



## RESCUE EXCAVATIONS AT UMM EL-BIGHAL THE POTTERY

by  
Svend Helms and David McCreery

### I. Introduction (McCreery)

The rapid pace of modern development in the Middle East poses an ominous threat to numerous important ancient sites. Many of these are being destroyed before they can be recorded. The 1982 Umm el-Bighal rescue project serves as an example of how research and documentation can be conducted without impeding progress on a construction project.

In order to provide adequate public services for the rapidly growing capital city of Amman, the Jordanian government has initiated a number of ambitious development projects. One such undertaking was the construction of a huge reservoir west of Amman in a district known as Umm el-Bighal (Figs. 1-3). The reservoir is but one element in an elaborate system which will provide Amman with much needed additional drinking water.

Through a series of pumping stations and treatment plants, water was diverted from the Jordan Valley near Deir 'Alla and brought to the terminal reservoir at Umm el-Bighal. With a capacity of 250,000 cubic metres, the reservoir increases significantly Amman's water supply.

The project was in the planning stages since 1979 but actual work on the reservoir site did not begin until the summer of 1982. The initial task of the contractor, George Wimpy International, was the removal of a hill which stood in the middle of the proposed reservoir site. With the exception of a nearby cistern of uncertain date (Fig. 3), there were no surface indications of antiquities on the site.

In late July of 1982, the Head Office of the Jordanian Department of Antiquities received a call from the construction site, reporting the discovery of a cave containing bones and pottery. The Department of Antiquities in turn asked the

American Center for Oriental Research (ACOR) for assistance and physical anthropologist Scott Rolston was immediately dispatched to the site.

Clearly visible tool marks on the walls of the exposed cavity were noted on initial inspection. There was no doubt that the burial chamber was man-made. While Rolston, assisted by Laura Hess, worked at extracting the bones from the compacted silt layers, bulldozers uncovered several more tombs. Within two days it was clear that the hill contained an extensive cemetery, rather than just a few isolated tombs. The pottery associated with the burials appeared to belong to the later third millennium B.C., to the much-debated EBIV/EB-MB or Intermediate MB period.

In order to salvage as much information as possible, given the urgency of the situation, the Department of Antiquities and ACOR worked in concert to provide excavation supervisors, logistical support, and to recruit volunteers. The Friends of Archaeology responded to the appeal by providing ten to twenty volunteers daily.

As with most rescue projects, an attempt was made to recover as much information as possible without delaying or interfering with the construction work. This made for long days, starting at 6 a.m. and often working until 11 p.m. over a three week period.

Hifzi Haddad from the Department of Antiquities and David McCreery from ACOR oversaw the operation. The following served as area supervisors: Scott Rolston, Hilda Ayoub, Brian Byrd, Wa'il Rashadan, Laura Hess, Lydia Paley-Hume, Joy McCorriston, and Martha Jane Newby.

The engineers from Boyle Engineering, Stanley Consultants, and George Wimpy International deserve recognition and thanks for reporting the discovery and assisting the archaeologists throughout the

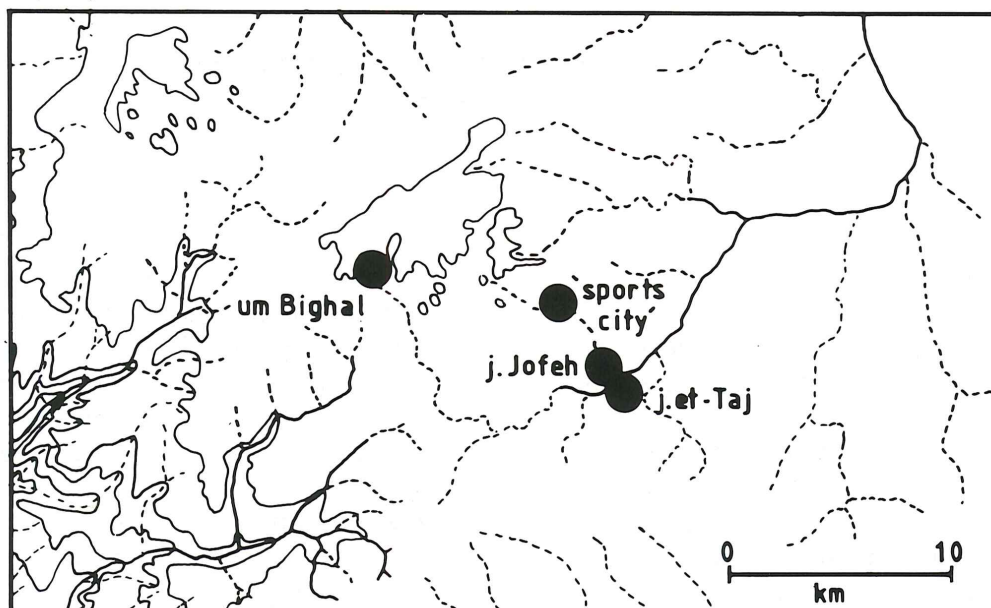


Fig. 1. Location of the Amman EBIV/EB-MB cemeteries .

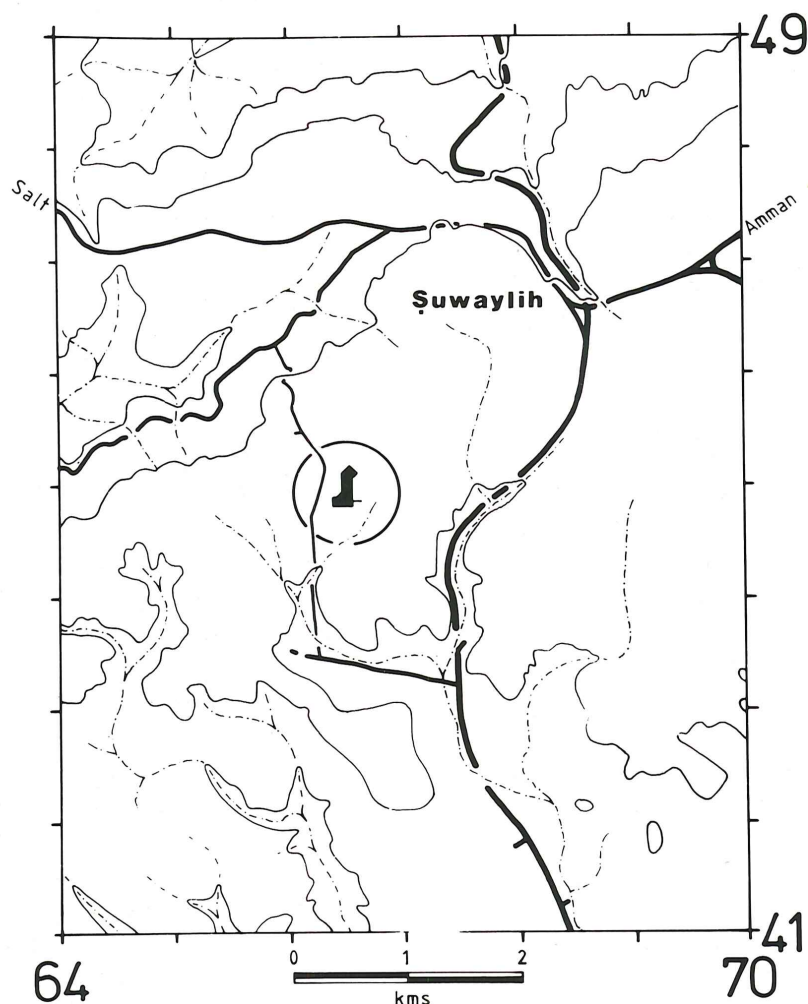


Fig. 2. Site of the new reservoir at Umm el-Bighal.

three week rescue operation. The excavations of the Umm el-Bighal cemetery would not have been possible without the

combined efforts of the Hashemite Royal Family, the Department of Antiquities, ACOR, the Friends of Archaeology and

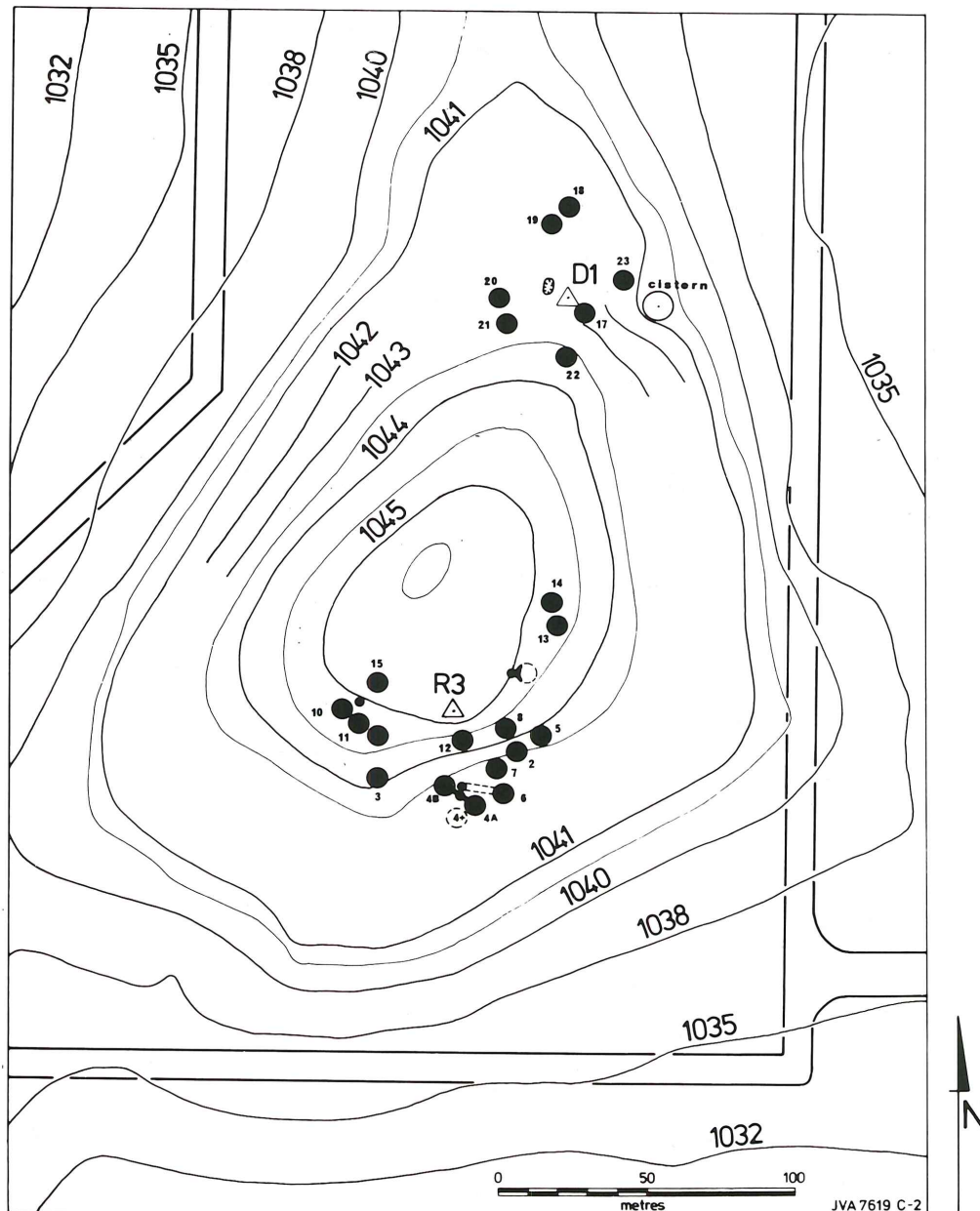


Fig. 3. Location of tombs within the new reservoir.

the British Institute at Amman for Archaeology and History (BIAAH).

## II. The Cemetery (Helms)

The burials at Umm el-Bighal consist of two groups, about 100 metres apart, on a low hill which was removed to make way for the new reservoir at the site (Fig. 3). With the exception of tombs 5 and 21 (Figs. 4, 5), most of the chambers were of the same size. All were rounded in plan and had stone-blocked entrances leading from vertical shafts. Several burials con-

sisted of two opposing chambers from a single shaft. The best example is tomb 4A/B (Fig. 4), which is similar to the burial at 'Sports City' (Zayadine 1978, Figs. 1, 2). Various internal structural features included benches (Fig. 4:6), walls (Fig. 5:8 & 5:17) and lamp niches (Fig. 4:6). So far as may be surmised from the necessarily summary clearance of skeletal remains, the majority of burials consisted of single individuals. Three burials contained two individuals (Figs. 4:1, 5:23) and one four (Fig. 5:13).



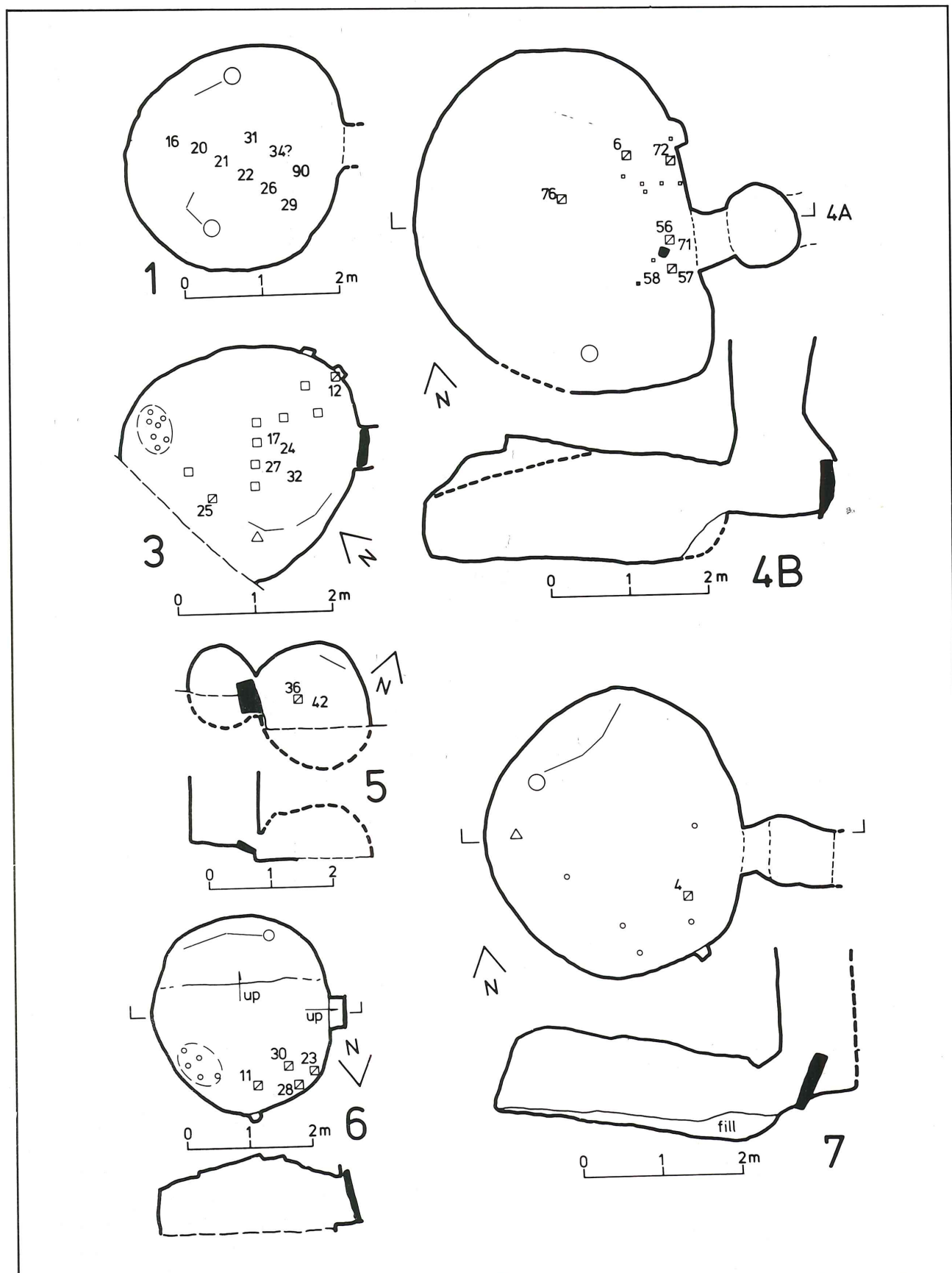


Fig. 4. Plans and sections of the tombs; numbers refer to catalogue references of the pottery; squares = pots *in situ*; circles = human skulls; lines = human bone remains.

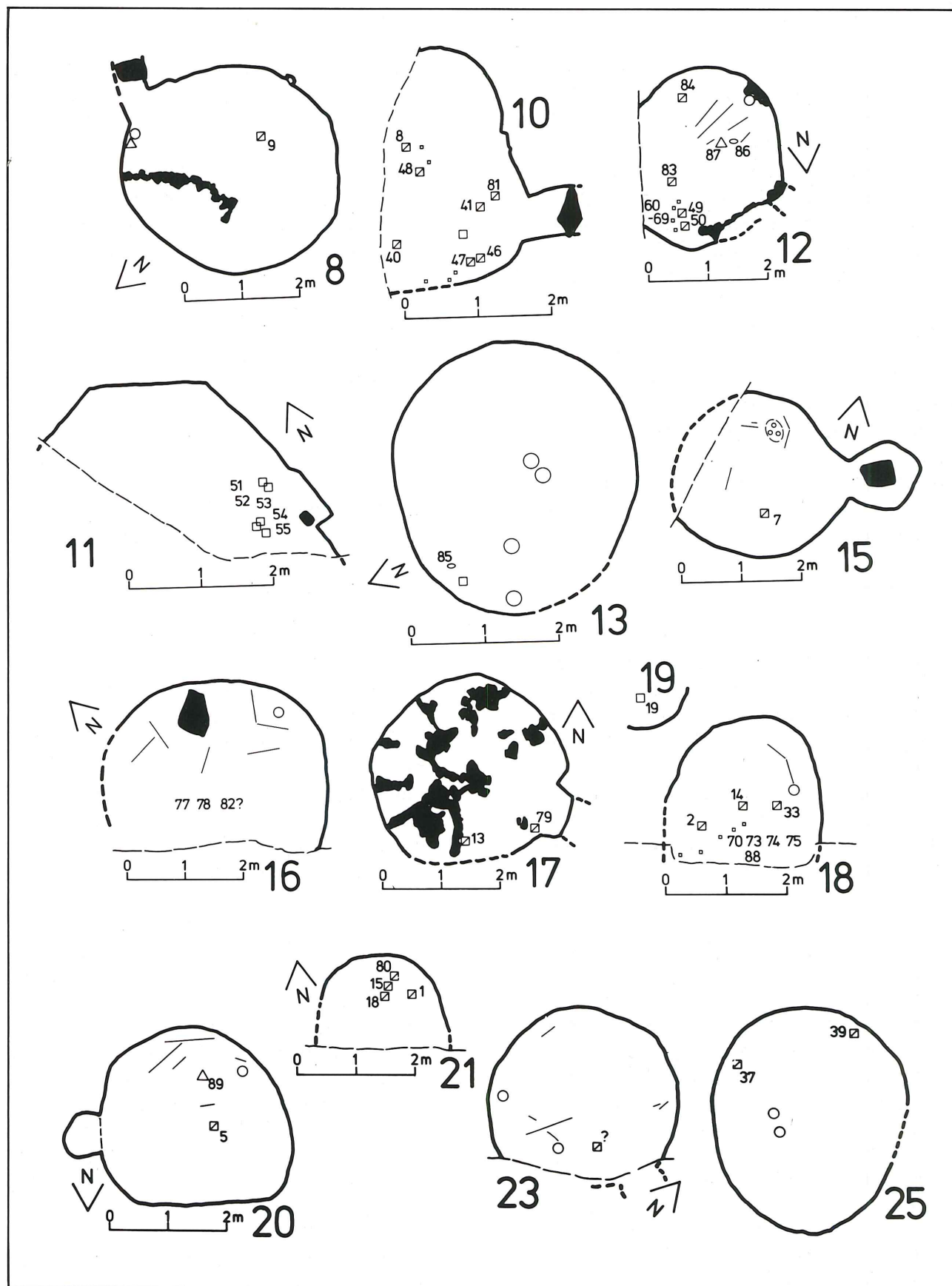


Fig. 5. Plans and sections of the tombs: numbers refer to catalogue references of the pottery; squares = pots *in situ*; circles = human skulls; lines = human bone remains.

### III. The Pottery (Helms)

Shaft graves from four other burial grounds have now been recorded, all within a short distance of each other (Fig. 1) and all of them were uncovered under rescue conditions: 'Sports City' (Zayadine 1978), and Tla' el-'Ali (Suleiman 1985) between Umm el-Bighal and Amman proper, Jabal et-Taj and Jabal ej-Jofeh in central Amman (Dajani 1967/8; Hadidi 1982). Their pottery assemblages mirror that of Umm el-Bighal to the extent that collectively all five may be regarded as a local group. No related occupation sites have yet been found in the Amman area. It therefore remains an open question as to whether the assemblage represents local pottery production of the Amman area, has a broader distribution, or came from another region altogether.

#### 1) Lamps (Figs. 6:1-12; 7:1-7)

The characteristic quatrefoil lamps of the EBIV (EB-MB) period are not chronologically diagnostic at the present stage of research. The dominant type at Umm el-Bighal has a rounded base, but several flat-based examples are known.

Parallels exist for both types at Tiwal esh-Sharqi, the cemetery for Tell Umm Hammād, where the dominant type is flat-based (compare Helms 1983, Fig. 22:7, 10 and Figs. 16:1, 17:3, 18:5, 6 etc.). Both occur together in one tomb (*ibid*, Fig. 22:9, 10). Near Umm el-Bighal round-based lamps were found at 'Sports City' (Zayadine 1978, Fig. 4:10, 8, 9) and Jabal ej-Jofeh (Hadidi 1982, Pl. 81:7, 6). Farther afield both types appear together in various tomb groups, or in association with similar vessels (genres and variants). Compare, among others, Beth Shan (Oren 1973, Fig. 26:15-17), Hablet el-'Amud (Sa'ad 1964, Pl. 35:16, 10), Jericho (Kenyon 1960; 1965 throughout), Rehov (Tsori 1975, Pl. 15:1-6), Iktanu (Prag 1974, Fig. 6:8, 9), 'Ain Samiya (Dever 1972, Fig. 4:1, 2), and Dhahr Mirzbaneh (Lapp 1966, Fig. 2:1, 2 etc.).

Apparently exclusively flat-based

lamps occur at Jabal Qa'aqir (Gitin 1975, Fig. 1:19), Bab edh-Dhra' (Schaub 1973, Fig. 6:1, but see also Fig. 8:26—both from an early stage: i.e. 'EBIVA'), Sinjil (Dever 1971), 'Ain Samiya (Shantur and Labadi 1971, Figs. 3:12, 4:17, 18), el-Ḥuṣn (Harding and Isserlin 1953, Fig. 1:1), Tell ed-Duweir (Tufnell 1958, Pl. 66:412, 448), Menahemiya (Bahat 1976, Fig. 3:7), and 'Araq en-Na'saneh (Dever 1974, Pls. 1:1, 11:3, 4).

Pedestal-based lamps (trefoil and quatrefoil) have been found at Qedesh (Tadmor 1978, Figs. 9 and 10) where the excavators attributed 'cultic' status to them.

On the basis of lamps alone, the only admissible preliminary conclusion would be that both forms — rounded and flat — are contemporary, although they may have had a regional distribution: i.e. flat in the south, rounded in the Amman region, and a mixture of both in between.

#### 2) Hole-mouth Jars (Figs. 7:11-12)

Such jars are rare in tomb assemblages, perhaps because they are a very ordinary domestic form. In contrast, lamps are common in burials, many chambers being supplied with a pair; they appear to be rare in assemblages from occupational contexts. Only two fragments were found at Umm el-Bighal and both find close parallels in the stratified occupation sequence at Tell Umm Hammād (Helms 1986, Fig. 19 and Table 3) where they occur in stage 7. Close parallels come mostly from the central and southern regions of Palestine, the northern contemporary examples taking the form of a low, everted rim (*cf.* Beth Shan in Oren 1973, Fig. 2:19, 20, Ma'ayan Barukh in Amiran 1961, Fig. 6:5 and Qedesh in Tadmor 1978, Fig. 5). This northern variant is somewhat reminiscent of cooking pots found in Syria at about the same time (*cf.* Fugman 1958; Braidwood 1960), but there is now also an example from Khirbet Iskandar (Richard 1982, Fig. 4:3). For close parallels of the Umm el-Bighal jars comparisons, among others, may be made with vessels from Jericho

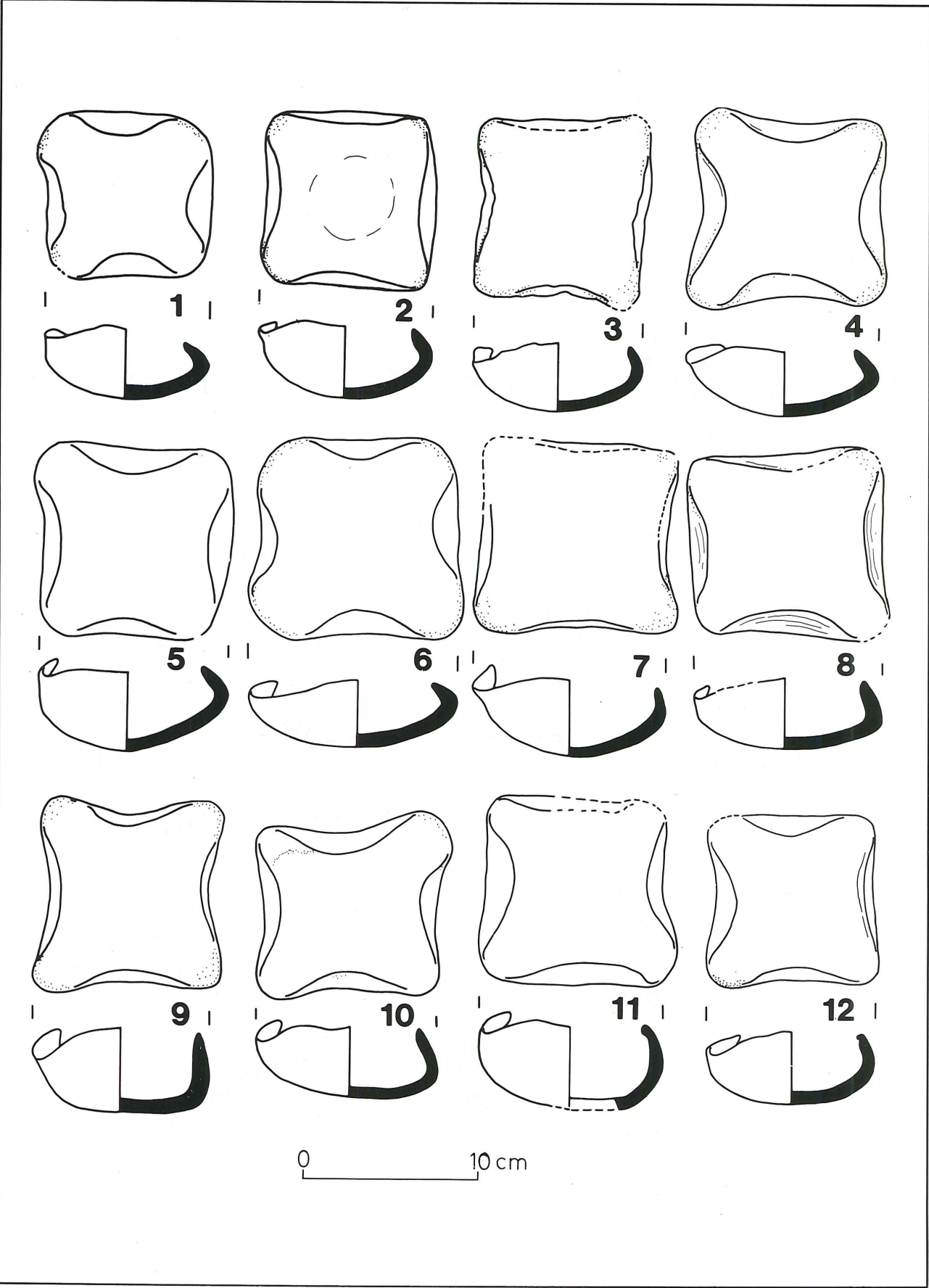


Fig. 6.



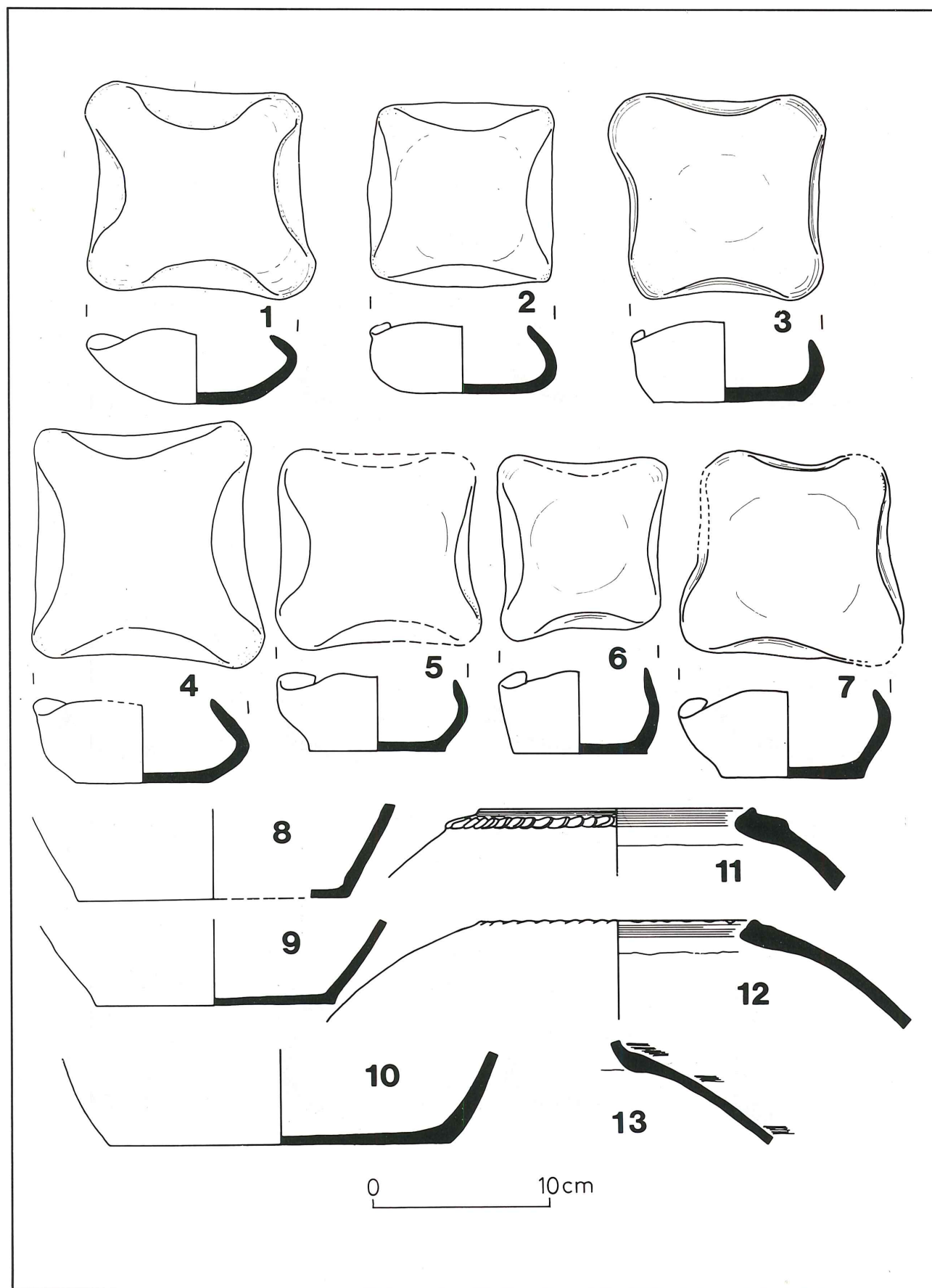


Fig. 7.

(Kenyon 1983, Figs. 19:30, 20:20, 21, 21:8, etc.), perhaps Beer Resisim (Cohen and Dever 1979, Fig. 17:25) where many shapes can also be compared to slightly earlier forms in the sequence at Tell Umm Hammād (Helms 1986, Fig. 19), Iktanu (Prag 1974, Figs. 3:17, 6:5, 6), Jabal Qa'aqir (Gitin 1975, Fig. 2:2), 'Araq en-Na'saneh (Dever 1974, Figs. 1:5, 7, 2:9, 3:16, 4:19, 20, 9:13-15, 10, 12:8) and Dhahr Mirzbaneh (Lapp 1966, Fig. 18:4).

Two cautious observations are possible. A regional distribution, rather similar to that of the lamps above, is indicated and, second, should the jars be chronologically diagnostic, this would suggest that the burials at Umm el-Bighal are roughly contemporary with two of Dever's most recent divisions of the period, his 'EBIVB' and 'C' (Dever 1980; cf. chronology below). The evidence from the stratified sequence at Tell Umm Hammād would seem to confirm this (cf. Helms 1986).

### 3) Jugs and Jars (Figs. 8-20)

This group of vessels may be subdivided into two categories. By far the largest is made up of strap-handled jugs and jars (Figs. 8-16). The second, smaller category comprises jars with two flattened, folded ledge handles ('envelope handles') and a variety of body decoration.

Considering first the smaller category, four variants may be recognized, based on various attributes:

- (a) plain jars with slightly recessed rims (Figs. 17, 18)
- (b) a thumb-impressed band at the base of the neck (Fig. 19)
- (c) parallel incised bands of lines (Fig. 20:1)
- (d) occasionally a vestigial thumb-impressed band at the base of the neck and very distinctive parallel (sometimes patterned) combing over the surface of the body (Fig. 20:2).

The first variant (a) appears in the other Amman burials (Dajani 1967/8, Fig. 2:5; Zayadine 1978, Fig. 3:5; Hadidi 1982, Pl. 79:2, 80:4). At Tiwal esh-Sharqi similar forms are known (Helms 1983, Fig. 19:2).

Most common in the central region of Palestine, this variant represents the basic jar shape throughout EBIV, with slight variations in shape, rim form and handle shape. Similar examples come from Jericho (Kenyon 1960, Figs. 98:9, 106:1 etc.; 1965, Figs. 28:5, 64:1-3 etc.; also 1983), Beth Shan (Oren 1973, Fig. 3:26), 'Artal (Hess 1984, Fig. 1:9), Motza (Bahat 1975, Pl. 20), el-Huṣn (Harding and Isserlin 1953, Fig. 4:57, 58), and Dhahr Mirzbaneh (Lapp 1966, Fig. 6:12 and the related form in Figs. 6:15, 24:10, 39:1, 2). One example comes from the southern region, from Tell ed-Duweir (Tufnell 1958, Pl. 67:467). The northern equivalent would seem to be the large jars with a pair of vestigial, rounded handles: e.g. Tiberias (Tzaferis 1968, Fig. 5:10), Geva'-Carmel (Amiran 1974, Pl. 1:8), Qedesh (Tadmor 1978, Fig. 3:70/498, 494 etc.) and Menahemiya (Bahat 1976, Fig. 2:14, with paint).

The north-south distribution of variants evinces the same notion already expressed above: that we are dealing with essentially contemporary variants within loosely related regional repertoires. In the northern regions the preferred jar shape seems to have vertical, rounded handles, in the central regions folded ledge handles are the norm, and in the south, as well as along the coastal plain up to the Carmel Ridge, either vestigial handles (cf. examples from Tell ed-Duweir) or more often none at all (e.g. Tufnell 1958, cemetery 2000, Pl. 67:467, etc.) are common.

A similar case can be made for the second variant (b) characterized by thumb-impressed bands at the base of the neck. Closely comparable examples are known at 'Sports City' (Zayadine 1978, Fig. 3:1) and at Jabal ej-Jofeh (Hadidi 1982, Pl. 79:3, but see also below for this repertoire), Tiwal esh-Sharqi (Helms 1983, Fig. 17:2), Tell Umm Hammād (Helms 1986, Fig. 18:9 in stages 7/8 = 'EBIVB/C'), Jericho (Kenyon 1965, Fig. 68[?]), Tell el-Hayyat (Falconer and Magness-Gardiner 1984, Fig. 18:3 [?]), Rehov (Tsori 1975, Pl. 13:1, 2), Iktanu (Prag 1974, Figs. 5:20, 8:5), Menahemiya (Bahat 1976, Fig. 212, there

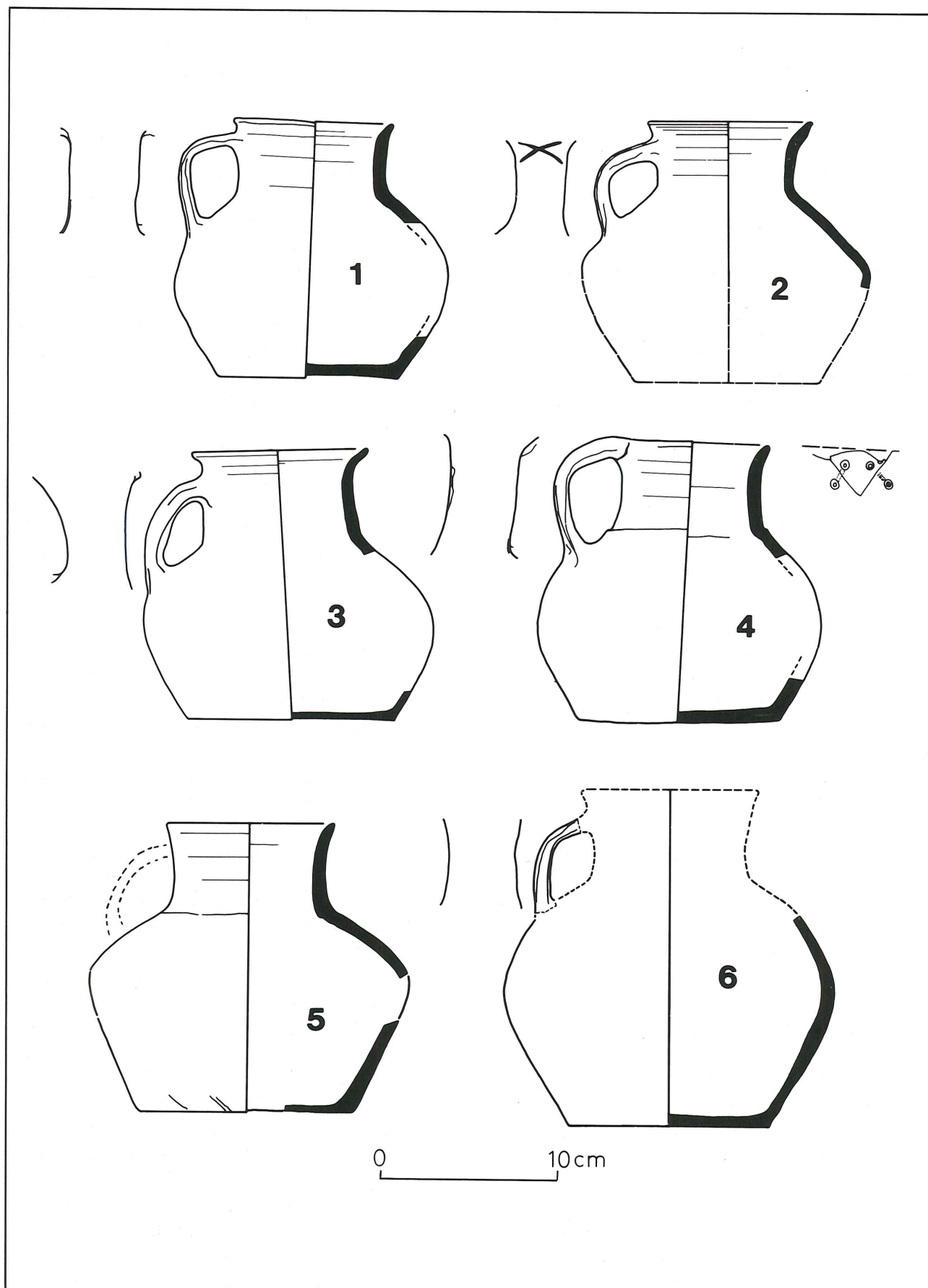


Fig. 8.



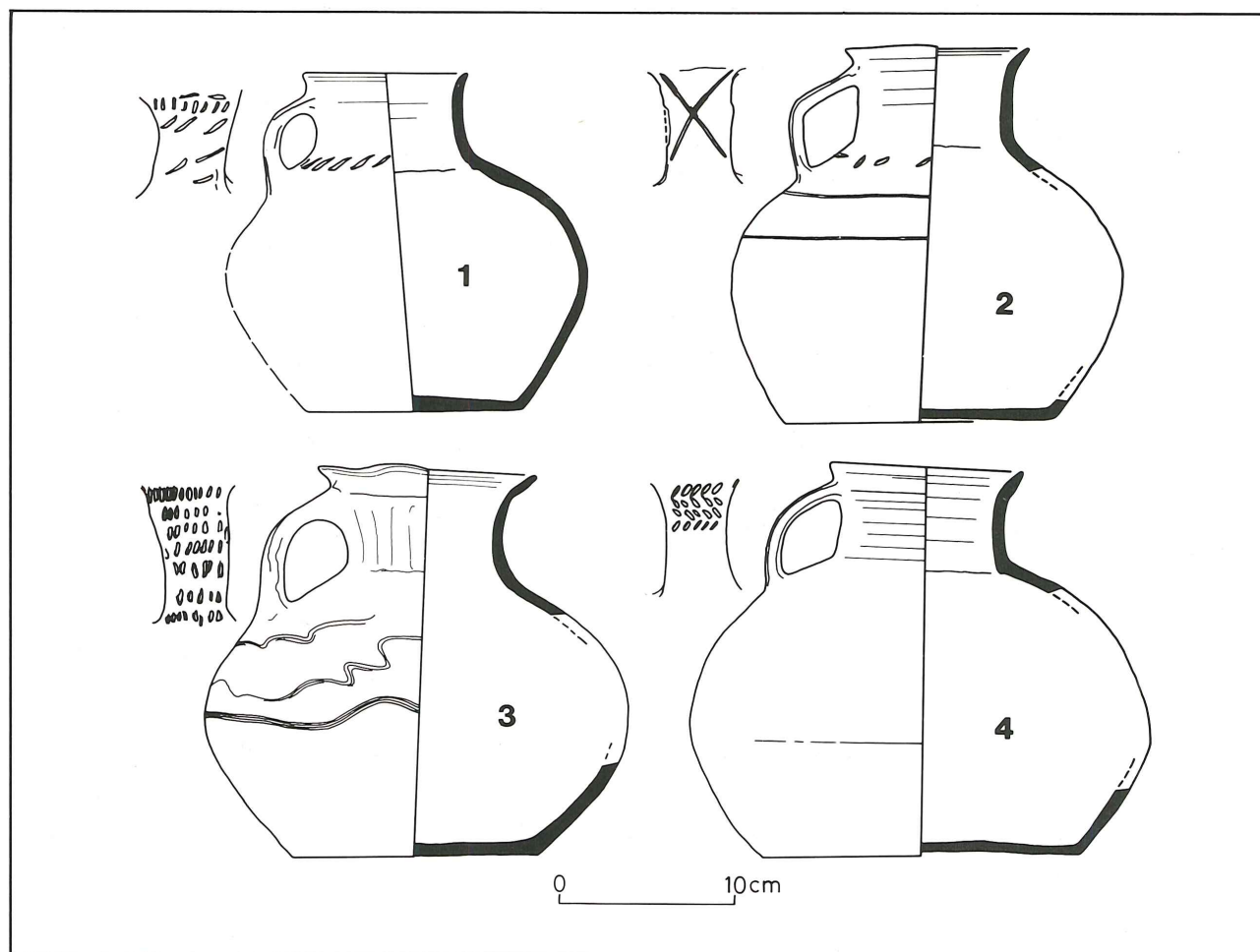


Fig. 9.

on a 'northern' jar), 'Araq en-Na'saneh (Dever 1974, Pls. 1:4, 2:11 — with incised bands, 7:5-7, 12:3), and Dhahr Mirzbaneh (Lapp 1966, Fig. 33:21). Virtually all parallels come from the central regions, but for a few examples from the south: notably from the 'Negev Highlands' (Cohen and Dever 1981, Fig. 11:7, 8), Tell ed-Duweir (Tufnell 1958, Pl. 66:425), Jabal Qa'aqir (Gitin 1975), and Tell Beit Mirsim (Albright 1933, Pl. 2:8).

The third variant (c) with parallel incised bands is broadly distributed and also found at Jabal et-Taj (Dajani 1967/8, Fig. 2:2, 3 — single grooves), Hābet el-'Amud (Sa'ad 1964, Pl. 25:1-4, 11-13 — very similar to Dever's family 'S'), Khirbet Kirmil (Dever 1975, Fig. 4:2, etc. — with wavy lines), Jericho, in both the tombs and on the tell (Kenyon 1965, Figs. 36:16 — with wavy lines — 60, 63:4; 1983, Figs. 20:16, 21:17), Beth Shan (Oren 1973, Fig.

3:27 — with wavy lines), Khirbet Iskandar (Parr 1960, Fig. 1:21), the 'Central Negev Highlands' (Cohen and Dever 1981, Fig. 11:6, 10 — with wavy lines; 1979, Fig. 17:4, etc.), Tell 'Ajjul (Kenyon 1956, Fig. 8:6, 7), Tell Beit Mirsim (Albright 1932, Pl. 45:2; 1933, Pl. 2), Tell ed-Duweir (Tufnell 1958, Pls. 59:180, 66:423 — with wavy lines — 424, 67:459 — with saw-tooth lines, 466, etc.), Iktanu (Prag 1974, Fig. 8:7), Jabal Qa'aqir (Gitin 1975, Fig. 11:2), 'Ain Samiya (Dever 1972, Fig. 2:1), and 'Araq en-Na'saneh (Dever 1974, Pls. 1:3, 2:11, 12, 3:14, 5, 6, etc. — with wavy lines).

Generally, parallel incised groups of lines are part of a decorative pattern which includes wavy lines. This combination, although not appearing in this class of jar, is a common feature of the jugs which will be discussed below.

Finally, combing (d) may be traced throughout the greater region, being a



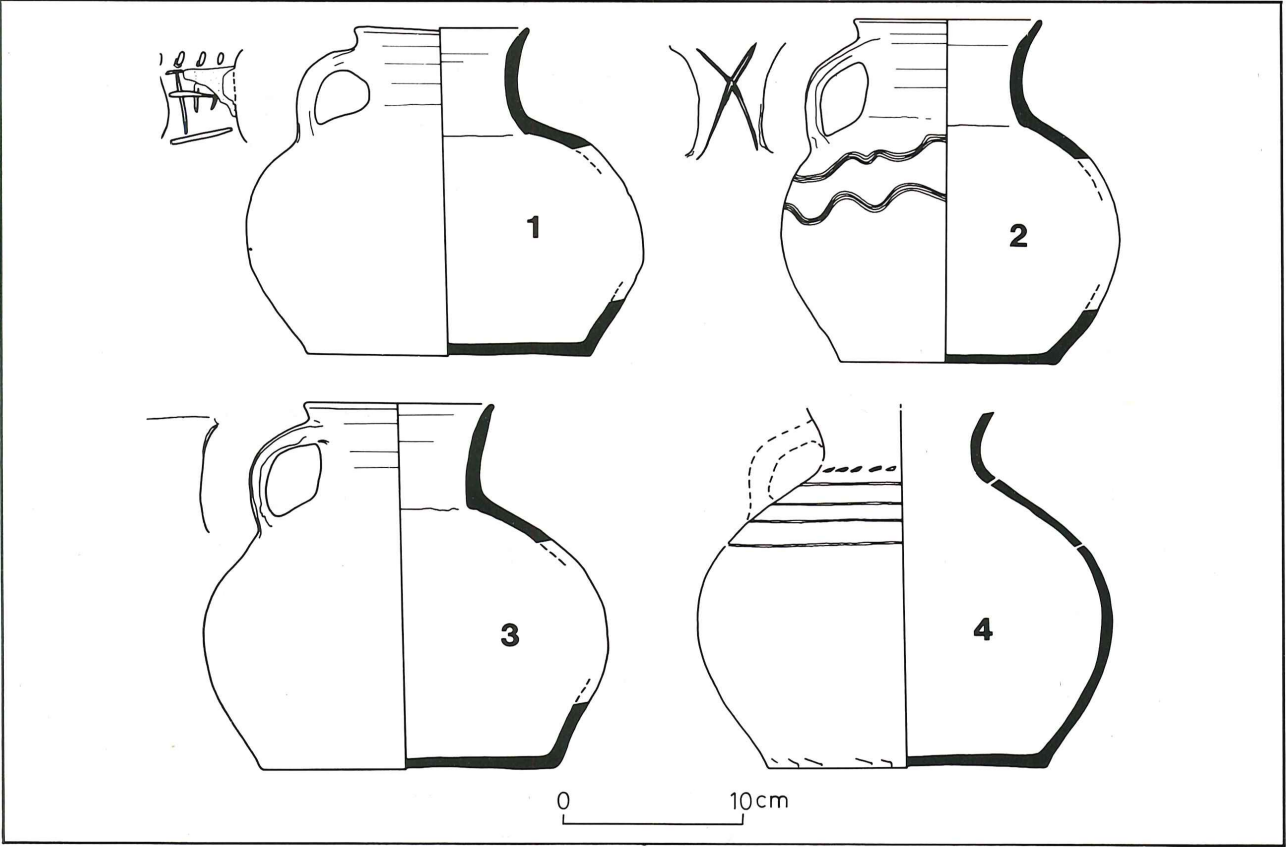


Fig. 10.

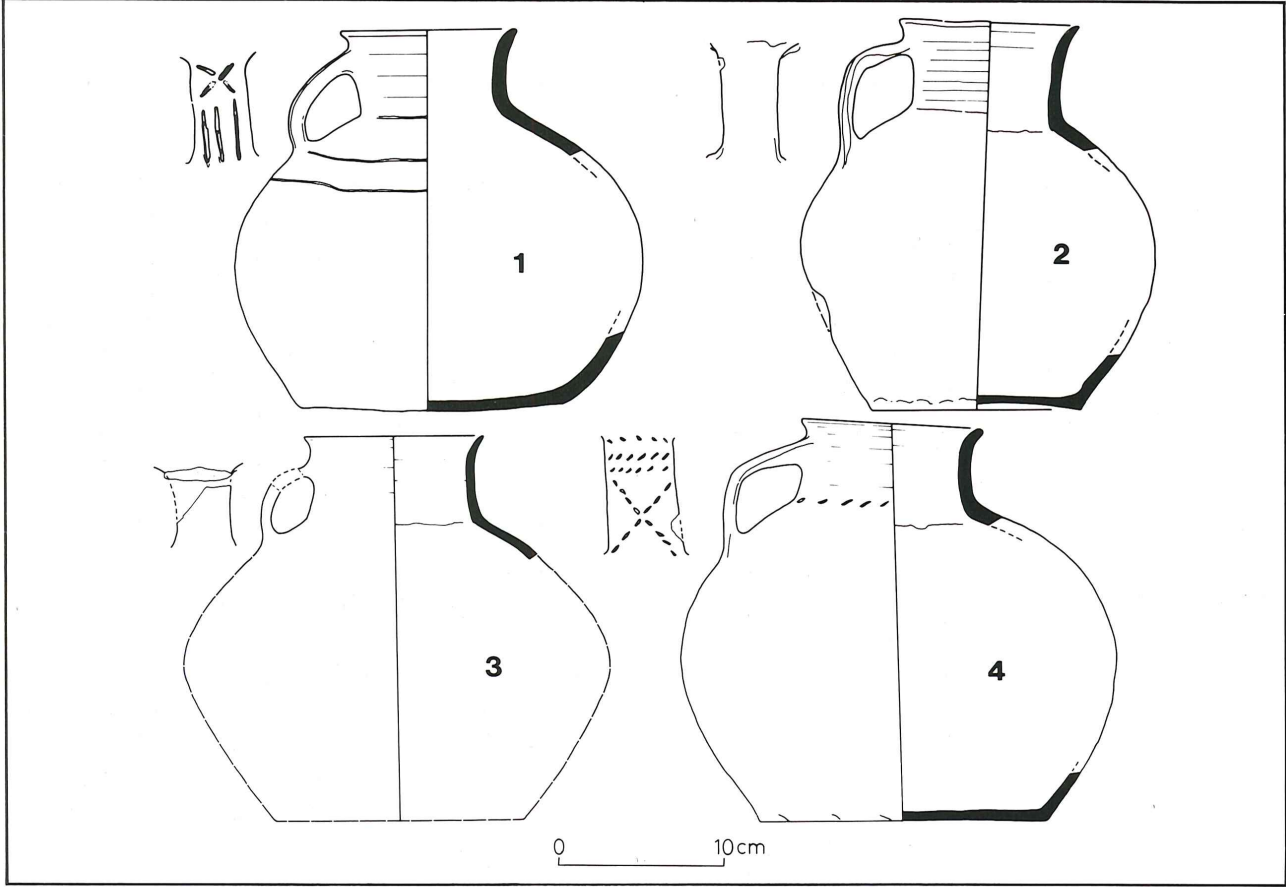


Fig. 11.

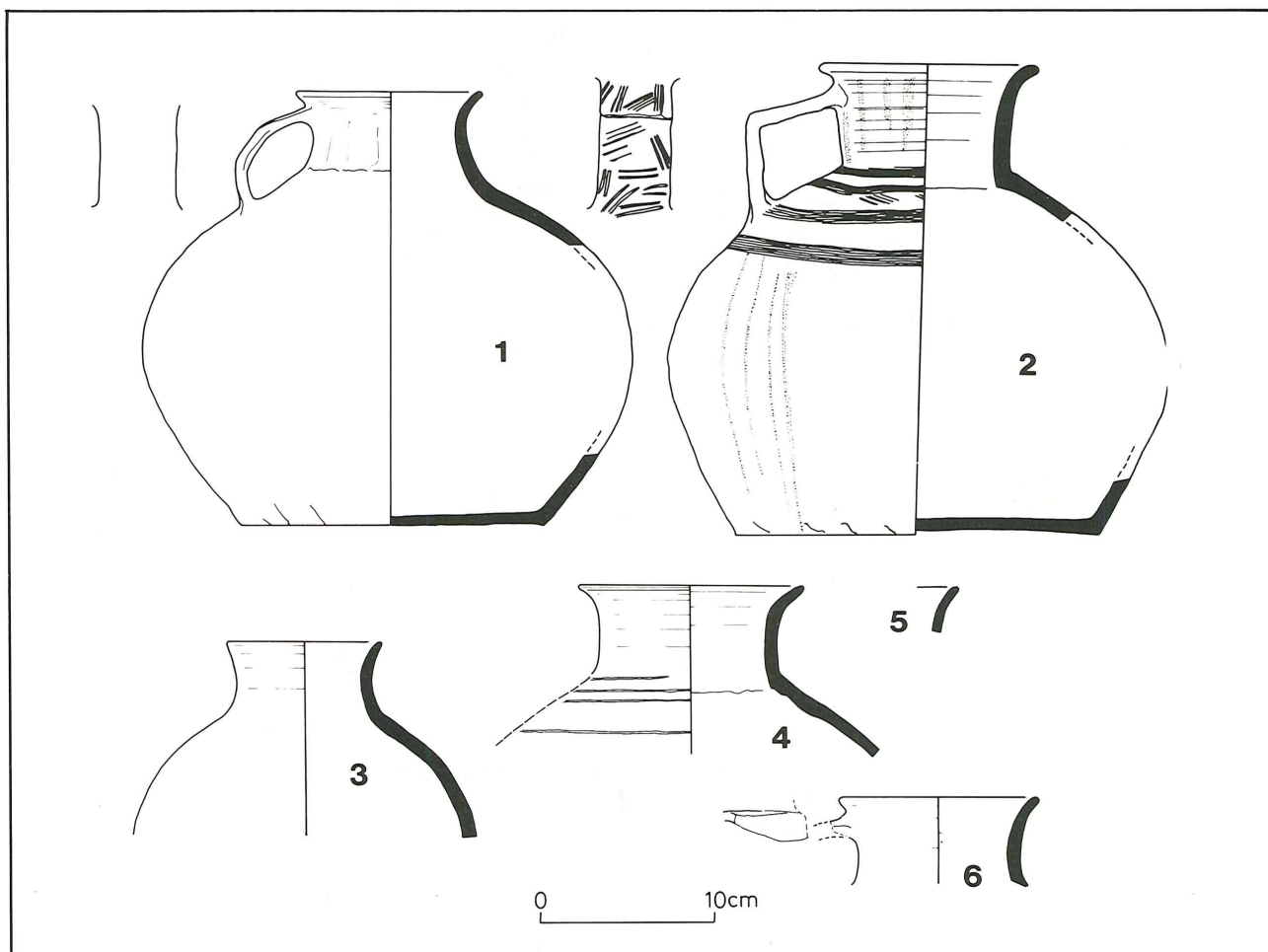


Fig. 12.

most common form of decoration in the central area, but appearing only once at Umm el-Bighal (Fig. 20:2) and not at all in the other Amman burials uncovered to date. Northern examples are known but not common. Precise parallels for this category are found at ʿIṭwal esh-Sharqi (Helms 1983, Figs. 16:8, 19:1) and also at the adjacent occupation site of Tell Umm Ḥammād (Helms 1986) where a long sequence of developing styles in this mode has now been established. The earliest examples in this sequence are similar to combed vessels in 'EBIVA' contexts at Bab edh-Dhra' (Schaub 1973, Fig. 7:21, etc.; compare also Helms 1986, Figs. 17-19). Combing is also found at Jericho, on various vessels in the tombs (Kenyon 1960, Fig. 86:13, 16; 1965, Figs. 28:4, 64:4, 80:11, 86:1, 2), and, but for one questionable example (*cf.* Kenyon 1983, Fig. 70:1) apparently not on the tell. Further exam-

ples come from Tiberias where they are painted and furnished with vertical, rounded handles (Tzaferis 1968, Fig. 5:11), Qedesh with similar handles (Tadmor 1978, Fig. 3:70-492), Beth Shan (Oren 1973, Fig. 2:21, compare also Helms 1983, Fig. 16:9 and examples from Fureidis in Hess 1980, Fig. 1:6 = family 'S'; plain jars come from Beth Shan in Oren 1973, Fig. 3:25), Rehov (Tsori 1975, Pl. 13:4), el-Ḥuṣn (Harding and Isserlin 1953, Fig. 4:56), 'Araq en-Na'saneh (Dever 1974, Pl. 7:1), and Tell el-Ḥayyat (Falconer and Magness-Gardiner 1984, Fig. 12:15).

None of these attributes, singly or in combination, should be considered to be chronologically diagnostic.

The larger category of jugs and jars (Figs. 8-16) represents the two most characteristic repertoires in the Amman assemblages and one which may have a special importance. The two repertoires

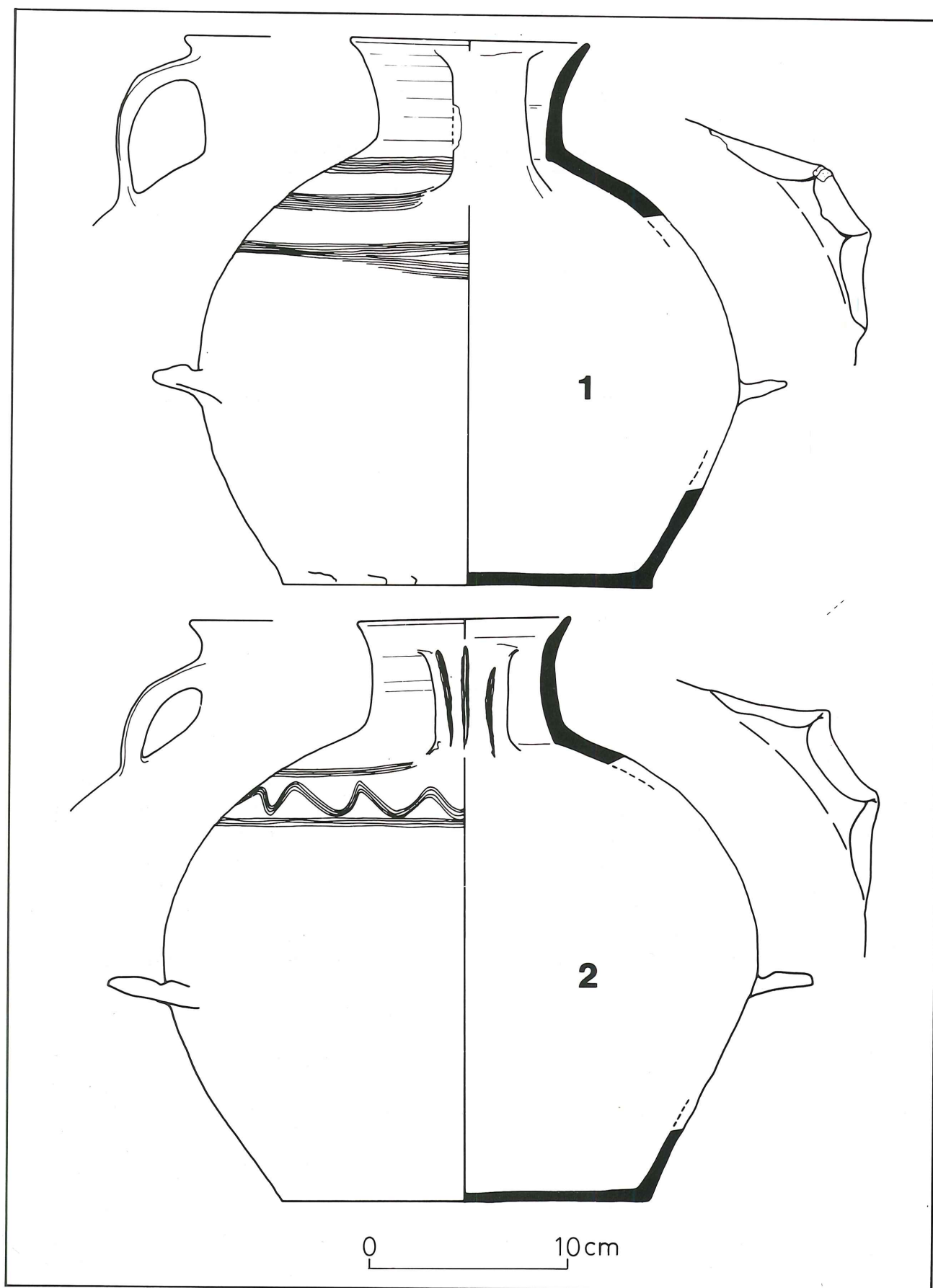


Fig. 13.

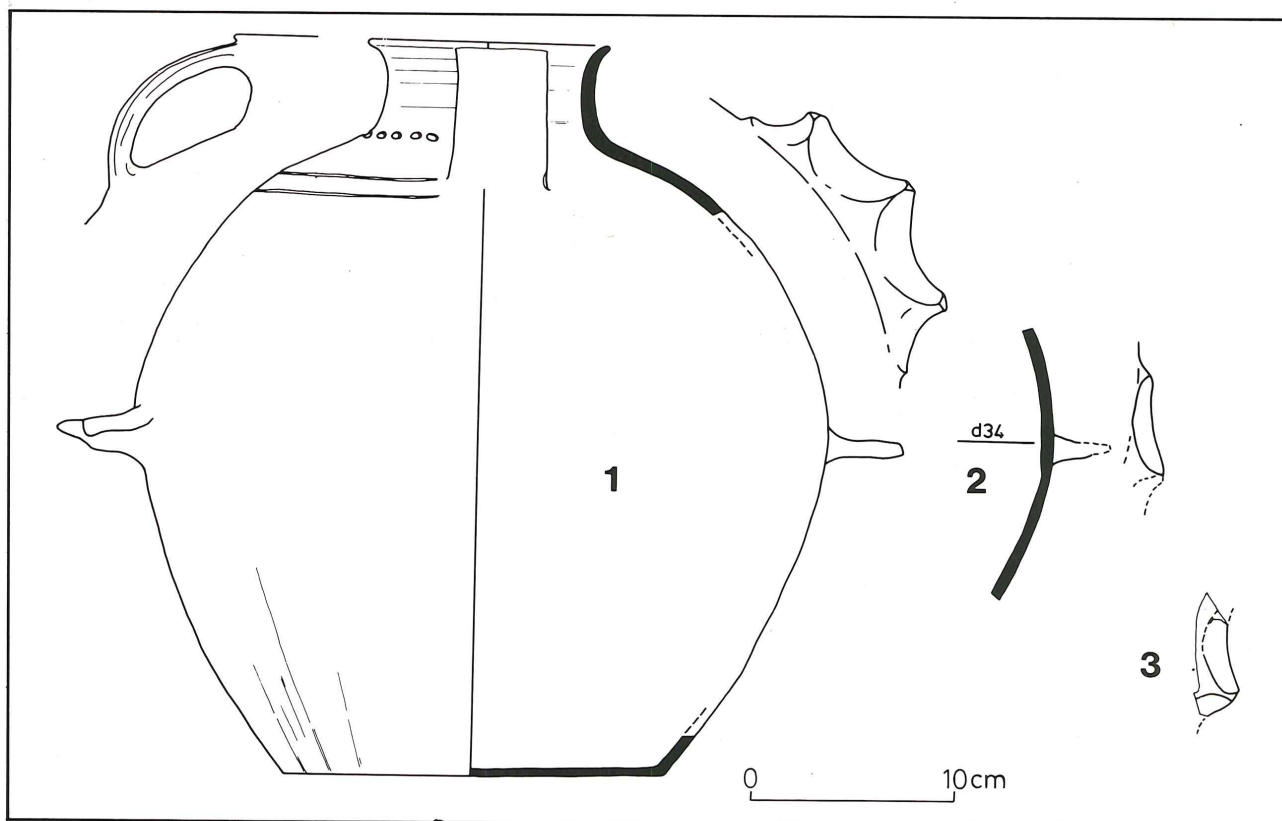


Fig. 14.

are typologically linked through their form, their flat strap handles, similar rim form, their wavy line decoration, and also in another, more complex way through shared 'symbols' which have been cut into these handles before firing. The last attribute might indicate a more complicated function: possibly a form of volumetric ranking and notation (cf. now Helms 1987a).

The smaller volumetric series of these two repertoires (Figs. 8-12) is identical to jugs from the other Amman burials (Dajani 1967/8, Fig. 2:4, 1; Zayadine 1978, Fig. 3:3, 2, 4; Hadidi 1982, Pl. 79:1). Similar forms — some with 'symbols' — occur as far south as Tell el-'Ajjul (Kenyon 1956, Fig. 8:5) and Khirbet Kirmil (Dever 1975, Fig. 9:9) where a related form (*ibid.*: Fig. 9:10) is typical of Dever's family 'S' and his 'EBIVC'. Closer parallels come from Jericho (Kenyon 1960, Fig. 106:2; 1965, Figs. 28:11, 67:4, 5, 80:10, 89:7) and one example was found at Ṭiwal esh-Sharqi (Helms 1983, Fig. 16:5). Much closer comparisons — distantly related to the Jericho types — may be made with jugs in

regions north of Amman. Comparable examples come from el-Ḥuṣn in Transjordan (Harding and Isserlin 1953, Figs. 1:14-17, 20-23 — with paint, 3:525 — round base) and others from a series of sites in the Beth Shan Valley and the western shore of Lake Tiberias, all of them similar to those from el-Ḥuṣn: e.g. Beth Shan (Oren 1973, Fig. 2:3, 4), Tell 'Artal (Hess 1984, Fig. 1:5), Menahemiya (Bahat 1976, Fig. 2:2, 4-11, 13), and 'Tiberias' (Tzaferis 1968, Fig. 5:7, 8). Shape and handles are almost identical; only the rim form differs slightly in that these jugs have a pouring spout, either in line with the handle or to one side of it (cf. now Helms 1987a, Fig. 9 for the distribution of variants).

On several counts — volumetric ranking, similar 'symbol' sets (Helms 1987a), as well as implied function — a second repertoire of jugs may be identified, with the tentative suggestion that it represents an essentially contemporary regional production in and about the Ḥuleh Basin and northwards, at least as far as Tyre. Comparison may be made with twin-handled



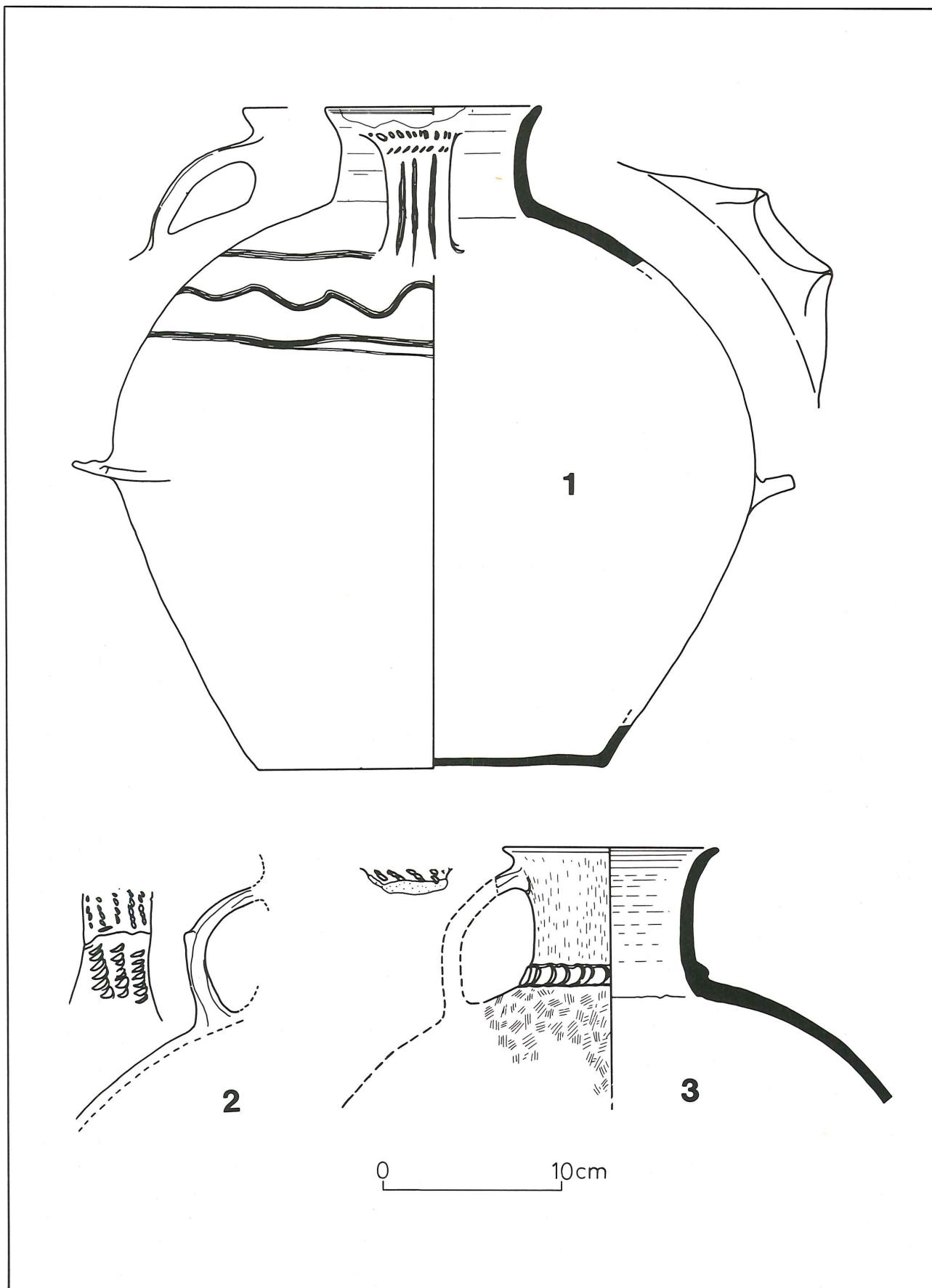


Fig. 15.

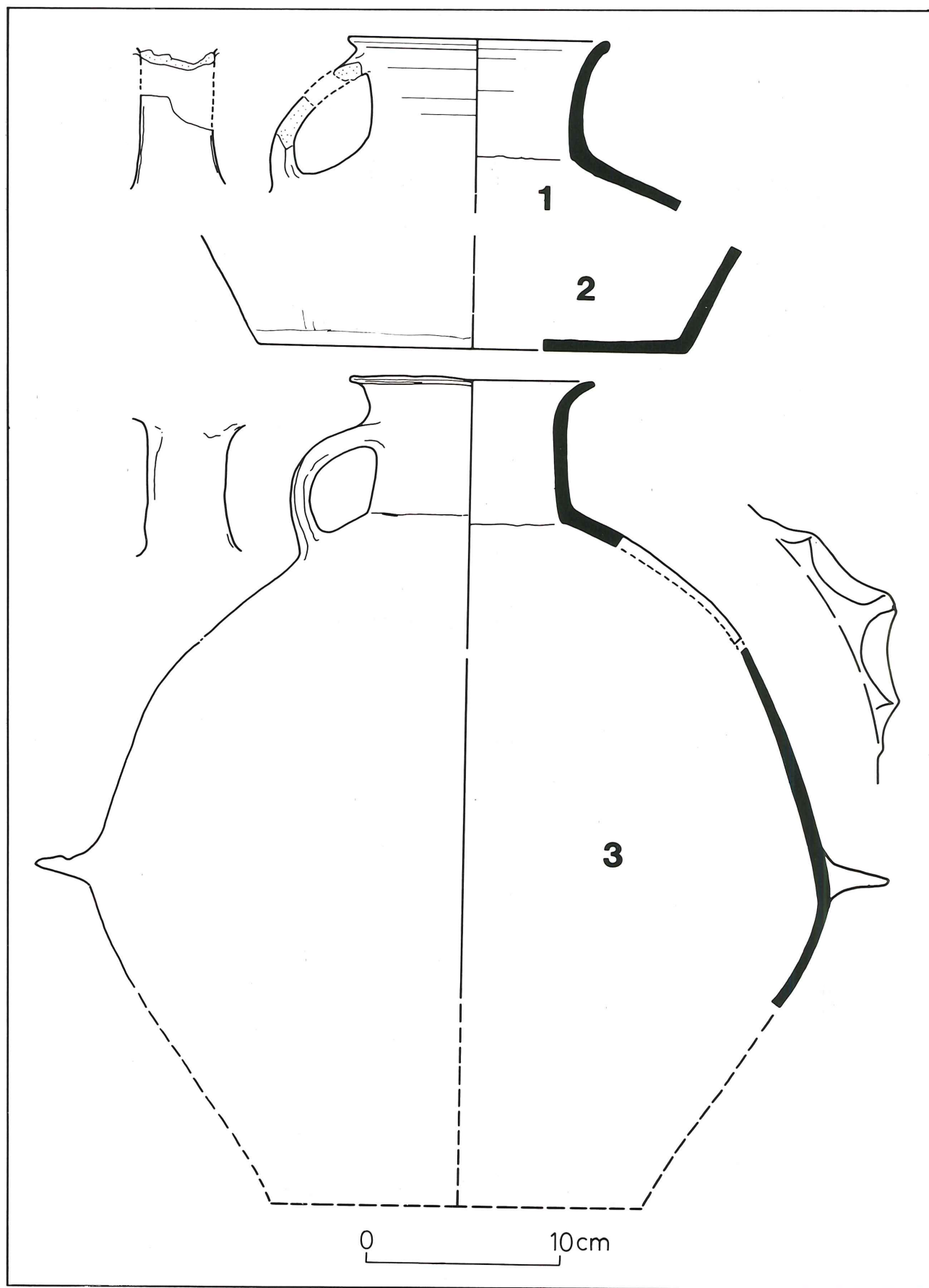


Fig. 16.

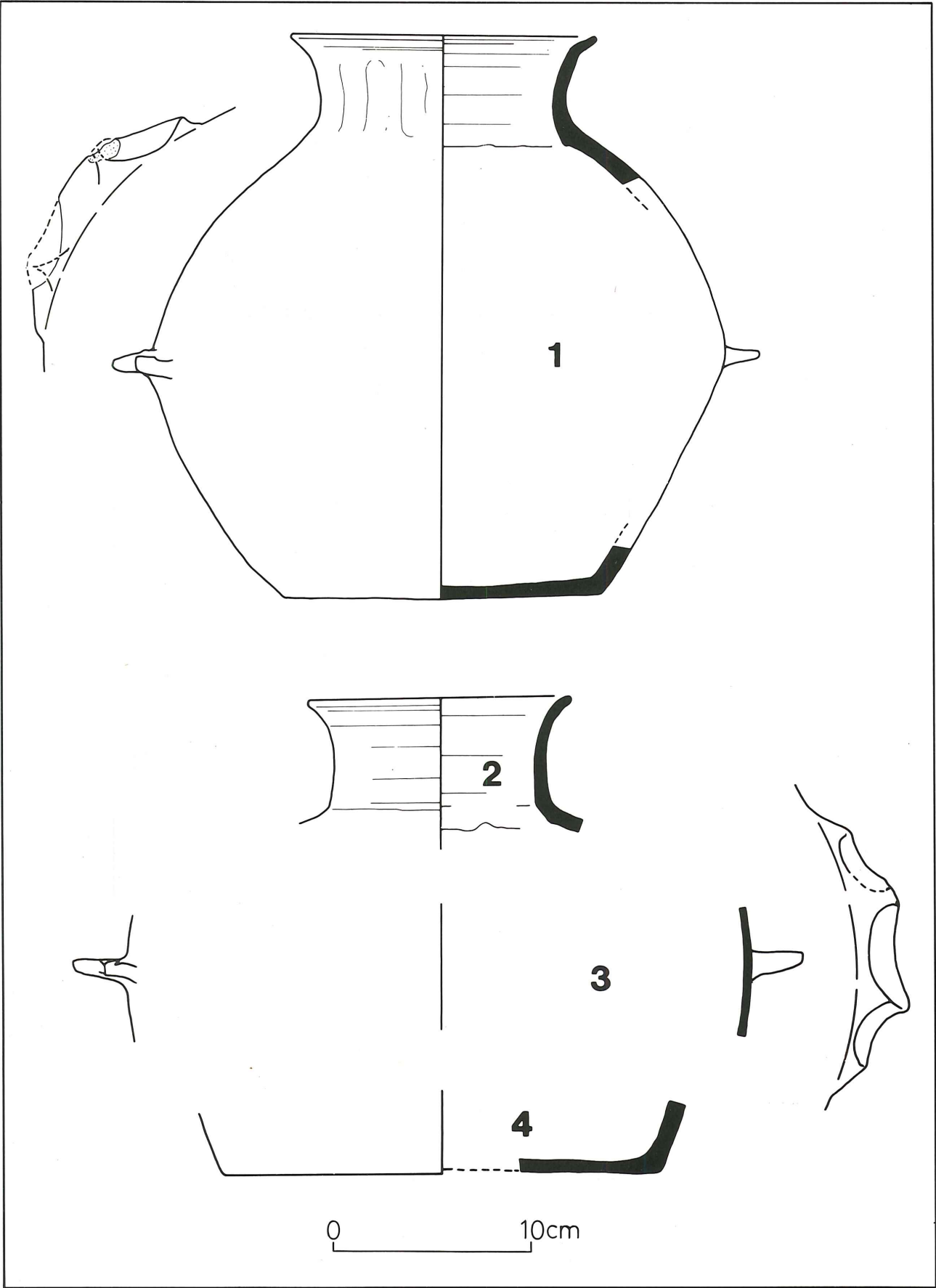


Fig. 17.

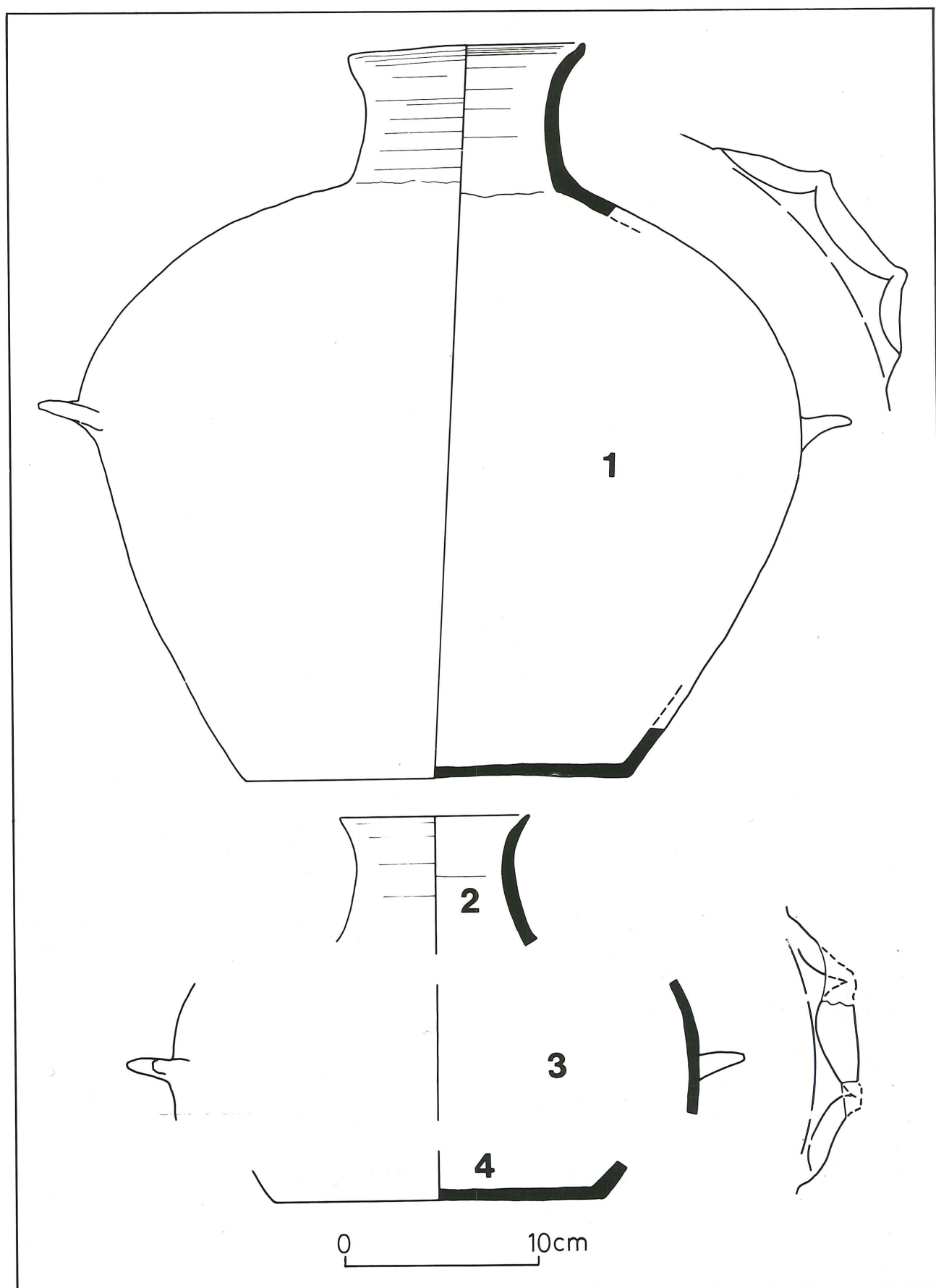


Fig. 18.



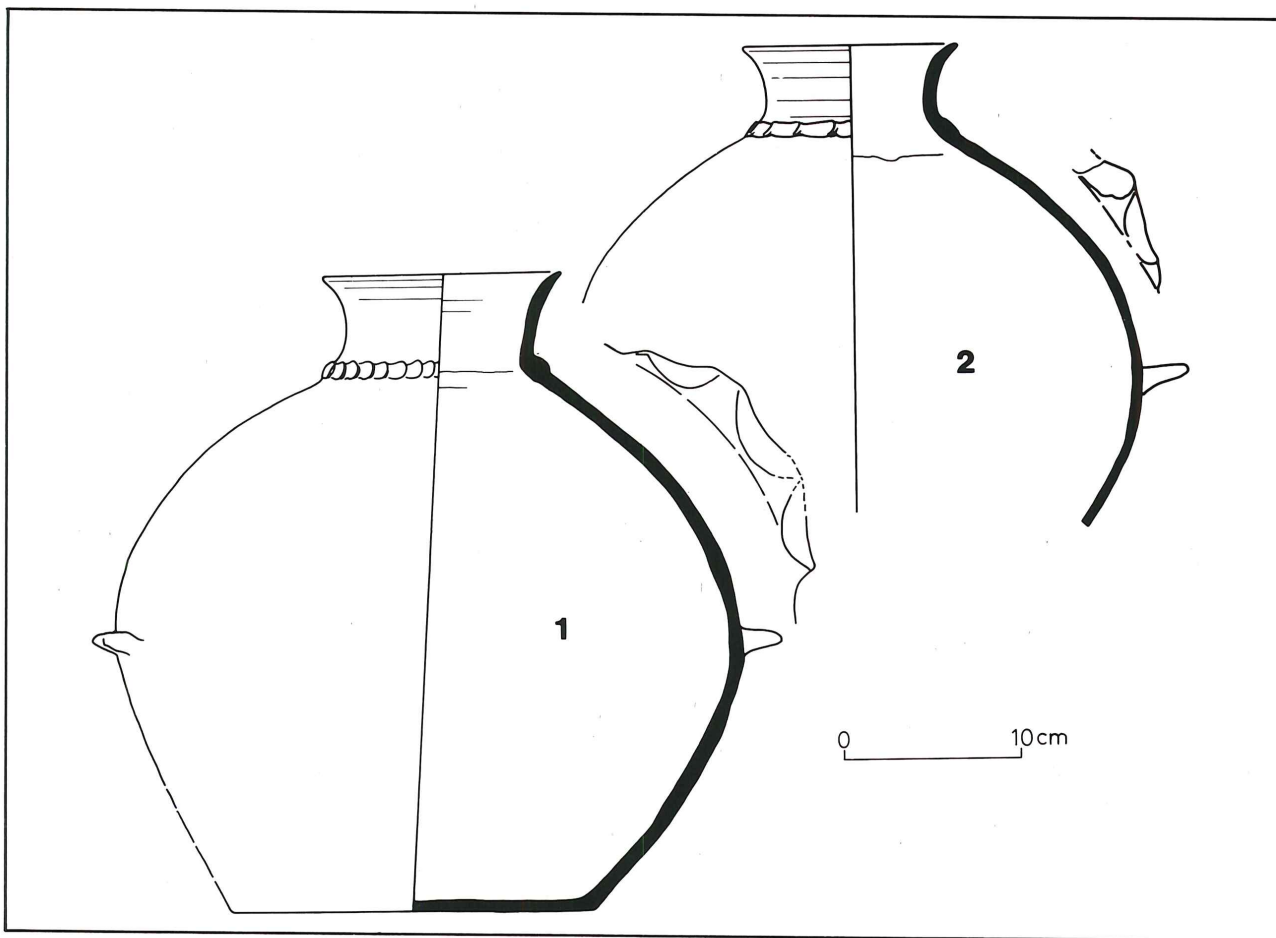


Fig. 19.

jugs with a pouring spout on one side from Ma'ayan Barukh (Amiran 1961, Fig. 7), Qedesh (Tadmor 1978, Fig. 4:10-413, 70-484, 70-223, 70-488, 70-486, 70-387), a body sherd from near Kibbutz Shamir (Bahat 1972, Fig. 1:5), and Tyre (Bikai 1978, Pl. LIV:2).

Typologically, the origins of the smaller series presented here may be sought in EB III jugs and even earlier (i.e. in high loop-handled juglets: cf. examples in Helms 1986; 1987b). It is possible to find contemporary prototypes for several jug-forms which in the past have been used in the construction of sequential typologies in EBIV (i.e. Dever 1980; cf. also Richard 1980). Thus, for example, an EB III jug from Jericho (cf. Amiran 1960, photo 75) stands before an 'EBIVA' jug from Bab edh-Dhra' (Schaub 1973, Fig. 8:24, 45) as well as an 'EBIVC' form from 'Ain Samiya (Dever 1972, Fig. 3:6). Another EB III example from Jericho (cf. Amiran 1969,

Pl. 20:11) stands midway between the repertoire from Umm el-Bighal and related forms from Khirbet Kirmil (Dever 1975, Fig. 5:10, 11). Comparison may also be made with a type from Arad, Stratum III (Amiran 1978, Pl. 15:14).

The larger series (Figs. 13-16) is also present in the other Amman burials (Dajani 1967/8, Fig. 2:2; Hadidi 1982, Pls. 79:3, 80:5) and, so far as an EBIV context is concerned, must be considered as a local development at this time. Its origins — like the rest, in EB III — may be of more specific importance in terms of inter-regional diffusion and transference of stylistic and technological preferences. Remarkably direct lineal ancestors of this repertoire come from south-central Palestine: e.g. examples from Tell ed-Duweir (Tufnell 1958, Pl. 30:226, and smaller versions in Pl. 59: 172, 176, 177), Jericho (Sellin and Watzinger 1913, Pl. 21:C.i), and 'Ai (Marquet-Krause 1949, Pl.

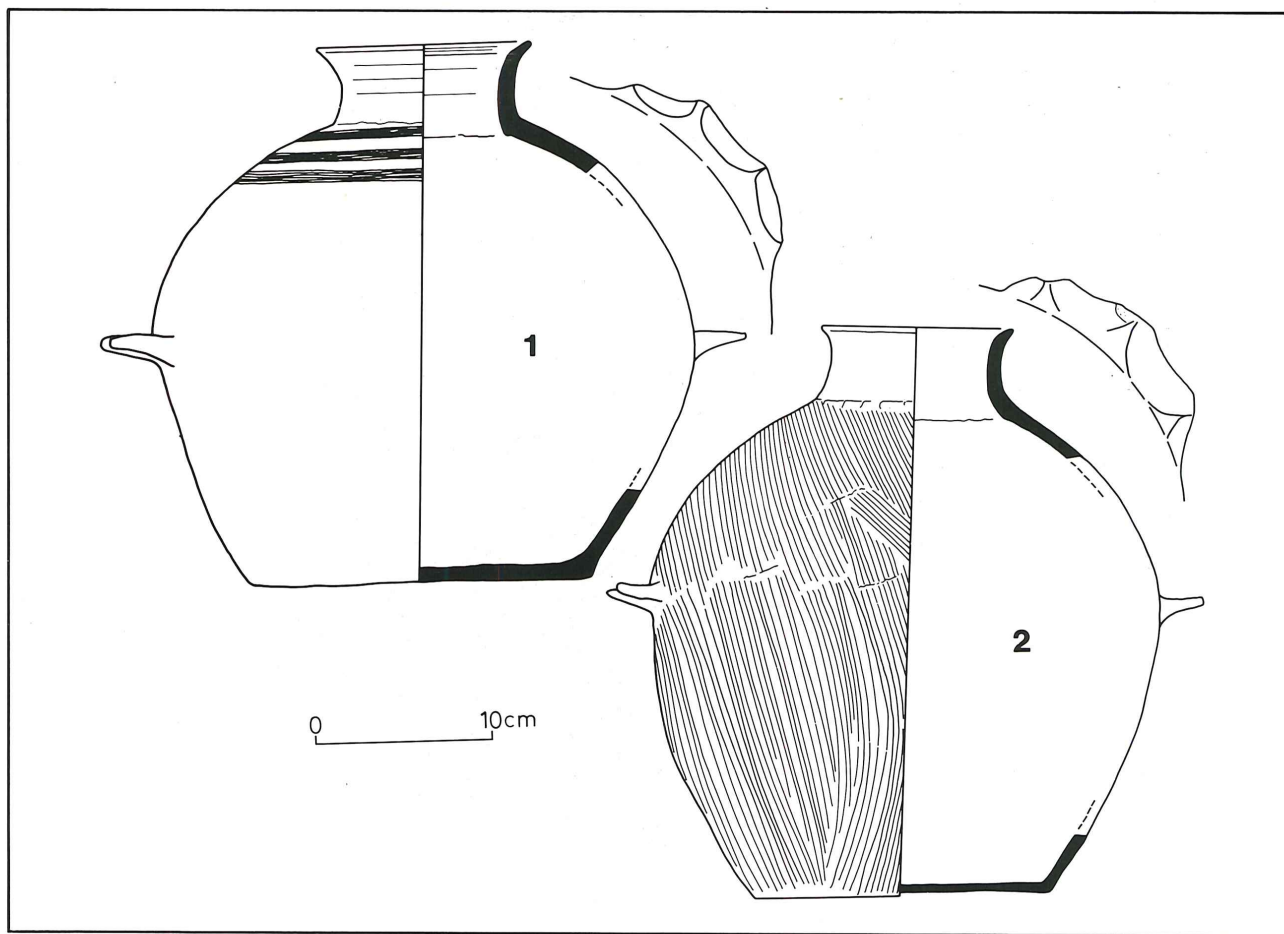


Fig. 20.

LXV:11.1565). More general antecedents in EB II may be noted in the common 'Syrian' bottles (*cf.* Amiran 1969, Pl. 17:3; 1978, Pl. 25:1-8, 27:14). The examples from Arad have 'degenerated' handles. Other similar forms, also from Arad (Stratum II) may be related (Amiran 1978, Pls. 37, 38) which themselves stem from EBIB prototypes (compare here Helms 1986, Fig. 13:7), if not even a little earlier.

#### IV Summary (Fig. 21)

The closest and most direct typological links of the assemblage from Umm el-Bighal and the rest of the Amman tomb groups lie in the north-central regions of Palestine/Transjordan. They are represented by sites like el-Ḥuṣn in the area of Irbid and a growing number of sites in the Beth Shan Valley. A direct link has been established with the tomb groups at Ṭiwal esh-Sharqi in the central Jordan Valley

which, in turn, may now be linked to the occupation sequences at Tell Umm Ḥammād in stages 7 and 8 there (*cf.* Helms 1986). These stages are predominantly typified by pottery which is later than Iktanu phase 1 (*cf.* Prag 1974) and probably also a little later than Iktanu phase 2. In terms of Dever's detailed typological division (1980) this pottery would be classed as 'EBIB'. However, some forms and some decoration at Umm Ḥammād can be classed in Dever's 'EBIVC' category. Similar decorative elements (wavy line incisions) and certain details of rim shape (e.g. recessed) at Umm el-Bighal suggest the same partial contemporaneity and possibly also a merging of styles. Forms are mainly related to Dever's 'EBIVB' category; some of the stylistic attributes to his 'EBIVC'. Attributes, form, even whole repertoires ought therefore more logically be regarded as isochronic. The various parallels cited above tend to support this.



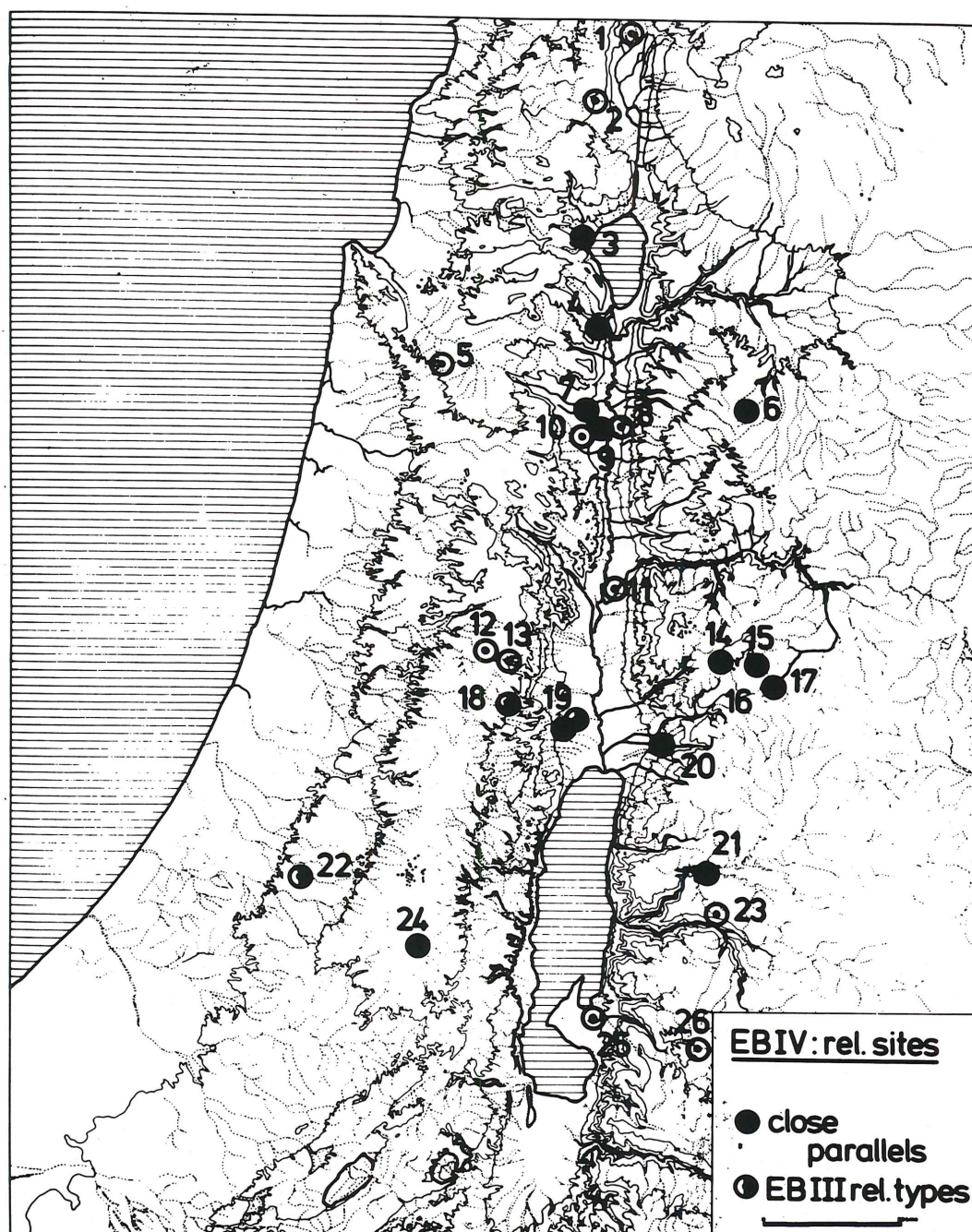


Fig. 21.

- |                                    |                     |
|------------------------------------|---------------------|
| 1 Ma'ayan Barukh                   | 14 Umm el-Bighal    |
| 2 Qedesh                           | 15 'Sports City'    |
| 3 'Upper Tiberias'                 | 16 Jabal ej-Jofeh   |
| 4 Menahemiya                       | 17 Jabal et-Taj     |
| 5 Megiddo                          | 18 'Ai (et-Tell)    |
| 6 el-Huṣn                          | 19 Jericho          |
| 7 Beth Shan                        | 20 Iktanu           |
| 8 Tell el-Ḥayyat                   | 21 Khirbet Iskandar |
| 9 Tell 'Artal                      | 22 Lachish          |
| 10 Rehov                           | 23 'Aro'er          |
| 11 Tell Umm Ḥammād                 | 24 Khirbet Kirmil   |
| 12 Sinjil                          | 25 Bab edh-Dhra'    |
| 13 Daliyeh, Mirzbaneh, 'Ain Samiya | 26 Ader             |

Turning briefly to the chronology of EBIV, certain general conclusions may be appropriate at this time, without regurgitating all facets of the 'EBIV debate' which evolved from absolute sequential typological arguments.

When the published evidence is examined coldly and objectively, there is no justification at any point for a tripartite division of the period between the end of EBIII (whatever that might be: but *cf.* Richard 1980, her internal EBIV chronology apart) and the beginning of the Middle Bronze Age in about 2000 B.C. Nor is there any reason whatever for assigning equal time spans for these divisions. The admissible evidence tends to support — if anything — a bipartite division, more or less as it was presented by Oren (1974) and criticised by Dever (1974). The few excavated occupation sites in Transjordan show this convincingly: e.g. Iktanu (Prag 1974) and 'Aro'er (Olavarri 1969). The division is demonstrated by stratigraphy and associated typological factors which divide about forms, decoration and technology: on the one hand closer to EB III prototypes and on the other, developed forms and decora-

tive elements partly developed locally and partly perhaps introduced from farther north (*cf.* now Mazzoni 1985). Recently excavated sites such as Khirbet Iskandar and Tell Umm Hammād have revealed longer typological sequences, particularly at the latter site where a long and continuous development can be charted throughout the whole of the period after whatever we might regard 'EBIA' to be. Neither of these two excavations supports a sequential and tripartite division on any grounds. Rather, they suggest a considerable chronological overlapping of regional styles. A similar conjecture was voiced by the excavators of Tell el-Hayyat, albeit without tangible proof (Falconer and Magness-Gardiner 1984).

Dever's typological analyses are still convincing and valuable, only the chronological components are questioned here: these and any hypotheses derived from them, particularly where Transjordan and southern Syria are concerned.

Svend Helms  
David McCreery



## Catalogue: Pottery (Figs. 6-20)

<i>Fig.</i>	<i>No.</i>	<i>Cat. No.</i>	<i>Tomb</i>	<i>Shape</i>	<i>Description</i>
6	1	11	6	lamp	4 spouts, rounded base
	2	12	3	lamp	4 spouts, rounded base
	3	2	18	lamp	4 spouts, rounded base
	4	5	20	lamp	4 spouts, rounded base
	5	3	0	lamp	4 spouts, rounded base
	6	83	12	lamp	4 spouts, rounded base
	7	38	0	lamp	4 spouts, rounded base
	8	7	15	lamp	4 spouts, rounded base
	9	4	7	lamp	4 spouts, rounded base
	10	9	8	lamp	4 spouts, rounded base
	11	39	25	lamp	4 spouts, rounded base
	12	84	12	lamp	4 spouts, rounded base
7	1	6	4B	lamp	4 spouts, rounded base
	2	1	21	lamp	4 spouts, rounded base
	3	8	10	lamp	4 spouts, flat base
	4	10	4A	lamp	4 spouts, flat base
	5	76	4B	lamp	4 spouts, flat base
	6	79	17	lamp	4 spouts, flat base
	7	13	17	lamp	4 spouts, flat base
	8	64	12	base	—
	9	74	18	base	—
	10	45	0	base	—
	11	36	5	hole-mouth jar	slurred rim, impressed decoration on rim
	12	37	25	hole-mouth jar	slurred rim, impressed decoration on rim
	13	59	12	body sherd	slurred
8	1	15	21	jug	flat strap handle, slurred rim
	2	72	4B	jug	flat strap handle with incised decoration, slurred rim, symbols
	3	80	21	jug	flat strap handle, recessed slurred rim
	4	18	21	jug	flat strap handle, carination on shoulder, slurred rim, mend holes
	5	75/73	18	jug	flat strap handle (?), slurred rim
	6	40/48	10	jug	flat strap handle
9	1	81	10	jug	flat strap handle with incised decoration, incised decoration on base of neck, slurred rim, symbols
	2	17	3	jug	flat strap handle with incised decoration, incised decoration on base of neck, incised lines on body, slurred rim, symbols
	3	24	3	jug	flat strap handle with incised decoration, recessed slurred rim, wavy incised lines on body, symbols
	4	23	6	jug	flat strap handle with incised decoration, slurred rim, symbols
10	1	19	19	jug	flat strap handle with incised decoration, slurred rim, symbols
	2	16	1	jug	flat strap handle with incised decoration, recessed slurred rim, wavy incised decoration on body, symbols
	3	33	18	jug	flat strap handle, slurred rim
	4	82	16	jug	strap handle (?), incised decoration on base

					of neck, incised lines on body, incised decoration at base
11	1	25	3	jug	flat strap handle with incised decoration, incised lines on neck and body, slurred rim, symbols
	2	14	18	jug	flat strap handle, incised decoration at base, slurred rim
	3	70	8	jug	flat strap handle, slurred rim
	4	20	1	jug	flat strap handle with incised decoration, incised decoration on neck, slurred rim, symbols
12	1	21	1	jug	flat strap handle, incised decoration at base, slurred rim
	2	22	1	jug	flat strap handle with incised decoration, incised lines on shoulder and body, incised decoration at base, painted vertical lines, slurred rim, symbols
	3	44	0	jar	slurred rim
	4	41/46	10	jar	incised lines on neck and body, slurred rim
	5	68	12	jar	—
	6	65	12	jug	flat strap handle, slurred rim
13	1	27	3	jug	flat strap handle, two folded ledge handles, incised lines on body, incised decoration at base, slurred rim
	2	26	1	jug	flat strap handle with decoration, two folded ledge handles, incised lines on body, wavy lines decoration on body, slurred rim, symbols
14	1	28	6	jug	flat strap handle, two folded ledge handles, incised decoration on neck, incised lines on body, combed body, slurred rim
	2	47	10	body sherd	folded ledge handle
	3	66	12	body sherd	folded ledge handle
15	1	29	1	jug	flat strap handle with incised decoration, two folded ledge handles, lines on body, wavy incised lines on body, slurred rim, symbols
	2	52	11	body sherd	flat strap handle with incised decoration, symbols
	3	35	0	jug	flat strap handle with incised decoration, impressed decoration on neck, combed decoration, slurred rim (internal), symbols
16	1	49	12	jug	flat strap handle, slurred rim
	2	50	12	body sherd	base, combed decoration
	3	54/55	11	jug	flat strap handle, two folded ledge handles
17	1	32	3	jar	two folded ledge handles, recessed slurred rim
	2	60	12	jar	slurred rim
	3	60	12	body sherd	folded ledge handle
	4	60	12	body sherd	base
18	1	31	1	jar	two folded ledge handles, recessed slurred rim
	2	57	0	jar	slurred rim
	3	57	0	body sherd	folded ledge handle

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	4	57	0	body sherd	base
19	1	77	16	jar	two folded ledge handles, impressed decoration on neck, slurred rim
	2	56(71)	4B	jar	two folded ledge handles, impressed decoration on neck, slurred rim
20	1	34	1	jar	two folded ledge handles, incised lines on shoulder, recessed slurred rim
	2	30	6	jar	two folded ledge handles, vertical impressed decoration on neck, combed body

Contents of Tombs

Tomb 1: 16 20 21 22 26 29 31 34 90; Tomb 2: 0; Tomb 3: 12 17 24 25 27 32; Tomb 4A: 10; Tomb 4B: 6 56 57 58 71 72 76; Tomb 5: 36 42; Tomb 6: 11 23 28 30; Tomb 7: 4; Tomb 8: 9; Tomb 9: 0; Tomb 10: 8 40 41 46 47 48 81; Tomb 11: 51 52 53 54 55; Tomb 12: 49 50 59 60 61 62 63 64 65 66 67 68 69 83 84 86 87; Tomb 13: 85; Tomb 14: 0; Tomb 15: 7; Tomb 16: 77 78 82?; Tomb 17: 13 79; Tomb 18: 2 14 33 70 73 74 75 88; Tomb 19: 19; Tomb 20: 5 89; Tomb 21: 15 18 80; Tomb 22: 0; Tomb 23: ?; Tomb 24: ?; Tomb 25: 37 39.

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