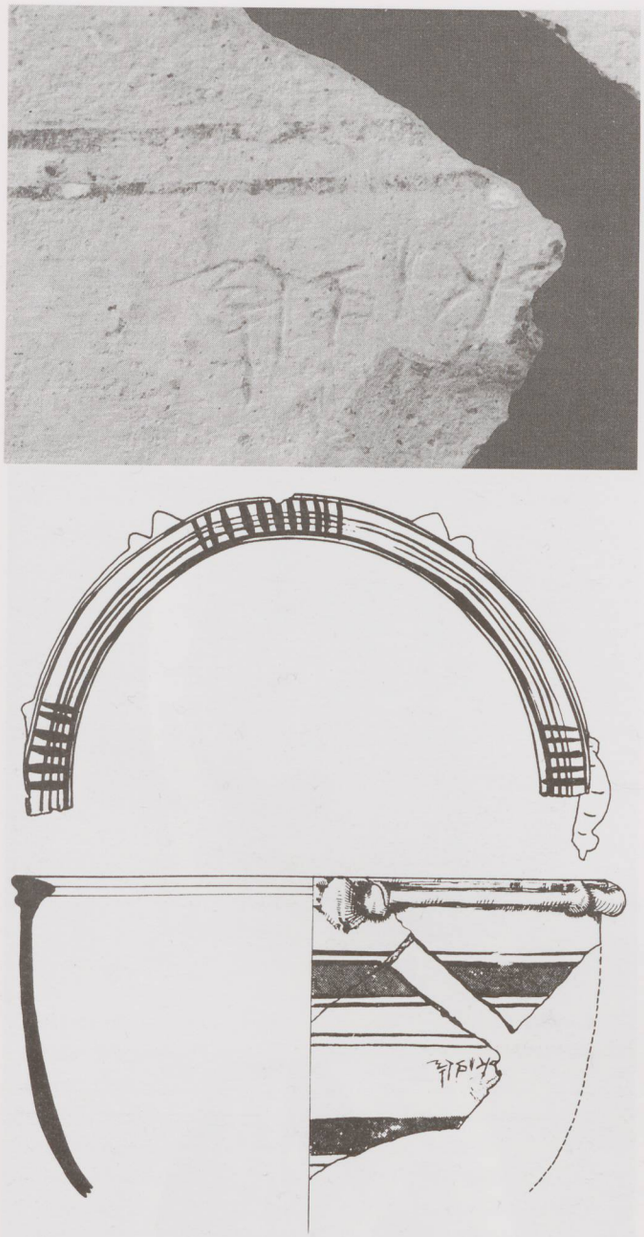


Plate 11.9: Inscribed bowl. Reg. 583

suffix, '... you, O Qos'. Van der Kooij compared the *s* and the *q* with those on ostracon 6043 from Tall al-Khalayfi, the *s* having Ammonite relations (1987: 114).

Bennett 1975: 15, fig. 8.1; Puech 1977: 14–15, pl. Va, no. IV; Bartlett 1989: 223, no. 3; Vanderhooft 1995: 154.

Plate 11.10 (Reg. 802). Part of a medium storage jar of smooth red-pink ware. On the central part of the body five letters were scratched after firing in a line c. 8 cm. long, sloping down from the right. From D3.5.2, feature 11. BM WAA 136055.

The letters are: *l'dnš*, 'for' or 'belonging to *'dnš*'. Bartlett compared the name *'dnš*' 'The Lord saved', known from a Phoenician seal (now Avigad and Sass 1997: 409, no. 1082), but it seems unlikely that the final *ʿ* would be lost, although in some cases it is reduced to *'* and so might have been omitted in a roughly written graffito such as this. An alternative

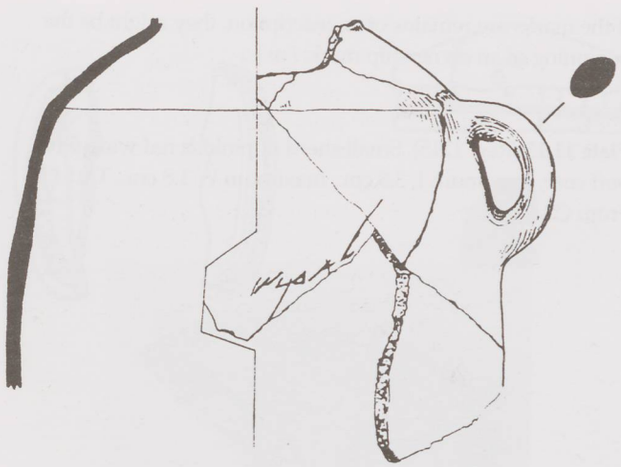


Plate 11.10: Inscribed jar. Reg. 802

explanation might be 'Sî (=Sîn) is (my) Lord', with the loss of the final *'*. Bartlett considered the letter forms 'angular and lapidary' and thought the *š* showed Aramaic influence. However, the difficulty of scratching on the curving surface may account for the angularity and the shape of the last letter and also make the dating of the forms difficult.

Bennett 1975: 15, fig. 8.3; Israel 1979: 173, no. 7; Bartlett 1989: 223, no. 4.

Plate 11.11 (Reg. 922). Small sherd of buff-pink ware with scratched lines on one surface, maximum L 3.2 cm., maximum W 2.4 cm., T 0.9–1 cm.

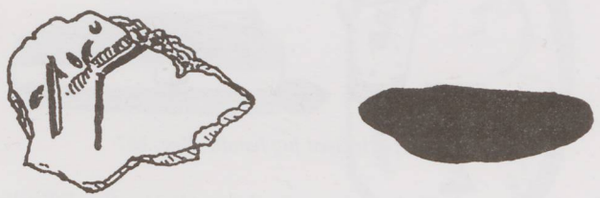


Plate 11.11: Sherd with scratched lines. Reg. 922

From A5.11.4. L NMGM 1993.180.2.

The marks on this sherd may be deliberately formed letters, but they are not now recognisable.

Plate 11.12 (Reg. 891). Sherd, no description available, scratched lines which may be parts of two letters on outer surface. From B6.2.3. Edin.

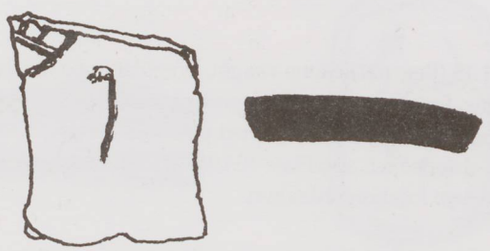


Plate 11.12: Sherd with scratched lines. Reg. 891

If the marks are remains of an inscription, they might be the beginning of an ownership mark: *l m* [...

Plate 11.13 (Reg. 1215). Small sherd of pinkish red ware with buff core, maximum L 3.8 cm., maximum W 1.8 cm., T 0.5 cm. From C2.4.2. Kar.



Plate 11.13: Incised sherd. Reg. 1215

Deeply incised on one face before firing are three strokes which might be an odd form of *'aleph*; the two oblique strokes would be expected to meet at the vertical, not to the right. Traces at the bottom left corner of the sherd may be part of another letter now obscured by incrustation.

Plate 11.14 (Reg. 487). Jug handle of coarse buff ware with a grey-buff core. W 5.2 cm., L c. 7 cm.; of handle c. 2 cm. tapering to 1.6 cm. Two letters were incised after firing near the rim. From A1.23.11. BM WAA 136068.

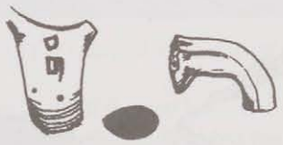


Plate 11.14: Incised jug handle. Reg. 487

The letters are: *'b*. Their very square shapes display the difficulty of placing them on the handle. Puech considered these letters might be the end of a personal name, the first part being cut on an opposite handle, but being unable to find a name that fitted, ingeniously proposed that the letters are abbreviations for *'(šryt) b(t)*, 'one tenth of a *bath* measure', taking the *bath* to be about 45 litres. The abbreviation *b* for *bath* is found on sixth-century BC ostraca from Arad (Renz and Rölling 1995: 2.36). Today the *bath* is reckoned at less, c. 21–24 litres (Renz and Rölling 1995: 2.36–38). However, this solution has to remain tentative.

Bennett 1975: 13; Puech 1977: 13, pl. IVe, no. III; Bartlett 1989: 222; Vanderhooft 1995: 154.

Plate 11.15 (Reg. 621). Stone weight, irregular cube of white limestone, four faces smoothed, partly pierced on one side, with traces of two other attempted piercings on other faces, slightly chipped (cf. also Plate 10.193). 1.5 x 1.5 x 1.9 cm. Surface find. Present location unknown.

On one face is a large letter *n*, on another *nṣ*, apparently with a line through both letters. Puech interpreted the line as a

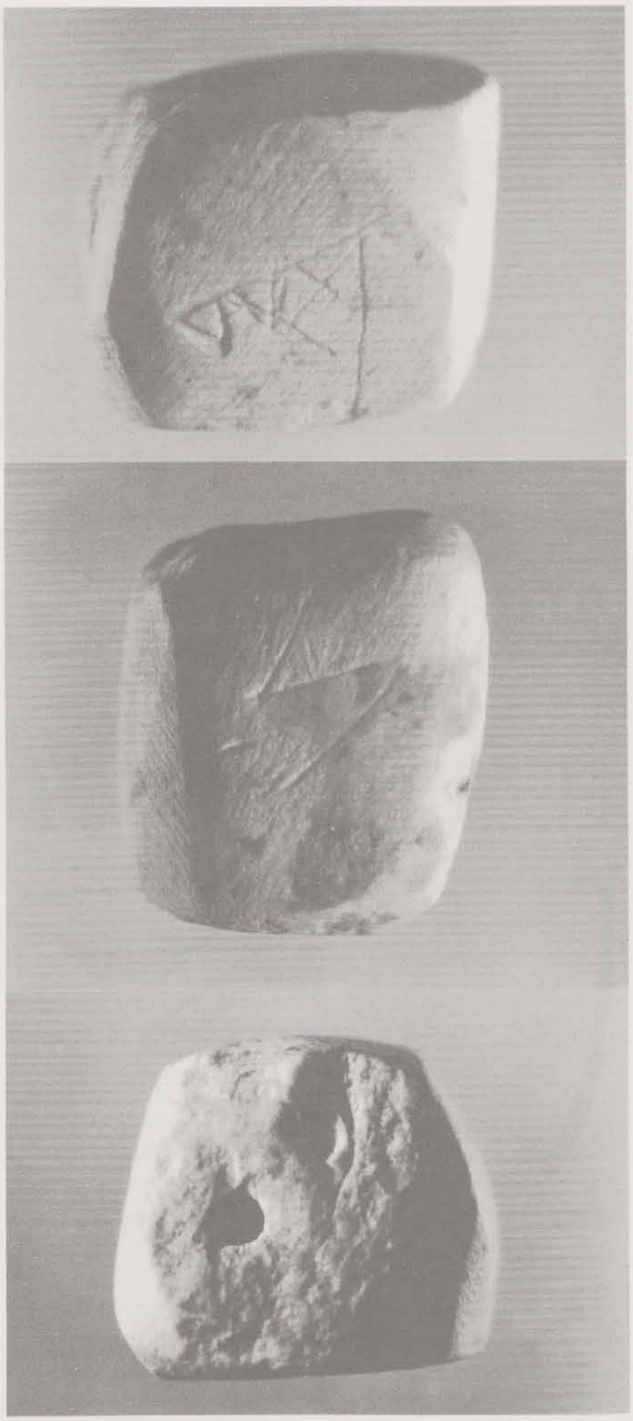


Plate 11.15: Stone weight. Reg. 621

cancellation by one who intended to engrave the letters *nṣp*, but finding insufficient space, cancelled them and put the single letter *n* on the other side. He identified these letters as an attempt to engrave the term *nṣp* and then its first letter as an abbreviation, *nṣp* being engraved on weight stones found in Judah. The stone weighs 9.5 g. which places it neatly in the pattern of the series established for the kingdom of Judah as 5/6th of the shekel of 11.3 g. Forty-six stones inscribed *nṣp* give an average weight of 9.66 g., hence the meaning 'five-sixth' is deduced for *nṣp* (Kletter 1998: 70–80). If this identification is sound, then the weight is either an import from Judah or an indication that the same system was current in Edom. Kletter listed over 50 *nṣp* weights,

this being no. 21, but all the Judaean examples are differently shaped, being domed or rounded stones (Kletter 1998: 109–201).

Puech 1977: 15–17, pl. VIa, no. V; Bartlett 1986: 227, no. 3; Ben-David 1979: 43, no. 27; Kletter 1991: 147, Table 6, no. 21; Kletter 1998: 61, 65, 195, no. 21.

Uninscribed seals and seal impressions

These pieces are mostly catalogued on the basis of descriptions, drawings and photographs supplied by Leonie Sedman.

Plate 11.16 (Reg. 667). Almost circular scaraboid described as ivory or onyx (?) in the field catalogue, but probably shell, pierced longitudinally. L c. 1.2 cm., T 0.7 cm. From B6.3.2. DoA.

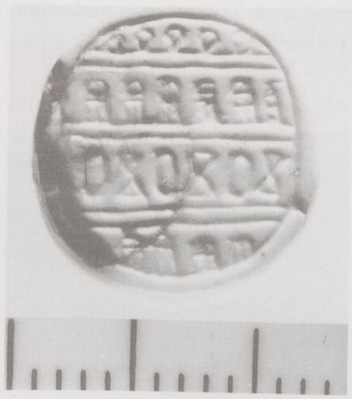


Plate 11.16: Scaraboid. Reg. 667

The face of the seal is divided into four registers by pairs of parallel horizontal lines. The registers show: 1. a row of five 'loops', perhaps debased ankh signs; 2. a row of six objects, possibly buildings or altars (cf. Plate 11.4); 3. three ovals and three angular figures of eight alternately; 4. four of the objects of the second register. While the designs in the second and fourth registers recall those in the top register of no. 2, the whole design may be interpreted as poorly executed reflections of misunderstood Egyptian motifs: ankh signs in the first register, rows of uraei such a decorate the pediment of Egyptian shrines in the second and fourth, and the 'anra' group of hieroglyphs in the third.

Bennett 1977: pl. IVd.

Plate 11.17 (Reg. 17). Left third of a turquoise scarab, pierced longitudinally. L 1.6 cm., W 0.6 cm., T 0.7 cm.
From A4.1.2. Ash 1973.376.

The remainder of the incised design is perhaps part of a palm branch flanking the central, lost figure. Possibly Twenty-sixth Dynasty.

Plate 11.18 (Reg. 290). Scaraboid, carnelian, highly polished. L 21 cm., W 0.7 cm., T 0.7 cm. From A26.1.16. DoA.

Object missing; no further details available.

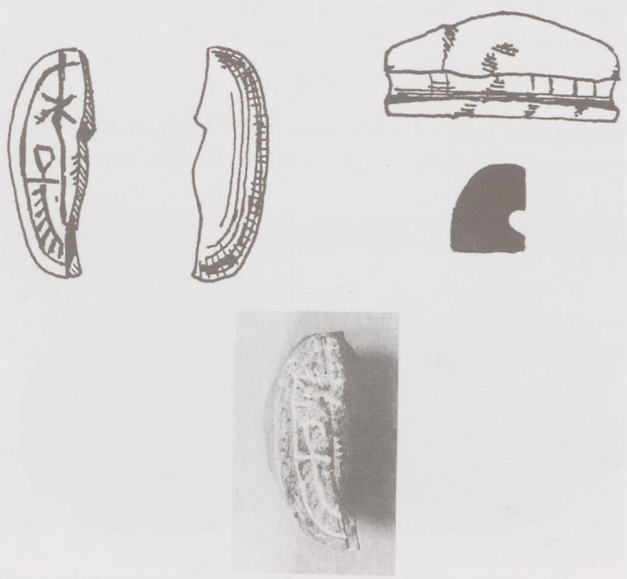


Plate 11.17: Turquoise scarab. Reg. 17



Plate 11.18: Carnelian scaraboid. Reg. 290

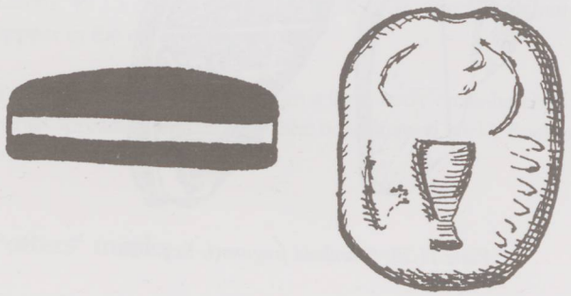


Plate 11.19: Stone scaraboid. Reg. 293

Plate 11.19 (Reg. 293). Scaraboid of dark green-grey hard stone, pierced longitudinally, very worn. L 2 cm., W 1.6 cm., T 1.7 cm. From A9.10.1 topsoil. BM WAA 136073.

The design is too worn to be identifiable; the traces might suggest a bull's head.

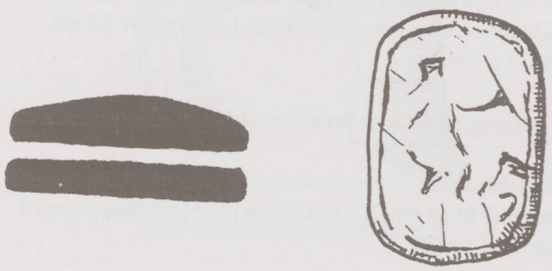


Plate 11.20: Limestone scaraboid. Reg. 316

Plate 11.20 (Reg. 316). Scaraboid of red limestone, pierced longitudinally, worn. L 1.8 cm., W 1.3 cm., T 0.7 cm. From B3.2.17. Ash 1974.274.

The abraded design shows traces of a standing man holding a spear or shield, possibly with a bird in front of his legs.

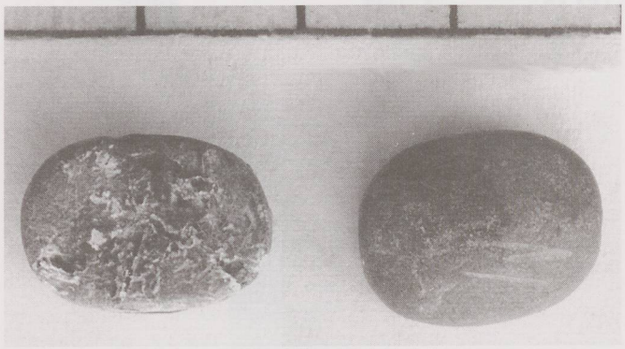


Plate 11.21: Scaraboid. Reg. 586

Plate 11.21 (Reg. 586). Scaraboid, perhaps of malachite, surface badly damaged. L 1.5 cm., W 1 cm., T 0.4 cm. From B3.4.7. ROM 974.107.30.

Unrecognisable traces of incised design.

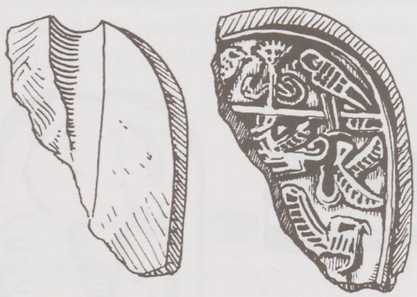


Plate 11.22: Scaraboid fragment. Reg. 923

Plate 11.22 (Reg. 923). Fragment in dark green stone of a scaraboid broken diagonally, pierced longitudinally. L 1.3 cm., W 1 cm., T 0.5 cm. From D3.2.22. Amm.

The incised design shows two birds flanking a palmette (?) in the upper register, with a winged uraeus and part of a falcon and another figure below.

(L. Sedman observed similar stone used in buildings in Karak.)

(Reg. 1193). Scaraboid of soft light blue material, pierced longitudinally, incised design on base. L 1.2 cm., W 0.8 cm. From B10.6.6. DoA.

Object missing; no further details available.

(Reg. 452). Stamp seal of red pottery (?)with traces of red paint (?), damaged. D 1.4 cm., T 1 cm. From [A1+] rubbish dump. L NMGM: 1993.180.30.

Traces of an incised design remain on the base.

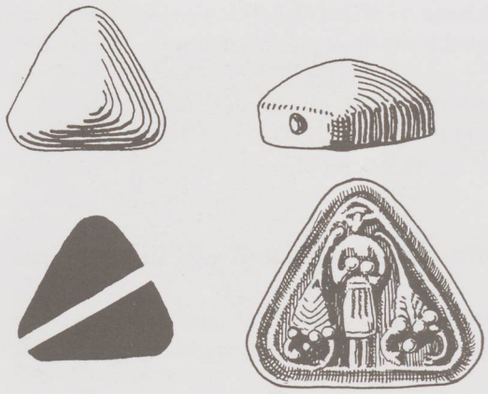


Plate 11.23: Triangular seal. Reg. 951

Plate 11.23 (Reg. 951). Triangular seal of red-brown stone with domed top, pierced from left corner to mid-point of right side. 1.5 x 1.4 cm., T 0.8 cm. From B3.2.4. Amm.

The design, partly drilled, shows a standing female with her hands to her breasts, flanked by two scorpions. Keel 1997: 660.

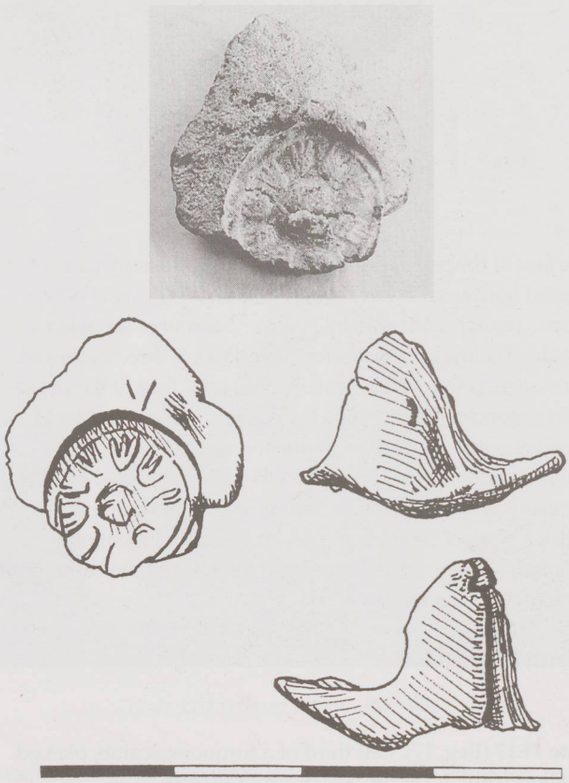


Plate 11.24: Clay sealing. Reg. 29

Plate 11.24 (Reg. 29). Clay sealing, plug-shaped with groove made by string, seal impression on one face. D of impression 0.7 cm. From B1.1.3. Ash 1973.380.

The impression shows a rosette of seven complete and two damaged three-branched leaves or petals around a central boss.

Plate 11.25 (Reg. 99). Clay sealing, circular, with imprints of string and sacking, badly worn. D 2 cm. From A31.1.8. Emory.



Plate 11.25: Clay sealing. Reg. 99

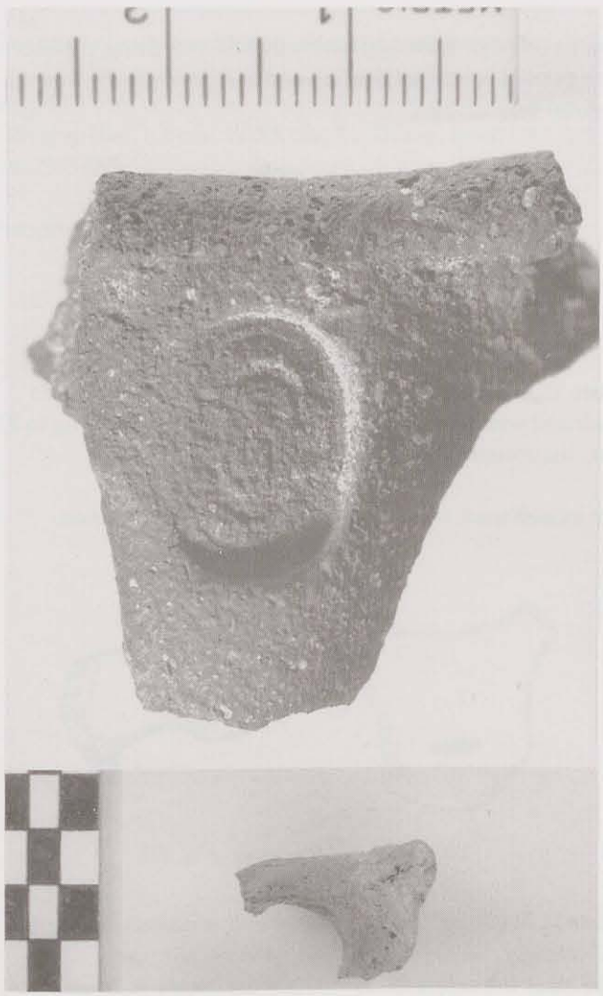


Plate 11.26: Seal impression on cooking pot handle. Reg. 1150

Plate 11.26 (Reg. 1150). Seal impression on the upper part of the handle of a cooking pot (?) of coarse grey ware with red-brown core. Impression 1 by 1.5 cm. From D3.2.2. Ash 1975.388.

The imprint, made by a scarab(oid) seal, is hard to recognise. There is a human figure in a central oval, above and below which Puech saw a uraeus and geometric designs symmetrically placed on either side.

Bennett 1977: 6; Puech 1977: 18, 19, pl. VIc, no. VIII; Buchanan and Moorey no. 36.



Plate 11.27: Seal impression on storage jar handle. Reg. 702

Plate 11.27 (Reg. 702). Seal impression on the handle of a storage jar of buff-red ware with a creamy buff slip and grey core with quite large grits. Impression 1.5 x 1 cm. From B6.15/B2.7.13? Kar.

The oval impression, made by a seal with heavy drill marks, shows a standing human figure with a crouching winged animal on either side. (R.D. Barnett, *apud* Bennett 1975: 15, suggested 'a bird man (?) on the left facing a winged horse or horses on the right'.) The style of the seal is similar to that of one in the collection of the Biblical Institute in Freiburg, Switzerland, BIF, nr. SK 138, see Keel-Leu 1991: 57, no. 66.

Bennett 1975: 15, pl. VIIb.

(Note: in the Ashmolean Museum is a scarab from Busayra, L 1.5 cm., W 1.1 cm., H 0.7 cm., Ash 1973.405, which does not appear in the excavation records.

It is described as 'engraved with a bird, body cross-hatched; wings spread; fantail; animal-like head turned back'. Buchanan and Moorey 1988: 4, no. 37.)

Potters' marks

(Reg. 745). Part of a mug of rough pink ware with buff-grey core, signs of burning. D 12 cm., H 5.5 cm. From A1.10.10. BM WAA 136719.

A small cross has been impressed below the handle.

Bennett 1975: 8, 9 fig. 5: 17.

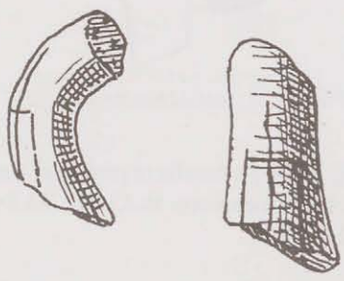


Plate 11.28: Incised handle. Reg. 27

Plate 11.28 (Reg. 27). Part of the handle of a small vessel, red ware. L 2.9 cm., W 1.2 cm., T 1 cm. From A5.3.4.15?. Kar.

The lightly incised mark has the form of a trident.

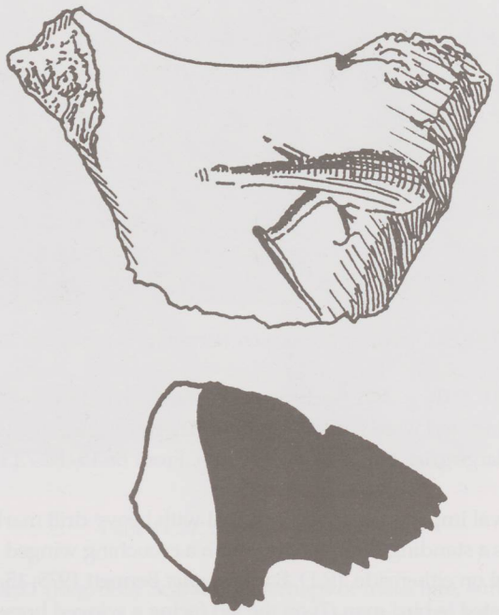


Plate 11.29: Incised handle. Reg. 785

Plate 11.29 (Reg. 785). Jar handle of grey ware with grits. L 6.4 cm., W 3.5 cm., T 3 cm. From A5.7.6. Kar.

Deeply incised on the handle before firing is a zig-zag mark.

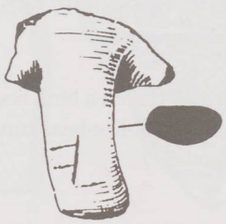


Plate 11.30: Incised handle. Reg. 1139

Plate 11.30 (Reg. 1139). Jar handle of red ware with grey core and large grits. W 4.3 cm., L 3 cm. From B2.10.5. Kar.

The lightly incised mark has the form of the letter *y* in the Iron Age alphabet.

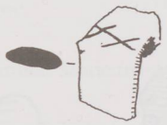


Plate 11.31: Incised handle. Reg. 1217

Plate 11.31 (Reg. 1217). Jar handle of pink-buff ware with grey core and large chalky inclusions. W 4.1 cm., T 1.8 cm. From C22.1.18. Reg. 1217. Kar.

Potter's mark of an oblique line crossed at an angle by two short parallel lines.



Plate 11.32: Incised handle. Reg. 674

Plate 11.32 (Reg. 674). Upper part of a handle of pinkish ware with small grits. W at rim 3.5 cm., L 3 cm. From B2.7.5. ROM 974.107.44.

The incomplete mark, apparently incised after firing, consists of two parallel horizontal lines crossed at right angles by three parallel vertical lines.



Plate 11.33: Incised handle. Reg. 1303

Plate 11.33 (Reg. 1303). Pot handle of grey ware tinged with pink and white chalky grits. L 8.8 cm., W 2.9 cm. tapering to 2.2 cm., maximum T 1.8 cm. From C9.4.9 Kar.

An incised mark is partly covered with lime incrustation.

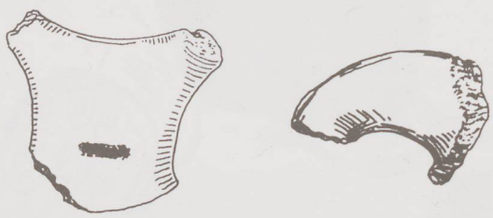


Plate 11.34: Incised handle. Reg. 918

Plate 11.34 (Reg. 918). Jar handle of buff ware with large grits. L 5.3 cm., W c. 5.5 cm. From B7.4.4. Man 1975.51.
The mark is a simple horizontal line cut deeply (0.2+ cm.) before firing, 1.8 cm. long.

Plate 11.35 (Reg. 478). Part of the base of a small bowl of orange-red ware with buff core. D of base c. 4.8 cm. From D3.1.2.A. Edin 1976.592.

So far as can be judged, the mark was probably a simple cross.

(Reg. 664). Part of the base of a dish of pink ware with buff-grey core. Maximum measurements 10.2 x 9 x c. 4 cm., T c. 1 cm. From D4.1.9. Ash 1974.272.



Plate 11.35: Incised base. Reg. 478

Two arms of a mark, either a v-shape or a cross remain.

(Reg. 680). Part of the base of a small dish of pink-buff ware with grey core. L 6 cm., W 3.5 cm., T c. 0.7 cm. From D4.1.5. Ash 1975.385.

Two arms of a mark, either a v-shape or a cross remain.

(Reg. 684). Base of a plate of pink ware. L 4.2 cm., W 3.6 cm. From D4.1.3. Ash 1974.282.

On the wall just above the base a cross was roughly incised before baking, its vertical pointing to the base.

(Reg. 721). Piece of a platter of smooth red ware with gritty inclusions and grey core. L 14 cm., W 7.1 cm., T 0.7 cm. From B3.6.22. Ash 1974.271.

On the outside lines c. 6 cm. long cross at an acute angle c. 1 cm. from the top.

(Reg. 889). Sherd of pink ware with grey core. L 5.2 cm., W 2–4 cm. From B2.9.3. Man 1974.82.

Cross incised on the convex, outer side after firing, two arms broken; present dimensions horizontal 3.8 cm., vertical 3.1 cm., line 0.2 cm. T.

(Reg. S.27). Small sherd of pink ware. L 1.9 cm., W 1.1 cm., T 0.4 cm. From A13.1+. L NMGM: 1993.180.131.

One line of a mark is visible, perhaps stamped on the vessel.

12. FOSSIL AND RECENT MARINE INVERTEBRATES

David S. Reese
with contributions by Kenneth J. McNamara and Catherine Sease

Fossil marine invertebrates

Introduction

The 1971–74 and 1980 excavations at Busayra produced 955 fossil marine invertebrate fragments. There are 773 *Gryphaea* fragments (80.9%), 74 other bivalves, 70 sea urchins, 23 gastropod internal moulds, four ammonites, and nine unidentifiable remains. Detailed information on the fossil marine invertebrates are provided in Table 12.1. Some of the *Gryphaea* contain haematite and it is possible that some shells were collected to utilise this pigment. Several urchins have been modified by man. However, it is very likely that many of the fossil invertebrates here are simply chance inclusions in construction fill.

Area A produced 580 fossil fragments (60.7%): 131 late eighth century to c. 550 BC (51 from A13.1 fill, 26 from A5.13.4 mudbrick fill, 25 from the A13.1.6 occupation deposit), 84 c. 550 to 300/200 BC (31 from A5.11.4–5 mudbrick fill, 21 from the A20.2.10 floor make-up, 22 from A20.2.11 fill), 362 unstratified (62.4%) (138 from A50.1.4, 92 from A1.1.3, 20 from A8.1), and three topsoil.

Area B produced 220 fossil fragments: 44 late eighth century to c. 300/200 BC (18 from the B6.2.5 deposit), 15 c. 300/200 BC, 144 unstratified (65.5%) (37 from B10.1, 20 from B8.2.2–3, 17 from B10.3), and 17 topsoil.

Area C produced 137 fossil fragments: 33 late eighth century to c. 550 BC (13 from the C20.1.20+25 deposit), five c. 550 to 300/200 BC, two c. 300/200 BC, 34 unstratified, and 63 topsoil (46%).

Area D produced six fossils with four stratified and two unstratified. Area M produced 11 unstratified fossils. There is also one urchin lacking context.

There is a total of 553 unstratified (57.9%) and 83 from topsoil (8.7%), that is, over 66.5% without stratigraphic context.

Fossil marine invertebrates have rarely been published from circum-Mediterranean and Near Eastern archaeological sites (Reese 1985a; 1988c; 1995a–c; 2000a; 2002a). Others have reported them from the Late Bronze Age Timna sanctuary (Price 1988), and nine shells come from all periods of Israeli excavation at Jerusalem (Mienis 1992: 122, 126).

Gryphaea

The most common fossil marine invertebrate present are 773 fragments of the bivalve *Gryphaea* (Figure 12.1). There are some large concentrations of these shells, as noted below and on Table 12.1. At least 25 shells contain haematite of various colours, and it is possible that one reason the shells are present at the site is to exploit this mineral, probably as a pigment. However, it is also very likely that these fossil bivalves are present simply as fill and were not collected on purpose. One



Figure 12.1: Gryphaea with haematite, L 50, W 37 (A13.1.18, Reg. 1252, Kar, late eighth century to c. 550 BC)

shell is burnt, from late eighth century to c. 300/200 BC fine ash and clay (B2.7.4).

Area A produced 487 fragments, with: 113 from late eighth century to c. 550 BC from 10 deposits, including 39 from A13.1.29–30 fill, 26 from A5.13.4 mudbrick fill and 18 from the A13.1.6 occupation deposit. For c. 550 to 300/200 BC there are 76 shells from four deposits with 29 from A5.11.4–5 mudbrick fill, 22 from A20.2.11–12 fill and 20 from A20.2.10 floor make-up. There are also 297 unstratified, including 129 from A50.1.3–4, 86 from A1.1.3, and 17 from A8.1. There is finally one topsoil *Gryphaea*.

Area B produced 167 fragments, with 29 from late eighth century to c. 300/200 BC from nine deposits, including 16 from B6.2.5. For c. 300/200 BC there are seven fragments from two deposits. Most shells, 120, are unstratified, including 38 from B10.1, 19 from B8.2.2, and 16 from B10.4.1. There are also 11 topsoil shells.

Area C produced 115 fragments, with 29 from late eighth century to c. 550 BC, from eight deposits including 13 from C20.1.20+25. For c. 550 to 300/200 BC there are three shells from one deposit. There are 27 unstratified, including 18 from C14.3. Most shells, 56, come from the topsoil, including 24 from C10.5.1 and 18 from C11.4.1. There are also two shells from Square D3 and two from Area M.

Other bivalves

There are 69 bivalve internal moulds not embedded in matrix. This includes: nine late eighth century to c. 550 BC from three deposits (eight from A13.1), five late eighth century to c. 300/200 BC from four deposits (three from B2.7), five c. 550 to 300/200 BC from four deposits, and two c. 300/200 BC from two deposits. There are also 43 unstratified examples including ten from A1, seven from A50.1, and finally five from topsoil.

In addition to the bivalve internal moulds there are five examples of non-*Gryphaea* bivalves in matrix blocks, with one of the late eighth century BC to c. 550 BC (C21.3.12), three unstratified (A1.1.3, A1.3a.3, and A1.18.2 [Figure 12.30c]) and one from topsoil (C11.4.1).

British excavations at Jerusalem produced a fossil scallop (Reese 1995a: 272) and Tawilan produced two bivalve internal moulds (Reese 1995b: 95).

Gastropods

There are 23 gastropod internal moulds in the collection, with two late eighth century to c. 550 BC, two late eighth century to c. 300/200 BC, three c. 550 to 300/200 BC, one c. 300/200 BC, 11 unstratified, and four from topsoil. There are 10 fusiform, six trochiform, and six *Nerinea/Nerinella*. None are modified by man although one of the late eighth century to c. 300/ 200 BC (B3.3/6.5) is burnt black.

The sanctuary enclosure (Phase 2) at Tulaylat al-Ghassul, excavated in 1995, produced two fossil gastropods, possible votive offerings (Sparks 2000: 75, fig. 22: 9–10).

British excavations at Jerusalem produced a fossil gastropod (Reese 1995a: 272) and Tawilan produced two gastropod internal moulds (Reese 1995b: 95).

Other fossils

There are four ammonite fragments: two late eighth century to c. 300/200 BC (B2.7.12, B7.5.12), c. 550 to 300/200 BC (A5.11.3), and an unstratified block with an ammonite fossil in it (B8.2.3). The three dated examples are all from large individuals.

There are also several unidentifiable fossil remains: one late eighth century to c. 550 BC (A1.11.18), two c. 300/200 BC (B2.6.3, C1.4.2), five unstratified from four deposits (A3.1.10, A8.1.6, C3.7.25, M3.1.5) and one topsoil (B5.1.3).

Sea urchins (KJM)

A total of 71 fossil sea urchins were recovered. From Area A 35 urchins were collected from 32 deposits; Area B produced 23 urchins from 20 deposits; Area C five urchins from five deposits; Area D three urchins from three deposits; and Area M five urchins from four deposits. There is one urchin which lacks context and one came from Ain Janin.

Only 23 urchins come from stratified contexts. In Area A, the late eighth century to c. 550 BC produced seven urchins and c. 550–300/200 BC two urchins.

In Area B, the late eighth century to c. 300/200 BC yielded four urchins and c. 300/200 BC six urchins.

In Area C the late eighth century to c. 550 BC produced two urchins while Area D c. 300/200 BC produced one urchin.

Both regular and irregular urchins are represented (Figures 12.1–23). The majority of urchins are irregulars, with 24 being heart urchins (spatangoids) and the remainder being holectypoids. Superficially resembling regular urchins, holectypoids are primitive irregular urchins that generally have a circular outline, like regular urchins. However, their irregular nature is illustrated by the location of the periproct (anus) on the ventral surface, in a posterior position, rather than centrally in the apical system on the dorsal surface, as is the case in regular urchins.

Only one species of regular urchin can be identified with any degree of certainty, *Heterodiadema lybica* (Figures 12.5–6). As well as having been recorded from Late Cretaceous limestone



Figure 12.2: Group shot of urchins, both spatangoids (heart urchins) and holectypoids (circular)



Figure 12.3: Group shot of urchins. Top centre is holed ?Coenholectypus *sp., D 23, H 17, hole D 4 (B2.2.3, Reg. 284, Emory 1974.19, unstratified, also Figure 12.15)*



Figure 12.4: Group shot of urchins, spataongoids (heart urchins) except top left, the holectypoid Coenholectypus

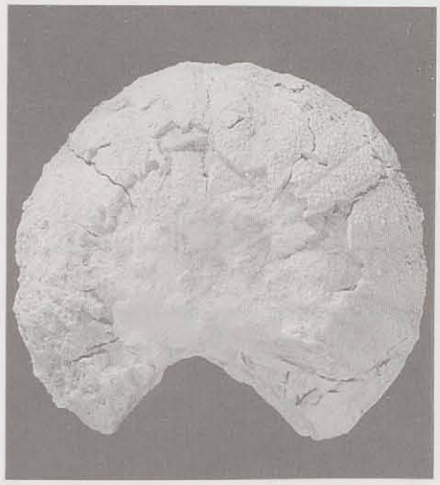
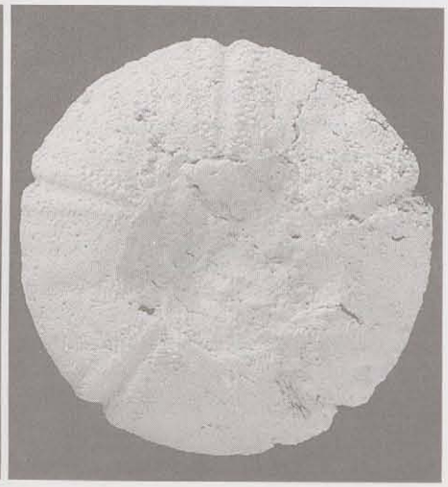


Figure 12.5: Heterodiadema lybica *– D 30, H 13 (x1½) (B8.1.2, Rec. 104, unstratified) (photo by K. Brimmell)*



Figure 12.6: H. lybica *– D 37, H 17 (x 2) (A50.1.4, Rec. 22, unstratified (photo by K. Brimmell)*



Figures 12.7–8: Phymosomatid – D 28, H 12 (x2) (B8.4.3, Rec. 54, unstratified) (photo by K. Brimmell)

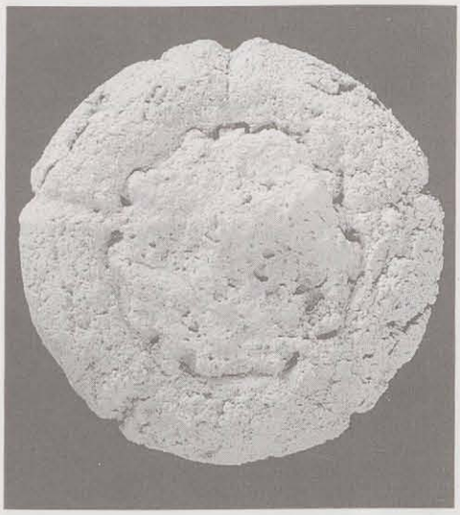
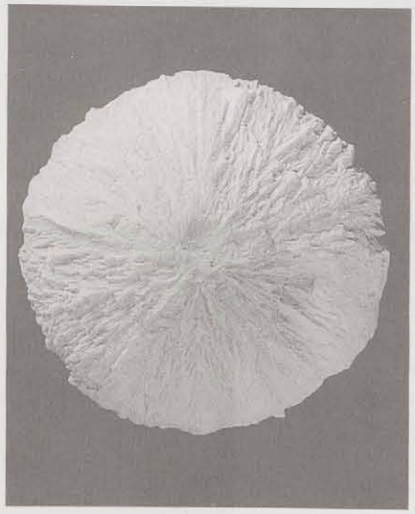
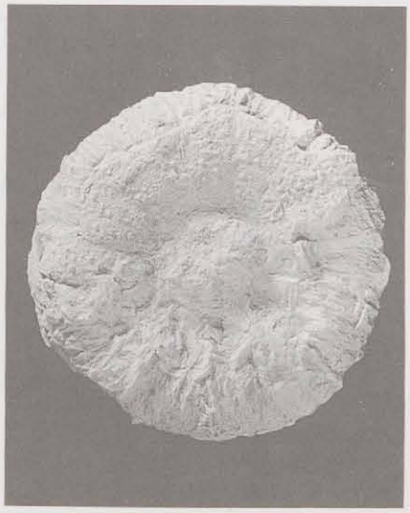


Figure 12.8: see above





Figures 12.9–10: C. larteti *– human modified, D 24, H 12 (x2) (A1.6.1, Rec. 78, unstratified) (photo by K. Brimmell)*

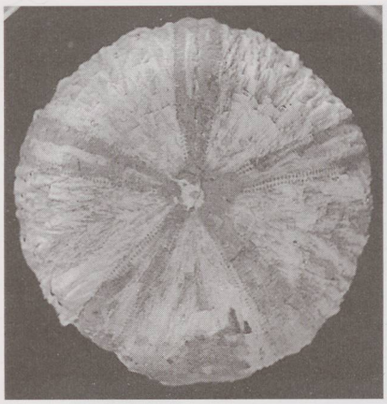


Figure 12.11: C. larteti *(Rec. 78) photographed under water with a green filter to highlight the pattern which was artificially enhanced by scraping the surface of the fossil (x 2)*



Figure 12.14: ?Coenholectypus *sp., holed in centre, slightly chipped, lime encrusted, D 29, H 15, hole D 5 (A11.1.2, Reg. 463, WM 439, unstratified)*



Figure 12.15: Holed ?Coenholectypus *sp., D 23, H 17, hole D 4 (B2.2.3, Reg. 284, Emory 1974.19, unstratified)*



Figure 12.18: Coenholectypus *cf.* subpentagonalis, *D 22, H 17 (A26.1.19, Reg. 273, Man 1974.26, unstratified)*



Figure 12.20: Mecaster ?fourneli, *L 28, W 26, H 18 (D4.1.11, Reg. 686, ROM 974.107.45, unstratified)*



Figure 12.21: ?Mecaster *sp., very worn, D 31, H 19 (B3.1.3, Reg. 164, Emory 1973.124, c. 300/200 BC)*

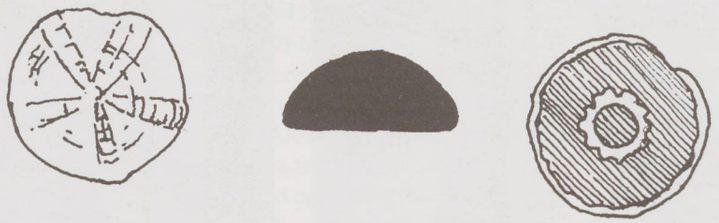


Figure 12.13: Coenholectypus *sp., slightly chipped in antiquity; according to register 'base has been polished completely flat and shows a circular pattern' (said to be man-made), D 24, H 11 (C11.1.3, Reg. 172, Kar, unstratified)*



Figure 12.12: C. larteti *– human modified, D 10, H 6 (x4) (A20.6.7, Rec. 29, late eighth century to c. 550 BC (photo by K. Brimmell)*



Figure 12.16: C. larteti *– D 29, H 16 (x2) (B7.1.5, Rec. 105, unstratified) (photo by K. Brimmell)*



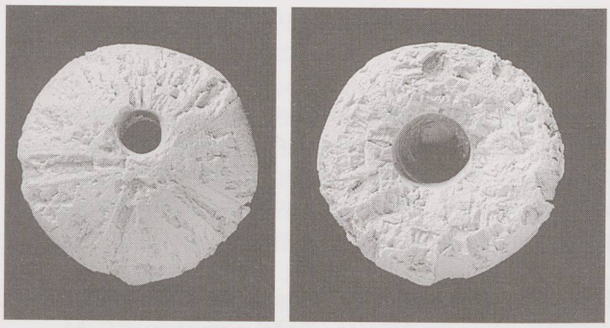
Figure 12.17: C. larteti *– D 27, H 16 (x2) (B2.7.1, Rec. 59, topsoil) (photo by K. Brimmell)*



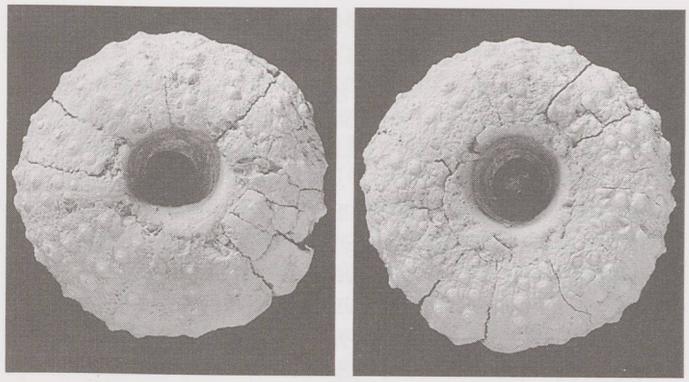
Figure 12.19: Mecaster *sp. – W 36.5 (x1½) (B5.13.4, Rec. 77, unstratified) (photo by K. Brimmell)*



Figure 12.22–23: Mecaster pseudofourneli *– L 21, W 21, H 14 (x2) (B1.2.2, Rec. 54, C. 300/200 BC) (photo by K. Brimmell)*



Figures 12.24–25: C. larteti – *dorsal and ventral surfaces scraped down, holed, D 15.5 x 16, T 7, upper hole 2 x 2.5, lower hole 2.5 x 3 (x2) ('Ain Ghazal 1984, no. 3282.186, Middle PPNB) (photo by K. Brimmell).*



Figures 12.26–27: Rachiosoma major – *holed, burnt, D 21 x 20.5, T 9.25, hole 3 (x2) ('Ain Ghazal 1984, no. 3081.203, Middle PPNB) (photo by K. Brimmell).*

in Jordan (Cotteau 1869; Blanckenhorn 1925; Bandel and Geys 1985), *H. lybica* is wide-ranging, both in time and space, having been found throughout most of the Late Cretaceous not only in Jordan, but also in Oman, Pakistan, Somalia, Egypt, Tunisia, Algeria, Morocco, Belgium, France, and Portugal (Geys 1980). An unidentified phymosomatid also occurs (Figures 12.7–8).

The most common irregular urchins at Busayra are species of the holectypoid *Coenholectypus* (Figures 12.9–18) and the spatangoid *Mecaster* (Figures 12.19–23). Both *Coenholectypus larteti* and *Coenholectypus subpentagonalis* are probably present. Since first being described from Late Cretaceous limestones in Jordan by Cotteau (1869), the more common *C. larteti* has subsequently been found in abundance in limestones in the Near East and North Africa (Smith *et al.* 1990). This rather delicate urchin with an almost circular to subpentagonal outline has a diameter that is usually between 20 and 30 mm.

Two specimens of *C. larteti* (A1.6.1, Rec. 78, unstratified, Figures 12.9–11) and A20.6.7 (Rec. 29, late eighth century to c. 550 BC, Figure 12.12) show distinctive indication of human modification. In the A1 example the surface of the test has been stripped off, revealing a fractured, cleaved surface of calcite. Because the cleavages radiate out from the centre of the urchin, this enhances its radial pattern. This is usually expressed by the five radiating ambulacra. In this specimen there has been differential mineralisation during diagenesis, with red, iron-rich calcareous ambulacra between white, pure calcite interambulacra. Removal of the surface of the urchin test has enhanced this colour differentiation. The dorsal surface has been completely stripped, whereas the ventral surface has been only partially stripped. This scouring of the surface of the urchin must have been carried out using a sharp instrument. There is no known natural process that could produce such a feature.

The urchin from A20 has also experienced a similar partial stripping of the dorsal surface. But it has also been abraded by persistent rubbing on a coarse surface, producing a slightly flattened dorsal surface. Artificial radial scraping has also been carried out on a holed *C. larteti* from Middle PPNB 'Ain Ghazal (no. 3282.186, Figures 12.24–25), suggesting a long tradition for this practice.

A third urchin, a *Coenholectypus* sp. (C11.1.3, Reg. 172, unstratified), not personally seen, is described in the register as 'base has been polished completely flat and shows a circular pattern' and is considered to be human-made (Figure 12.13).

While I know of no other record of artificial scraping of the surface of a fossil urchin test to enhance the radial pattern of a fossil, prolonged rubbing of the dorsal and ventral surfaces of a test are also seen in an urchin from Islamic levels in the Amman Citadel (noted below).

Two unstratified *Coenholectypus*, one from A11.1.2 (Reg. 463, Figure 12.14) and the other from B2.2.3 (Reg. 284, Figures 12.3 top centre, 12.15), were artificially holed. This holectypoid urchin lends itself to such treatment because the peristome (mouth) situated on the ventral side is sunken.

The other common irregular urchins from Busayra are heart urchins, particularly species of *Mecaster* (Figures 12.19–23), the majority being *Mecaster fourneli* var. *latigrunda* and *Mecaster semicavatus*. A single *Mecaster pseudofourneli* is also present (B1.2.2, Rec. 54, 300/200 BC, Figures 12.22–23). Specimens of *M. fourneli* var. *latigrunda* can be distinguished from *M. semicavatus* by their more narrow test, longer, narrower petals and large labrum that protrudes across the peristome on the ventral surface. *M. pseudofourneli* is characterised by its narrow petals and less indented anterior margin. *M. fourneli* is a common, widespread Late Cretaceous species that is found across much of the Near East and North Africa. It is even known from as far west as Brazil. As well as occurring in Jordan, *M. semicavatus* has been found in Tunisia and Algeria.

Of the urchins that have been identified from Busayra (*C. larteti, H. lybica, M. fourneli, M. semicavatus, M. pseudofourneli*), all occur commonly in Jordan in the Late Cretaceous Ajlun Group. Comprising eight formations of Cenomanian to Turonian age, this sequence of chalky limestones outcrops over about two-thirds of the country (Neumann 1999). As such, these very fossiliferous rocks would have yielded a plentiful supply of fossils, including urchins. Whether unworked fossils are simply the product of weathering from the building stone, which derived from these formations, or whether they were specifically collected and brought to Busayra, must remain speculative. However, the presence of fossil urchins at many other archaeological sites, in Jordan, the Near East, and the Eastern Mediterranean region in general, suggests that many of these fossils may have been collected and used in a votive context.

Fossil urchins from other archaeological sites in Jordan/West Bank

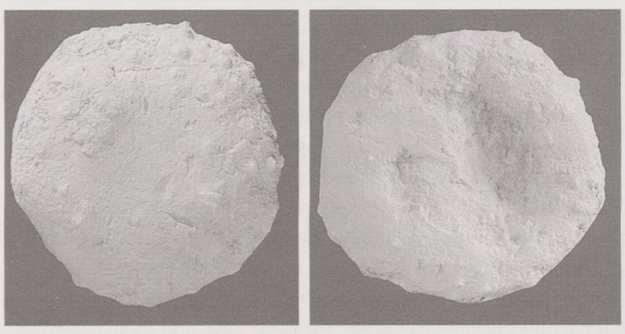
'Ain Ghazal produced four urchins, all holed. In the Middle PPNB *C. larteti* noted above (Figures 12.24–25), both dorsal and ventral surfaces have been scraped down. The radial scraping may well have been undertaken to enhance the aesthetic appeal of the fossil. In particular, the narrow star-patterned ambulacra have been scraped almost clean of white calcite, revealing red, iron-stained matrix beneath. This highlights the five-rayed star pattern very effectively. The tapering hole is about twice as wide on the flatter ventral surface than on the more convex, dorsal surface. The narrower hole is off-centre on the dorsal surface that carries the five-rayed pattern, and emerges between two of the enhanced ambulacra. A Middle PPNB specimen of *Rachiosoma major* (no. 3081.203, Figures 12.26–27) shows bevelling of the edges of the hole on both sides, indicating that the hole was made from both directions. This specimen appears to have been burnt at some stage. The final examples are a PPNB urchin (regular) holed in centre (no. 3078. 281), and a Yarmoukian holed urchin (Rollefson *et al.* 1991: 104; D.S. Reese analysis).

PPNB Beidha produced five irregular urchins (nos. 800, 2659, 2669, two unnumbered) (D.S. Reese analysis).

Jericho produced one fossil urchin of unknown date now in the Institute of Archaeology, London (no. 2765, Tr. III.xxxix) (Kenyon and Holland 1983: 843).

At Tall Jawa, Stratum VIII (early Iron Age II; ninth/eighth centuries BC) produced three urchins with two holed examples. The bevelled holes were made from both sides. Stratum VII (late Iron Age II; late eighth/seventh centuries BC) also produced an urchin holed in a similar fashion and a broken spatangoid urchin (Reese 2002a).

Iron Age Umm al-Biyara produced a *Coenholectypus* and Umm ad-Dananir produced a holed fossil urchin (Reese 2002a). A holed urchin was found in an Iron IIC/Persian building at Rujm al-Henu (McGovern 1983: 131, fig. 13: 8, pl. XXV: 1; IV.10, 81–6–210, Locus 1, Area 3). Balu'a produced an unholed urchin (Worschech *et al.* 1986: 301, pl. 64: 2). A possible urchin was also found at Tawilan (Bennett and Bienkowski 1995: 86, fig. 9.19: 2). American excavations at Jarash around 1983 produced a ?*Heterodiadema* sp. (D 29.75, H 14.5; JNT.B, Unit II, Locus 012, PB 138). American excavations at Tall Safut in 1983 in Area A, Square 1 extension produced two *Mecaster*: Locus 15, Pail 13 (*Mecaster* sp., slightly encrusted, L 29, W 27.25, H 18) and Locus 22, Pail 34 (*M. fourneli*, possibly burnt, chipped in various areas, heavy, L 50, W 47, H 41.5).



Figures 12.28–29: Raphiosoma *cf.* rectilineatum – *dorsal and ventral surfaces are flattened (x2) (Amman Citadel 1979, BXLI.6.4 <7>, Fatimid) (photo by K. Brimmell)*

A holed regular urchin from tenth-century AD deposits near Karak is on display in the Karak Castle Museum, where it forms part of a necklace with a variety of coloured stones, confirming the use of these objects for personal decoration (personal communication C. Neumann).

A *Raphiosoma* cf. *rectilineatum* (Figures 12.28–29) from Islamic (Fatimid) levels in the Amman Citadel excavation of C.-M. Bennett in 1979 (B91.6.4) exhibits the effect of prolonged rubbing of the dorsal and ventral surfaces. The effect of this abrasive rubbing of the urchin was to flatten off the otherwise convex ventral and dorsal surfaces. It is not clear whether this served a useful, utilitarian function. One possibility is that this might have been undertaken to enable the fossil to be used as a gaming piece.

Fossil urchins from archaeological sites in the eastern and central Mediterranean and their significance

Fossil sea urchins have been found at a number of other archaeological sites in the eastern half of the Mediterranean. Two club-shaped spines of the cidaroid urchin *Balanocidaris glandifera* are known from Upper Paleolithic Phase IIB and Levantine Aurignacian levels at the Ksar 'Akil rock shelter in Lebanon (van Regteren Altena 1962: 96). There is evidence that similar fossils were thought to have possessed curative properties as far back as the Twenty-sixth Egyptian dynasty, around 650 BC (Fraas cited in van Regteren Altena 1962). Nine holed urchins of the Tertiary genus *Plagiochasma* were found in a Chalcolithic tomb in Egypt. These silicified urchins were thought to have formed part of a single necklace (de Morgan 1896; Demnard and Néraudeau 2001). The Egyptian Tomb 361 at Tell el-Ajjul in Gaza produced a holed urchin, probably *Coenholectypus* (Petrie 1933: 6, pl. XVII), called by Petrie a pierced 'Micraster'.

A specimen of the Pliocene urchin *Sphaerechinus granulosus* was found at Aceramic Neolithic Rizokarpaso-*Apostolos Andreas Kastros* in north-eastern Cyprus (D.S. Reese analysis).

At Kommos in southern Crete a fragment of an urchin was found in a Late Minoan II deposit (Reese 1995c: 88). From Iron Age levels there two urchins are known (c. 760–600 BC and 375 BC–AD 170) (Reese 2000a: 404, 406). Many of the Kommos Iron Age fossils (the urchins and numerous bivalves and gastropods) are considered by Reese (2000a: 407) as having been placed in the sanctuary as offerings.

Fossil urchins have been found in a votive context on Malta. In the 2800–1900 BC Tarxien temple two urchins were found in shallow holes that had been carved into pillars of the temple (Zammit 1930: 29).

The Late Bronze Age temple at Timna, near Eilat in southern Israel, yielded three *H. libyca* and two urchins that Price tentatively assigned to *C. larteti* (1988: pl. 154: 4–5; Rothenberg 1972: pl. 108 top left). Both these species occur at Busayra. It is interesting to note that Price commented on the 'considerably abraded' nature of these specimens. Whether this was natural or artificial is not clear. The Canaanite site of Timna, situated in the

Wadi Arabah, exhibits Egyptian influence in its layout and construction (Rothenberg 1972; 1988; Ben-Tor 1992). Copper-mining activities were carried out by Egyptians here during the Nineteenth and Twentieth Dynasties. The temple and associated mining activities continued to flourish until the period of Ramesses V. A well-marked route existed from Egypt through the Sinai Desert and southern Negev to Timna. This is illustrated by cartouches of Ramesses III on rocks at these intervening sites.

The possibility that the presence of fossil sea urchins at such sites as Busayra and Timna was due to more than just having been derived from weathered building stones is suggested not only by the few artificially abraded or holed specimens found at these sites, but also by a fossil urchin found in Egypt. During excavations at Heliopolis in the early part of the twentieth century, Ernesto Schiapparelli uncovered a specimen of the cassiduloid urchin *Echinolampas africanus*. Inscribed on its ventral surface were 12 hieroglyphs, running in a circular pattern from right to left (Scamuzzi 1947). Each hieroglyph is about 1 cm. high. Translated they read 'Found south of the stone quarry of Sopdw by the priest T-nofre'.

The particular spelling of the God Sopdu's name has been found in the Sinai mining area, which was well known to the Egyptians. The spelling suggests the inscription was made during the Middle Kingdom, perhaps during the reign of Amenemhat III or IV, i.e. the Twelfth Dynasty (1855–1799 BC). The finder of the fossil, the priest T-nofre, bore a name widespread in ancient Egypt. Where he found it is not known for certain. Scamuzzi suggested the possibility of derivation from the Sinai Peninsula. This is supported by the association of Sopdu, the god honoured along with King Senfore and with the goddess Hathor, in the inscriptions in the Sinai mining area which read: 'He who strikes against the Asians'.

But what led the priest T-nofre to carry this urchin all the way back to Heliopolis? The link may well lie in the five-rayed star on the urchin's dorsal surface, and the naming of the quarry where he found it. Sopdu (sometimes Soped) was one of a triad of gods, the son of Sah and his wife Sopdet (Sirius to the Greeks and Sothis in the Greco-Roman period). These were old gods of Heliopolis, and paralleled the later Horus, Osiris and Isis, respectively. Sah was Orion, as we know it today; Sopdet was the star Sirius (the 'dog star'). They are described in the Pyramid texts as having given birth to Sopdu, the 'morning star'.

A particularly important event to the Egyptians, and especially at Heliopolis, was the heliacal rising of the dog star Sirius. This occurred on about 19th July on the Julian calendar, when the star becomes visible on the horizon just before sunrise.

It was about this time of the year that the Nile began to rise, and the Egyptians thought that the celestial phenomenon actually caused the inundation. Thus Sopdet was a particularly important god to the agricultural people of the Nile region. This event was so significant that the heliacal rising of Sirius marked the first day of the year in the Egyptian calendar. The 70-day period during which Sirius disappears below the horizon was also very significant in that this marked the period for which bodies were embalmed — the time between when bodies died and were buried. Thus the period during which Sirius was absent from the sky was thought to separate their death from their resurrection. The hieroglyph for Sopdet includes a five-pointed star. She is often shown riding over the heavens in a boat or on a dog (the dog star) who has a star on his head between his ears. She is also sometimes represented in statues with a five-pointed star on her head.

It seems probable that a natural object emblazoned with a five-pointed star, like a fossil urchin that would have been commonly encountered during quarrying, was likely to have been of great votive significance, given the importance of these celestial objects. Such stars are frequently depicted on the ceilings and chambers of tombs, due to the belief that mortals could be reborn in the form of stars. Whether fossil urchins retained their significance to the later, Iron Age peoples of Jordan, or whether the distant echo of their significance was just manifest in these fossils as perhaps lucky objects, is uncertain.

Table 12.1. Catalogue of Busayra fossil marine invertebrates

Area A

Phase 1: occupation (late eighth century to c. 550 BC)

A13.1.10 <30> Rec. 43 (plaster floor)
Gryphaea — ribbed, small/medium

A13.1.17 <33> Rec. 45 (dark brown soil)
2 *Gryphaea* — 1 large
bivalve internal mould — medium

A13.1.23 Rec. 67 (bedding for floor)
5 *Gryphaea* — 3 ribbed

A13.1.2 Rec. 76
3 *Gryphaea* — 1 large

A13.1.23 Reg. 1263 (Brussels 4440)
Gryphaea — has yellowish haematite inside, L 25, T 15

Phase 2: fill (late eighth century to c. 550 BC)

A1.11.11 Reg. 501 (ROM 974.107.14)
?*Mecaster* sp. (urchin) — D 25, W 24, H 15

A1.11.18 Reg. 530 (ROM 975.416.44)
urchin — chipped and worn, L 24, W 22, H 15

A1.20.20 Rec. 104 (BIAAH)
2 *Gryphaea* — 1 with haematite

A1.20.22 Rec. 101
2 *Gryphaea* — 1 ribbed and rather large

A13.1.18 <32> Rec. 47
2 *Gryphaea* — 2 ribbed

A13.1.18 <37>
Gryphaea — worn
bivalve internal mould — medium
unidentified fragment — worn

A13.1.18 <38> Rec. 63
2 *Gryphaea* — 1 large

A13.1.18 <41> Rec. 70
4 *Gryphaea* — 2 ribbed, 1 large

A13.1.18 Reg. 1252 (Kar)
Gryphaea — has haematite, L 50, W 37 (Figure 12.1)

A13.1.29 <47> Rec. 85
Gryphaea — ribbed

A13.1.30 <51> Rec. 88
38 *Gryphaea* — 7 ribbed, 4 large

Phase 3: 'temple' building on the platform and associated occupation (late eighth century to c. 550 BC)

A1.20.18 Rec. 99 (floor make-up) (BIAAH)
2 *Gryphaea* — 1 flat, 1 small and curving

A1.20.19 Rec. 103 (clay surface) (BIAAH)
2 *Gryphaea* — flat and ribbed; small and curving

A5.4.7 Reg. 894 (stone paving) (BIAAH)
urchin (?irregular) — chipped on top and cracked on side and bottom, D 22, H 15

A5.7.5 Rec. 42 (earth floor)
trochiform gastropod internal mould fragment

A5.13.4 Rec. 74 (mudbrick fill)
25 *Gryphaea* — 16 ribbed, 6 large

A5.13.4 Rec. 114
Gryphaea — yellow haematite inside

A9.7.9 Reg. 130 (plaster floor) (Ash 1973.388)
Mecaster sp. (urchin#) — very worn, chipped, lime encrusted, L 33.7, W 31, H 23.4

A13.1.4 <16> (plaster floor)
urchin — disintegrated

A13.1.6 <21> Rec. 35 (occupation deposit)
4 *Gryphaea* — 1 ribbed, 2 large
bivalve internal mould — H 25.25, W 28.25

A13.1.6 <24> Rec. 37
12 *Gryphaea* — 5 ribbed, 1 large
4 bivalve internal moulds — 3 small, 1 medium

A13.1.6 <27> Rec. 39
2 *Gryphaea* — 1 ribbed and large, 1 worn
2 bivalve internal moulds — 2 small

A20.6.7 Rec. 29 (ashy deposit)
Coenholectypus larteti (urchin*) — human modified (partially stripped and abraded dorsal surface), small, D 10, H 6 (Figure 12.12)

A25.6.9 Reg. 370 (earth fill) (Man 1974.50)
urchin — complete, D 41, H 25

Phase 4: second phase of 'temple' building and associated occupation (c. 550 to 300/200 BC)

A5.11.3 Rec. 32 (floor of small stones and chips)
5 *Gryphaea* — 3 ribbed, 2 large
2 bivalve internal moulds — 2 medium
ammonite fragment — large individual, W 59.25

A5.11.4 Rec. 53 (mudbrick fill)
12 *Gryphaea* — 1 in matrix, 5 ribbed, 2 large

A5.11.5 Rec. 20
17 *Gryphaea* — 1 with red haematite inside, 6 ribbed
fusiform gastropod internal mould — broken, L 37
gastropod (*Nerinea/Nerinella*) internal mould section

A20.2.10 <2> Rec. 2 (floor make-up)
10 *Gryphaea* — 7 ribbed

A20.2.10 <5> Rec. 21
10 *Gryphaea* — 4 ribbed
gastropod (*Nerinea/Nerinella*) internal mould section

A20.2.11 <3> Rec. 31 (fill)
10 *Gryphaea* — 6 ribbed, 3 large

A20.2.11 <4> Rec. 34
8 *Gryphaea* — 4 ribbed, 3 large

A20.2.12 <5> Rec. 38
4 *Gryphaea* — 2 large

A20.6.5 Reg. 909a (earth and stone fill)
(L: NMGM 1993.180.16)
urchin — cracked but complete except for chips on side and base, D 22, H 12

A20.6.5 Reg. 909b (ROM 975.416.42)
?*Mecaster* sp. (urchin) — L 39, W 31, H 19

Unstratified

A1.1.3 Rec. 11 (traces of mortar)
86 *Gryphaea* — 12 in matrix, 1 ribbed, 6 large
5 bivalve internal moulds — 1 small, 1 small/medium, 2 medium, 1 large (H 55.5, W 38.25, T 32.25)
bivalve (venerid) in matrix

A1.1.11 Reg. 10 (Kar)
?*Mecaster* sp. (urchin) — L 32, W 30, H 18

A1.3a.3
2 *Gryphaea* — 2 ribbed
bivalve (venerid) in matrix

A1.3a.10 Reg. 466a (ROM 975.416.41.1)
urchin — very white and chalky, L 38, W 38, H 22

A1.3a.10 Reg. 466b (ROM 975.416.41.2)
urchin — L 28, W 24, H 14

A1.6.1 Rec. 78
Coenholectypus larteti (urchin*) — human modified (dorsal surface stripped off and ventral surface partially stripped), D 24, H 12 (Figures 12.9–11)

A1.11.4 Reg. 486 (Edin A.1987.368.1572)
urchin — oval, heavily encrusted, L 42, W 37, H 21

A1.11.8 Rec. 10
bivalve internal mould — worn, medium

A1.11.9 Reg. 502 (Emory 1974.17)
?*Mecaster* sp. (urchin) — D 25, H 15

A1.13.1 Rec. 23
bivalve internal mould — pinkish

A1.13.1 Reg. 585 (BIAAH)
urchin — slightly damaged and lime encrusted, D 14, H 12

A1.17.4 Reg. 778
urchin — lime encrusted, D 23, H 15

A1.18.2 Reg. 548 (Dub 818)
bivalve (venerid) in chalky matrix — oval, 52 x 51 x 37 (Figure 12.30c)

A1.18.3 Rec. 64
bivalve internal mould — pinkish

A1.21.8 Rec. 92
fusiform gastropod internal mould — broken, L 28.5

A1.23.3 Reg. 323
urchin — D 27, H 18

A1.23.10 Rec. 6
Gryphaea — ribbed, large
bivalve internal mould — worn, medium

A1.23a.12 Reg. 272 (Emory 1973.123)
?*Mecaster* sp. (urchin) — D 25, H 16

A1.25.2 Rec. 1
2 *Gryphaea* — 1 ribbed with red haematite on exterior, 1 worn

A1.25a.1 Rec. 2
Gryphaea — ribbed, worn
bivalve internal mould — worn, small
fusiform gastropod internal mould — broken apex, L 36

A3.1.2 Rec. 53
Gryphaea — ribbed

A3.1.8 Rec. 36
Gryphaea — medium (and other fossils discarded)

A3.1.10 Reg. 119 (Kar)
2 ?limpets

A3.2.2 Rec. 65
2 *Gryphaea* — 1 ribbed
bivalve internal mould — medium

A4.1.4 Rec. 66
bivalve internal mould — medium, pinkish

A4.1.12 Rec. 123 (BIAAH)
2 bivalve internal moulds — 39 x 40; 33 x 32

A5.1.4 Rec. 67
bivalve internal mould — medium

A5.6.2 Reg. 479 (Dub 264)
urchin — circular, chipped and cracked, D 35, H 16

A5.11.8 Rec. 27
6 *Gryphaea* — 2 ribbed, 2 large, 2 very large
bivalve internal mould — H 24, W 28.5, T 17.5

A7.–.5 Rec. 20
urchin

A8.1.2 Rec. 69
5 *Gryphaea* — 2 ribbed, 1 large

A8.1.3 Rec. 6
8 *Gryphaea* — 3 ribbed

A8.1.3–4 Rec. 71
3 *Gryphaea* — 2 ribbed
bivalve internal mould — medium
gastropod internal mould fragment — worn

A8.1.3–4 Rec. 104
Gryphaea fragment — has yellow haematite inside, ribbed

A8.1.6 <4> Rec. 87
fossil in concretion

A8.3a.3 Rec. 42
2 *Gryphaea* — 1 ribbed, large

A8.3a.4 Rec. 23
bivalve (venerid) internal mould — broken, H 33

A8.3a.4 Reg. 929
Gryphaea — broken, lime encrusted, L 70, W 80, T 40

A8.3a.71 Rec. 31
6 *Gryphaea* — 3 ribbed, 3 large

A8.3a.10a Rec. 35
Gryphaea — ribbed, large

A8.3a Rec. 17
gastropod (*Nerinea/Nerinella*) internal mould section — in matrix

A8.3b.4 Rec. 46
2 *Gryphaea* — 1 worn and broken, 1 large

A8.3b.15 Rec. 96
Gryphaea

A9.2.6 <1> Rec. 8
Gryphaea — worn, medium/large

A9.3.7 Reg. 817 (Edin A.1987.368.1574)
urchin — heavily lime encrusted, chipped, D 35, H 26

A9.4.8 <1> Rec. 30
7 *Gryphaea* — 3 ribbed, 2 large

A9.5.8 Rec. 33
Gryphaea — medium

A9.6 Reg. 163 (Kar)
?*Mecaster* sp. (urchin) — some chipping, L 29, W 26, H 17

A9.7.2 Rec. 80
2 *Gryphaea* — 1 ribbed, 1 large

A9.7.2 Reg. 139a (Ash 1973.390)
?*Mecaster* sp. (urchin) — broken in antiquity, L 36.8, W 25.8, H 23.6

A9.7.2 Reg. 139b (Kar)
urchin — slightly lime encrusted, D 24, H 13

A9.7.4 Reg. 131 (Kar)
Mecaster sp. (urchin#) — very encrusted, L 59, W 52, H 35

A11.1.2 Rec. 9
urchin — worn, D 22, H 23.5

A11.1.2 Reg. 463 (Dub 439)
?*Coenholectypus* sp. (urchin) — holed in centre, slightly chipped, lime encrusted, D 29, H 15, hole D 5 (Figure 12.14)

A13.1.2 <2> Rec. 27
Gryphaea — worn, small

A13.1.3 <8> Rec. 32
bivalve internal mould — small

A13.1.3 Reg. 1227
?*Mecaster* sp. (urchin) — D 24, H 15

A13.1.12 <36> Rec. 56
Gryphaea — worn, medium

A13.1.26 <46> Rec. 83
Gryphaea — ribbed, medium

A13.1.32 <54> Rec. 92
2 *Gryphaea*

A13.1 Rec. 34
Coenholectypus larteti (urchin*) — worn, encrusted, L 25.75, W 25.25, H 13.75

A20.4.1 Rec. 18
bivalve internal mould — broken distal, H 27.75, W 36, T 24.75

A20.8.4 Rec. 17
8 *Gryphaea* — 3 ribbed, 3 large

A20.9.2 Rec. 94
fusiform gastropod internal mould — broken at both ends, L 53.5

A21.1.13 Rec. 62
2 *Gryphaea* — 1 ribbed

A25.3.4 Rec. 106
bivalve internal mould — H 40.75, W 39.25, T 19.75

A25.4.3 Rec. 97 (BIAAH)
2 *Gryphaea* — ribbed, small

A26.1.19 Reg. 273 (Man 1974.26)
Coenholectypus cf. *subpentagonalis* (urchin) — D 22, H 17 (Figure 12.18)

A30.2.2 Reg. 902 (ROM 975.416.49)
urchin — circular, D 33, H 15

A30.2.2 Rec. 3
2 *Gryphaea* — 2 worn

A30.2.3 Rec. 8
2 *Gryphaea* — 2 ribbed, 1 large

A30.4.1 Rec. 6
bivalve internal mould — has bit of matrix, medium

A50.1.3 Rec. 18
53 *Gryphaea* — 3 ribbed, 1 large

5 bivalve internal moulds
trochiform gastropod internal mould — distal fragment

A50.1.4 Rec. 19
3 *Gryphaea* — 2 worn, 1 large
bivalve internal mould fragment

A50.1.4 Rec. 22
73 *Gryphaea* — 6 ribbed

A50.1.4 Rec. 22
Heterodiadema lybica (urchin*) — D 37, H 17 (Figure 12.6)
bivalve internal mould

A60.2.1 Rec. 21
Gryphaea — large
fusiform gastropod internal mould — broken at both ends, L 38.75

A60.8.4 Rec. 124
Gryphaea — has reddish-orange haematite

A60 Rec. 7, 9
2 *Gryphaea*

Topsoil

A8.7.1 <2> Rec. 90
Gryphaea — worn/weathered, very large

A60.3.1 Reg. 927 (ROM 975.416.43)
urchin (regular) — circular, D 25, H 9

A60.4.1 Reg. 934 (ROM 975.416.40)
urchin (regular) — L 43, W 37, H 23

Area B, Squares 1–4

Phase 3: occupation deposits associated with wall (late eighth century to c. 300/200 BC)

B2.7.12 (rubble)
ammonite fragment — large individual

B2.7.17 Rec. 63 (stones)
2 bivalve internal moulds — 2 worn, 2 medium

B3.3.14 Rec. 79 (loose ashy rubble)
bivalve internal moulds — worn, pinkish, H 18, W 24.25, T 14.25

Phase 5: floors and occupation (late eighth century to c. 300/200 BC)

B1.1.11 Rec. 50 (earth and rubble)
urchin

B2.7.2 Rec. 60 (fine ash and pottery)
Gryphaea — ribbed, very large

B2.7.4 Rec. 41 (fine ash and clay)
bivalve internal mould — H 47, W 38, T 36

B2.7.4 Rec. 45
Gryphaea — burnt black, ribbed, large, reddish stains inside

B2.7.4 Reg. 736 (Dub 266)
urchin — chipped, D 22, H 19

B2.7.5 Rec. 46 (hard clay)
2 *Gryphaea* — 2 ribbed, 1 worn, 1 very large (L 51+)

B2.7.5? Rec. 70
Gryphaea — ribbed, very large

B2.7.6 Rec. 45 (rubbly deposit)
Gryphaea — worn, large

B3.2.4 Rec. 104 (clay and pottery)
Gryphaea — worn, small/medium

B3.2.12 Reg. 278 (ashy earth) (Ash 1973.396)
?*Coenholectypus* sp. (urchin*) — almost circular, L 21.0, W 21.0, H 11.4

B3.3/6.5 Rec. 12 (collapse)
trochiform gastropod internal mould — burnt black, worn, broken at both ends, W 20

B3.6.11 Reg. 619 (ashy) (Ash 1974.291c)
?*Coenholectypus* sp. (urchin#) — almost circular, lime encrusted, cracked and chipped, L 24.7, W 24.4, H 10.5

Phase 8: fire and collapse (c. 300/200 BC)

B1.1.3, found amongst pots Reg. 24 (compact mortary deposit) (Kar)
?*Mecaster* sp. (urchin) — complete, L 35, W 31, H 22

B1.2.2 Rec. 54
Mecaster pseudofourneli (urchin*) — grey, L 21, W 21, H 14 (Figures 12.22–23)

B1.2.2 Rec. 60
urchin (discarded)

B1.2.2b Rec. 58
fusiform gastropod internal mould — lacks both ends

B2.6.3 Rec. 236
fossil in matrix

B3.1.3 Reg. 164 (Emory 1973.124)
?*Mecaster* sp. (urchin) — very worn, D 31, H 19 (Figure 12.21)

B3.2.2 Rec. 90 (BIAAH)
bivalve internal mould fragment

B3.6.2 Reg. 543 (Ash 1974.291d)
Mecaster sp. (urchin#) — broken in antiquity, pres L 30.5, W 26, H 15.1

B3.6.2 Rec. 11
Gryphaea in matrix — large

Unstratified

B2.2.3 Reg. 284 (Emory 1974.19)
?*Coenholectypus* sp. (urchin) — holed, D 23, H 17, hole D 4 (Figure 12.15)

B2.8.2 Rec. 74
bivalve internal mould — H 18.75, W 25, T 12.25

B2.8.6 Rec. 69
2 *Gryphaea* — 2 ribbed, 2 large

B2.9.12 Rec. 33
bivalve internal mould — H 20.75, W 26, T 12

B2.10.1 Reg. 1002
?*Mecaster* sp. (urchin) — a few chips, D 50, H 30

B3.4.19 Reg. 679 (Man 1974.71)
urchin — badly encrusted, D c38, H c29

B3.4.19 Rec. 49
trochiform gastropod internal whorl — broken at both ends, W 22.5

Topsoil

B2.1.1 trochiform gastropod internal whorl — broken at both ends, large, W 37

B2.7.1 Rec. 59
Coenholectypus larteti (urchin*) — D 27, H 16 (Figure 12.17)
bivalve internal mould — H 35.5, W 34.25, T 18.5

Area B, Squares 5–8

Phase 3: rectangular structure (late eighth century to c. 300/200 BC)

B7.5.12 Rec. 118 (deposit of earth, stones, mudbrick)
ammonite fragment — large

Phase 4: fill (late eighth century to c. 300/200 BC)

B6.3.16 Rec. 49
Gryphaea — with yellow haematite staining inside and out, ribbed, large

Phase 5: occupation associated with Phase 3 and 4 structures (late eighth century to c. 300/200 BC)

B6.2.5 Reg. 750 (deposit of earth, stones, mudbrick) (ROM 974.107.58)
urchin — slightly encrusted, L 32, W 30, H 20

B6.2.5 Rec. 65
7 *Gryphaea* — 4 ribbed, 3 large

B6.2.5 Rec. 67
4 *Gryphaea* — 1 ribbed, 3 large

B6.2.5 Rec. 71
5 *Gryphaea* — 2 ribbed (1 with yellow haematite inside, large)
bivalve internal mould — worn, medium

B6.2.6 Rec. 53 (clay surface)
Gryphaea — ribbed, medium
trochiform gastropod internal mould — distal fragment, worn, W 19.75

B6.3.6 Rec. 45 (clay surface)
4 *Gryphaea* — 4 ribbed, 2 large

B7.4.7 Rec. 19 (plaster floor)
Coenholectypus larteti (urchin*) — small, L 15, W 14.75, H 7.5

Phase 6: collapse (c. 300/200 BC)

B6.4.4 Rec. 50
6 *Gryphaea* — 1 ribbed, 3 large, 1 very large (L 58.25)

Unstratified

B5.13.4 Rec. 77
5 *Gryphaea* — 3 ribbed, 3 large
Mecaster sp. (urchin*) — W 36.5 (Figure 12.19)

B6.1.4 Rec. 54
3 *Gryphaea* — 2 ribbed, 2 large

B6.2.22 Rec. 65
Gryphaea — yellow ?haematite inside and out, ribbed, large, L 45.25

B6.5.1 Reg. 735 (ROM 975.416.45)
urchin — very small, circular, broken on one side, D 17, H 8

B6.6.1 Reg. 635 (Edin A.1987.368.1573)
urchin — L 26, W 27, H 16

B6/8.1 *Gryphaea* — broken, orange haematite inside

B7.1.2 Reg. 803 (BM 136081A)(1974)
Gryphaea — yellowish haematite inside, L 46, W 30

B7.1.2 Reg. 813 (ROM 975.416.46)
urchin — now has appearance of greenish stone, D 25, H 12

B7.1.5 Rec. 103
bivalve internal mould — worn, burnt on one side, H 18.75, W 19.25, T 9.75

B7.1.5 Rec. 105
Coenholectypus larteti (urchin*) — D 29, H 16 (Figure 12.16)

B8.1.1 Rec. 77
6 *Gryphaea* — 2 ribbed, 2 worn, 3 large
bivalve internal mould fragment — medium

B8.1.2 Rec. 85
bivalve internal mould — H 17, W 17, T 9.25

B8.1.2 Rec. 104
Heterodiadema lybica (urchin*) — D 30, H 13 (Figure 12.5)

B8.2.2 Rec. 86
4 *Gryphaea* — 4 ribbed, 2 large, 1 very large (L 50.75)

B8.2.2 Rec. 91
4 *Gryphaea* — 3 ribbed, 1 large

B8.2.2 Rec. 92
2 *Gryphaea* — 1 ribbed with pinkish haematite inside and out, 2 large

B8.2.2 Rec. 96
4 *Gryphaea* — 4 ribbed, 1 worn, 2 large

B8.2.2 Rec. 101
5 *Gryphaea* — 2 ribbed

B8.2.3 Reg. 837
block with ammonite, curved exterior, D 180, H 95

B8.3.1 Rec. 89
3 *Gryphaea* — 1 with orange haematite inside, 2 ribbed

B8.3.6 Rec. 20
2 *Gryphaea* — 1 ribbed, large

B8.4.3 Rec. 54
phymosomatid (urchin*) — D 28, H 12 (Figures 12.7–8)

Topsoil

B5.1.3 Rec. 48
unidentified fragment

B6.2.2 Rec. 108
gastropod (*Nerinea/Nerinella*) internal mould — broken at both ends, W 22

B6.2.3 Rec. 37
5 *Gryphaea* — 1 ribbed, yellow ?haematite inside and out

B6.3.2 Rec. 32
Gryphaea — ribbed, medium

B6.3.2 Rec. 34
Gryphaea — flat, medium

B6.4.1 Rec. 33
Gryphaea — large

B6.4.2 Rec. 35
2 *Gryphaea* — 2 medium

B7.1.1 Rec. 59
bivalve internal mould — small

B7.1.1 Rec. 62
Gryphaea (discarded)

Area B, Squares 9–10 (unstratified)

B9.1.3 Rec. 92
2 *Gryphaea* — 1 with yellow haematite

B9.1.5 Rec. 65
2 *Gryphaea* — 2 ribbed, 1 large

B10.1.1 Rec. 10
4 *Gryphaea* — 2 ribbed

B10.1.1 Rec. 31
18 *Gryphaea* — 4 ribbed, 4 large
2 bivalve internal moulds — 1 hinge area lacking distal, other small/medium

B10.1.4 Rec. 25
8 *Gryphaea* — 5 ribbed, 2 large

B10.1.7 Rec. 26
8 *Gryphaea* — 2 ribbed, 2 large

B10.1.14 Reg. 773 (ROM 975.416.39)
urchin — very damaged, D 46, H 32

B10.2.5–6 Rec. 102
2 *Gryphaea* — 2 medium
fusiform gastropod internal mould — broken at both ends, L 42, W 25

B10.2.9 Rec. 99
3 *Gryphaea* — 1 ribbed fragment, very large
bivalve internal mould — worn, H 42.25, W 40, T 29.75

B10.2.11 Rec. 74
2 *Gryphaea* — 2 with yellow haematite inside

B10.3.1 Rec. 51
4 *Gryphaea* — 2 ribbed

B10.3.2 Rec. 36
7 *Gryphaea* — 2 ribbed, 1 with yellow haematite inside
bivalve internal mould — H 16.75, W 15.25

B10.3 Rec. 5
Gryphaea — medium

B10.4.1 Rec. 58
6 *Gryphaea* — 1 ribbed, large
bivalve internal mould — worn, H 18.75, W 18.75

B10.4.1 Rec. 75
10 *Gryphaea* — 6 ribbed, 2 large, 1 very large (L 45+)

Square C3

C3.21.5 Reg. 131 Phase 4 (foundation trench) (late eighth century to c. 550 BC) (Kar)
urchin — large, chipped, some lime encrustation, L 59, W 52, H 35

C3.7.25 Rec. 17 Unstratified
gastropod (*Nerinea/Nerinella*) internal mould — broken at both ends
unknown fossil

Area C building

Phase 4: occupation (late eighth century to c. 550 BC)

C1.3.3c Rec. 70 (earth surface)
Gryphaea — ribbed

C2.2.6 Rec. 82 (earth surface)
3 *Gryphaea* — 2 ribbed

C2.2.6 Rec. 83
2 *Gryphaea* — 1 ribbed, 1 worn
fusiform gastropod internal mould — broken, medium

C11.1.19 <12> Rec. 3 (deposit of sand, stones, charcoal, pottery, bones, shell)
Gryphaea — flat, medium

C12.1.7+9 Rec. 25 (plaster floor)
2 *Gryphaea* — 1 worn, 1 large

C20.1.20 Rec. 40 (red clay, mudbrick and plaster)
2 *Gryphaea* — 1 large

C20.1.20 Rec. 42
2 *Gryphaea* — 2 ribbed, 1 large

C20.1.20 Rec. 46
2 *Gryphaea* — 2 ribbed, 1 large

C20.1.25 Rec. 52
7 *Gryphaea* — 5 ribbed, 2 large

C20.1.26 Rec. 53 (surface)
Gryphaea — flat, large

C20.1.27 Rec. 57 (brown earth, mudbrick, stones)
5 *Gryphaea* — 1 ribbed, large

C21.3.12 Rec. 50 (soil and ash)
Gryphaea — ribbed, large
bivalve (venerid) fragment in matrix

C21.3.13 Reg. 1248
urchin (regular) — D 22, H 11

Phase 6: occupation (c. 550 to 300/200 BC)

C10.3.4 Rec. 93 (soil, rubble and charcoal) (BIAAH)
bivalve internal mould — flat, oval, 27 x 26

C11.4.3 <7> Rec. 69 (earth surface)
Gryphaea — ribbed, medium

C11.4.3 Rec. 79
Gryphaea — ribbed, large

C11.4.3 Rec. 80
Gryphaea — medium/large

C12.1.5 Rec. 102 (earth floor)
bivalve internal mould — pinkish, H 11.25, W 11.5

Phase 7: collapse (c. 300/200 BC)

C1.4.2 Rec. 253
stone with fossil impression

C11.1.4 Rec. 88
bivalve internal mould — H 19, W 18.25, T 8.75

Unstratified

C10.5 Rec. 32
Gryphaea — medium

C10.6.2 <24> Rec. 24
2 *Gryphaea* — 1 ribbed, large

C10 Wall B Rec. 95 (BIAAH)

2 bivalve internal moulds — 2 oval, flat, 28.5 x 27.5, 18.5 x 20

C11.1.3 Reg. 172 (Kar)
Coenholectypus sp. (urchin) — slightly chipped in antiquity; register says 'base has been polished completely flat and shows a circular pattern' (said to be man-made), D 24, H 11 (Figure 12.13)

C14.3.2 Rec. 23
Gryphaea — large

C14.3.2 <2> Rec. 14
3 *Gryphaea* — 1 ribbed, 2 large

C14.3.3 Rec. 22
2 *Gryphaea* — 1 ribbed, 2 large

C14.3.4b <12> Rec. 7
8 *Gryphaea* — 2 ribbed, 4 large

C14.3.4b <14> Rec. 15
2 *Gryphaea* — 1 ribbed, large

C14.3.5 Rec. 24
2 *Gryphaea* — 1 ribbed, large

C20.3.2 Rec. 77
Gryphaea — ribbed, large

C20.3.2 Rec. 84
Gryphaea — red haematite staining all over, large

C20.3.3 Rec. 81
Gryphaea — yellow haematite inside, medium

C20.3 Rec. 35
Gryphaea — red haematite staining all over, large

C20.3 Reg. 1259
?*Mecaster* sp. (urchin) — nearly complete, D 50, H 30

C23.1.2 Rec. 64
3 *Gryphaea* — 2 ribbed

Topsoil

C10.1.1 Rec. 79
gastropod (*Nerinea/Nerinella*) internal mould section

C10.1.1 Rec. 91
2 bivalve internal moulds — worn, 22 x 20; flat, oval, 29.5 x 27

C10.5.1 <3> fusiform gastropod internal mould — slightly broken, L 55, W 25.25

C10.5.1 <9> 2 *Gryphaea* — 1 ribbed, large

C10.5.1 <12> Rec. 61
8 *Gryphaea* — 4 ribbed, 1 large

C10.5.1 <18> Rec. 66
3 *Gryphaea* — 2 ribbed, 1 large

C10.5.1 <20> Rec. 71
4 *Gryphaea* — 4 ribbed, 1 very large (L 53.75)

C10.5.1 <33> Rec. 81
2 *Gryphaea* — 2 ribbed, 1 large

C10.5.1 <35> Rec. 86
5 *Gryphaea* — 1 with yellow haematite inside, 1 ribbed, 3 large
bivalve internal mould — pinkish, H 31.75, W 25.75, T 19

C10.5.1b Reg. 1218
?*Mecaster* sp. (urchin) — D 27, H 16

C11.4.1 <1> Rec. 44
bivalve (venerid) fragment in matrix

C11.4.1 <2> Rec. 49
17 *Gryphaea* — 1 with red haematite inside, 1 ribbed, 5 large

C11.4.1 <3> Rec. 54
Gryphaea — ribbed, large

C11.4.2 <5> Rec. 62
3 *Gryphaea* — 1 with red haematite inside, large

C22.1.1 Rec. 63
2 *Gryphaea* — 1 large

C23.1.1 <1> Rec. 59
9 *Gryphaea* — 1 with red haematite inside; 1 ribbed, large

Square D2

D2.7.1 Rec. 130 Phase 6 (make-up for floor) (BIAAH)
bivalve internal mould — H 32.75, W 26

D2+3 Reg. 468 Unstratified (Ash 1974.291b)
urchin — surface slightly chipped, slight lime encrustation, L 28.6, W 25.7, H 19.5

Square D3

D3.10.10 Rec. 125 Phase 3 (late eighth century to c. 550 BC) (hard brown earth)
Gryphaea — flat

D3.3.10 Rec. 47 Phase 5 (late eighth century to c. 300/200 BC) (gritty soil and ash)
Gryphaea — some haematite inside, small

D3.6.2 Reg. S.32 Phase 10: collapse (c. 300/200 BC) (L: NMGM 1993.180.136)
urchin — circular, complete, D 40, H 21

Square D4 (unstratified)

D4.1.11 Reg. 686 (ROM 974.107.45)
Mecaster ?fourneli (urchin) — L 28, W 26, H 18 (Figure 12.20)

Area M (unstratified)

M2.1.4 Rec. 66
fusiform gastropod internal mould — distal fragment, small

M2.1.7 Reg. 771a (L: NMGM 1993.180.17)
urchin — ½ preserved, D c30, H 11

M2.1.7 Reg. 771b (Emory 1974.16)
urchin — D 34, H 22

M2.1.10 Rec. 93
Mecaster fourneli (urchin*) — slightly broken, inside.of test filled with sparry calcite, L 30.75, W 28.75, H 27.5
bivalve internal mould — H 24.25, W 27.25

M2.4.9 Rec. 84
Gryphaea

M2.18.8 Reg. 770 (Ash 1974.291a)
urchin — complete, L 30.6, W 28.9, H 12.7

M3.1.4 Reg. 804 (Dub 265)
urchin — slightly chipped, encrusted, D 25, H 17

M3.1.4 Rec. 82

Gryphaea — ribbed
bivalve internal mould — small
M3.1.5 Rec. 814
unknown fossil — broken, L 37.75, W 27.25

No context (ROM 974.107.9)
urchin — chipped, L 19, W 17, H 11

Ain Janin (presented by Abu Sulayman) Reg. 1246 (Kar)
urchin (regular) — D 39, H 29

Gryphaea counts are of fragments
All measurements in millimetres. Measurements and some photographs for Ash = Ashmolean Museum kindly provided by P.R.S. Moorey and R. John.
Photograph seen by Kenneth J. McNamara, * Personally examined by Kenneth J. McNamara

Recent marine invertebrates

Introduction

The 1971–4 and 1980 excavations at Busayra produced 324 marine invertebrate remains with 21.1% *Tridacna*, 18.2% *Cypraea*, 16.4% *Lambis* and 12% *Pinctada*.

The distribution of the marine invertebrates by period is: 30 late eighth century to c. 550 BC (9.2%), 20 late eighth century to c. 300/200 BC (6.2%), 21 c. 550–300/200 BC (6.5%), 32 c. 300/200 BC (9.9%), 196 unstratified (60.6%), and 25 topsoil (7.7%). Almost 70% of the material is without stratigraphic context.

The site is 140 km. from the Red Sea and 145 km. from the Mediterranean Sea, both distances as-the-crow-flies. All of the marine shells are to be considered as from the Red Sea, although the four *Glycymeris* and one *Nassarius* could possibly have come from the Mediterranean Sea. A detailed description of the Recent marine invertebrate collection is provided in Table 12.2.

Tridacna *(Giant clams)*

The most important specimen of the 65 remains of this bivalve genus is the engraved shell (B7.5.9, Reg. 1120), fully described below. The only other worked piece is a distal fragment which has been ground-down on the left side of one ridge for the length of the fragment and also in the depression to the left (C3.21.4, Rec. 68). It is unstratified, but may be part of the late eighth century to c. 550 BC C3.21.2 valve noted below.

There are five fragments dated to the late eighth century to c. 550 BC, including two from C3.21.2, both probably from the same valve. The two fragments from C11.1.16 and C11.1.19 may also be from the same valve. There is also an almost complete *Tridacna squamosa* (Lamarck, 1819) from C21.3.13 (Reg. 1247, Figure 12.30b).

There are two late eighth century to c. 300/200 BC fragments: B3.2.5 (fresh) and B3.2.7 (worn). There is one c. 550–300/200 BC *T. squamosa* fragment (C12.5.4). From c. 300/200 BC comes a *T. squamosa* fragment of a large individual (B7.5.2).

There are 53 unstratified remains (including the ground-down example noted above), mainly *T. squamosa*, including 40 fragments from A3.1 (23 from A3.1.12, Reg. 350; 17 from A3.1.10, Reg. 119, Figure 12.31), and four from B2.2. One has some yellow colour inside (B8.2.2, Reg. 815, Figure 12.32). One shell is rather complete and the interior is heavily lime encrusted (B8.2.3, Reg. 836, Figure 12.30d). One shell is water-worn (B8.2.1, Reg. 835). There are two topsoil remains, one a very large *Tridacna maxima* (Röding, 1798) fragment (B6.2.4). Brandl (1984a: fig. 4a, c) has illustrated two unworked *Tridacna* shells from Busayra.

There is also one unstratified worked elongated bead of *Tridacna* or *Lambis* which is broken down the length and has a hole drilled from both sides which does not meet in the middle (A5.4.6).

The engraved shell (DSR/CS)

The engraved *T. squamosa* is described here as well as comparanda from the Levant. For recent discussions of these engraved shells, see Reese 1988a, Reese and Sease 1993, and Brandl 2001. These shells all probably date between the seventh century and early sixth century BC.

The Busayra example, Reg. 1120, was found in 1974 in B7.5.9 in soft earth and ash in the Phase 5 occupation of a house

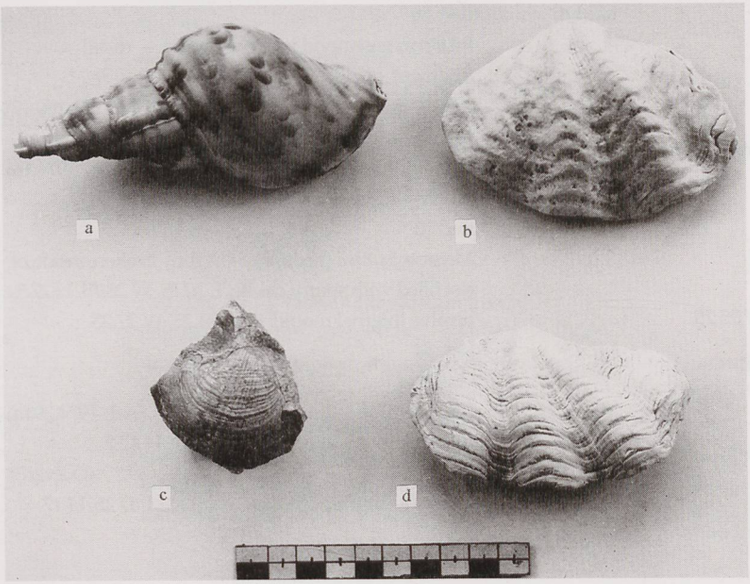


Figure 12.30: a: Charonia tritonis — *broken, tip broken, small hole at apex, larger hole 40 mm. below apex, L 125, W 54 (B8.2.2, Reg. 821, Edin A. 1987.368.1553, unstratified). b:* Tridacna squamosa — *complete, slight chipping near hinge and at distal, L 218, W 122 (C21.3.13, Reg. 1247, Kar, late eighth century to c. 550 BC). c: fossil bivalve (venerid) in chalky matrix — oval, 52 x 51 x 37 (A1.18.2, Reg. 548, WM 818, unstratified). d:* Tridacna squamosa — *rather complete, interior heavily lime encrusted, H 95, W 57 (B8.2.3, Reg. 836, Emory 1974.18, unstratified)*

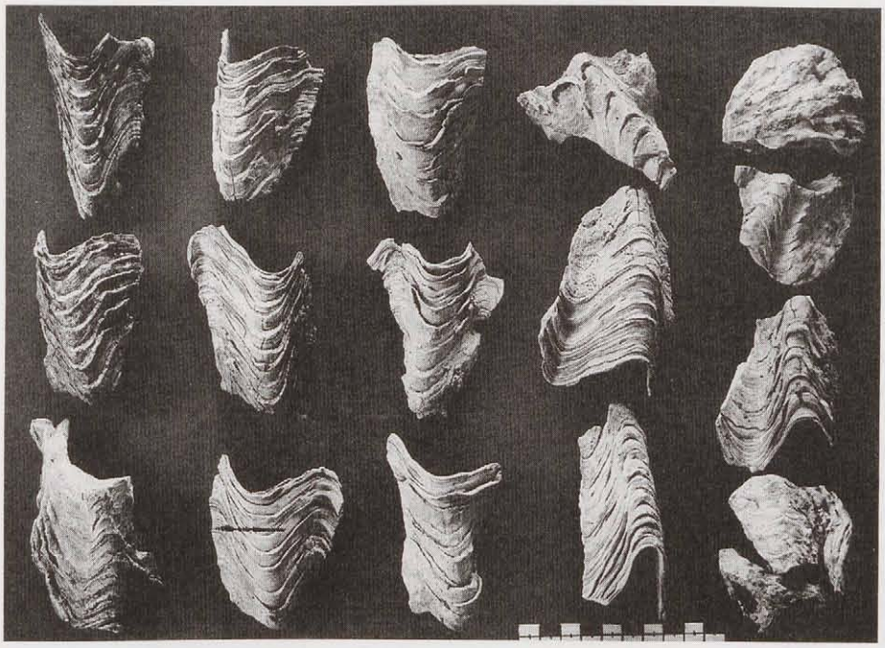


Figure 12.31: Seventeen Tridacna *fragments (A3.1.10, Reg. 119, Kar, unstratified)*

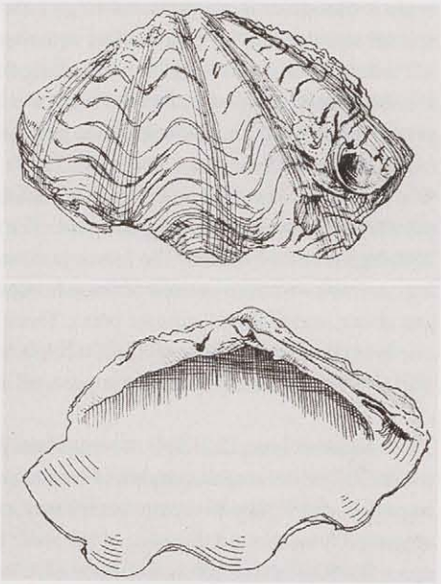


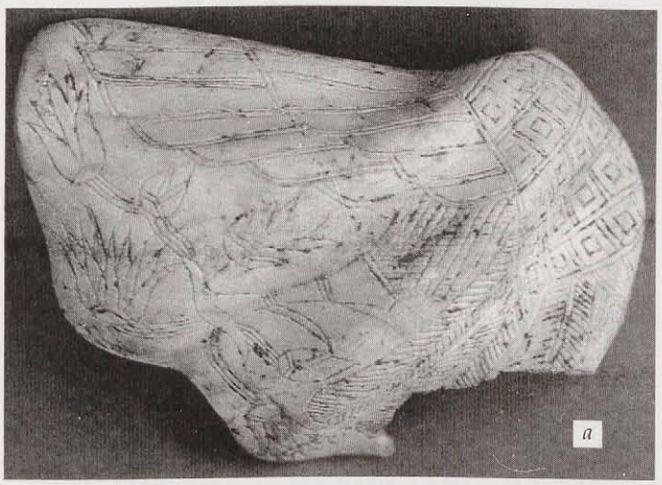
Figure 12.32: Tridacna *– yellow colour inside, one end chipped, H 51, W 153 (B8.2.2, Reg. 815, Dub 263, unstratified)*

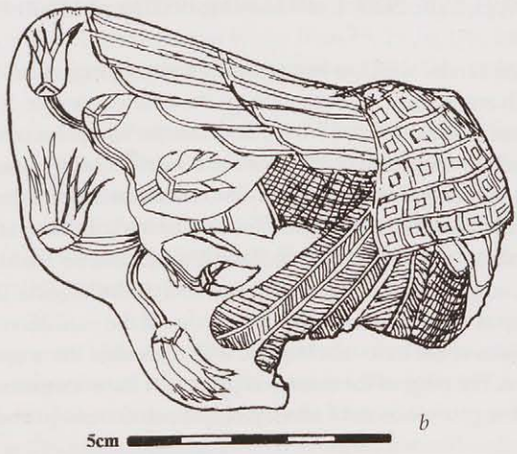
associated with Phase 3 and 4 structures. By its context it is dated to between the late eighth century and c. 300/200 BC. It is now in the Amman Museum.

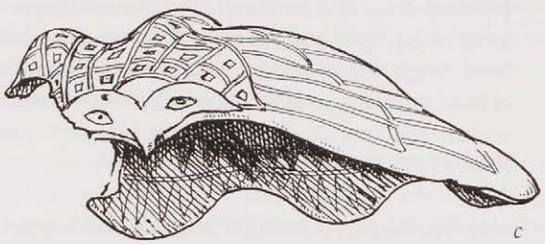
The shell is broken and has a preserved maximum width of 82 mm. and a height of 77 mm. While it has been noted and illustrated in the past (Stucky 1974: 21; **Bennett** 1977: 7, pl. 1B; 1978: 170, fig. 4A; 1982: 187, fig. 3a; 1983: 13; Brandl 1984b: 18 n 18 [as made from *T. maxima*], 19, fig. 13; 2001: 54, 60, fig. 6b; Bienkowski 1994: 256, fig. 2a), it has never been described fully.

DESCRIPTION

The exterior (Figure 12.33a, b) has an engraved bird of prey. Much of the proper right side of the bird is missing where the shell is broken. The head of the bird is at the umbo with two almond-shaped eyes, accentuated by two curving lines above the eyes and a hint of the top of the head above them. The edge of the shell suggests the bird's beak (Figure 12.33c). The bird's







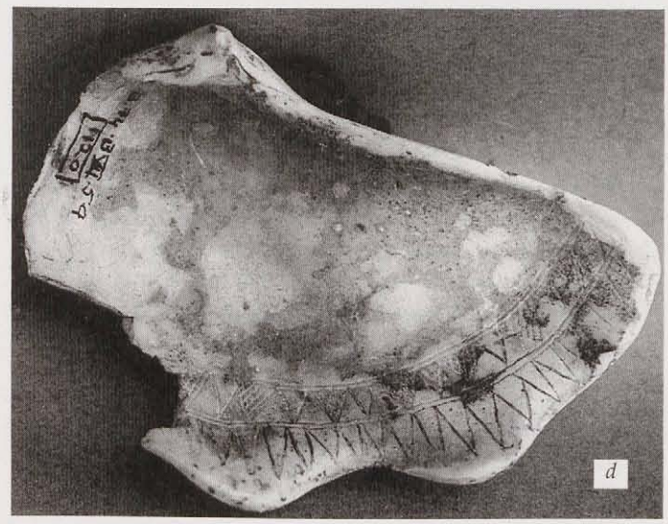


Figure 12.33: Engraved Tridacna squamosa *(B7.5.9, Reg. 1120, Amman, late eighth century to c. 300/200 BC)*

body is triangular in shape, consisting of about 23 unevenly spaced squares, each with a smaller square inside it. The proper left wing extends out from the body along the hinge and consists of two rows of feathers. All but three feathers of the proper right wing are missing. Three long tail feathers extend from the lower point of the body. The bird's legs are on either side of the tail. The proper left leg is complete, but only the top portion of the proper right leg is extant. The upper portion of both legs is cross-hatched. The lower portion of the proper left leg narrows with two groups of three horizontal incised lines just above and at the narrowest point. Three lotus blossoms and one lotus bud sprout from the foot while a longer tendril with a bud and blossom extend from the talon on the left.

The interior (Figure 12.33d) is decorated only along the edge of the shell. The decoration consists of two registers. The innermost register is defined by two pairs of closely spaced parallel engraved lines around the edge of the shell. Inside the defined space is a row of triangles; cross-hatched triangles alternate with solid, undecorated ones. A series of undecorated triangles extends from the outermost line to form the second register.

The decoration belongs to Stucky's Special Group where the umbo is a predatory bird's head. Sometimes the exterior depicts the bird's legs, outstretched wings and tail (Stucky 1974: fig. 7) while in other cases only the umbo head is decorated and the rest of the shell is smoothed and polished. The Busayra shell exhibits traces of a black substance in the engraved lines on both sides. Other engraved *Tridacna* also have some colouring (Stucky 1974: 97), including the Arad and Amman (Great Temple) examples noted below.

COMPARANDA

Only six other examples of this bird-headed type are known:

a). from the Amman Citadel, exterior smoothed and polished, decorated bird head at umbo, small eyes on the inner umbo, three long hanging 'curls' on either side of the head, single line on exterior around head, feathers at back of head indicated by seven long roughly parallel lines, undecorated interior; Zayadine 1986: 19 n. 25; Caubet and Poplin 1995: 492 n. 21; Routledge 1997: 37);

b–c). two fragments from Tel Miqne-Ekron in Israel (both described below);

d). from Assur in Iraq (exterior much smoothed and polished, bird head at umbo, beak set at an angle, inlays or large round eyes now lost, double band with divisions on exterior around head, feathers at back of head indicated by eight poorly incised lines, undecorated interior; in Vorderasiatisches Museum, Berlin [VA 11505], Stucky 1974: 24, no. 4, pl. IV, fig. 7);

e). from Susa in Iran (left leg and overlapping tail feathers of the central bird, undecorated interior; in Louvre, Paris [Sb 9203], Stucky 1974: 53, no. 83, pl. LVII; Amiet 1971: 11, 1976: 185–86 no. 3; Caubet 1992: 280; W 58, H 42 mm.);

f). one in a private collection in Japan (bottom edge of bird's right wing on upper right edge; a crudely depicted lower right leg and claw of the central bird along the left side of the shell fragment, a crowned sphinx and palmette tree between the bird leg and wing fragment; Reese and Sease 1993: 111–12 [A-M 89], fig. 4a–b, e).

THE OTHER WORKED *TRIDACNA* FROM SYRO-PALESTINE

In addition to the Busayra and Amman Citadel examples described above, there are a number of other worked *Tridacna* from Syro-Palestine. These are described briefly here.

Tel Miqne-Ekron — shell 1): an engraved *T. squamosa* of Stucky's Special Group, excavated in 1985, Area III (Lower City), SE 27.87, locus 27003 (mudbrick debris, Phase IB [last quarter seventh century BC], Reg. 504; Israel Antiquities Authority no. 99-2566; Brandl 2001, no. 1). The umbo is decorated with the head of a bird of prey. The rest of the shell is undecorated, but the exterior is smoothed and polished. The bird has large circular eyes with unworked interiors (probably once inlaid), and eyelashes under the eyes. On the proper left side of the head there are three 'curls'; on the proper right side only one curl remains. Feathers on the back of head are indicated by a trapezoid enclosing five incised lines with two probably missing. The interior is undecorated. The shell measures 48 x 41 x 25 mm. (personal analysis).

Tel Miqne-Ekron — shell 2): an engraved *T. squamosa* excavated in 1985, Area I (Upper City), NE 1.11, locus 1003 (topsoil debris), Reg. 6538; IAA no. 99-2567 (Brandl 2001, no. 2). The fragment consists of two smoothed ridges. On the exterior, three tail feathers of a central bird extend from a small curved portion of the body and cover the entire length of the shell. To the left of the feathers is part of the upper left leg and the cross-hatched bird body. Between the left-most tail feather and the left leg is a tiny portion of a lotus bud. The engraving is of high quality and the shell is unworn. There are traces of red pigment on the lower end of the tail. Any interior decoration along distal end is not preserved. The fragment measures 49.25 x 46.75 mm. (personal analysis).

Tell el-Far'ah (South) (=Beth Pelet): from south end of tell, excavated in 1927–8. On the exterior, the right arm of a winged woman extends across the shell. The arm is decorated with unevenly spaced boxes, some with smaller boxes inside them. A lotus bud extends from the top of the arm. The feathers of the wing extend from the bottom edge of the arm. The end of a head feather is to the left of the arm. The interior is undecorated (L 63.5, W 29.8, T 17; Petrie Palestinian Collection accession number EVII.166/1; personal communication R. Sparks; Stucky 1974: 55, no. 87, pl. LVIII; Starkey and Harding 1932: 30, pl. LXXIII: 82).

Tell Arad : the shell has been restored from six fragments, two of which are burnt. The decoration on the exterior consists of the bottom edges of a set of wings. Between the wings is a central medallion consisting of a central circle surrounded by concentric circles decorated with triangles. The outermost layer of the medallion is alternating lotus flowers and buds. Between the medallion and the right wing, there is a palmette on the lower right edge. In the corresponding position on the left side, there is the tip of a lotus bud. On the upper edge of the medallion there are parts of the torso of a human, with a possible left arm of the figure. The edge of the interior is decorated in two registers. The inner register consists of alternating plain and cross-hatched triangles. The outer register has two facing and crouching

winged sphinxes among lotus flowers and buds. The inner left sphinx looks at what remains of a plant, possibly a palm tree (Stucky 1974: 32, no. 25, pls. XV–XVI; Brandl 1984b, 1985). On display in the Israel Museum, Jerusalem.

Jerusalem: two engraved fragments from the Shiloh excavations are to be published by Brandl. One is from G2063, Locus 703, a gravel layer, and the other from G4421, Locus 781, fill (Mienis 1992: 127). There is also a partly polished fragment of the sixth-fourth centuries BC from G4429, Locus 950 fill, possibly like the Busayra C3.21.4 piece described above.

Shechem: the German excavations of 1913-34 produced a fragment of an engraved *Tridacna* now in Leiden. The exterior preserved the back portion of the body of a couchant sphinx, including parts of a wing. Below the sphinx is a lotus blossom. The interior decoration depicts a stylised plant or tree, which consists of the top of an oblong that has two registers, both of which are cross-hatched. Long stylised branches with cross-hatched oblong elements on their ends extend from the outer edge of the oblong (Kerkhof 1969: 91, fig. 27: 6; Geva 1980 [note exterior and interior illustrations transposed]).

Amman (Great Temple on the Citadel): an externally and internally polished *Tridacna maxima* (L 208, W 140 mm.). The two ?drilled eyes are inlaid with glass and pigmented with yellow faience paste and there are traces of red pigment below the left eye. There are traces of yellow pigment in the interior of the shell. The shell comes from Iron II levels (Koutsoukou [with Aplin] 1997: 147–8; Caubet and Poplin 1995: 492 n. 21, fig. 2: 7; Routledge 1997: 37).

Alalakh (Amuq/Hatay, Turkey), a surface find. On the exterior, there is a lotus blossom. To its left there is part of a palmette and to its right the leg of an animal. On the interior, there is the left side of a kneeling youth holding something in his hand. Below the arm there is a lotus blossom (Stucky 1974: 31 no. 24, pl. XV; Antakya Museum, no. 7115, AT 38/6).

Tell Sekin (Syria): a siren-headed engraved *Tridacna* (personal analysis).

Near Byblos (Syria): a lion-headed engraved *Tridacna* (personal analysis).

Note that the complete engraved *Tridacna* said to come from a grave in Bethlehem (Bennett 1967: 199, pl. XXIc; Stucky 1974: 32, no. 26, pls. XVI–XVII; Brandl 1984a: 18 ns 18, 19, fig 17b, 1984b: 78 n. 6) actually has no provenance (Reese 1988a: 39 n. 28).

No provenance: a *T. squamosa* now in the Bible Lands Museum, Jerusalem (BLMJ 551; on display) is carved in the form of a stylised swimming Leatherback turtle, *Dermochelys coriacea* (Linnaeus, 1766) (Mienis 1984). The original publication of this piece (Anonymous 1992: '92) described it as a flying bat. Brandl (2001: 57, fig. 91) describes it as a bee.

The engraved *Tridacna* can be compared to the corpus of stone palettes which have a human head and clothing similar to that found on figures on the *Tridacna* shells. Most of these palettes are now in private collections and museums, but a few come from actual excavations, in Jordan: Amman Citadel, Umm al-Biyara, Karak, Ghrareh and Tawilan (Bennett 1967; Sease and Reese 1994; Bennett and Bienkowski 1995: 85, figs 9.15: 1, 9.60, and a less decorated example comes from an Iron II grave at Tel Jezreel in Israel (Ussishkin and Woodhead 1997: 33–4, fig. 27).

OTHER UNWORKED *TRIDACNA*

Tawilan (90 km. from the Red Sea) produced 15 *Tridacna* remains, with six identifiable as *T. squamosa*. At least nine are fragmentary, and four examples were discarded (Reese 1995b: 93, 94).

Ghrareh (70 km. from the Red Sea) produced four *T. squamosa* and one *T. maxima* of the seventh/sixth century (Reese 1988a: 40).

Umm al-Biyara (100 km. from the Red Sea) produced six *Tridacna* fragments of two shells in two deposits (one burnt) from two mid seventh-century deposits (Reese 1988a: 40).

The Parr excavations at Petra (100 km. from the Red Sea) produced two *T. maxima* (Reese 1988a: 40), one containing something in the interior.

Wadi Tbeik in the Negev (75 km. from the Red Sea) produced a shell dating between 850 and 600 BC (Reese 1988a: 40).

Iron Age Kadesh-barnea in the eastern Sinai (130 km. from the Red Sea) produced some *Tridacna* (Bar-Yosef Mayer 2000a: 223).

Tel Masos (200 km. from the Red Sea) yielded 40 marine invertebrates from the Iron I, with 11 *Tridacna* (Reese 1983: 224).

Tell Jemmeh (210 km. from the Red Sea) produced two valves and one fragment dating between 675 and 550 BC (Reese 1988a: 40).

Tall Jawa (South) in the Madaba Plains (255 km. from the Red Sea) produced two *Tridacna* fragments. From Stratum VIII (early Iron Age II; ninth-eighth centuries BC) comes a complete umodified valve. From Stratum VII (late Iron Age II; late eighth to seventh centuries BC) comes a body fragment with two cut parallel sides (Reese 2002a).

The Kenyon excavations at Jerusalem (270 km. from the Red Sea) produced five *Tridacna* with two presently dated: one c. 587 BC and one second-first centuries BC (Reese 1995a: 268, 275–76). The other three fragments, not yet published, come from Area F (603.8; 1962 excavation), Area SI (5.2a; 1966 excavation, early Ottoman with much residual material) and Area SIV (unstratified) (personal analysis). The Israeli excavations here produced 17 *Tridacna* remains of two species, including: late seventh century to 586 BC (one), sixth–fourth centuries (three, one partly polished fragment), fourth–second centuries (one), second-first centuries BC (seven) and Roman (five) (Mienis 1992: 128).

Tel Miqne (280 km. from the Red Sea) produced one unmodified *T. squamosa* (I NE 3.367, loc. 3072, Phase VI [Iron I, last two-thirds twelfth century]), excavation date 6/25/86), small, complete, fresh, right, H 68, W 119.25 mm. (Reg. 11019).

Tell Ta'annak in the northern West Bank (425 km. from the Red Sea) produced three *T. maxima*, with two Iron II and one Hellenistic (Ezzughayyar and Al-Zawahra 1996: 77).

Ras Shamra in Syria (650 km. from the Red Sea) produced one undated *Tridacna* now in the Louvre (Reese 1988a: 40).

The *Tridacna* fragments or complete valves may have been used as small containers for foodstuffs or ornaments, or may have been the raw material for engraved shell objects.

Cypraea *(Cowries)*

There are 56 cowries from Busayra. Six come from B2, five from C11 and four from A1. Most are referable to *Cypraea annulus* (Linnaeus, 1758), a Money cowrie. There are nine late eighth century to c. 550 BC with four from C11.1. One from C11.1.19 has an open dorsum and one from A1.11.6 has a ground-down dorsum. There is one from late eighth century to c. 300/200 BC. There are six dated to c. 550 to 300/200 BC, including three from A5.11.6 (one with an open dorsum), and two from A1.10.11 (one with an open dorsum). There are two dated c. 300/200 BC from B3.6.2.

There are 23 unstratified *C. annulus*, with three from the B7.1.2 pit (one burnt), three from C21.1 (all slightly burnt), two from C3.7.2 (one holed, one slightly burnt), two from D2.8, and two from A21. Three of these have a ground-down dorsum (B2.10.5, B4.1.2, C14.3.4b) and three have a more irregular open dorsum (B2.8.1, B8.1.1, B8.3.11). There are three from topsoil, one with an open dorsum (B3.6.1).

There are three *Cypraea tigris* (Linnaeus, 1758) (Tiger cowrie) fragments, with one late eighth century to c. 550 BC (A20.6.7) and two unstratified (A1.11.15, B2.1.3). There is one *Cypraea moneta* (Linnaeus, 1758) (Money cowrie) with an open dorsum from topsoil (C10.5.1).

There are nine unidentified cowries, eight of which were discarded shortly after excavation, including one late eighth century to c. 550 BC, two late eighth century to c. 300/200 BC, two c. 300/200 BC, three unstratified (one with an open dorsum), and one from topsoil.

At Tawilan, 27 of the 68 marine shells (40%) are *Cypraea*, mainly *C. annulus* (Reese 1995b: 93). Ghrareh yielded an unmodified *C. annulus* and a fragment of a *C. tigris* (personal analysis). At Umm al-Biyara there are 119 shells with 104 cowries (87.4%), also mainly *C. annulus*. They are found in groups of 35, 32, and 11 and are largely unholed. The Hammond excavations at Petra produced a number of holed *C. tigris*.

At Kenyon's excavations at Jerusalem there are six *C. annulus*, five with a ground-down dorsum and one with an open dorsum. There are four from Area A, with two second-first centuries BC (Reese 1995a: 267, 275).

There are five *C. annulus* from the Israeli excavations at Jerualem of the tenth century (complete), eighth century (two), and c. 586 BC. All but one have an open dorsum (Mienis 1992: 123).

An eighth to fourth-century tomb at Um Udhaina, Amman, produced four cowries with at least two stringeable (Hadidi 1987: 120, fig. 12: 1, 3).

Tell Ta'annak in the northern West Bank produced one Iron II *C. moneta* (Ezzughayyar and Al-Zawahra 1996: 77).

Iron Age Kadesh-barnea in the eastern Sinai produced 128 *C. annulus*, about one-third of all shells found, including some holed examples (Bar-Yosef Mayer 2000a: 223, fig. 4).

The shrine at Horvat Qitmit in the Negev produced 18 *C. annulus*, 17 of which have a ground-down dorsum and one with an irregular hole in the dorsum (Mienis 1995: fig. 6.6).

The late eighth to sixth centuries at Tall Šeḥ Hamad in Syria (850 km. from the Red Sea) produced a *C. annulus* with an open dorsum while an unstratified deposit produced a *C. moneta* with a ground-down dorsum (Reese 1991a: 136, figs. 84, 90).

Red Sea cowries are known from numerous sites in the Levant, Mediterranean basin, and Europe (Reese 1991b: 184-9). Almost all are to be considered personal ornaments.

Lambis *(Spider conch or Scorpion shell)*

There are 24 *Lambis truncata sebae* (Kiener, 1843) general body fragments, as well as 29 worked discs. Of the general fragments, there is one late eighth century to c. 550 BC internal body fragment, two late eighth century to c. 300/200 BC body fragments, one c. 550 to 300/200 BC body fragment, three c. 300/200 BC fragments, with one water-worn internal body fragment illustrated (B7.4.4, Reg. 910, Figure 12.34). There are 16 unstratified samples, with two water-worn, five worn, and two burnt grey. Two unstratified pieces could be blanks for worked discs (C11.1.15, C12.3.3). There is also one fresh body fragment from topsoil.

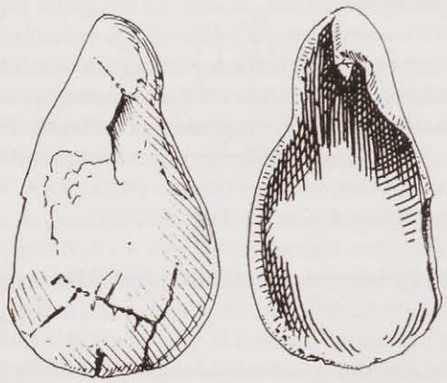


Figure 12.34: Lambis *internal body fragment – water-worn, L 98, W 57, H 30 (B7.4.4, Reg. 910, ROM 975.416.52, c. 300/200 BC)*

Tawilan produced a *Lambis* with a worked apex, a probable shell trumpet (Reese 1995b: 95, fig. 10.1). Ghrareh produced a partially burnt *Lambis* with an open apex, possibly also a shell trumpet.

Three *Lambis* come from Jerusalem Area A, with one fragment of the eighth century BC, one worked object of c. 587 BC, and the third piece also probably Iron Age (Reese 1995a: 269, 274–5, fig. 4).

There are six *Lambis* from the Israeli excavations at Jerusalem including eighth century (one with the beginning of a man-made hole), sixth–fourth centuries (with incised design, Brandl 1984: 17, figs. 1e, 2e, 3a, 3c, 7b [as *Tridacna*]; Mienis 1988: 431, fig. 2), and second–first centuries BC (three, one heavily polished) (Mienis 1992: 123).

Discs

There are 29 *Lambis* discs, ranging in diameter from 11 to 29 mm. Most are unstratified and from Area A. Illustrated examples include A1.24 [Reg. 455, Figure 12.35], A3.2 [Reg. 155, Figure 12.36], A60 [Reg. 1117, Figure 12.37]). There are six from A1.24, 13 from A.13, and three from A60. Of the few datable examples there is one late eighth century to c. 550 BC (C11.1.16), one c. 550–300/200 BC (C12.3.2, Reg. 288, Figure 12.38) and two c. 300/200 BC (B3.1.10, Reg. 319, Figure 12.39; B3.7.1).

The *Lambis* discs can best be compared with the 23 Busayra discs of pottery, stone, bone and wood which are similarly sized (11-30 mm. in diameter). All the non-shell discs are discussed in more detail in Chapter 10. There are three late eighth century to c. 550 BC discs (two pottery [one with slight indentation in centre], one bone), one late eighth century to c. 300/200 BC (pottery), five c. 300/200 BC (all pottery [one with central hole]), four of unknown date (three pottery, one bone or shell), eight unstratified (three pottery, four stone [one rock crystal ?possible inlay; one slate], one bone), two topsoil (one stone, one wood). Discs made of shell (mainly) and other material are shown on Plate 10.5.



Figure 12.35: ?Lambis *disc – one side smooth, creamy colour and flat, other rougher, greyish and slightly lime encrusted, D 13, T 2.5–4 (A1.24, Reg. 455, BM 136078, unstratified)*

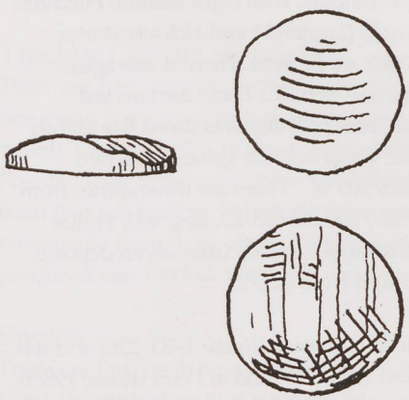


Figure 12.36: ?Lambis *disc – slightly concave on one side, convex on other, buff/beige colour, L/H 22.3, T4 (A3.2, Reg. 155, Ash 1973. 391, unstratified)*

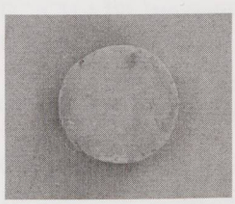


Figure 12.37: Lambis *disc – one side very flat, smooth and creamy coloured, other uneven and concave, ridges visible, grey, D 22–24, T 4.5–9 (A60, Reg. 1117, BM 136751, unstratified)*



Figure 12.38: ? Lambis *disc – shiny interior of shell on one side, buff exterior of shell on other side, L 16.5, W16.3, T 3 (C12.3.2, Reg. 288, Ash 1973.398, c. 500–300/200 BC)*

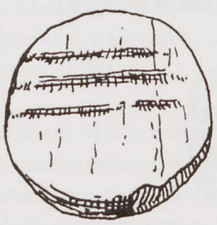




Figure 12.39: ?Lambis *disc – D 28, T 4 (B3.1.10, Reg. 319, Man 1974. 30, c. 300/200 BC)*

Pinctada *(Pearl oyster)*

There are 39 *Pinctada margaritifera* (Linnaeus, 1758) samples present. There are six worked pieces of nacre or mother-of-pearl. There is a disc of c. 550–300/200 BC (C11.4.7, Reg. 1304). Dating to c. 300/200 BC is a fragment which has rather rounded edges and may be a 'button' or inlay blank (C14.2.4, Rec. 64). There are three unstratified worked pieces: a disc (B7.1.2, Reg. 772), a 'button' decorated with an incised design and partially pierced (C14.2.5, Reg. 1084, Figure 12.40) and an unfinished ring fragment (D3.6.7, Rec. 100). These discs may in fact be inlays.

There are 33 samples with unworked *Pinctada* remains, including three samples dated late eighth century to c. 550 BC with two from C11.1.19. There is one fragment dated late eighth century to c. 300/200 BC There are three samples dated c. 550-300/200 BC with two from C10.2. There are five samples dated c. 300/200 BC. There are 16 unstratified samples, with two from A4.1, two from A20.10, three from C10–11 and three



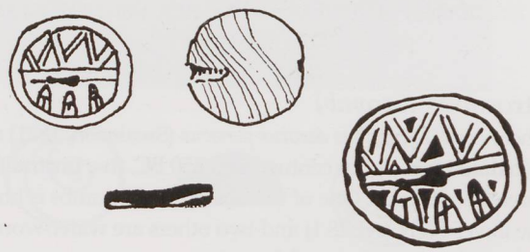


Figure 12.40: ?Pinctada *button – decorated with an incised design, partially pierced, but piercing appears to have gone wrong, breaking through the surface and damaging design, D 15, T 3 (C14.2.5, Reg. 1084, ROM 975.416.35, unstratified)*

from C14.3. There are five topsoil samples with three from C10.5.1.

There are 14 *Pinctada* from all periods from Israeli excavations at Jerusalem with single pieces from the tenth century, seventh century, and sixth-fourth centuries (Mienis 1992: 126). This shell was also worked to make inlays of various shapes. The Parr excavations at Petra produced a worked *Pinctada* semicircle.

Conus *(Cone shells)*

There are 14 *Conus*, including five *Conus ebraeus* (Linnaeus, 1758), the Hebrew cone. There are four from B7.5 and two from A20.10 and C11.1. There is one dated late eighth century to c. 300/200 BC, two late eighth century to c. 300/200 BC with one holed at the apex (B7.5.9, Reg. 1115, Figure 12.41 right) and another water-worn, two c. 300/200 BC with one holed apex (B7.5.6, Reg. 1065, Figure 12.41 left) and the other from a nearby deposit (B7.5.3, Figure 12.42). There are nine unstratified with three water-worn, four worn, and two with a holed apex (B2.10.1, B7.1.2).

There are two unstratified worked *Conus* or *Strombus* rings: one fragment (A8.1.2), and one worked but unfinished ring section (B10.3).

Ghrareh produced a water-worn *Conus* holed at the apex.

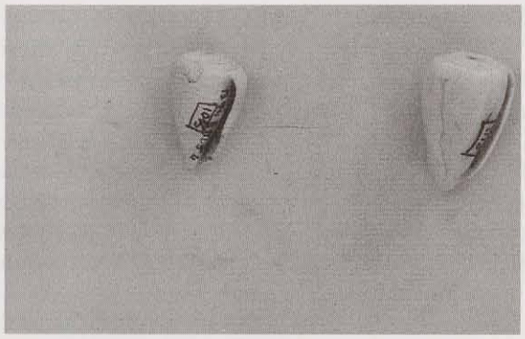


Figure 12.41: Left, Conus *– holed apex, L 25.8, W 16.5, hole 1.5 (B7.5.6, Reg. 1065, Ash 1975.410, c. 300/200 BC). Right,* Conus *– holed apex, L 30.5, W 20.3, hole 2.4 (B7.5.9, Reg. 1115, Ash 1975.392, late eighth century to c. 300/200 BC)*



Figure 12.42: Conus *– has colour, broken lip, slight lime encrustation, L 34, W 21 (B7.5.3, Reg. 926, Ash 1975.398, c. 300/200 BC)*

Strombus *(Stromb)*

There are 10 *Strombus decorus persicus* (Swainson, 1821) with two dated late eighth century to c. 550 BC, five unstratified, and three from topsoil. One of the unstratified strombs is holed in the lower body (A1.28.1) and two others are water-worn.

They are present at Umm al-Biyara and Petra (Reese 1988b: 261), and Ghrareh produced a water-worn *Strombus* holed at the apex.

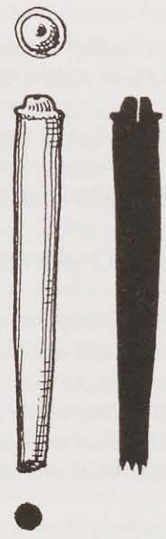


Figure 12.43: Echinoid spine – broken at tip, L 52, W 6 (B3.4.3, Reg. 483, L NMGM 1993.180.12, c. 300/200 BC)

Sea urchin

There are remains of 15 echinoids, with eight stratified urchins. Both *Phyllacanthus imperialis* (Lamarck) and *Heterocentrotus mamillatus* (Linnaeus, 1758) are present. There is one spine dated late eighth century to c. 550 BC. There are two test fragments and one spine from two deposits dated late eighth century to c. 300/200 BC. There are two spines from two deposits dated c. 550–300/200 BC. There are three spines from three deposits dated c. 300/200 BC (B3.4.3, Reg. 483, Figure 12.43). There are nine unstratified spines from seven deposits with two from A60 and four from C3.7.

Iron I Tel Masos produced one spine (Reese 1983: 226) and it is present at Tawilan (Reese 1995b: 96) and at Petra (Reese 1988b: 264).

Coral

There are 15 coral remains. The only worked piece is an unstratified broken or incomplete red coral bead from A5.3.6 (Reg. 28, illustrated on Plate 10.28).

There are three late eighth century to c. 550 BC corals (two *Stylophora pistillata* (Esper, 1795) [one water-worn, one C11.1.16]

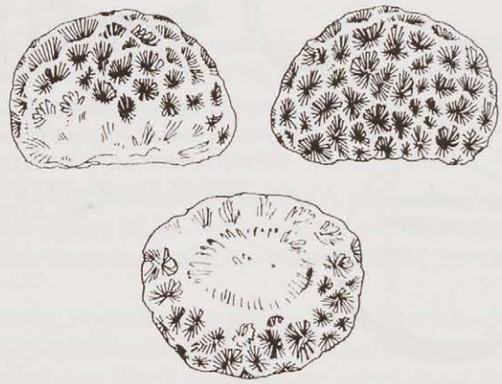


Figure 12.44: Favistes halicora *(coral) – 68 x 50 (C10.2.2, Reg. 759, Emory, c. 550–300/200 BC)*

and one water-worn *Pocillopora verrucosa* [Ellis and Solander, 1786] from C11.1.14). There are three coral remains from the c. 550–300/200 BC C10.2.2 deposit, with two water-worn *Millepora dichotoma* (Forskål, 1775) and one *Favistes halicora* (Reg. 759, Figure 12.44). There is one coral of c. 300/200 BC. There are six unstratified corals, including one from C10.2.3 and one from C11.1.9. These include two water-worn individuals, one *S. pistillata* and one worn *M. dichotoma* (C11.2.1). There is also a water-worn *S. pistillata* from topsoil (C11.4.1).

In Jerusalem Area L a coral dates to AD 550–575 (Reese 1995a: 278). The earlier Timna temple produced *P. verrucosa*, *S. pistillata*, and *M. dichotoma* (Reese 1988b: 260, pl. 152: 5, 2, 4).

Nerita (*Nerite*)

There are six *Nerita*, with one late eighth century to c. 300/200 BC, four c. 300/200 BC with one having an irregular hole in the body (B3.6.2) and one unstratified with an irregular hole in the body centre (B2.9.7).

Ghrareh produced an apically holed *Nerita*.

Iron Age Kadesh-barnea produced holed *Nerita* (Bar-Yosef Mayer 2000a: 223).

Trochus/Tectus (*Topshell*)

There are four samples with four *Trochus/Tectus* columellas and one lower body fragment, all unstratified. It is unclear why mainly the columellas of these large gastropods are present. Possibly their nacre was utilised and this is the debris left over from that production. In historic times mother-of-pearl buttons were made from these shells. The Parr excavations at Petra produced one *Trochus niloticus* (Linnaeus, 1767).

Engina

There are four fresh but unholed *Engina mendicaria* (Linnaeus, 1758), the Striped engina, from the late eighth century to c. 550 BC (C11.1.19), late eighth century to c. 300/200 BC (B1.3.9), and two unstratified.

Ghrareh produced an unmodified *Engina*.

Glycymeris (*Dog-cockle*)

There are four *Glycymeris* bivalves, with one late eighth century to c. 300/200 BC (worn), two c. 300/200 BC (one fresh, one water-worn) and one topsoil (water-worn, broken hole at umbo, B6.2.3).

Tawilan, Umm al-Biyara, and Ghrareh each produced a few holed *Glycymeris* (Reese 1995b: 93).

Most of the marine shells (19) from Iron II Tall Jawa (South) in the Madaba Plains (125 km. from the Mediterranean Sea) are *Glycymeris* with most water-worn and holed at the umbo (Reese 2002a).

There are 54 *Glycymeris* from Area A at Jerusalem including: late ninth century (water-worn, holed), eighth century (three water-worn and holed), probably eighth century (water-worn, holed), seventh century (two water-worn and holed), c. 587 BC (six water-worn and holed), and Iron Age (four water-worn with two holed) (Reese 1995a: 265).

The Israeli excavations in Jerusalem yielded 30 *Glycymeris*: tenth century (two, one holed, one fragment), tenth-eighth centuries (fragment), eighth century (11, eight holed, three fragments [one burnt]), and seventh century to 586 BC (two holed) (Mienis 1992: 125–6).

There are 20 Mediterranean shells at Iron I Tel Masos (60 km. away), with 16 *Glycymeris* (Reese 1983: 224).

An Iron Age tomb at Jabal al-Jofeh al-Sharqi, Amman, yielded four water-worn and holed *Glycymeris* (Dajani 1966: pl. III: 5, 49–52). An eighth–fourth-century tomb at Um Udhaina (Amman) produced one *Glycymeris* (Hadidi 1987: 120, fig. 12: 2).

An Iron Age tomb at Abu Nseir produced a water-worn and holed *Glycymeris* (Abu Ghanimeh 1984: 310, pl. LXII: 3, obj. 43).

The Iron II Tomb 20 at Nebo produced two water-worn and holed *Glycymeris* as well as seven cowries with the dorsum removed (Saller 1966: 195, fig. 9).

Water-worn and holed *Glycymeris* are the most common shell found at Tall al-Mazar, largely dated to the sixth-fifth centuries BC (personal analysis).

Tell Ta'annak in the northern West Bank (30 km. from the Mediterranean) produced 90 *Glycymeris* of the Iron II, seven from the Persian period (of eight shells) and one of the Hellenistic period (of two shells) (Ezzughayyar and Al-Zawahra 1996: 77).

Turbo (*Turban shell*)

There are three calcareous opercula of *Turbo* but no shells. There is one of the late eighth century to c. 550 BC (A5.7.6, Reg. 731, Figure 12.45), one unstratified, and one from topsoil.

Jerusalem produced a seventh-century BC operculum from a pit (Mienis 1992: 122). Timna in southern Israel produced 10 *Turbo* opercula, but no shells (Reese 1988b: 260-61, pl. 153: 10). Tawilan produced one operculum, as did Umm al-Biyara (Reese 1988b: 261; 1995b: 95). Petra produced both shells and opercula (Reese 1988b: 261). These opercula may have had an ornamental use or were used as gaming pieces or charms.

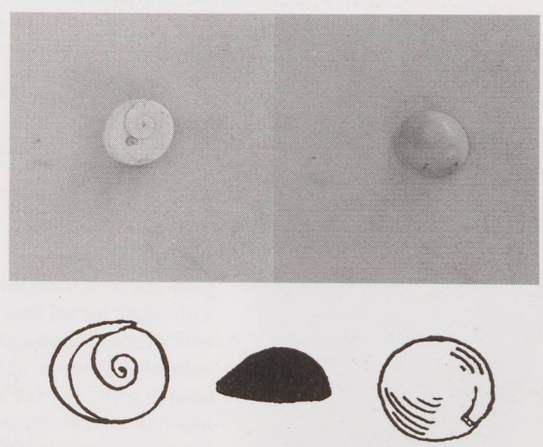


Figure 12.45: Turbo *operculum – slightly chipped and lime encrusted, L 14.2, W 13.3, T 7 (A5.7.6, Reg. 731, Ash 1975.401, late eighth century to c. 550 BC)*

Incised gastropod pieces

Busayra produced two incised gastropod shell pieces. There is one c. 300/200 BC thin-walled gastropod fragment incised on the exterior. This shows the lower portion of two figures on either side of a low table or altar, one kneeling on one leg (B3.1.3, Reg. 252, Figure 12.46).

There is also an unstratified broken gastropod section with simple incised lines and with several holes around the outer edge (C22.10.3, Reg. 1233, Figure 12.47). The fragment, assembled from two pieces, measures 65 x 45, and restored measurements would be roughly 75 x 80 mm. It has a ring-and-dot motif in the centre and four preserved lines radiating out from this circle. The complete piece probably had eight or nine sections. There are five preserved irregularly spaced holes (D 2) around the edge or just in from the edge and as many as 12 were probably once present. Its closest parallels are two shells from Iran and Iraq. However, these are much more elaborately decorated and have a central hole. The first, from Tabarak, Isfahan, Iran, measures 103.5 x 91.5 mm., and is decorated in low relief in quadrants arranged around a central circle with a central hole (D 3.5). A cross radiates out from the centre. Each of the quadrants contains a stylised wild caprid. The hole at the top of the piece has a ?copper stud broken off in it. The bottom hole has a D of 2. The ibex's eyes would have contained something inset in them; in one case there is some bitumen present (personal analysis; Herzfeld 1941: 140, fig. 254 left; Barnett 1963: 83–4, pl. XVIIa, BM 128870 [1936]). The second piece is from Nimrud, broken but measuring 101.5 x 56+ (restored: 85 mm.), and seems to be exactly like that from Tabarak. It has a central hole of D 4.25 and is broken through the hole. The interior has a preserved flange from the natural whorl of the gastropod and this flange has one incomplete drill hole and a complete hole (D 3) (personal analysis; Barnett 1963: 84, pl. XVIIb, BM 133008 [1962] ND 11229).

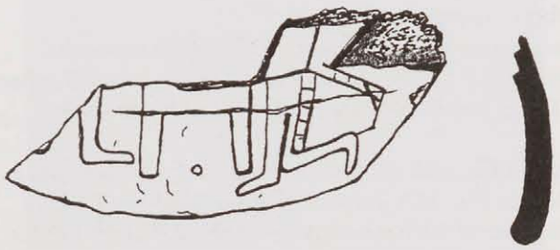


Figure 12.46: Thin-walled gastropod fragment incised on exterior, showing lower portion of two figures on either side of a low table or altar, one kneeling on one leg, creamy/buff/pink colour, L 61, W 20 (B3.1.3, Reg. 252, BM 136069, c. 300/200 BC)



Figure 12.47: Broken gastropod section decorated with simple incised lines and with several holes around the outer edge. Ring-and-dot motif in centre and four lines radiating out. Five preserved irregularly spaced holes around the edge, grey/white, pres L 65, pres W 45, T 4, holes D 2 (C22.10.3, Reg. 1233, Kar, unstratified)

Rarer shells

There are three *Mitra* (Mitre): c. 550 to 300/200 BC (A1.23.11), c. 300/200 BC (C22.1.13, burnt light grey), and topsoil (B6.2.3).

There are three *Cerithium* present, with one unstratified *Cerithium* sp. (fresh, A60.4.4) and two from topsoil: *Cerithium caeruleum* (Sowerby, 1865) (fresh, C1.3.1) and *Cerithium erythraeonense* (Lamarck, 1822) (worn, C10.5.1). Umm al-Biyara produced a *C. erythraeonense* with a carefully made, almost rectangular hole opposite the mouth (Reese 1988b: 261).

There are two *Dentalium* scaphopods (Tooth or Tusk shells): c. 550-300/200 BC (C21.3.6) and unstratified (A8.3a.7). Iron Age Kadesh-barnea produced *Dentalium* (Bar-Yosef Mayer 2000a: 223).

There is one c. 300/200 BC worked ring fragment broken at both ends (D3.6.2). The Hammond excavations at Petra produced several shell rings.

There is an unstratified ornament or inlay fragment roughly triangular in shape, both edges seem broken, pointed at end, semicircular in centre and highly polished on the concave side (A12.4.11, Reg. 1050, Figure 12.48).

There is one c. 300/200 BC *Clanculus pharonius* (Linnaeus, 1758), the Strawberry top, ground-down near the mouth and holed and still retaining the beautiful colour (B3.1.3). Ghrareh produced a ground-down and holed *Clanculus* very similar to that from Busayra. Iron Age Kadesh-barnea produced holed *Clanculus* (Bar-Yosef Mayer 2000a: 223).

There is one unstratified broken *Charonia tritonis* (Linnaeus, 1758), a Trumpet or Triton shell, with a broken tip, small hole at apex, larger hole 40 mm. below apex (B8.2.2, Reg. 821, Figure 12.30a). Fragments of a Hellenistic example are also known from Jerusalem (Mienis 1992: 123). Seventh-sixth century Kadesh-barnea produced a *C. tritonis* (Bar-Yosef Mayer 2000a: 223). A broken specimen was found in a probable Hellenistic context at Horvat 'Eleq (Bar-Yosef Mayer 2000b).



Figure 12.48: Ornament or inlay fragment – roughly triangular in shape, both edges seem broken, pointed at end, semi-circular in centre, highly polished on concave side, pres L 15, pres W 18, D of centre 12, T 5 (A12.4.11, Reg. 1050, L: NMGM 1993.180.13, unstratified)

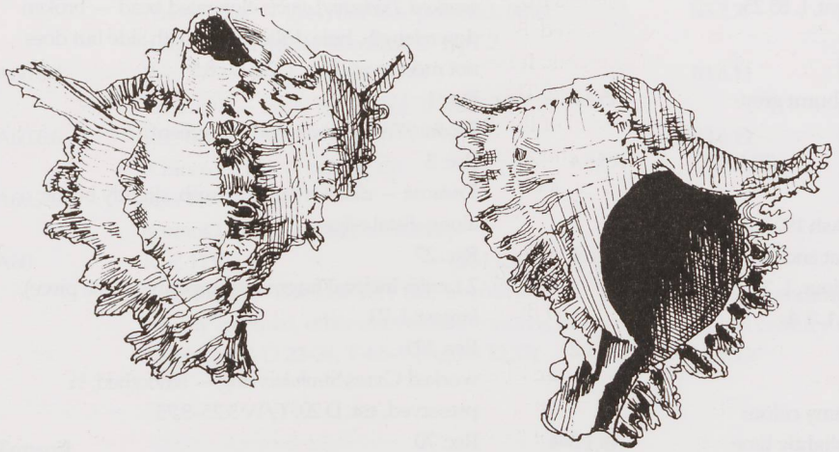


Figure 12.49: Chicoreus ramosus — *broken apex and distal, small hole in body of shell and a very open apex, L 100, W 105 (A5.13.6, Reg. 1188, Kar, late eighth century to c. 550 BC)*

There is one *Chicoreus ramosus* (Linnaeus, 1758), a murex, of the late eighth century to c. 550 BC (A5.13.6, Reg. 1188, Figure 12.49). It has a broken apex and distal end and a small hole in body of shell. The Parr excavations at Petra produced at least one shell, and several were found in the Hammond excavations.

There is one late eighth century to c. 300/200 BC *Dosinia* bivalve (B2.7.4).

There is one c. 300/200 BC *Turritella* with an irregular hole on lower body and a small gastropod-bored hole on the mid body (B3.2.1).

One deposit produced two unstratified vermetids (C3.7.2j).

There is one unstratified *Nassarius* holed in lower body near the lip (A8.1.3-4). Jerusalem produced one unmodified related Mediterranean *Arcularia* of the seventh century BC. One shell is also present at Umm al-Biyara. A juglet at Dayr 'Alla yielded 60 holed examples (van der Kooij and Ibrahim 1989: 100-01, no. 93).

There is one unstratified example of each of the following: *Mytilus* bivalve (A5.1.4a); worn *Drupa/Thais* (B1.1.3c); fresh *Donax* bivalve (B2.10.5); ?*Chama* bivalve (C3.6.2h); and fresh *Cerastoderma* bivalve (D3.12.9).

There is one fresh *Fusus/Fasciolaria* from topsoil (C21.1.6).

There are four unidentified gastropod fragments, with two late eighth century to c. 300/200 BC, one unstratified, and one water-worn piece from topsoil (D3.2.1, illustrated on Plate 10.19c).

There is also one unstratified sample of fresh-water bivalve fragments (1971, A1.3.15, Rec. 55).

Table 12.2: Catalogue of Busayra Recent marine invertebrates

Area A

Phase 3: 'temple' building on the platform and associated occupation (late eighth century to c. 550 BC)

A1.11.6 Rec. 4 (burnt clay)
Cypraea annulus — ground-down dorsum, L 21.75, W 16.5, H 7.5

A4.1.6 Rec. 122 (plastering of courtyard)
Cypraea annulus — has gloss, L 19.75, W 13.75, H 9.25

A5.7.5 Rec. 75 (earth floor)
Lambis internal body fragment — L 91

A5.7.6 Reg. 731 (ash and charcoal) (Ash 1975.401)
Turbo operculum — slightly chipped and lime encrusted, L 14.2, W 13.3, T 7 (Figure 12.45)

A5.13.4 Rec. 81 (mudbrick fill)
Pinctada — 2 fragments, toward hinge

A5.13.6 Reg. 1188 (mud and lime surface) (Kar)
Chicoreus — broken apex and distal, small hole in body of shell and a very open apex, L 100, W 105 (Figure 12.49)

A5.13.6a Rec. 80 (fill of drain)
Cypraea annulus — has gloss, L 18, W 13, H 8.5

A20.6.7 Rec. 30 (ashy deposit)
Cypraea tigris — lip fragment, lime encrusted, large individual

Phase 4: second phase of 'temple' building and occupation (c. 550 to 300/200 BC)

A1.10.11 Rec. 44 (ash and clay mix)
2 *Cypraea annulus* — open dorsum, ½ preserved, L 21.5, H 8.25; L 18, W 13.25, H 8.75

A1.23.11 Rec. 6 (fill)
Mitra — has colour, L 14, W 7.75

A5.11.3 Rec. 4 (floor of small stones and chips)
Lambis — body fragment, thick

A5.11.6 Rec. 40 (mudbrick fill)
Cypraea annulus — has gloss, L 20.25, W 14.75, H 10.25

A5.11.6 Rec. 83
2 *Cypraea annulus* — open dorsum (partly ground down, smoothed), L 17, W 11.75, H 6.25; has gloss, L 18.75, W 12.75, H 9

Unstratified

A1.11.4 Rec. 8
Lambis — body fragment (toward distal)

A1.11.15 Rec. 17
Cypraea tigris — dorsum fragment, small piece, bright colour

A1.13.1 Rec. 24

Lambis — water-worn siphon fragment, L 85.25, W 64.25

A1.23.3 Rec. 112
Lambis — internal body fragment — burnt grey, L 39.5, W 58

A1.23a.3 Rec. 105 (BIAAH)
Tridacna fragment

A1.24 Reg. 398 (Ash 1973.404a-e)
5 ?*Lambis* discs — all with one side flat and smooth and the other rougher, buff/beige colour, L 27.7, H 28, T 5; L 27.1, H 27, T 4; L 14.3, H 14.1, T 4; L 13.4, H 13.7, T 5; L 13.5, H 13.6, T 3

A1.24 Reg. 455 (BM 136078) (1974)
?*Lambis* disc — one side smooth, creamy colour and flat, other rougher, greyish and slightly lime encrusted, D 13, T 2.5–4 (Figure 12.35)

A1.24.2 Rec. 238
Lambis — body fragment, fresh

A1.28.1 Rec. 13
Lambis — water-worn body fragment, recently broken
Strombus — holed lower body, fresh, L 19, W 10.75, hole 3.75 x 3.25

A1 Rubbish Dump Reg. 459 (BM 136077) (1974)
?*Lambis* disc — one side flat and smooth, other side concave with glossy smooth patina, creamy/pink/buff colour, D 15, T 4–5

A1/D2 Rubbish Dump Reg. 461 (BM 136076) (1974)
?*Lambis* disc — one side flat and smooth, other rougher, concave, and with a pitted surface, D 12–14, T 5.5–7

A2.1.5 Rec. 87
Lambis — body fragment, rather thin, recently broken

A3.1.10 Reg. 119 (Kar)
17 *Tridacna* fragments (Figure 12.31)

A3.1.11 Reg. 349 (Kar)
11 ?*Lambis* discs — largest D 29, T 5; smallest D 22, T 3

A3.1.12 Reg. 350 (Ash 1973.401)
23+ *Tridacna* fragments — some burnt, one encrusted with marine organisms

A3.1.12 Reg. 351 (Ash 1973.402)
?*Lambis* disc — slightly chipped and encrusted, one side flat, other uneven and slightly convex, L 27.9, H 27.2, T 7

A3.2 Reg. 155 (Ash 1973.391)
?*Lambis* disc — slightly concave on one side, convex on other, buff/beige colour, L/H 22.3, T4 (Figure 12.36)

A4.1.4 Rec. 52
?*Pinctada* fragment (discarded)

A4.1.4-5 Rec. 81
Pinctada fragment (near distal end)

A5.1.2-3 Rec. 18
Tridacna fragment — fresh, large, H 115+

A5.1.4a Rec. 25
Mytilus — fresh, broken

A5.3.6 Reg. 28 (Edin A.1987.368.1527)
coral bead — broken/incomplete, L 11, W 4, D 3 (illustrated on Plate 10.28)

A5.4.6 Rec. 25
worked *Tridacna/Lambis* elongated bead — broken down length, hole drilled from both side but does not meet in middle, L 20, D c8.5

A5.4.7 Rec. 1
Trochus/Tectus lower body fragment

A5.6.4 Rec. 5
Tridacna — distal fragment, fresh, slightly burnt along distal edge

A5.6.4 Rec. 27
2 *Lambis* internal fragments (probably same piece), largest: L 73

A8.1.2 Rec. 121
worked *Conus/Strombus* ring — smoothed, ½ preserved, est. D 20, T/W 3.25–3.75

A8.1.3–4 Rec. 70
Nassarius — holed in lower body near lip, L 16.75, W 10.75, irregular hole 4.25

A8.1.4 *Tridacna* fragment (discarded)

A8.3a.7 Rec. 31
Dentalium — ribbed, fresh, L 23.5 (not complete), max D 5

A8.4.1 Rec. 23
Pinctada distal fragment

A8 Cleanup *Lambis* — body fragment (toward apex)
Strombus — L 39, W 23

A12.1.2 Reg. 904 (BM 136749) (1975)
Lambis disc — more oval than circular, base polished smooth, very flat, top uneven, unpolished and concave, edges chipped, ridges visible, D 26 x 24, T 3–8

A12.4.11 Reg. 1050 (L: NMGM 1993.180.13)
ornament or inlay fragment — roughly triangular in shape, both edges seem broken, pointed at end, semicircular in centre, highly polished on concave side, pres L 15, pres W 18, D of centre 12, T 5 (Figure 12.48)

A20.10.2 Rec. 56
Pinctada fragments

A20.10.2 Rec. 85
Conus — worn, pitted apex, broken lip, L 42.5, W 25

A20.10.4 Rec. 79
Lambis — internal body fragment, worn, L 122.5
Pinctada — 2 fragments

A20.10.4 Rec. 84
Conus — worn, L 43.25, W 26.75

A20.10 Rec. 57
2 *Trochus/Tectus* columellas

A21.2.13 Rec. 62
Cypraea annulus — has gloss, L 25, W 19.25, H 12.25

A21.3.3 Rec. 173 (BIAAH)
Cypraea annulus — L 25, W 19

A25.3.3 Rec. 173
Stylophora (coral) — branching, 81 x 66, large

A30.2.3 Rec. 8
Cypraea sp. — ½ preserved, open dorsum (partly smoothed), L 23, H 7.5

A60.1.24 Rec. 55
Pinctada — distal fragment, delaminating

A60.2.2 Rec. 43
2 *Lambis* body fragments — worn and pitted

A60.4.2 Reg. 958 (L: NMGM 1993.180.21)

?*Lambis* disc — grey, one side polished, other rougher and lighter in colour, D 13, T 2

A60.4.4 Rec. 39
Cerithium — fresh, has colour, L 16.25, W 7.75

A60.6.6 Rec. 67
echinoid spine — broken tip

A60.7.8 Rec. 117
echinoid spine — small, broken tip

A60 Reg. 1117 (BM 136751) (1975)
Lambis disc — one side very flat, smooth and creamy coloured, other uneven and concave, ridges visible, grey, D 22–24, T 4.5–9 (Figure 12.37)

Topsoil

A1.1.2 Rec. 42
Strombus — apex fragment, fresh, W 14.75

A20.5.1 Rec. 26
Lambis — body fragment, fresh

A25.1.1 Rec. 74
Tridacna fragment

A26.1.1 Rec. 72
Strombus — no colour, L 15.25, W 9

A26.6.2 Rec. 22
Pinctada — small fragment

A60.6.2 Reg. 955 (BM 136750) (1975)
Lambis disc — one side smooth and flat, creamy white, other rougher and slightly uneven, pink/buff and slightly lime encrusted, D 21, T 3

Area B, Squares 1–4

Phase 3: occupation deposits associated with wall (late eighth century to c. 300/200 BC)

B1.3.9 Rec. 71 (loose brown soil)
Engina — fresh, L 16.25, H 10.25

B2.7.14 Rec. 83 (hard sandy clay and ash)
Cypraea annulus — has gloss, L 17.5, W 13, H 8.75

B2.7.27 Rec. 100 (ash and clay)
Cypraea sp. fragment (discarded)

B3.2.16 Rec. 120 (hard grey deposit)
echinoid — 2 test fragments

Phase 5: floors and occupation (late eighth century to c. 300/200 BC)

B2.2.5 Rec. 248 (collapse)
Lambis body fragment — worn, rather smooth, L 81.25, W 47.25

B2.7.4 Rec. 43 (fine ash and clay)
medium gastropod — body fragment, has gloss

B2.7.4 Rec. 45
Nerita — fresh, W 14.25, H 13.25

B2.7.4 Rec. 61
Dosinia — fresh, right, H 29.25, W 33

B2.7.4b Rec. 68
Glycymeris — hinge/upper body fragment, worn, large

B3.2.5 Rec. 44 (clay and stones)
Tridacna fragment — fresh, very large individual, H 82+

B3.2.7 Rec. 98 (ash and stones) (BIAAH)
Tridacna fragment — worn

B3.6.11 Rec. 29 (ashy)
Cypraea sp. fragment (discarded)

B3.6.12 Rec. 36
Lambis body fragment — rather fresh, L 36.75, W 46.5

Phase 6: rectangular room added to Phase 4 structure (late eighth century to c. 300/200 BC)

B1.1.13 Rec. 69 (muddy soil with plaster) (BIAAH)
Conus apex fragment — rather large

Phase 8: fire and collapse (c. 300/200 BC)

B1.1.3 Rec. 38 (compact mortary deposit)
Cypraea sp. (discarded)

B1.1.3 Rec. 43
Nerita — worn, W 21.75, H 17.25

B3.1.3 Reg. 252 (BM 136069) (1974)
thin-walled gastropod fragment incised on exterior, has lower portion of two figures on either side of a low table or altar, one is kneeling on one leg, creamy/buff/pink colour, L 61, W 20 (Figure 12.46)

B3.1.3 Rec. 89
Clanculus — ground-down near mouth and holed, fresh, beautiful colour, H 14.25, W 20.75, ground-down area 8.5 x 5.25, hole 2.25

B3.1.10 Reg. 319 (Man 1974.30)
?*Lambis* disc — D 28, T 4 (Figure 12.39)

B3.2.1 Rec. 88
Turritella — worn, broken lip, irregular hole on lower body, small gastropod-bored hole on mid body, L 27.25, W 8.25, hole 2.75

B3.4.3 Rec. 15
?*Pinctada* fragment (discarded)

B3.4.3 Reg. 483 (L: NMGM 1993.180.12)
echinoid spine — broken at tip, L 52, W 6 (Figure 12.43)

B3.6.2 Rec. 19
2 *Cypraea annulus* — has gloss, L 19.75, W 13.75, H 10; fragment, has gloss, L 17, H c9
Nerita — unmodified, W 15.75, H 12.5

B3.6.2 Rec. 20
Lambis siphon and body fragment — worn, lime encrusted, L 118, W 70

B3.6.2 Rec. 21
Nerita — irregular hole in body, slightly worn, W 20.75, H 15.25, hole 2.75–3.25

B3.7.1 Reg. 620 (ROM 974.107.36)
?*Lambis* disc — slightly chipped, D 26, T 5

B4.2.2 Rec. 116
Cypraea sp. (discarded)

Unstratified

B1.1.3c Rec. 45
Drupa/Thais — worn, H 37, W 25.25

B1.2.8 coral — 77 x 61 (discarded)

B2.1.3 Rec. 100 (BIAAH)
Cypraea tigris fragment — L 39

B2.1.23 Rec. 88
Cypraea annulus — unmodified, has gloss, L 17.5, W 12.75, H 8.5

B2.8.1 Rec. 95
Cypraea annulus — open dorsum (irregular), has gloss, L 21.25, W 16.5, H 7.25

B2.9.7 Cave Rec. 106
Nerita — irregular hole in body centre, fresh, W 14.25, H 11.75, hole 2.25

B2.10.1 Rec. 47
Conus ebraeus — holed apex, water-worn and pitted, L 33.5, W 21.25, hole 1

B2.10.5 Rec. 61
Cypraea annulus — ground-down dorsum, has gloss, L 16.5, W 12, H 5.25
Donax — fresh, right, H 16.25, W 33.75

B3.3 Rec. 146
echinoid spine — lacks tip half

B3.4.2 Rec. 25
Tridacna side fragment — fresh, some scales present, large individual

B3.20.4 Rec. 73
Tridacna hinge fragment — broken scales, large and thick, very large individual

B3.20.5 Rec. 104
coral — very water-worn, in shape of cone, L 43.25, W 25.25

B3.22 Rec. 34
Conus ebraeus — water-worn, L 10.25, W 7.25

B4.1.2 Rec. 121
Cypraea annulus — nicely ground-down dorsum, L 16.5, W 12.5, H 6

Topsoil

B2.7.1 Reg. 698 (Ash 1975.402)
Turbo operculum — creamy pink, L 15.9, W 14.2, T 7

B3.6.1 Rec. 16
Cypraea annulus — open dorsum (smoothed), has gloss, L 20, W 14.25, H 6.75

Area B, Squares 5–10

Phase 5: occupation associated with Phase 3 and 4 structures (late eighth century to c. 300/200 BC)

B6.3.6 Rec. 68 (hard yellow deposit)
echinoid spine — tip half

B7.5.9 Reg. 1120 (soft earth and ash) (Amm)
engraved *Tridacna* (Figure 12.33)

B7.5.9 Reg. 1115 (Ash 1975.392)
Conus — holed apex, L 30.5, W 20.3, hole 2.4 (Figure 12.41 right)

B7.5.9 Rec. 76
Conus ebraeus — water-worn, broken lip, L 38.25, W 25.75

Phase 5/6 (late eighth century to c. 300/200 BC)

B7.5.5–7 Rec. 72
medium gastropod — body/siphon fragment, worn

Phase 6: fire and collapse (c. 300/200 BC)

B6.3.4 Rec. 56
Glycymeris side/distal fragment — water-worn, W c28

B7.4.4 Reg. 910 (ROM 975.416.52)
Lambis internal body fragment — water-worn, L 98, W 57, H 30 (Figure 12.34)

B7.5.2 Rec. 50
Tridacna squamosa — distal fragment, fresh, small piece, large individual

B7.5.3 Reg. 926 (Ash 1975.398)
Conus — has colour, broken lip, slight lime encrustation, L 34, W 21 (Figure 12.42)

B7.5.4? Rec. 24
Nerita — worn, encrusted, W 22.75, H 16.25
Glycymeris — fresh, H 38.5, W 40.25

B7.5.5 Rec. 86
echinoid spine — tip half

B7.5.6 Reg. 1065 (Ash 1975.410)
Conus — holed apex, L 25.8, W 16.5, hole 1.5 (Figure 12.41 left)

B7.5.6 Rec. 67
Lambis lip/body/distal/siphon fragment — fresh, L 139.5, W 100.5

Unstratified

B5.2.7 Rec. 37
Conus — water-worn, L 11, W 7.75
gastropod body fragment — has gloss

B6.5.2 Rec. 40
Lambis body fragment — smooth, thick

B6.6.1 Rec. 38
Pinctada distal fragment

B7.1.1 Rec. 73
Engina — fresh, L 11.5, W 7.25

B7.1.2 Reg. 772 (ROM 974.107.13)
?*Pinctada* disc — D 12, T 2

B7.1.2 Reg. 806 (Ash 1975.399)
Conus — holed apex, slight lime encrustation, L 25, W 16.6, hole 1.1

B7.1.2 Rec. 72
Lambis internal body/columella fragment — smooth, thick, L 57.5

B7.1.2 Pit Rec. 97
3 *Cypraea annulus* — burnt black, L 20, W 14.25, H 10.5; has colour and gloss, L 23.25, W 15.75, H 11.5; partly lime encrusted, L 18, W 13, H 9.25

B7.1.3 Rec. 90
gastropod columella fragment

B8.1.1 Rec. 77
Cypraea annulus — open dorsum (irregular), slight gloss, L 22, W 16.25, H 8.5

B8.2.1 Reg. 835 (Dub 262)
Tridacna — water-worn, H 64, W 100

B8.2.2 Reg. 815 (Dub 263)
Tridacna — yellow colour inside, one end chipped, H 51, W 153 (Brandl 1984a: fig. 4a) (Figure 12.32)

B8.2.2 Reg. 821 (Edin A.1987.368.1553)
Charonia — broken, tip broken, small hole at apex, larger hole 40 mm below apex, L 130, W 54 (Figure 12.30a)

B8.2.2 Rec. 80
Tridacna squamosa — complete, worn, no scales, right, H 56.25, W 93.75

B8.2.3 Reg. 836 (Emory 1974.18)
Tridacna squamosa — rather complete, interior heavily lime encrusted, H 95, W 57 (Figure 12.30d)

B8.3.3 Rec. 41
Trochus/Tectus columella

B8.3.11 Rec. 89
Cypraea annulus — open dorsum, worn, L 20.25, W 15.25, H 5.25

B8.4.3 Rec. 54
Pinctada fragment — thick piece, delaminating

B10.1.11 Rec. 57
Cypraea annulus — has gloss, L 18.25, W 12.75, H 9

B10.2.6 Rec. 98
Conus ebraeus — worn and pitted, broken lip, L 46, W 27

B10.2.11 *Pinctada* distal fragment

B10.3 Rec. 5
Conus/Strombus semicircle ring section — broken, unfinished, L 28.25, W/T 4–6.25, restored D c35

Topsoil

B6.2.3 Rec. 37
Pinctada fragment
Glycymeris hinge/upper body fragment — water-worn, broken hole at umbo
Mitra — worn, broken lip, L 16.25, W 7.25

B6.2.4 Rec. 39
Tridacna maxima fragment — fresh, very large individual, H 101+

B6.4.1 Rec. 33
Strombus — slight colour, L 19.25, W 12

B6.4.2 Rec. 35
Cypraea annulus — worn and pitted, L 19.25, W 14.75, H 10

Square C3

Phase 3: brown clay and stones (late eighth century to c. 550 BC)

C3.21.2 Rec. 60
Tridacna distal fragment — fresh, broken scales, thick, very large individual, H 83.5, W 62.5

C3.21.2 Rec. 62
Tridacna hinge/side fragment — fresh, broken scales, H 57.25, W 43.25
(both fragments probably from same valve)

Phase 5: surface and collapse (c. 550–300/200 BC)

C3.20.2 Rec. 48 (hard light brown clay and stones)
Pinctada hinge fragment — small piece

Unstratified

C3.1.2a Rec. 119 (BIAAH)
Cypraea annulus — L 20, W 15

C3.3.2d Rec. 118 (BIAAH)
Tridacna squamosa fragment

C3.6.2h Rec. 136
?*Chama* valve — hinge area, broken distal, hinge W 37.25

C3.7.1 Rec. 124 (BIAAH)
Engina — fresh, L 15

C3.7.2j Rec. 135 (BIAAH)
Trochus/Tectus columella — L 42+ 2 vermetids — 1 small, 1 larger

C3.7.2j Rec. 137 (BIAAH)
Cypraea annulus — ?burnt light grey, L 15
Pinctada fragment

C3.7.2j Rec. 220
3 echinoid spines — 5 fragments, 1 slightly burnt

C3.7.2j Rec. 222
Cypraea annulus — small circular hole not quite in centre, has gloss, slightly lime encrusted, L 20, W 16.25, H 10.25, hole 5.5 x 4.25

C3.7.25 Rec. 17
echinoid spine — broken tip

C3.21.4 Rec. 68
Tridacna distal fragment — fresh, broken scales, ground-down on left side of one ridge for length of fragment (L 80, W 22) and also apparently in depression to left, H 92.5, W 67. May be part of C3.21.2 valve.

Area C building

Phase 4: occupation (late eighth century to c. 550 BC)

C1.3.3b Rec. 75 (earth surface)
Strombus — fresh, slight colour, L 21.75, W 12

C11.1.14 Rec. 2 (plaster floor)
Pocillopora (coral) — water-worn, L 34, W 29, T 11.5

C11.1.16 <3> Rec. 4 (brown earth)
Cypraea annulus — has gloss, L 18, W 13.5, H 8.75

C11.1.16 <4> Rec. 6
Tridacna hinge fragment — fresh but pitted at umbo, very large individual, H 40, W 110

C11.1.16 Rec. 3
Stylophora (coral) — water-worn, L 41.25, W 25, T 20.25

C11.1.16 Reg. 1208 (Kar)
?*Lambis* disc — has ridges, creamy white and shiny, D 26, T 5

C11.1.17 <6> Rec. 4 (ash)
echinoid spine — broken tip

C11.1.19 <5> Rec. 1 (deposit of sand, stones, charcoal, pottery, bones and shells)
Cypraea annulus — broken side, has colour, L 21.5, H 9.25

C11.1.19 <12> Rec. 3
Pinctada — 7 fragments (1 hinge)

C11.1.19 <16> Rec. 16
Strombus — fresh, has colour, L 20.25, W 11
Engina — fresh, L 13.5, W 8

C11.1.19 Rec. 18
Tridacna distal fragment — fresh, thin, small piece
Cypraea annulus — open dorsum (irregular, possibly recent), has gloss, L 15.25, W 11, H 6.25

C11.1.19 Rec. 19
Cypraea annulus — has gloss, L 20, W 14.75, H 9.5

C11.1.19 <25> Rec. 91
(=C11.4.12) *Pinctada* centre fragment — thick
C11.4.9 (brown earth)
Cypraea sp. fragment (discarded)
C14.1.11 Rec. 106 (earth floor)
Stylophora (coral) — L 47.75, W 36.25, T 22
C20.1.26 Rec. 53 (hard earth with charcoal)
Cypraea annulus — broken, has gloss, L 18.25, H 8.75
C21.3.13 Reg. 1247 (brown soil and ash) (Kar)
Tridacna squamosa — complete, slight chipping near hinge and at distal, L 218, W 122 (Figure 12.30b)

Phase 6: occupation (c. 550–300/200 BC)

C10.2.2 Reg. 80 (earth floor)
2 *Millepora* (coral) — 2 water-worn individuals: L 23, W 17.5, T 4.25; L 63.25, W 43.25, T 17
C10.2.2 Rec. 87 (BIAAH)
Pinctada — 2 small fragments
C10.2.2 Reg. 759 (Emory) (Figure 12.44)
Favistes (coral) — 68 x 50
C10.2.10 Rec. 134 (brown soil and rubble) (BIAAH)
Pinctada fragment
C10.3.4 Rec. 94 (soil, rubble and charcoal) (BIAAH)
Cypraea annulus — L 22, W 15.5
C10.3.6 Rec. 135
echinoid spine — very small
C11.4.7 Reg. 1304 (burning) (Brussels 4442)
?*Pinctada* disc — slightly abraded, D 15, T 2
C11.4.7 <13> Rec. 93
echinoid spine tip
C12.3.2 Reg. 288 (earth floor) (Ash 1973.398)
?*Lambis* disc — shiny interior of shell on one side, buff exterior of shell on other side, L 16.5, W 16.3, T 3 (shell actually has C.XII.2 [1]) (Figure 12.38)
C12.5.4 Rec. 126 (earth floor) (BIAAH)
Tridacna squamosa fragment — L 61
C21.3.6 Rec. 5 (plaster floor)
Cypraea annulus — has gloss, L 20.75, W 15.25, H 10
C21.3.6 Rec. 7
Dentalium — water-worn, not complete, L 20, W 5.5

Phase 7: collapse (c. 300/200 BC)

C11.1.4 Rec. 98 (BIAAH)
coral — 35 x 16
C12.4.2 Rec. 125 (BIAAH)
Pinctada — 2 small fragments
C12.4.2 Rec. 215
echinoid spine — lacks tip half, large
C14.2.4 Rec. 64
Pinctada — 5 fragments, 1 has rather rounded edges and may be a 'button' or inlay blank: 22.25 x 18.75
C22.1.7+9 Rec. 25
Pinctada fragment — thin
C22.1.13 <6> Rec. 26
Mitra — burnt light grey, L 13.75, W 6.5

Unstratified

C7.7.2j Rec. 128
Tridacna fragment (discarded)
C10.2.3 Rec. 83 (BIAAH)
coral fragment — water-worn, 35 x 23
C10.2.11 Rec. 89
Lambis body fragment — slightly worn, L 31.75, W 27.25
C10.6.2 <27> Rec. 24
Pinctada — 2 fragments
C10–11 <5> ?*Pinctada* fragment (discarded)
C11.1.3 Rec. 133
echinoid spine — broken tip
C11.1.9 Rec. 147 (BIAAH)
coral — water-worn, 54 x 34
C11.1.15 <7> Rec. 13
Strombus — water-worn, L 19, W 11.5
Conus — water-worn, L 10.5, W 7.75
C11.1.15 <14> Rec. 9
Lambis fragment — worn and pitted, could be blank for a disc: L 30.5, W 28.75
C11.1.20 <13> Rec. 10
Conus — worn, broken lip, L 11.25, W 8
C11.2.1 Rec. 93
Millepora (coral) — flat, thin, worn, L 42.75, W 25.25, T 9.5
C11.–.7 Rec. 96 (BIAAH)
Cypraea annulus — L 16.5, W 12.5
C11.–.15 Rec. 11
Pinctada — 2 fragments (1 distal)
C12.3.3 Rec. 139
Lambis fragment — could be blank for a disc, burnt light grey, L 32, W 29
C14.2.5 Reg. 1084 (ROM 975.416.35)
?*Pinctada* button — decorated with an incised design, partially pierced, but piercing appears to have gone wrong, breaking through the surface and damaging design, D 15, T 3 (Figure 12.40)
C14.3.4b <12> Rec. 7
Cypraea annulus — beautifully ground-down dorsum, L 15.5, W 12.25, H 5
Strombus — broken body and mouth, no colour, L 19
C14.3.4b <16> Rec. 33
Pinctada — 11 fragments (3 hinge, 1 distal)
C14.3.5 Rec. 12
Pinctada — 6 fragments (2 hinge)
C14.3.6 <21> ?*Pinctada* fragment
C20.3 Rec. 31
Lambis body fragment — a bit worn, L 65.5, W 38.25
C21.1.14 Rec. 29
Cypraea annulus — burnt light brown/grey, has gloss, L 23.5, W 17.75, H 13
C21.1.15 Rec. 28
Cypraea annulus — burnt dark grey, has gloss, L 22, W 15.5, H 11.25
C21.1.17 <6> Rec. 20
Cypraea annulus — burnt tan, has gloss, L 19.25, W 14.25, H 9.75
C21.1.22 <14> Rec. 36
Strombus — water-worn, L 19, W 11.5
C21.2.6 Reg. 1066 (Ash 1975.400)
Turbo operculum — L 14.7, W 13.3, T6
C22.10.3 Reg. 1233 (Kar)
broken gastropod section decorated with simple

incised lines and with several holes around the outer edge. Ring-and-dot motif in centre and four lines radiating out. Five preserved irregularly spaced holes around the edge, grey/white, pres L 65, pres W 45, T 4, holes D 2 (Figure 12.47).

C23.1.4 Rec. 75
Cypraea annulus — has gloss, L 18, W 13.25, H 8.75

C23.2.9 *Cypraea* sp. (discarded)

C Reg. 464 (L: NMGM 1993.180.18)
echinoid spine — L 39, W 5

Topsoil

C1.3.1 Rec. 77
Cerithium caeruleum — fresh, L 33, W 20

C1.3.1 Rec. 79
Cypraea annulus — has gloss, L 23, W 16.25, H 11.25

C10.5.1 <7> Rec. 55
Pinctada centre fragment

C10.5.1 <9> Rec. 58
Cypraea moneta — open dorsum (not smoothed), has gloss, L 16.25, W 11.75, H 6
Cerithium erythraeonense — worn, slightly broken distal, L 49.25, W 25

C10.5.1 <23> *Cypraea* sp. — broken (discarded)

C10.5.1 <35> Rec. 86
Pinctada fragment — small piece

C10.5.1 Rec. 97 (BIAAH)
?*Pinctada* fragment

C11.4.1 <49> Rec. 49
Stylophora (coral) — water-worn, partly burnt, L 31.75, W 29.25, T 17

C21.1.6 Rec. 66
Fusus/Fasciolaria — fresh, L 50.25, W 25.25

Square D2 – unstratified

D2.8.2 Rec. 129
Cypraea sp. fragment (discarded)

D2.8.2 Rec. 132 (BIAAH)
Cypraea annulus — L 15, W 11

D2.8.3 Rec. 133 (BIAAH)
Cypraea annulus — broken, L 20

Square D3

Phase 1: clay and earth occupation (late eighth century to c. 550 BC)

D3.1.11 Rec. 28
Cypraea annulus — has gloss, L 21.75, W 16, H 9.5

Phase 3: clay surface (late eighth century to c. 300/200 BC)

D3.6.5 Rec. 47
Pinctada fragment — thick, small piece

Phase 10: collapse (c. 300/200 BC)

D3.6.2 Reg. 945 (L: NMGM 1993.180.14)
worked ring fragment — broken at both ends, pres L 16, W 6, T 4

D3.6.2 Rec. 32
Pinctada fragment — small

Unstratified

D3.6.7 Rec. 100
Pinctada ring fragment — unfinished, not smoothed, L 14.5, W/T 2.75–3.5, restored ext D c25

D3.12.9 Rec. 63
Cerastoderma — fresh, asymmetrical, right, H 24.75, W 27.75

Topsoil

D3.2.1 Reg. 1052 (ROM 975.416.51)
large gastropod fragment — water-worn, broken, encrusted, L 50, W 30, T 2 (illustrated on Plate 10.19c)

All measurements in millimetres. Measurements for Ash = Ashmolean Museum kindly provided by P.R.S. Moorey and R. John.

13. THE ANIMAL BONES

Edited by Piotr Bienkowski
with a contribution by David S. Reese

The animal bones found in the first four excavation seasons (1971–4) were studied in preliminary form, and lists of identifications and preliminary analyses were found in the excavation archive. It is not known who carried out the identifications and analyses: it is clear that at least three people identified and analysed the bones at different times. At the time, there was no comparative collection available in Jordan. No contextual information was linked to the analyses, and although most of the bones came from Iron II/Persian contexts, it is clear that a proportion were found in later contexts, topsoil or were unstratified. The whereabouts of this material is unknown, and it may have been discarded. No identifications were found for the animal bones from the 1980 season. This appendix has been compiled from the data available in the excavation archive and by comparison with the report on the Tawilan animal bones (Köhler-Rollefson 1995), and represents no more than a preliminary report on the Busayra animal bones excavated in 1971–4.

The bones were not in good condition, and only about half showed enough evidence to be identifiable. Bones of the following species were found:

Capra hircus (domestic goat) and *Ovis aries* (domestic sheep): 1813 (85.84%)
Bos taurus (domestic cattle): 220 (10.42%)
Equus asinus (domestic ass): 2 (0.09%)
Equus caballus (domestic horse): 1 (0.05%)
Camelus c.f. *dromedarius* (camel, one-humped): 1 (0.05%)
Canis sp. (dog or wolf): 1 (0.05%)
Sus scrofa (wild or domestic pig): 4 (0.19%)
Gallus gallus (chicken): 5 (0.24%)
Gazella sp. (unidentified gazelle): 2 (0.09%)
Reptilia (unidentified reptile): 15 (0.71%)
Pisces indet. (unidentified fish): 10 (0.47%)
Unidentified: 38 (1.80%)
Total: 2112

Sheep and goats

Over 85% of the bones could be attributed to *Ovis/Capra*. The differentiation of bones of 'small ruminants' (a category that also comprises morphologically similar taxa, such as gazelle, roe deer etc.) is difficult, especially if they are very fragmentary. One thousand eight hundred and thirteen bones were attributed to 'small ruminants'. It can be safely assumed that the majority of these bones come from domesticated sheep or goats (in about equal proportions), but the possibility of the presence of other small ruminants cannot be discounted.

Table 13.1 shows the occurrence of the different parts of the skeleton of the *Ovis/Capra* sample. Apart from the teeth, the bone best represented is the Phalanx 1 (toe), because there are eight in each animal (there are also eight Phalanx II and eight Phalanx III, but they are smaller and more easily overlooked). Of the long bones, distal tibia and distal humerus are most common, then articular ends of the scapula and proximal and distal femur fragments. These bones are from the meat-rich parts of the body. Typically they are cut through just above the joints.

The age at which the animals were killed can be ascertained from the epiphyseal fusion state of the bones (Köhler-Rollefson 1995: 99). In young animals the epiphyses are not fused. Each epiphysis within an animal fuses at a different age and, by comparing the proportion of fused against unfused skeletal elements, a profile of the culling age can be determined. This might provide some clues as to the purpose for which livestock was kept; for example, in dairy or wool-oriented animal husbandry systems, a higher proportion of old animals is expected than in meat production, where animals are killed before or at the time of reaching maturity. At Busayra, of the Phalanx I, whose epiphysis closes between 0.5 and 0.75 years, c. 29% are unfused. The calcaneus fuses within three years, and 37.5% have open epiphyses. The ulna epiphyses close between three and three-and-a-half years, and 53% are not closed. We have to consider that the absolute number of bones is too small to provide statistically significant evidence, and also that an error might be caused by the fact that unfused bones do not preserve as well (thus under-representing young animals). However, it can be assumed that about one-third of the animals were killed below the age of 0.5 to 0.75 years, and half of the animals had been killed before reaching the age of three years. The remainder were kept for milk and wool production. This suggests dual purpose (milk and meat) exploitation, with perhaps a higher proportion of animals kept for meat.

Cattle

Two hundred and twenty bones and teeth were identified as belonging to *Bos taurus*, at 10.42% the second most exploited animal at Busayra. Bones best represented (see Table 13.2) are the Phalanx I and Phalanx II and the astragali, probably because they preserve best. Of the long bones, proximal and distal parts of the femur and distal parts of the humerus occurred most often.

Most of the bones of adult animals seem to come from a fairly small short-horned breed, as was the case at Tawilan and the region in general during the Iron Age (Köhler-Rollefson 1995: 99). However, there is a fairly high proportion of young animals, indicated by their epiphyseal closure. For example, of the eight calcanei, five have open epiphyses, indicating that they are from animals younger than three years. Of the 10 distal metapodial ends, four have unclosed epiphyses, indicating that they belong to animals younger than two to two-and-a-half years. It is likely that the main aim of cattle husbandry was milk production, with the by-product of meat from the male animals, which were slaughtered at different ages under two to three years.

One bone which suggests a different conclusion is a Phalanx I which is very thick and heavily built and shows serious arthritic lesions. Its dimensions suggest that it may come from a male castrated animal. The arthritic deformity probably developed over a long period of physical stress on the joints, as would be caused by its use for draughting purposes.

Equids

The only bone from a domestic horse is one lower molar. Two molars of the domestic ass were found. The presence of only teeth from equids suggests that they were not used as a source of food but for transportation.

Camels

One distal metapodial end was identified as coming from *Camelus* sp. The postcranial skeletons of the two camel species, *Camelus dromedarius* (dromedary, or one-humped) and *Camelus bactrianus* (Bactrian, or two-humped), are virtually identical and cannot be distinguished. However, there is no evidence for the presence of the Bactrian camel so far west, so on zoo-geographical grounds it is likely that the camel species at Busayra was *Camelus dromedarius*.

Dogs/wolves

Only one distal metapodial end can be attributed to either domestic dog or wolf. This is supported by the finds from other Iron Age sites in Edom: at Umm al-Biyara no canid remains were found, while at Tawilan only one distal metapodial end was found (and this was from a later or disturbed context, cf. Köhler-Rollefson 1995: 98).

Pigs

Four bones were attributed to *Sus scrofa*. A humerus and a maxilla fragment definitely came from mature wild boars. Two distal humerus fragments were from young animals, whether wild or domesticated is unknown.

Chickens

Five chicken bones were found. It is possible that chickens were raised for food at Busayra on a larger scale than these few bones indicate. Chicken bones are easily overlooked, they do not preserve well, and they could have been devoured by carnivores after discard. The tentative identification of the domestic chicken, *Gallus gallus*, at Tawilan was never verified (Köhler-Rollefson 1995: 99).

Gazelles

One Phalanx I and one astragalus definitely belong to gazelle. There are also some distal metapodial ends and a few juvenile bones which might possibly be from gazelles. It was impossible to judge from which species the bones came. There are three gazelle species indigenous to Jordan, each preferring a slightly different habitat, but osteologically, apart from their horn-cores, they are very difficult to distinguish (*Gazella gazella*, *Gazella dorcas*, and *Gazella subgutturosa*).

Reptiles

A surprisingly high number of reptile bones (15) was found, mostly skull fragments of large lizards, but closer identification was impossible.

Fish

Ten fish vertebrae were found, with no further identification.

Unidentified

A number of bird bones were not further identified. A number of distal tibia and metapodial ends may have come from ibex. A piece of antler, a proximal tibia, a proximal metatarsus and two Phalanges II may have been from the Mesopotamian fallow deer.

Conclusions

The inhabitants of Busayra relied for their meat supply on the herding of sheep and goats, and to a smaller extent cattle. To a very small extent they supplemented this by hunting wild boar and gazelles, and by raising chickens. This is the standard pattern of animal bone assemblages from Jordanian sites post-dating the Pre-Pottery Neolithic B period. Also found at Busayra were striking amounts of fish vertebrae and skull fragments of reptiles, mostly large lizards. Fish, probably dried, would have provided a significant source of additional protein. It is not known if the reptile bones assembled naturally or were the result of human use, nutritional or ceremonial. Horses and asses, and to a small extent camels, were kept for transport. Some cattle may also have been used as draught animals.

The worked astragalus (DSR)

Busayra produced one worked left *Ovis/Capra* (sheep/goat) astragalus from an unstratified context (B2.20.5, Reg. 1070, ROM 975.416.50) (illustrated on Plate 10.15). It measures: length 31, width 20, height 17 mm. and has three drilled holes on the plantar side, with one penetrating through the bone and appearing on the dorsal side. There is also a hole drilled latero-medially through the bone. The holes have a diameter of 5 mm. It is either a gaming piece or a pendant.

Worked astragali in the central and eastern Mediterranean have been discussed elsewhere (Reese 1985b; 1992; 2000b; 2002b; Gilmour 1997).

Table 13.1: Anatomical element distribution of *Ovis/Capra*/small ruminant sample. Figures in brackets indicate number of unfused bones

Horncores	4
Skull fragments	7
Maxilla	29
Mandibula	77
Teeth	502
Scapula	86
Humerus, dist.	114 (26)
Radius, dist.	56 (8)
Ulna	26 (14)
Pelvis	67
Femur prox.	2 (2)
Femur dist.	84 (16)
Tibia prox.	1 (1)
Tibia dist.	100 (16)
Calcaneus	56 (21)
Astragalus	81
Os centrotarsale	11
Metacarpus	27 (4)
Metatarsus	10
Metapodial, dist. + shaft fragment	105 (56)
Phalanx I	136 (40)
Phalanx II	22 (3)
Phalanx III	11
Patella	4
Vertebrae	143
Ribs	41
Carpal bones	11
TOTAL	1813

Table 13.2: Anatomical element distribution of *Bos taurus* sample. Figures in brackets indicate number of unfused bones

Horncores	1
Scapula	8
Humerus	8
Femur	16 (6)
Tibia	3 (1)
Calcaneus	8 (5)
Astragalus	15
Metacarpus	1
Metatarsus	4
Metapodial	10 (4)
Carpal bones	1
Os centrotarsale	6
Phalanx I	25
Phalanx II	20
Phalanx III	5
Mandibula	8
Teeth	58
Vertebrae	6
Ribs	16
TOTAL	220

Astragali with three holes on the dorsal or plantar side are quite rare. I know of two examples (found with other astragali) from a 1075/50–900 BC cremation burial of a female at Hama in Syria (Riis 1948: 176, fig. 22, no. 6B922), one example from Boghazköy (Phase III, fourteenth–thirteenth centuries BC) in Turkey (Boehmer 1972: 181, pl. LXV: 1872), and 22 among thousands of astragali from the Corycien cave above Delphi on the Greek mainland (Amandry 1984: 350, fig. 8). Closer to Busayra, an ?*Ovis/Capra* astragalus with two holes on one side is known from Phase 3 in Cave I (c. 750–650 BC) at Jerusalem and considered to be a pendant (Eshel 1995: 17, 54, 154, fig. 32: 19).

Comparanda

For comparanda I note here other worked Iron Age examples or concentrations of unworked astragali from nearby areas.

At Tell el-Ajjul were found two astragali of uncertain date, but probably second millennium, with one ground-down on two sides and the other holed and filled with copper (Petrie 1933: 11, nos. 71–72, pl. 29).

At Megiddo a cache of 684 astragali was found in a bowl in locus 2081 of Stratum IVB-VA (late tenth century). The bowl was found in association with a collection of cultic artefacts in a niche in the south-west corner of the courtyard of a large building, perhaps a governor's residence (Loud 1948: 45–6). These were not of pig (*Sus*), as suggested by Lapp (1964: 35 n. 50), but included 660 *Ovis/Capra*, 21 *Gazella* or *Capreolus* (gazelle or roe deer), and three *Dama* (fallow deer). About 135 astragali had cut marks, 'shave' marks or had been polished, 11 were holed, and two had copper/bronze metal fragments attached (Hesse 1990: 214–15; 1995: 224).

At Ta'annak a tenth-century storeroom was identified as a 'cultic structure' partly because of the presence of groups of 76, 44, and 20 astragali, with one holed and one with an iron rod attached (Lapp 1964: 26–32, 35–9). These were originally identified as pig, but are now known to be *Ovis/Capra* (Glock 1992: 289).

There are nine published worked astragali from Jerusalem (Ariel 1990: 144, fig. 25), with at least two ground-down on the dorsal and plantar sides.

Tel Miqne-Ekron produced 66 worked Iron Age astragali, with 61 *Ovis/Capra*, four *Dama*, and one *Bos* (cattle). All of these have been ground-down on one or more sides except for one late seventh-century BC example which is holed through the distal plantar side on an angle and in the lower middle of the dorsal side (Reg. 11371, personal analysis).

Tomb B3 at Akko produced two astragali, with at least one *Ovis/Capra* ground-down on the lateral and medial sides and possibly on the dorsal side (Ben-Arieh and Edelstein 1972: 26, pl. VIII: 5).

At Nebo in Jordan, Tomb 20 produced four 'pig' astragali, and a jug in Tomb 84 produced about 30 astragali (Saller 1966: 197, 264, fig. 10).

Iron Age II Tall Jawa, in the Madaba Plains of Jordan, produced an *Ovis/Capra* astragalus holed near one end (Daviau 2002: 164, fig. 2.124:1).

An Iron II tomb at Samaria produced a 'pig' astragalus (Zayadine 1968: 563).

Iron Age (Stratum III) Lachish produced an *Ovis/Capra* astragalus ground-down on the lateral and medial sides (Lernau 1975: pl. 30: 3–3A).

The Persian period at Tell el-Hesi produced three *Ovis/Capra* astragali, with at least one ground-down on the dorsal side (Bennett and Blakely 1989: 286–7, fig. 213: 2, 7–8).

At Hellenistic Ashdod, an *Ovis/Capra* astragalus was ground-down on the dorsal and plantar sides (Dothan 1971: 67, fig. 30: 1).

There are three worked astragali from Iron Age Sarepta in Lebanon. From the Iron I comes a *Bos* astragalus ground-down on the dorsal and plantar sides and with holes partly drilled on three sides (Reg. L-923-242). From the Iron II to Persian period comes a burnt *Ovis/Capra* astragalus ground-down on the dorsal side (L-923-13), and from the Late Hellenistic to Early Byzantine period comes a *Dama* astragalus ground-down on the dorsal side (L-923-245b) (personal analysis).

Munbaqa in Syria produced four worked *Ovis/Capra* astragali, two ground-down on the lateral and medial sides, one ground-down on the lateral, and one ground-down on the medial side (Boessneck and von den Driesch 1986: 155, pl. 1: 4).

Tell Afis in Syria produced a *Bos* astragalus ground-down on the lateral and medial sides (Wilkens 1992: 198, fig. 2: 6).

The Iron Age (Phase XII) at ʿAin Dara in Syria produced one *Ovis/Capra* astragalus ground-down on the lateral and medial sides (Stone and Zimansky 1999: 81, 108, fig. 88: 7).

14. CONCLUSIONS

Piotr Bienkowski

Overall phasing

The individual chapters on the stratigraphy have highlighted the problems of excavation, recording and analysis encountered in each area, but have nevertheless attempted to propose a defensible sequence of phases. There are even greater uncertainties in attempting to correlate these individual sequences into an overall phasing sequence valid for the whole site. There was no stratigraphic connection between the areas, and different parts of Areas B, D and H could not even be correlated into a single sequence valid within each of those areas. Furthermore, there is no diagnostic dating evidence — such as the appearance or disappearance of particular pottery types — which can function as a reference point for the relative position of individual phases across different areas.

Two stratigraphic datums which are common to Areas A–D have been used as reference points in an attempt to correlate the phasing: these are two fire/destruction and collapse episodes, the first apparently localised in particular parts of each area, the second being the widespread, final fire/destruction which was followed by abandonment, characterised by thick, dark ash and collapse of the walls. That is the basis for the relative phasing within the Integrated Stages in Table 14.1 — the working hypothesis is that these two fire/destruction episodes occurred at the same time in every area, and as a consequence the remainder of the overall phasing can be pieced together around them.

In applying this tentative overall phasing (Table 14.1), some of the same patterns appear across the areas, which might be regarded as some confirmation for this integrated sequence. The relative phasing of the different parts of Areas B and D follows the tentative suggestions for correlation outlined in the concluding sections of Chapters 5 and 7. Area H has not been fully integrated into the overall phasing, since there are uncertainties regarding the date of the earliest wall (Phases 1 and 2) in Square H1, i.e. whether it is Iron II/Persian or Nabataean/Early Roman (see Chapter 8). However, the Early Roman date of the H1 rebuild and of H2 is secure, and so this has been integrated.

Integrated Stage 1

In all four main areas, Areas A–D, the earliest human activity was the construction of walls and laying of floors on bedrock or on a fill. Most of these earliest structures were incompletely excavated and cannot be interpreted: certainly it is likely that in Areas A and C remains of this stage were more widespread than what was excavated. In Square D2 a rectangular room was identified, and in Squares B1–4 a wall may have been the earliest perimeter (town?) wall.

Integrated Stage 2

In Areas A and C, large public buildings were constructed on stone and earth platforms. The walls forming the Area A platform were arranged in a lattice framework which acted as a retaining structure for the hard earth fill. The Area A building measured 76.50 by 38 m., with plastered walls, and there were traces of other structures against it. Its plan was based on two wings, each with rooms around an inner courtyard; it is not clear if there was access between the two courtyards, and it is possible that the two wings of the building functioned separately. This building has been tentatively identified as a temple, with the north-east wing containing a possible purification room and steps leading to a long narrow 'cella'. The rooms surrounding the courtyard, and in the south-west wing, may have been storerooms, and the south-west wing may have functioned as a storage and administrative annexe to the temple proper.

The Area C building covered at least 624 square metres, the plan consisting of a large rectangular courtyard with one or two rows of smaller rectangular rooms on the south-west side. There was evidence of structures against the platform supporting the building. This building has been tentatively identified as a residency or palace, with its massive plastered reception room or courtyard bounded by thick walls, a small plastered bathroom with bath, toilet and steps, and a stone-paved storage area.

In Area B, new walls created a stone-paved gateway which incorporated a possible paved track outside the perimeter wall. Behind the wall, in Squares B5–8, was a rectangular structure with a plaster floor. At some time within Integrated Stages 1 and 2, the area north-east of the perimeter wall was utilised by an underground cave complex whose function is unknown.

On the other side of the Area A 'temple', in Area D, there were also rectilinear structures, with new walls throughout Integrated Stage 2 further subdividing the rooms. The occupational deposits here included hearths or ovens and a plaster trough.

This stage ended with localised fires or destruction in parts of the plastered courtyard, around the steps and in the 'cella' of the Area A 'temple', in the reception room/courtyard, bathroom and storage area of the Area C 'palace', and in the Area B gateway. Some of the Area D walls collapsed, but there was no evidence there of fire.

Integrated Stage 3

The Area A 'temple' was substantially rebuilt and some new walls were added, partitioning rooms to create smaller spaces. The construction techniques were different from the previous stage, and now the walls do not appear to have been plastered. Two major walls had a concave construction, creating a winged effect and giving the south-west wing the appearance of a separate building. However, with a few minor changes the original plan of two wings was retained.

The Area C 'palace' was also rebuilt, with spaces further subdivided and enclosed by new walls with doorways. A series of new walls created a clear circulation pattern in one part of the building, which ran at the same absolute height

Table 14.1: Stratigraphic chart showing integrated stages of occupation at Busayra

Integrated Stage	Area A	Area B1-4	Area B-8	Area B9-10	Area C	Area D2	Area D3	Area H	Area M	Date
1	*Phase 1*: Walls and occupation on bedrock	*Phase 1*: Occupation on bedrock *Phase 2*: Walls (earliest town wall?) *Phase 3*: Associated occupation	*Phase 1*: Flimsy walls *Phase 2*: Associated occupation		*Phase 1*: Walls *Phase 2*: Occupation deposits not associated with walls	*Phase 1*: Fill and rectangular room *Phase 2*: Associated occupation	*Phase 1*: Plaster floor on bedrock or fill, and associated occupation			Iron II, late 8th to 7th centuries BC
2	*Phase 2*: Stone and earth platform *Phase 3*: Public building (temple?) on platform Localised fire	*Phase 4*: Gateway *Phase 5*: Gateway stone-paved, associated occupation Localised fire	*Phase 3*: Rectangular structure		*Phase 3*: Public building (palace?) on stone platform *Phase 4*: Use of public building - reception room, bathroom, storage Localised fire	*Phase 3*: Mudbrick and stone structure *Phase 4*: Associated occupation *Phase 5*: Rebuild *Phase 6*: Associated occupation *Phase 7*: Collapse	*Phase 2*: Rectilinear structure *Phase 3*: Associated surfaces and oven *Phase 4*: Wall *Phase 5*: Associated occupation *Phase 6*: New walls *Phase 7*: Surfaces and occupation deposits *Phase 8*: Localised collapse			Iron II, 7th century to 553 BC (Nabonidus)
3	*Phase 4*: Rebuild of public building (temple?), subdivision of rooms Destruction and collapse	*Phase 6*: Rectangular rooms/houses, perimeter wall with postern gateway, change of approach to gateway *Phase 7*: Associated occupation, gateway blocking *Phase 8*: Fire and collapse	*Phase 4*: Two rectangular structures *Phase 5*: Associated occupation - house, storage and cooking *Phase 6*: Fire and collapse	*Phase 1*: Walls *Phase 2*: Associated occupation *Phase 3*: Collapse	*Phase 5*: Rebuild of public building (palace?), subdivision of rooms, new gatehouse? *Phase 6*: Use of public building Localised destruction? *Phase 7*: Fire and collapse	*Phase 8*: Rebuild *Phase 9*: Fire and collapse	*Phase 9*: Alteration of plan - two rectangular rooms *Phase 10*: Fire and collapse			Iron II/Persian (to Early Hellenistic?), 553 to c. 300/200 BC
4	*Phase 5*: Threshing floor (?) and elliptical walls							Walls and associated use in H1 and H2 (rebuild of earlier wall in H1?)		Nabataean/Early Roman, c. 1st century BC to 2nd century AD Late Roman sherds in topsoil, c. 3rd to 4th centuries AD
5									Use of village cemetery and pilgrimage site	Ottoman, c. AD 1516-1918

along a re-used stone floor through three doorways. A new piered gate led to two narrow rooms and is perhaps to be interpreted as a 'gatehouse'. The minimum area covered by this rebuilt complex was 1,015 square metres.

In Area B, a massive new perimeter wall was built, with a postern gateway. A wall outside the perimeter wall may have blocked off a track or road up the slope from the north-west, to encourage an approach to the gate from the south-east. Eventually the gateway was blocked completely. Behind the perimeter wall was a series of rectangular rooms or houses, with shelves, benches or platforms against the walls, one with an internal tabun, and a possible external storage and cooking area between two of the rooms/houses.

In Area D, walls were rebuilt and new walls altered the plan to create two very small closed rectangular rooms.

Thick black ash mixed with burnt pottery and bone and collapsed stones testify to an intense fire marking the end of this stage in Areas A, C and D and much of Area B, although an initial fire in Area C seems to have been restricted to the reception room/courtyard and 'gatehouse'.

Integrated Stage 4

In Area A, there was some evidence of use following a period of abandonment, but this was not a coherent occupation phase. One feature may have been a Roman threshing floor. Some narrow elliptical walls were perhaps used for agricultural purposes, but with no evidence of date. A human burial was cut into a floor of Integrated Stage 3, but its date is also uncertain. Area H, the north-west corner of the perimeter wall, shows clear evidence of construction and use of a rubble-core wall in the Nabataean/Early Roman period, but the section of wall in Square H1 may have been originally constructed in the Iron II/Persian period, which would associate it with Integrated Phases 1–3.

Integrated Stage 5

Late Islamic (Ottoman) pottery was found in Area M, south-east of the main excavations, adjacent to the disused village cemetery and the village mosque (see Chapter 1). The pottery is probably associated with use of the cemetery and the mosque, which is a minor pilgrimage site as it contains the tomb of a Muslim holy man, Nabi Sheed.

Dating

The broad range of the dates of occupation at Busayra has been established through the pottery (see Chapter 9). In summary, the pottery from Integrated Stages 1–3 dates between the late eighth century and c. 300/200 BC. The precise end-date is uncertain: Attic imports indicate that Integrated Stage 3 continued into the fourth-century BC, but five Hellenistic black-slipped sherds, one of which was attributed to Integrated Stage 3 but might be a stray, would date the end of Integrated Stage 3 to the third century BC. The local late Iron II forms at Busayra therefore appear to continue virtually unchanged to the end of the Persian period and perhaps into the Early Hellenistic period, with the probable addition of some new forms but no discernible break between the periods, as seems to have been the case further north at Hisban and Tall al-ʿUmayri, and probably Tall Jalul, and perhaps in the south at Tawilan and Tall al-Khalayfi (Bienkowski 2001c).

Although Integrated Stage 4 was not a coherent occupation phase, the (re?)building of the perimeter wall in Area H is dated by Nabataean and Early Roman pottery to between the first century BC and the second century AD. It is possible, but not proved, that the tentatively identified Roman threshing floor, and perhaps the elliptical walls, date to the same period. However, a few Late Roman sherds in topsoil indicate human presence at Busayra in the third/fourth century AD.

Integrated Stage 5 is dated by Late Islamic sherds from Area M to the Ottoman period (AD 1516–1918).

The date of Integrated Stages 1–3, and of the final destruction and abandonment of Iron II/Persian Busayra, are much later than the excavator, Crystal Bennett, acknowledged. Bennett argued that Busayra was destroyed and abandoned in the sixth century BC, and her final published view (1983: 17) attributed this to the Neo-Babylonian armies, despite her previous attempts (1977: 8) to identify Persian-period pottery at Busayra. She appears to have been unaware of the Attic and Hellenistic pottery in Integrated Stage 3 contexts.

It may be possible to speculate on more precise dates for each of Integrated Stages 1–3 by attempting to correlate the dating evidence from Busayra with the sparse historical data. Clearly, the two fixed points are the earliest possible date for the local pottery — late eighth century BC — and the Attic and Hellenistic pottery in Integrated Stage 3 contexts, which dates the end of Iron II/Persian occupation to c. 300/200 BC. Two working hypotheses are proposed here: 1) that the selective destruction at the end of Integrated Stage 2 should be attributed to Nabonidus in 553 BC; and 2) that the subsequent Integrated Stage 3 dates from 553 BC until c. 300/200 BC.[1]

Five arguments can be advanced in support of these two hypotheses:

1. According to the Nabonidus Chronicle for his third year (553 BC), Edom, or conceivably specifically Busayra, may have been the objective of an attack by Nabonidus (Beaulieu 1989: 166, 169; Grayson 1975: 105, 282). The signs are broken and the exact reading is not certain, but the relevant text reads:

   > In the month Kislimu, the king [mustered?] his army [and ... ...] and to Nabû, Bel-dan, brother [... ... ...] of Amurru, to [... ...] he/they encamped [against? the land of E]dom. [... ... ...] the large armies [... ... ... the g]ate of the city Rugdini (Šindini?) [... ... ... he ki]lled him [... ... ...] x [... ... ...] his army (Beaulieu 1989: 166).

[1] These arguments have been set in a wider context in Bienkowski 2001c.

Beaulieu restores the name *[u]du-um-mu* here as 'Edom', and the restoration of the relevant passage can be either 'he/they encamped against the land of Edom' or 'against the city of Edom', and this is usually understood as meaning a siege of Busayra and the annexation of Edom (Lindsay 1976: 36; Bartlett 1989: 157–61). Beaulieu dates this action more specifically to December 553 BC (1989: 168–9). However, *[u]du-um-mu* could refer to either Edom or Duma in north-west Arabia (Lindsay 1976: 33–4), although Smith argued that Duma seems to be too far east and out of the way if this event occurred while Nabonidus was on his way to Tayma in Arabia (Smith 1944: 37–8, 139–40 nn. 86, 87). There is certainly no evidence that Edom was attacked or annexed earlier by the Neo-Babylonians. According to Josephus (*Ant.* X.9.7), Nebuchadnezzar conquered Ammon and Moab — but not Edom — in 582 BC, and this is usually interpreted as meaning that Ammon and Moab were annexed at this point and were henceforth ruled directly from Babylon (Herr 1999: 232).

2. Further evidence for the presence of Nabonidus in the vicinity of Busayra is the relief at Sela, just to the north-west of Busayra (Dalley and Goguel 1997). This shows a standing king, above him a crescent and a star, and an illegible inscription. Analysis of the style of the relief identifies the figure almost certainly as Nabonidus. Dalley and Goguel (1997: 174–5) propose that the relief was carved to commemorate Nabonidus' journey through Edom towards Tayma, perhaps in years three or four of his reign (i.e. c. 553–552 BC). They further suggest that the presence of the relief in Sela implies that Edom was under (direct?) Babylonian administration at that time and that Nabonidus' campaign might have been responsible for the destruction of Busayra.

3. If it is accepted that the historical evidence implies an attack on Busayra by Nabonidus, then the localised destruction at the end of Integrated Stage 2 is the only possible extant archaeological evidence for it, since the only other evidence for destruction, at the end of Integrated Stage 3, dates much later than Nabonidus.

4. The selective destruction at Busayra at the end of Integrated Stage 2 was concentrated in parts of the plastered courtyard, around the steps and in the 'cella' of the Area A 'temple', in the reception room/courtyard, bathroom and storage area of the Area C 'palace', and in the Area B gateway. Thus, the fire was concentrated in what can be described as the key symbolic 'public' areas: the 'cella' of the temple, the 'reception room' of the palace, and a major gateway through the defences. This might suggest that the destructions were not random outbreaks of fire, but deliberate and focused messages left by a conqueror intent not on annihilation but on subjugation (as suggested by Bartlett 1989: 159). This would fit the hypothesis that the attack was the work of Nabonidus.

5. Following the partial destruction at the end of Integrated Stage 2, the Area A 'temple' and the Area C 'palace' were rebuilt in Integrated Stage 3. This rebuilding was characterised especially by the partitioning of rooms to create smaller spaces, and the addition of new doorways. Although this suggestion is pure speculation, such rebuilding (following partial destruction) is not incompatible with a slightly different usage for the buildings following a conquest of Busayra and an annexation of Edom by Nabonidus. Despite the lack of any specific evidence, the possibility cannot be excluded that the 'palace' was redesigned for use as a 'residency' by a governor appointed by the Babylonians, and later the Persians.

If the arguments outlined above are accepted, and allowing a notional period of late eighth to seventh centuries BC for Integrated Stage 1 (there is no diagnostic evidence that allows for chronological separation between Integrated Stages 1 and 2), the following dates can be tentatively proposed for the Iron II/Persian phases at Busayra:

Integrated Stage 1: late eighth to seventh centuries BC
Integrated Stage 2: seventh century to 553 BC
Integrated Stage 3: 553 to c. 300/200 BC

It must be emphasised that these suggested dates are speculative, but as a working hypothesis they have been included in Table 14.1.

The nature and role of Busayra

Busayra is a natural stronghold on a high spur surrounded on three sides by wadis and connected to the main land mass only on the south side. It is probably to be identified with Bozrah, mentioned in the Old Testament as a city of Edom. To the south is a route towards Petra along part of the modern King's Highway; to the south-west is the copper-production area of Faynan, probably reached via the Wadi Dana; to the north-west the Wadis Qarqur and Hamayidah lead past Ramsis, Sela and other Iron II/Persian sites towards Wadi Khuneizir and the Southern Ghors; and to the west the Wadi Dahal leads towards the Wadi Arabah and the crossing to 'En Hazeva.

Crystal Bennett excavated two large public buildings, probably a temple and a palace, constructed on stone and earth platforms which raised them above the surrounding houses, the whole area bounded by a perimeter wall. It is likely that the excavations revealed only the administrative centre, since there is evidence that the ancient site continued to the south-east in the area now occupied by the modern village.

Following an initial phase of poorly elucidated architecture and perhaps the earliest perimeter wall (Integrated Stage 1), two phases of the Area A 'temple' and the Area C 'palace' were built on stone and earth platforms (Integrated Stages 2–3), similar to the podium supporting the palace-forts and residency at Lachish (Reich 1992: 208–9; Ussishkin 1993: 906–7; Aharoni 1975: 34). Originally, Bennett (1977: 9) interpreted the evidence as a distinction between an 'Upper Town' and a 'Lower Town', separated by a battered enclosure wall. However, it is likely that this 'enclosure wall' between Areas A and B was in fact the edge of the platform supporting the Area A 'temple' (see Chapter 5), and Bennett failed to recognise that

the Area C 'palace' was built on a similar platform. The construction of temples and palaces on podia was a widespread practice throughout Mesopotamia and the Levant during the late Iron Age, found at Khorsabad, Nineveh, Nimrud, Tall Halaf, Zinjirli, Til Barsip, Tall Shaykh Hamad, Megiddo, Lachish and elsewhere (Bienkowski 1995: 141–2 with references). The purpose of the podia was to elevate the key civic and religious buildings above the surrounding structures.

The plans of the Area A 'temple' and Area C 'palace' have been compared to the so-called 'open-court' buildings in Palestine, as at Megiddo, Hazor, Lachish and Ayyelet ha-Shahar (Amiran and Dunayevsky 1958; Bennett 1974: 4; Reich 1975; 1992: 214–22; Bienkowski 1995: 140–41). Each of the buildings is slightly different in plan, but the essential features at Busayra, either in the temple or palace or in both, are much the same: a more or less rectangular shape, a more or less central courtyard, an off-centre entrance, the presence of a drainage system, thick inner walls, and a double row of rooms.

The Area C 'palace' has a similar arrangement of rooms around a courtyard, paved areas and toilets as the Amman Citadel Stratum 7 residence (Humbert and Zayadine 1992: 250 fig. 12, and pls XIIb and XIVa). There are also some similarities to the reception suites of Neo-Assyrian palaces and residences, in particular the unplastered niche in the wall of the 'courtyard/reception room', which may have been for the insertion of a stone slab, sometimes located next to the throne dais (see Chapter 6).

The Area A 'temple' consisted of two wings, both with what appear to be storage rooms surrounding a courtyard; the second wing was perhaps a storage and administrative annexe to the 'temple' proper. The rooms surrounding the 'temple' courtyard yielded numerous long cylindrical jars (Jars E), not properly paralleled elsewhere in Edom, and at Busayra restricted to these rooms. Similar vessels are found in storage, administrative and/or temple contexts at Tel Miqne, Malhata and Beersheba, and they may have been a type of industrial jar, at Busayra perhaps used to store oil or other commodities for use in temple ceremonies (see Chapter 4).

Between the perimeter wall and the Area A 'temple' was a series of rectangular houses or rooms in Area B, with evidence for storage and cooking suggesting domestic use. The area north-east of the perimeter wall was utilised by an underground cave complex of uncertain function. Small rectangular rooms with hearths or ovens were also found in Area D, against the face of the platform on the other side of the 'temple'. However, the enigmatic Double bowls were mostly, although not exclusively, restricted to Area D (see Chapter 9). Their function is uncertain, but they are fairly rare and not a standard component of a domestic assemblage. Also found in Area D were sherds impressed with stamps of grazing stags (cf. Chapter 10), and an inscribed jar (Figure 9.45:6). These unusual and special finds may suggest that the Area D 'houses' were not purely domestic but had some connection with the Area A 'temple', against whose platform they were constructed.

The stratigraphy of the perimeter wall in Area B reveals constant change, perhaps reflecting a series of responses to problems of defence and access. There was a sequence of walls in Integrated Stages 1–2, creating a paved entrance or gateway, possibly approached by a paved track from the north-west. Following a fire/destruction in the gateway at the end of Integrated Stage 2, a massive new perimeter wall was built in Integrated Stage 3, with a postern gateway. Only in this stage does this resemble a casemate system, since the new perimeter wall was built against house walls of the previous stage. A small wall outside the perimeter wall blocked off the old track. In the final phase of Integrated Stage 3 the gateway was blocked completely, prior to its final destruction.

The topography of the site may help to throw some light on this sequence of defences. On the north-east side of Busayra is the Wadi Janin, which is very deep, rugged and steeply terraced, and in places impassable. The Busayra-Tafila Archaeological Survey found virtually no sites in this wadi (MacDonald *et al.* 2000; cf. Chapter 2). Clearly, this was not a natural approach to the site. However, on the south-west side, where Area B was located, are the gentler slopes of the Wadi Qarqur, which seems to have been an ancient route (see Chapter 1). On this side of Busayra the entrance was originally approached by a paved track or road up the side of the Wadi Qarqur from the north-west, probably used by the inhabitants of Busayra to access the agricultural terraces and by people from the many Iron II/Persian sites along the wadi. In Integrated Stage 3, following a fire/destruction in the entrance area, a thick wall with a postern gate was added and this track was blocked off, creating access to the newly fortified gateway only from the south-east. In the final phase this entrance was blocked, presumably denying access from the Wadi Qarqur altogether, and suggesting the perceived existence of a threat from this easily accessible wadi.

The excavated animal bones indicate that the inhabitants of Busayra relied for their meat supply on the herding of sheep and goats, and to some extent cattle, which may also have been used as draught animals. There was only limited evidence for the hunting of wild boar and gazelles. Dried fish would have provided additional protein. Other animal bones identified were chicken, dog/wolf, unspecified bird bone, and striking numbers of reptile skulls, mostly from large lizards. Horses and asses, and to a small extent camels, were kept for transport. Botanical evidence was not collected during the excavation, so no information on crop cultivation is available. However, the large numbers of stone grinders and querns, and the circumstantial evidence of the surrounding fertile agricultural terraces, especially in the Wadi Qarqur, strongly imply that the subsistence of Busayra's population depended on agropastoralism, a combination of animal herding and crop cultivation.

While Busayra's agropastoral economy appears no different from that of other Iron Age sites in Edom, or indeed Transjordan (e.g. Tawilan, Bennett and Bienkowski 1995: 104), the architecture and town plan are quite unique in Edom. No other structure in Iron Age Edom has yet been identified as a temple or shrine, except for the Area A 'temple' at Busayra. Most Iron Age settlements in Edom appear to have been open villages and farms, such as Tawilan (Bennett and Bienkowski 1995) and Khirbat al-Mu'allaq (Lindner, Knauf and Zeitler

1996). Many sites in the Petra area were located on almost inaccessible mountain tops, and are characterised by long corridor-like rooms or a conglomeration of smaller buildings, with little or no painted pottery, such as Umm al-Biyara, as-Sadeh, Jabal al-Qseir and Ba'ja III (cf. Lindner *et al.* 1996: 160–61). Ghrareh is an exception, since it was on a spur surrounded by an enclosure wall, but it is most likely to be interpreted as a fortified farmstead with perhaps some involvement in trade (Hart 1988). Tall al-Khalayfi is still enigmatic, variously described as a border fortress, a grain storage facility, or a fortified caravanserai; reappraisal of Glueck's excavations proposed two main phases, a casemate fortress with a six-roomed building in the centre, followed by a fortified settlement with a four-chambered gate (Pratico 1993). However, renewed excavations at Khalayfi are drastically revising Glueck's stratigraphy and plans, and it is conceivable that his original division into strata will not survive this new reappraisal (Mussell 1999). Nevertheless, Khalayfi's unique mixture of Negev Ware, 'Edomite', 'Midianite', Greek, Arabian and Egyptian pottery and other objects (Glueck 1993: 869) strongly suggests that its role was connected with the Arabian trade, as a gateway town on the Red Sea coast trade route (Bienkowski and van der Steen 2001: 37).

It has been argued that the highly varied settlement layout and architecture at sites in Edom suggests a lack of strong centralised administration (Zeitler in Lindner *et al.* 1996: 161). Knauf (in Lindner *et al.* 1996: 162) speculates that each of the mountain strongholds in the Petra region formed a 'citadel' of an individual clan or tribe, and interprets the contrast between Busayra and the Petra sites in terms of an opposition between the 'state' and the tribes, suggesting that the villagers were avoiding the state and its agents (Knauf 1992: 52). The pottery assemblages too show both strong regional variation and further variation dependent on site location. The Busayra pottery is a distinct regional corpus in northern Edom, demonstrably different from assemblages in southern Edom, which themselves are highly varied, with Tawilan, the Petra 'mountain-top' sites and Tall al-Khalayfi each with quite distinct assemblages, supporting Knauf's notion of separate tribal communities (see Chapter 9; Zeitler in Lindner *et al.* 1996: 159–60), although some of the ceramic wares at Busayra originated in the Petra area and in the Wadi Arabah, indicating some degree of contact.

Busayra was clearly some sort of administrative and religious centre, but the evidence indicates that Edom was a 'tribal kingdom' rather than a centralised nation state. Recent work on the social organisation of the Iron Age kingdoms of the southern Levant concludes that they never ceased to be essentially kin-based or tribal (LaBianca and Younker 1995; Younker 1997; LaBianca 1999; cf. also Knauf 1992; Knauf-Belleri 1995). They lacked some of the essential features of true nation states, and remained fundamentally tribal societies or 'tribal kingdoms' in which the political organisation and the unit of subsistence was the tribe, not the state. The evidence of settlement patterns, architecture and pottery in Edom, and the lack of a hierarchy of settlements, suggests little centralised control from Busayra, bearing out LaBianca and Younker's (1995: 406–11) hypotheses that, compared with Moab and Ammon, Edom had a lower degree of supra-tribal organisation, settlement density and land-tied tribalism, and a higher degree of range-tied tribalism.

Among the characteristics of such tribal kingdoms is the continuation of the tribal social order alongside a supra-tribal authority ('king'), and the existence of heterarchical rather than hierarchical power structures, whereby each site or centre based its power on a different political resource or combination of resources (LaBianca 1999: 21–2). From this perspective, Busayra was not a national 'capital' in the sense of being the hub of a nationwide monolithic administrative network, but a tribal centre which became the base of the supra-tribal authority ('king'), which interfaced with the imperial powers of Assyria, Babylon and Persia, and whose power was based on certain resources. Its increasingly wide-ranging bonds of cooperation and allegiance with tribes in the south of Edom enabled them to recognise Busayra's (transient?) supra-tribal authority and to coalesce into a state called Edom, but they retained their own power bases.

Busayra's resources, and the source of its political power and influence, were control of copper production, control of the Arabian trade to the Negev and Gaza, and control of contacts with the Mesopotamian powers. Although Busayra's relationship with the copper-mining area of Faynan has not yet been clearly established, they are only 15 km. apart and easily accessible through the Wadi Dana. It may be significant that the earliest Iron Age settlements in Edom — Khirbat an-Nahas and Barqa al-Hetiye, dating to the ninth century BC — are in the Faynan area and were probably connected with copper production (Bienkowski 2001a; for radiocarbon dates, cf. Hauptmann 2000: 66 table 7, and p. 189). It is likely that the development of a copper industry was a factor in state formation in Edom. The huge scale of the operations must have required considerable organisation. It has been estimated that the major Iron Age copper-production centres in the Faynan area — which included Khirbat an-Nahas — produced between 6,500 and 13,000 tons of copper, considerably more than in any other period (Hauptmann 2000: 97 table 9, 99, 155, 189–90). It seems very likely that the location of the earliest settlement at Busayra in the late eighth century BC was partly influenced by its proximity to Faynan (Knauf-Belleri 1995: 113).

There is evidence that from the late eighth century BC through the Persian period the Arabian trade in frankincense and other luxury goods ran through Busayra, 'En Hazeva and the Beersheba Valley to Gaza (Singer-Avitz 1999; Bienkowski and van der Steen 2001: 36–7).[2] Busayra is situated in an ideal position to control the main crossing point of the Wadi Arabah

[2] It has been suggested that the Arabian trade commenced considerably earlier, at the end of the Late Bronze Age (Artzy 1994; Jasmin 1999) or in Iron I (Finkelstein 1995: 122), but if this was the case, its route(s) through Edom in those periods are presently unknown. Note that 'En Hazeva is not currently dated as late as the Persian period (Cohen and Yisrael 1995: 11 date the latest 'Iron Age' deposits to the sixth century BC), but some sites in the Beersheba Valley may have continued to function as administrative centres (Beit-Arieh 1999: 3).

opposite 'En Hazeva, reached through the Wadi Dahal. At this point the Wadi Arabah is almost at its narrowest, at c. 13 km. wide, and forms a level and easy route, combined with the rich water resources of 'En Hazeva and the Wadi Fidan, whereas immediately to the north and south its topography changes, making crossing more difficult (Harel 1959; Bienkowski and van der Steen 2001: 37 n. 16).[3] The ceramic parallels between Busayra and sites in the Negev (see Chapter 9) are more satisfactorily explained through interaction as a result of the Arabian trade and pastoral movement of tribal groups (Singer-Avitz 1999; Bienkowski and van der Steen 2001: 36) than by an Edomite invasion of the Negev (e.g. Beit-Arieh 1995a).

The Assyrian king Adad-nirari III claimed that Edom submitted and paid tribute after his campaign to Palestine in 796 BC, but no specific king of Edom was named (Millard 1992; cf. Weippert 1987 for references to cuneiform sources). Qos-malak, Ayarammu and Qos-gabr are mentioned as tributary kings of Edom in the inscriptions of Tiglath-pileser III and his successors, Qos-gabr also appearing on a (restored) seal impression from Umm al-Biyara (Bartlett 1989: 213). There is no specific evidence that these kings were based at Busayra. The seal of a possible royal official was found at Busayra (cf. Chapter 11; Bartlett 1989: 212), but a series of impressions from a single seal of an undoubted royal official was found on pottery from Tall al-Khalayfi, naming 'Qos-'anal, servant of the king' (DiVito 1993: 53–5). It cannot therefore be proved conclusively that Busayra was the seat of the kings of Edom, but it is a reasonable hypothesis given the existence there of buildings identified as a palace and a temple dating to the period of the Assyrian references, and the lack of a plausible alternative site in Edom. Their recognition as kings by the Assyrians gave the rulers of Busayra clear prestige. Assyrian texts record that royal officials from Edom brought the annual tribute to Nimrud and Nineveh. These delegations, arguably comprising palace officials from Busayra, were well cared for and supplied with wine and gifts, giving them the opportunity to admire and emulate the wealth and power of their Assyrian hosts (Weippert 1987: 100; Postgate 1992: 260; Bienkowski 1995: 141–2; 2000: 52–3). These are experiences which clearly distinguished them from their tribal contemporaries in the south of Edom.

Political power and influence might also stem from the location of a religious shrine (LaBianca 1999: 22), but it is uncertain to what extent the Busayra Area A 'temple' can be regarded as a 'national' shrine. There is no evidence from epigraphic finds or Old Testament references to indicate the identity of the deity or deities who might have been worshipped in the 'temple'. It has been suggested that the shrine at Horvat Qitmit in the Negev was Edomite and dedicated to Qos (Beit-Arieh 1995b: 206), but the architecture and cultic finds there are completely different and it cannot be used as a parallel. There is nevertheless some temptation to identify the Busayra 'temple' as dedicated to Qos, since two kings of Edom had names compounded with this theophoric element, but this is speculation (Bartlett 1989: 203; Dearman 1995: 120–21). While this argument might allow the identification of Qos as the deity of the royal line at Busayra, there is no clear evidence that Qos was a 'state' god of Edom or the head of a pantheon (Dearman 1995: 121, 128–31). Certainly Qos is known to have been worshipped in Edom, the Hijaz and the Negev (Bartlett 1989: 200–04; Dearman 1995: 123–7), but there is also some evidence that other gods were known, such as Hadad, El, Baal, Astarte and perhaps Sin, some of them perhaps assimilated within Qos (Bartlett 1989: 194–6; Dearman 1995: 123–31). It is possible that different tribal or kin groups in Edom recognised different deities or aspects of deities (Dearman 1995: 128–31), as may have been the case also in Ammon (Aufrecht 1999).

The resources and power of tribal centres in southern Edom depended on other factors. All sites in the Petra region were located in rich arable lands, providing opportunities for agropastoralism, but the mountain-top locations provided an additional resource of security and refuge. Ba'ja III and al-Qseir may have been small farming communities, while Umm al-Biyara and as-Sadeh have been interpreted as regional control centres, perhaps of local tribes (Zeitler in Lindner *et al.* 1996: 161). On the plateau, Tawilan and Ghrareh were also most likely agropastoral communities, but with evidence linking them to wider trade networks to the north and south (Bennett and Bienkowski 1995: 104; Hart 1988: 96–8). Tall al-Khalayfi may well have been a gateway town on the Red Sea coast, at a key point on the trade route between Arabia, Busayra and Gaza, and its quite unique mixed ceramic assemblage may reflect an independent political centre within a heterarchical state of Edom (Bienkowski and van der Steen 2001: 37).

Summarising Busayra's nature and role, the site is ideally located on an easily defended, high spur among rich arable lands to provide secure opportunities for agriculture and pastoralism, and to maximise proximity to the Faynan copper mines and to the Wadi Arabah crossing used by the Arabian trade. Settled from the late eighth century to c. 300/200 BC, it was the administrative and religious centre of the supra-tribal authority of the heterarchical state of Edom, recognised and treated as kings by the Assyrians. Edom was composed of largely independent tribal groupings, each with their own political centres based on resources of agropastoralism, security or trade, held together by bonds of cooperation and allegiance to the supra-tribal monarchy at Busayra.

Clearly Busayra's role must have changed over this long period, during which imperial control over Edom shifted from Assyria to Babylon to Persia and finally to the successors of Alexander the Great, but identifying and assessing any changes is speculative. It has been suggested above that the localised destruction of parts of Busayra at the end of Integrated Stage 2 was the work of Nabonidus during his campaign of 553 BC. Edom may have been annexed at this point and ceased to exist as an independent state. If this was the case, then the Area C 'palace' can be interpreted as the residence of the king in Integrated Stage 2, but, following selective destruction and some alteration, in Integrated Stage 3 it may have become the

[3] In *Seven Pillars of Wisdom* (20–21.ii.18), T.E. Lawrence describes his overnight journey in 1918 by camel from Busayra, via the Wadi Dahal, across the 'windings of the marly labyrinth' of the Wadi Arabah to 'En Hazeva, and finally to Beersheba.

residency of an official appointed by the Babylonians. There are no further stratigraphic breaks until the massive final destruction of Integrated Stage 3 in c. 300/200 BC, which might be interpreted as evidence for continuity, but Edom's position under the Persians is not well understood. There appears to have been little immediate administrative change in Palestine and Transjordan in the transition from Babylonian to Persian rule in 539 BC (Bienkowski 2001b; Stern 1990: 221). After 486 BC, 'Beyond the River' — the area from the Euphrates to southern Palestine, including Transjordan — became a satrapy (Lemaire 1994: 13). Therefore, Edom probably came under the overall rule of the Persian satrap of 'Beyond the River'. A sub-unit of a satrapy was a province, ruled by a governor. The only certain provinces within the satrapy of 'Beyond the River' in the sources are Judah and Samaria in Palestine (Lemaire 1994: 16–24, 41–6). At present there is no evidence that Edom became a separate province within the satrapy of 'Beyond the River', but there is evidence that Ammon was a separate province (Herr 1999). The name of the possible Persian governor of Ammon, Shuba', is described as a typical Ammonite nickname (Herr 1999: 233), while Tobiah, the Persian-appointed official in Ammon named in Nehemiah 2:10, is described as 'the Ammonite', and so, like elsewhere, it is likely that governors were members of indigenous groups rather than external appointees (Eph'al 1988: 151–2). It is therefore likely that Edom continued to be represented by the supra-tribal authority at Busayra under the Babylonians and Persians, and possibly into the Early Hellenistic period under the Ptolemies if the settlement at Busayra continued beyond c. 300 BC (for the Hellenistic period, see Smith 1990; Berlin 1997). Just as the Ptolemies maintained the Tobiads' status under the Persians in Ammon, with their stronghold at 'Iraq al-Amir, so too the tribal family at Busayra may have continued as a leading family, perhaps in the role of 'client-shaykhs' of the Persians and Ptolemies (cf. Berlin 1997: 11), but how far their authority over the tribes of southern Edom remained at this period is conjectural.

Who or what was responsible for the massive fire/destruction at Busayra at the end of Integrated Stage 3 in c. 300/200 BC is not known. Evidence for an initial fire in the reception room/courtyard and 'gatehouse' of the Area C 'palace', preceding the main conflagration, might point to deliberate destruction, initially aimed at key symbolic areas, rather than an accidental fire or natural causes such as an earthquake. The search for a perpetrator is made more difficult because the exact date of the destruction is not known, but there are several possible scenarios. Diodorus Siculus (19.95–7) describes a night attack in 312 BC by Athenaios, a general of Antigonos Monophthalmos, one of the successors of Alexander the Great, on the Nabataeans, at that time still essentially nomads. Diodorus describes the Nabataeans as having a rocky stronghold with only one easily defensible access. This description is often applied to Umm al-Biyara, but Sela or Busayra are closer to the geographical description and distances given by Diodorus (cf. Schmid 2001: 367). The sparse 'classic' Nabataean finds at Busayra postdate the destruction at the end of Integrated Stage 3 or are out of context, and probably date between the first century BC and the second century AD. However, it cannot be excluded that either the early (non-settled?) Nabataeans themselves destroyed Busayra prior to 312 BC, realising its defensive potential, or it was the site attacked by Athenaios. Alternatively, Busayra may have been destroyed a century later in the wake of the disruption caused by Antiochus III's wars against the Ptolemies, culminating in his victory at the battle of Panion in 200 BC, perhaps in an action analogous to Antiochus' siege of the Ptolemaic garrison at Rabbath-Ammon in 218 BC (Polybius, *Hist.* 5.71.9). Finally, it cannot be discounted that Busayra was destroyed during some unrecorded dispute with rival tribal confederations (for example, the Qedarites or Nabataeans?; cf. Bartlett 1989: 168–74). The disruption of settled life, trade routes and copper mining in this area might have been a result of inter-tribal rivalries and competing power bases rather than the machinations of imperial powers.

There was some re-use of Busayra, perhaps for agricultural purposes, between the first century BC and the second century AD. Construction of defences in Area H and the discovery of an out-of-context Nabataean altar in Area M suggest that this occupation may have been more substantial than the ephemeral excavated evidence implies. Late Roman sherds in topsoil indicate human presence in the area in the third to fourth centuries AD, but following that there is a gap in archaeological evidence until the Ottoman period, when the modern village appears to have been founded.

APPENDIX 1
INSTRUMENTAL NEUTRON ACTIVATION ANALYSIS, BUSAYRA AND JUDAH

Jan Gunneweg and Márta Balla

Objectives

The study of the Busayra pottery in Chapter 9 indicates many parallels with southern Edom and with the Negev. Although the source of much of this pottery is likely to be Busayra itself, this needs to be demonstrated clearly. The aim of this appendix is to attempt to trace the provenance of the pottery found at Busayra using instrumental neutron activation analysis (INAA).

The study of pottery is usually the only window we have into the lives of bygone civilisations. Not only might one get an insight into the evolution of early technology based upon pottery production, but also one might learn in some detail about the development of what may well be the earliest commercial trade or human interrelations between individuals or groups. This applies to Busayra as it does to any other site.

Our task was to determine whether painted 'Edomite' ware, which is easily discernible also at sites in Palestine, could have originated in Edom proper or vice-versa, i.e. whether Judahite pottery already classified by instrumental neutron activation analysis as having been manufactured in Palestine would show up at Busayra. If the latter were true, it might point to a form of commerce or interrelations between the various sites and regions.

The chemical compositions of 'Edomite' pottery found at the shrine of Horvat Qitmit, the open-air cult space at 'En Hazeva and in the fortress at Kadesh-barnea are well represented in our data banks. On the other hand, there was no adequate site-specific reference for Edom in general or Busayra in particular. Nevertheless, we had sampled two vessels in the past (Gunneweg *et al.* 1991: tables 2 and 4).

The present INAA study is focused upon the establishment of the chemical fingerprint of Busayra local ware. The goal of this research project is:

1 To trace the Busayra pottery by its chemistry rather than by style.
2 To establish the relation between the pottery found at Busayra and other Edomite sites, for example Umm al-Biyara and Tawilan in Jordan, and such sites as Horvat Qitmit and 'En Hazeva in the Judaean Negev.
3 To study the character of an interregional trade between Busayra and its surroundings, if any.

The first detailed study of the provenance of 'Edomite' pottery began in 1988 at the Kern Physik Institut at Bonn University and the Hebrew University of Jerusalem, on cult vessels found at Horvat Qitmit (Gunneweg and Mommsen 1990). Later, this research was enlarged into a collaborative project with the Nuclear Reactor Facility at the Technical University of Budapest (Balla and Gunneweg 2003).

This appendix is divided into a description of the method used to obtain the most reliable results by tracing 18 samples of the Busayra pottery assemblage to their manufacturing site, and showing an example of what we may have learned from that process. Piotr Bienkowski selected the pottery to be sampled to reflect pottery thought to be local to Busayra and painted pottery in which we were interested because of its parallels at Judahite sites.

Most of the scholars dealing with the pottery of Busayra are in agreement that the pottery was made at the site. Despite that probability, there always remains the dilemma of uncertainty: which pottery is certainly manufactured at Busayra, which is uncertain, and which has to be excluded altogether as locally made. In the latter case, where did the pottery originate? These findings will be crucial in the study of interrelations between Edom and Judah in the late Iron Age. We are convinced that in the light of results on pottery assemblages published by us over the past 25 years, laboratory methods can really be of assistance, also or perhaps specifically in the case of Busayra, because of its geographical isolation.

Methodology

The technique used to analyse the Busayra pottery samples is instrumental neutron activation analysis (INAA), especially designed to fingerprint chemically a ceramic vessel or just a part of it (a sherd). The technique is based on the premise that each clay source on earth has a different geochemical history, hence a different chemical composition and can, therefore, be distinguished from all others (Perlman and Asaro 1969; Gunneweg, Perlman and Asaro 1988; Molnar *et al.* 1993). When potters add tempering materials, a new chemical composition is formed that is unique to that potter or to a site in general. Thus, ceramics made by these potters and from these clays can also be distinguished. INAA has the capability to determine quantitatively about 35 chemical elements — for the most part trace elements — which are sufficient to provide a so-called chemical 'fingerprint' for the vessel.

By subjecting a set of samples to a given neutron flux, the stable isotopes of the various elements present in a ceramic are converted into radioactive ones, which emit gamma rays. These mono-energetic gamma rays will later identify the element, while the abundance of the element is determined by counting the gamma-photons that are emitted in a predetermined length of time

Modus operandi

Eighteen samples were taken from Busayra vessels to establish a local chemical profile of the site. The pottery powder obtained by a synthetic sapphire drill was placed into a plastic cup and registered. The powder was then weighed and sealed in a polyethylene vial. These vials were irradiated in the nuclear reactor of the Technical University of Budapest with a neutron flux of $2.4 \times 10^{12} n/sec/cm.^2$ The Budapest facility uses a Canberra HPGe Well-type Detector that is connected to a Canberra S100 Multi-channel Analyser that stores the Gamma-spectrometric measurements. For the evaluation of spectra, SAMPO 90 software was used. Standardisation was made by the so-called single comparator method, using gold as the comparator element. By measuring the NBS 1633a Coal Fly Ash Standard Reference material the accuracy of the measurements is controlled.

Statistical grouping

After we have analysed a considerable number of pottery sherds and other materials that the archaeologist deems to be local to a site, we attempt to construct (a) pottery group(s) based upon similar chemical composition by means of multivariate statistics. The reference group is a dilemma. We have devised certain criteria for deciding whether the test piece is part of the group, but in the present study we shall focus on the analytical results.

Analytical results

From the results obtained at Busayra, we were able to form a chemical group of pottery that matched pottery that must be deemed to be local to the site where it was found. First, the samples represented the most common types of pottery found at Busayra, so that archaeologically speaking they are local to the site. The painted sherds were added to the sampling because we were interested to see whether earlier work on painted 'Edomite' pottery provided similar results.

In our case, having to deal with a limited amount of pottery samples from a site, geographically quite isolated from other Edomite sites and also typologically different from pottery styles at other Edomite sites, the 'goodness of fit' value Chi-Square to a given composition coupled with the Euclidean Distance measurement will suffice. Such a procedure as described by Mommsen (Mommsen, Kreuser and Weber 1988) also takes care of experimental errors and a possible dilution phenomenon introduced by potters' practices.

By an iterative procedure of looking for the samples that belong together with both the Chi-Square dissimilarity and Euclidean Distance measurements in tandem, the following group could be established that comprises seven samples: BUS 2, 7, 8, 12, 14, 17 and 18.

A group of 12 samples from Umm al-Biyara was also analysed. The results will not be discussed except for the fact that they are entirely different from those analysed samples with the Busayra chemical composition.

Previous samples from Edom, analysed and published in a Bonn-Jerusalem collaborative programme, consisted of three Edomite cooking pots obtained from Ghrareh in Jordan, which were traced to the Tawilan district. A cream ware bowl found at Busayra remained of unknown provenance. A painted jug found at Busayra, however, came from the Umm al-Biyara/Petra region (Gunneweg and Mommsen 1995).

Since the present Busayra group of seven samples is the only group of pottery that clustered together and its chemical composition has not been found in the same quantity at any of the other Jordanian sites from which pottery has been analysed, we are inclined to call this group the local chemical fingerprint of Busayra.

Samples BUS 8, 12, and 14 are painted vessels and they match the group that we have called 'local Busayra'. It proves that the painted version of Busayra pottery, as others found in Jordan, can also be traced to Busayra, as others were proved to have originated in Umm al-Biyara.

BUS 3, 4, 6, 10 and 19 are samples of pottery that chemically match pottery groups established to have originated in Umm al-Biyara and Petra. BUS 10 is a black-burnished ware bowl and similar to BUS 19, a bowl found in the environment of Beersheba. Also, the new samples freshly obtained from Umm al-Biyara (supplied by Piotr Bienkowski) and analysed at Budapest corroborate this statement. It suffices to mention here that samples 3, 4, 6, 10 and 19 are from Edom.

The overall conclusion is that we were able to compose a group of pottery that was found at Busayra and that probably was locally made there. We have other vessels that surely came from the Petra area.

Twelve pots could be traced. This leaves us with seven samples that are chemical outliers. They comprise BUS 1, 5, 9, 11, 13 and a pair 15 and 16. For some of them, traces point to other areas that will be treated in the discussion below.

Discussion

Does one find Iron Age II pottery at other sites in Edom that could have come from Busayra according to the chemical composition now established? The answer is yes: samples 3, 4, 6, 10 and 19 are similar to pottery previously analysed from Petra, Umm al-Biyara and Tawilan (Gunneweg *et al.* 1991), which means that there were relations between Busayra and the Petra district.

Is there pottery that originated in Busayra and that ended up at a Judahite or an Arabah site, to the west of Jordan? Yes, when four vessels found in 'En Hazeva, HAZ 6 (a zoomorphic vessel), 19, 22 and 81 (a bowl), individually are used as an input for obtaining the Chi-Dissimilarity and the Euclidean Distance, they score a number between 0–1 as postulated compared to BUS 8, 12 and 17 which belong to the local Busayra chemical group. This means that these vessels found in the Wadi Arabah came from Busayra.

BUS 5, a white-ware bowl, is a sample that stands alone among the Busayra samples. However, it was found to be chemically similar to HAZ 102, a cultic stand. HAZ 102 was established to be local to 'En Hazeva, so it may be an indication that BUS 5 too originated in the Wadi Arabah where 'En Hazeva is located. Perhaps a pottery vendor or trader supplied Busayra with 'En Hazeva pottery, or a traveller from Busayra or 'En Hazeva brought this vessel to Busayra.

The outliers, BUS 1 and 11, are similar to BIY 5 (a rim of a large jar found at Umm al-Biyara), but we have been unable to clarify at which site they originated. Thus, for the moment, there is INAA data but no reliable provenance for these vessels.

Of the fine painted pottery analysed from Busayra, BUS 7, 8, 10, 12 and 14, four belong to the local Busayra group whereas only BUS 10, a black-burnished bowl, came from the Umm al-Biyara/Tawilan region. The Umm al-Biyara samples will be treated in a separate publication.

Finally, BUS 16, a very fine painted vessel, matches BUS 15. BUS 15 and 16 are chemically similar and they also look similar to vessels that were found in the Wadi Arabah; however, both were imported from an unidentified site.

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List of Busayra samples

BUS 1 Cooking pot rim, B1.1.3
BUS 2 Jug rim, B1.1–3
BUS 3 Jar rim, C1.4.1
BUS 4 Bowl rim (Bowl B), B1.2.2c
BUS 5 Bowl rim, white ware, C10.1.5
BUS 6 Krater? rim, B1.2.2c
BUS 7 Bowl rim, fine ware, painted (very hard fired pottery)
BUS 8 Bowl rim (Bowl D), fine ware, painted, B1.2.2c
BUS 9 Jar rim, B1.1.1–3
BUS 10 Bowl rim (Bowl D), black-burnished ware, B1.1.1–3
BUS 11 Storage jar rim, B1.1.1–3
BUS 12 Bowl rim (Bowl E), with bar handle, painted, B3.3/6.5
BUS 13 Bowl rim (Bowl K), B1.1.1–3
BUS 14 Bowl rim (Bowl J), fine ware, burnished and painted, TS181 B1.2.2c
BUS 15 Storage jar rim, A13.1.18
BUS 16 Bowl sherd (Bowl A, platter), grey ware, TS3014 C11.1.16
BUS 17 Cylindrical jar base (Jar E)
BUS 18 Negev Ware rim, C10.6.2
BUS 19 Bowl from Beersheba, black-burnished ware as BUS 10

APPENDIX 2
METALLURGICAL EXAMINATION OF COPPER-BASE METAL FROM BUSAYRA[1]

R.F. Tylecote

A group of 'scrap' metal from Area A is all copper-base alloy and would appear to have been softened and nearly melted in a conflagration so that the objects represented in it are almost unrecognisable. There are about 95 separate pieces of metal including pieces of a large cauldron or bucket with rivets *in situ* and what may be metal fastenings of wooden furniture, possibly stools.

The specimens were removed from the most metallic-looking areas. The metal was found to be non-magnetic, which suggests that the metallic iron level is less than 1%.

Metallographic examination

1 Clean copper, i.e. free from slag; worked and annealed with alloy rivet suffering from intercrystalline corrosion. Hardness of Cu = 83 HVI.
2 Coarse-grained equiaxed copper-base sheet with twins, and sub-structure with two-phase inclusions. Hardness 80 HVI.
3 Coarse-grained equiaxed copper-base sheet, possibly containing some lead; showing stress corrosion cracks. HVI = 87.
4 Similar to above but no lead; twinned. HVI = 81.
5 As above. HVI = 92.

Chemical analysis

Fragments representing the whole sample taken were broken up and analysed to give an average of 5.8% tin and 0.002% zinc.

This shows that the material is copper and bronze and not brass (i.e. Cu-Zn alloy). The composition of the whole sample must vary from impure copper to a high-tin bronze (yellow metal), i.e. from zero to about 15% Sn, giving an average of 5.8% Sn. Zinc is clearly absent even as a trace impurity in the copper, which suggests that the original ore was very low in zinc.

Conclusions

Chemical and metallographic examination shows that much of the metal is impure copper with hardnesses in the range 80-92 HVI. Some of it contains stress corrosion cracks which appear to have been caused by the application of residual stress in an ammonia or chloride environment. The grain size is very large which would be expected of worked metal heated to near its melting point in a fire.

In places there are pieces of a yellow, high-tin bronze which appear to have been used as rivets. This must have been for decorative purposes, as rivets are usually of lower alloy content and therefore softer than the metal into which they are put.

Stress corrosion cracking has been reported in a bronze axe from Hasanlu (Nielsen 1977: 27). This is believed to have been brought about by the wedging action of the corrosion products supplying the stress component of the process.

[1] Completed 10 October 1978. This material was at that time temporarily in the Ashmolean Museum, Oxford, and it was by kind permission of Miss A.C. Western that the writer was allowed to take specimens for examination. The material was never accessioned into the Ashmolean Museum's collection, and its present location is unknown.

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