

## Early Bronze Age Potmarks from Khirbat az-Zayraqūn: Some Aspects Concerning their Meaning\*

### Introduction

Potmarks, generally defined as pre-firing incisions on vessels, are a well known phenomenon for the Early Bronze Age of the Southern Levant. The earliest finds were already reported by W. M. F. Petrie from Tall al-Hiṣi during the excavations in 1890 (Petrie 1891: 42 and Pl. V:48-50). Since then potmarks have been found on almost every Early Bronze Age site, although only from few sites complete catalogues or more detailed discussions of these finds are published (Bliss 1894: 42ff. and Nos. 1-68; Tufnell 1958: 156ff. and Pl. 18; Amiran *et al.* 1978: 49; Fargo 1979: 27ff.; London 1991: 388ff.; Scheftelowitz 1992: 8ff.; Lapp 1995).

The recent excavations at Khirbat az-Zayraqūn offer new possibilities for examining the function of these potmarks. Khirbat az-Zayraqūn is an Early Bronze Age II-III walled town of about 7 ha in size in Northern Jordan, 12 km east of Irbid. The site was excavated between 1984 and 1994 by S. Mittmann, Biblisch-Archäologisches Institut, University of Tübingen and M. Ibrahim, Institute of Archaeology and Anthropology, Yarmouk University, Irbid (Mittmann 1994, Ibrahim and Mittmann 1991, 1994)

### Description of the Incisions from Khirbat az-Zayraqūn

During the excavation of Khirbat az-Zayraqūn, altogether 545 potmarks incised before firing were found on vessels and sherds.<sup>1</sup> 267 of these marks are completely preserved and enable a typological grouping of the different motives. 57 different motives can be recognized, most of them incised, some impressed, and some even show a combination of the two techniques (FIG. 1). The motives range from very simple lines or finger impressions to complex signs like pentagrams and tree motives. Twenty-two of the motives occur only once, but the remaining

1		16	田	31	○	46	●
2		17	□	32	⊖	47	●●
3		18	+ x	33	⊗	48	●/●
4		19	⊥	34	9	49	●●●
5		20	∧	35	7	50	●●●●
6		21	△ ▽	36	∩	51	●●●●●
7	—	22	△	37	∩ ∪ ∪	52	●●●●●●●
8	— —	23	∫	38	◇	53	●●●●●●●●
9	∏	24	∟	39	∩	54	●●●●●●
10	∏	25	∟	40	∩	55	●
11	∏	26	∟	41	∩	56	●●●
12	I	27	∟	42	∩ ∪	57	●●●
13	≡	28	∟	43	∩		
14	≡	29	☆	44	∩		
15	≡	30	∟	45	∩		

1. Motifs of potmarks represented in Khirbat az-Zayraqūn.

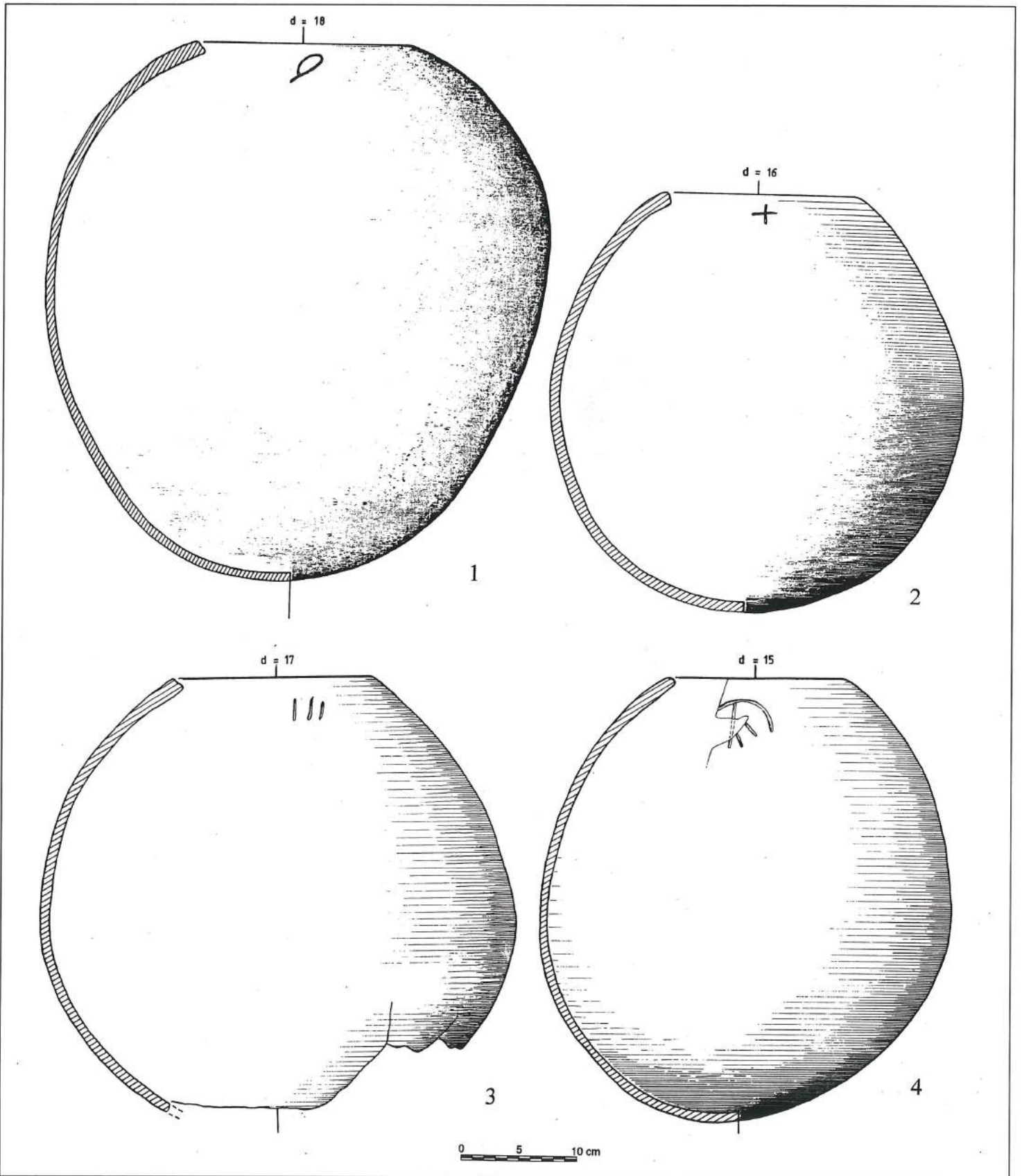
ones are found more often, even on different classes of vessels. Most common are the motifs 2, 18, 39, 46, 47 and 55, ranging from 20 to 30 occurrences (FIGS. 2-7).

Almost all motives from az-Zayraqūn find parallels at

\* The subject presented here was taken from my Ph. D. Dissertation, which deals with the Early Bronze Age pottery from Khirbat az-Zayraqūn in general (see Genz, in press). I would like to thank the directors of the Khirbat az-Zayraqūn Project, Prof. Dr. S. Mittmann, Tübingen, and Prof. Dr. M. Ibrahim, Irbid, for entrusting me with the

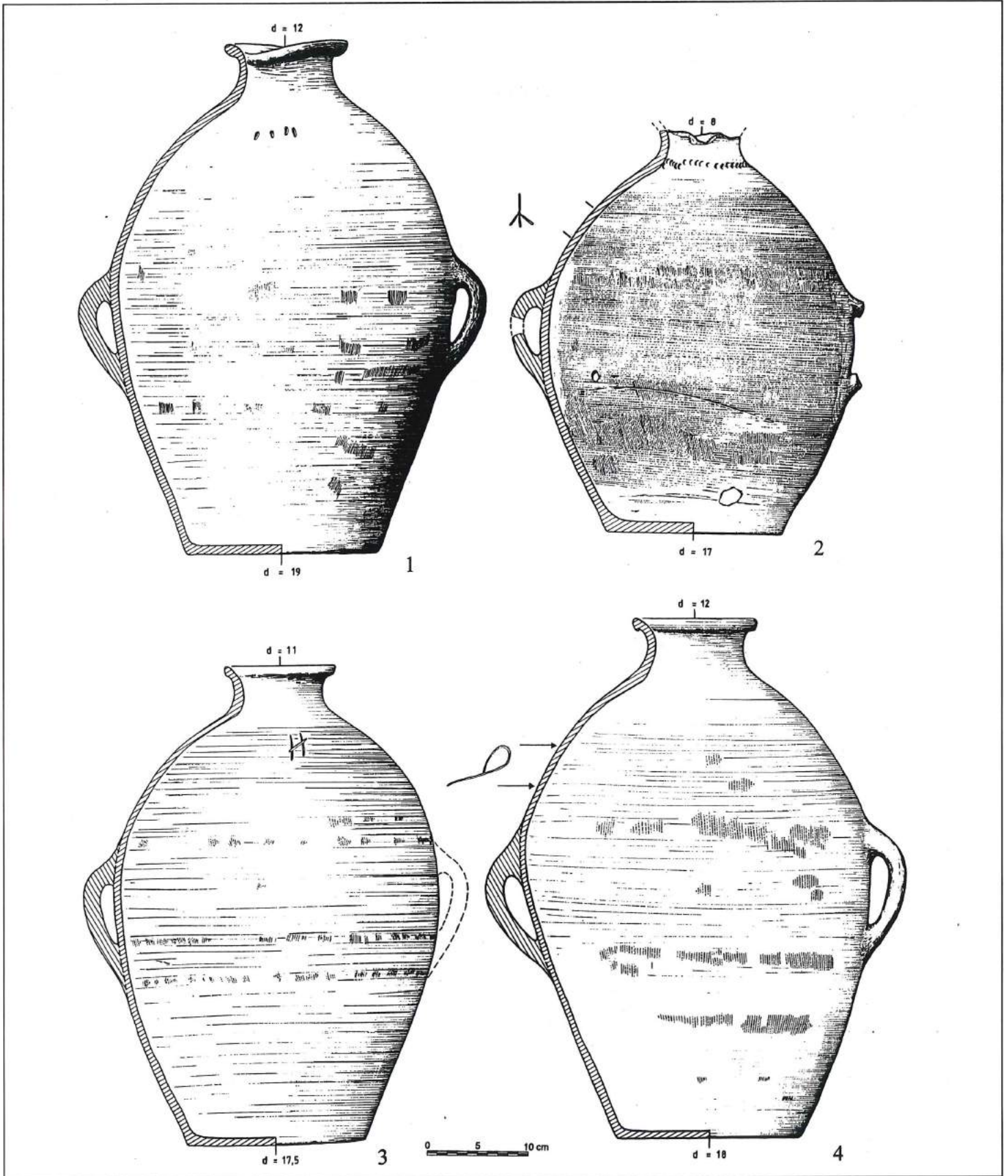
material. Special thanks go to Jens Kamlah, Tübingen, for various comments concerning the article. The pottery drawings are the work of J. Englert, Tübingen.

<sup>1</sup> This large number stands in strong contrast to only 19 post-firing incisions known from the site.

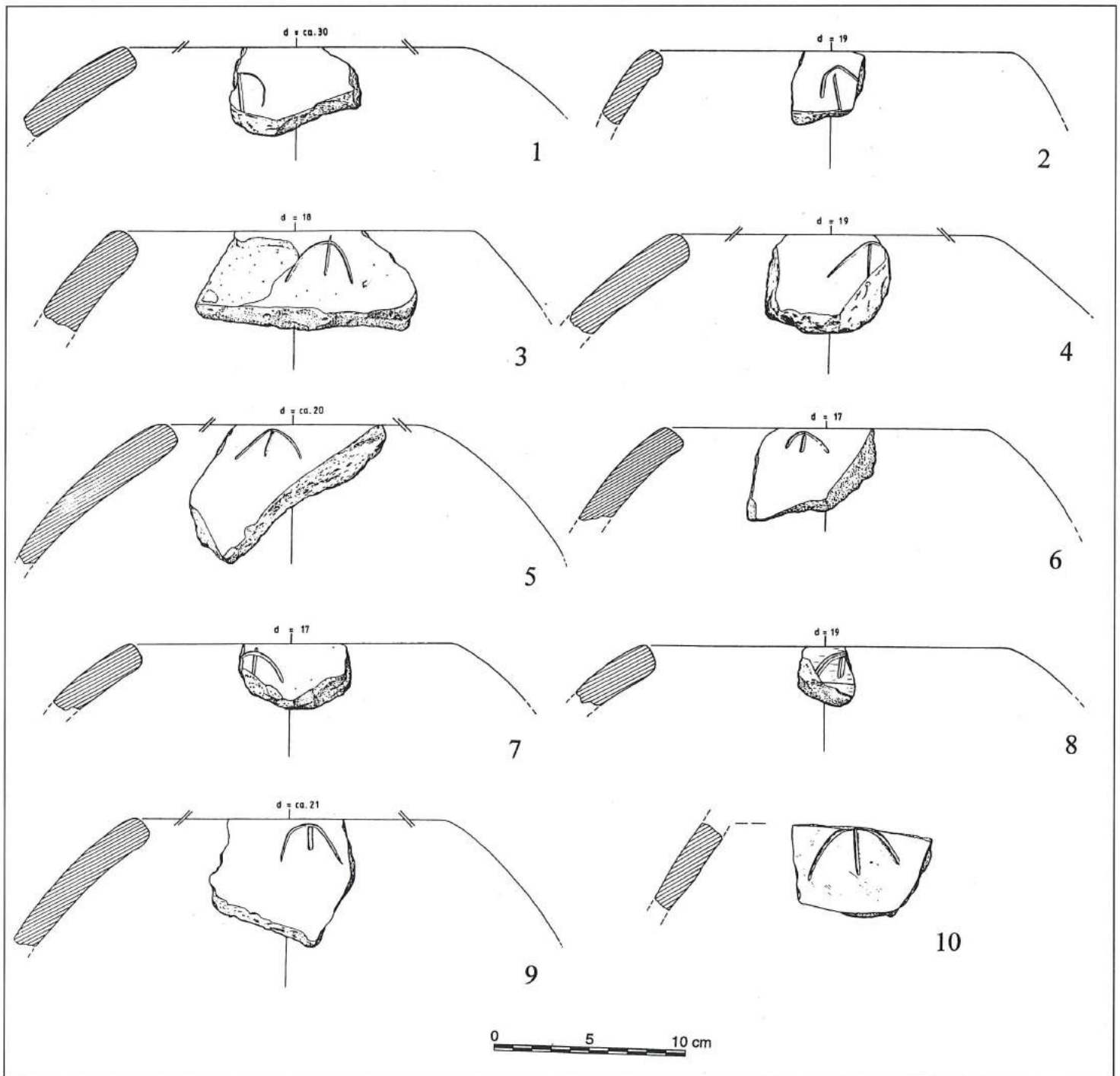


2. Complete holemouth jars with potmarks from the last urban phase at Khirbat az-Zayraqūn. 1: HZ87-306; 2: HZ87-305; 3: HZ87-338; 4: HZ87-349.





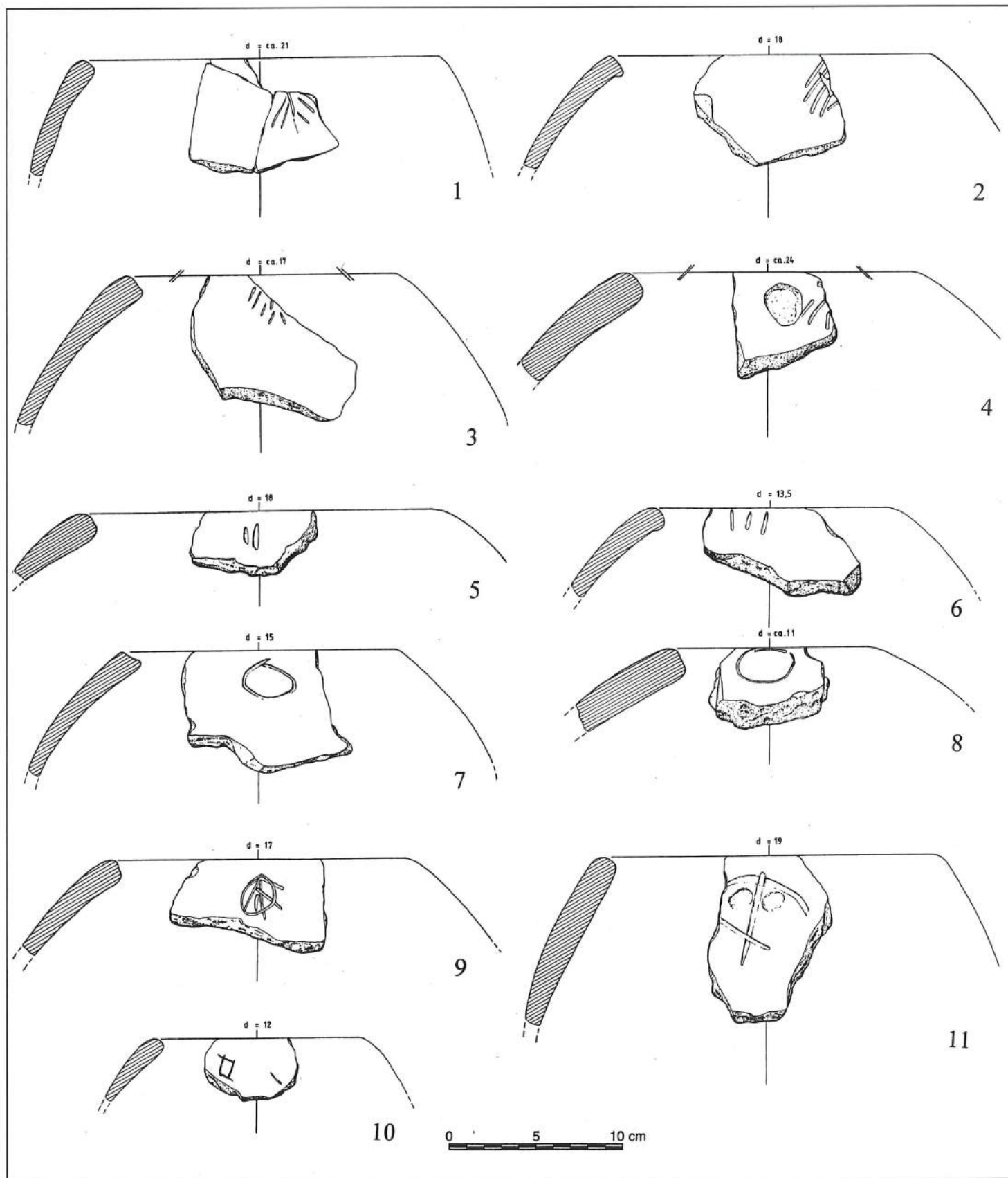
3. Complete jars with potmarks from the last urban phase at Khirbat az-Zayraqŭn. 1: HZ91-785; 2: HZ88-436; 3: HZ91-838; 4: HZ93-256.



4. Holemouth jars with potmarks from Khirbat az-Zayraqūn. 1: IH5:FN148:5; 2: IH5:FN207:1; 3: IF4:FN3:1; 4: IM8:FN59:1; 5: IIIB16:FN145:63; 6: IIID15:FN91:1; 7: IIID17:FN194:5; 8: IVA16:FN11:14; 9: IVA18:FN4:20; 10: IG5:FN176:2.

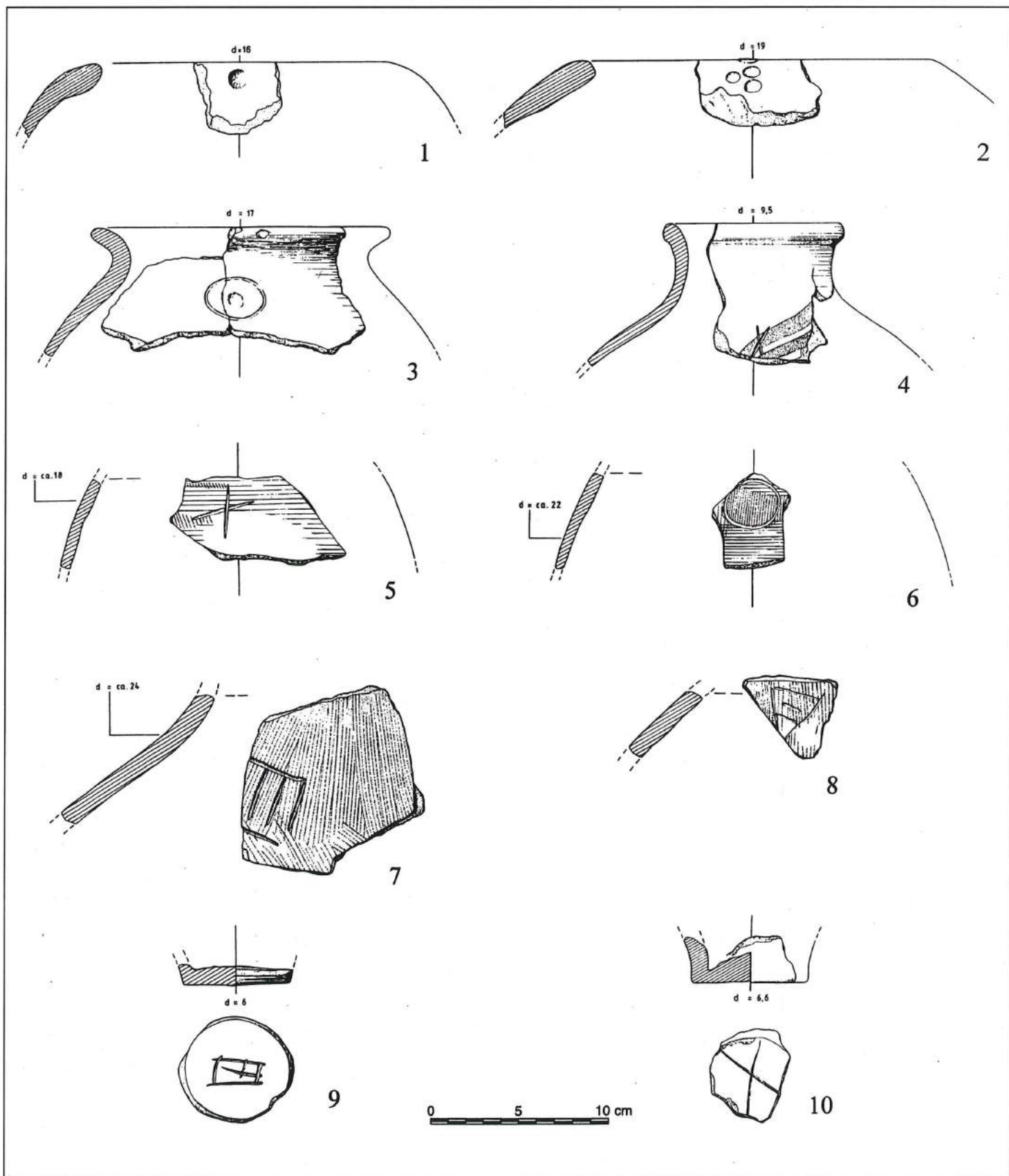
other sites in the Southern Levant. While this is not surprising for the simple ones, it seems quite remarkable for the more complex signs. Motif 28, the tree motif, is found at Tall ad-Duwayr (Tufnell 1958: Pl. 18:25) and Tall al-'Umayri (London 1991: Fig. 21:8:9). The pentagram (Motiv 29) seems to have a longer tradition. One find from En Shadud is dated to the Early Bronze Age I (Braun 1985: Fig. 26:12), while another one from Kfar

Ata comes from a typical Early Bronze Age II platter (Amiran 1969: Fig. 68). The examples from az-Zayraqūn are found on typical Early Bronze Age III platters (FIG. 7). Motif 39, very frequent at az-Zayraqūn (FIG. 4), occurs also at Tall al-'Umayri (Harrison 1997: Fig. 5.8:24), Tall ad-Duwayr (Tufnell 1958: Pl. 18:67), Tall al-Hiṣi (Bliss 1894, 21) and even at Tall Mardikh in Syria (Mazzoni 1988: Fig. 7:3). This cursory overview shows the

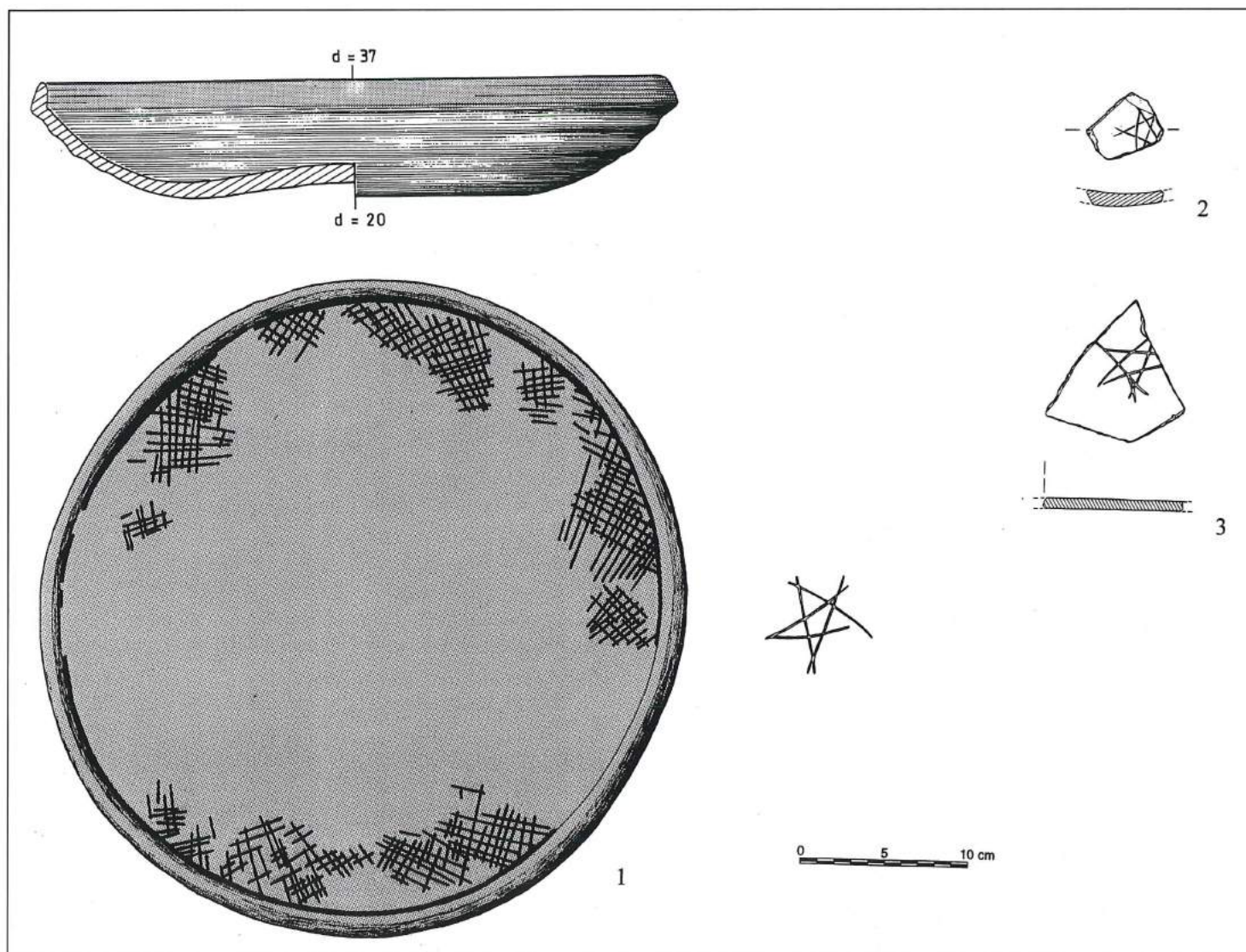


5. Holemouth jars with potmarks from Khirbat az-Zayraqūn. 1: IG5:FN1:1; 2: IG5:FN143:89; 3: IG5:FN143:88; 4: IG5:FN143:87; 5: IG5:FN163:2; 6: IVA18:FN4:19; 7: IG5:FN134:4; 8: IVA17:FN12:79; 9: IIIC15:FN277:10; 10: IJ5:FN110:1; 11: IM7:FN80:3.





6. Different vessel classes with potmarks from Khirbat az-Zayraqūn. 1: IP7:FN3:15; 2: IVA18:FN48:4; 3: IF4:FN29:1; 4: IJ5:FN5:7; 5: IK8:FN29:1; 6: IL8:FN68:15; 7: HZ88-291; 8: IIIE15:FN63:10; 9: IG5:FN164:1; 10: HZ88-511.



7. Platters with pentagrams (motif 29) from Khirbat az-Zayraqūn. 1: HZ85-83; 2: IIIB16:FN87:16; 3: IIIC15:FN337:1.

wide distribution of some of the signs not only in the Southern Levant, but even into Syria. Interestingly, the signs are not confined to pottery. The same motifs, for instance the pentagram, are found in the Southern Levant on tabular flint scrapers as well (Rosen 1997: 74ff.). All signs from az-Zayraqūn show non-figurative patterns. Figurative incisions seem to be exceptions, and are only rarely found in the Southern Levant.<sup>2</sup>

Further, the marks can be separated according to visibility. 452—the majority of the signs—are situated at the rim, on the shoulder or on the handle of the vessels, and thus can be easily recognized by the user, whereas 93 are situated on bases and thus are invisible for the user. Visible signs occur mainly on holemouth jars, globular jars

with flaring rims, bottles and jars, on bases they are confined to bowls, platters, jugs and jars.

Generally only one sign per vessel is found.<sup>3</sup> From az-Zayraqūn only two exceptions with two incisions exist on jars (HZ 87-314, HZ 88-460). In both cases one is a pre-firing, the other a post-firing incision (FIG. 8).

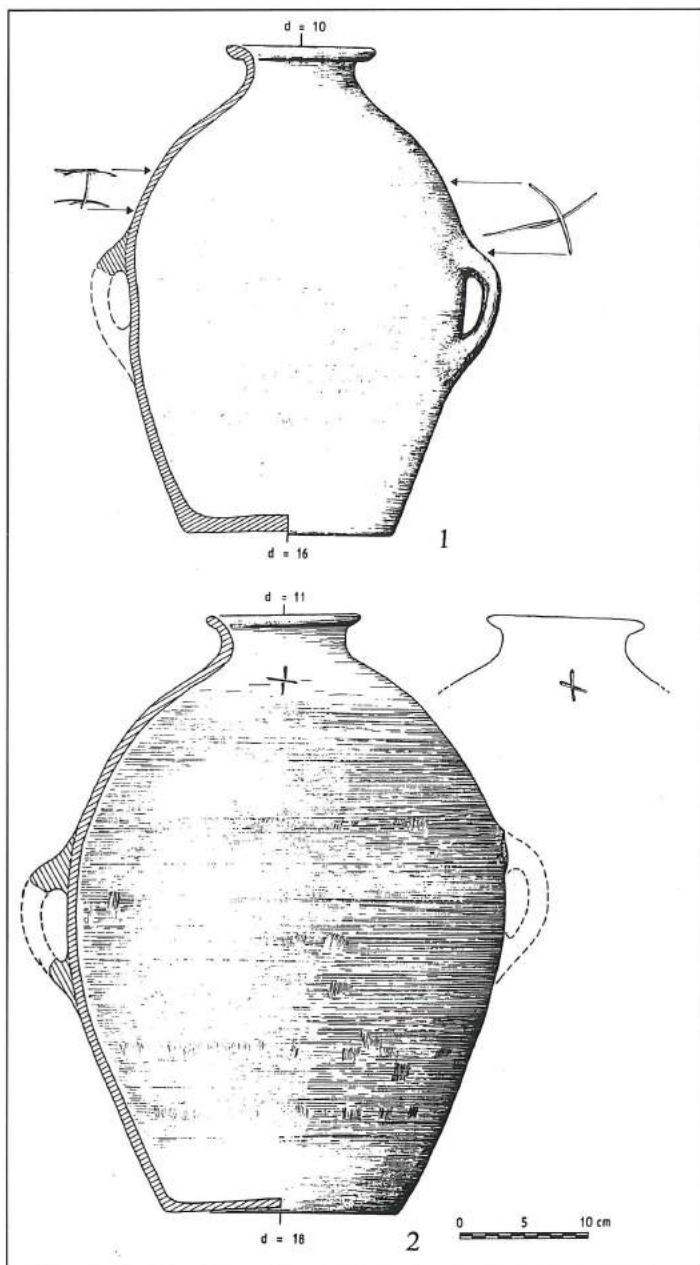
Potmarks in az-Zayraqūn are not evenly distributed on all different classes of vessels (FIG. 9). The majority of them are found on holemouth jars (class E) and jars (class K). Less frequently, they are found on bowls (class A), platters (class B), globular jars with flaring rims (class F), jugs (class H) and bottles (class J), whereas they hardly ever or never occur on cooking bowls (class C), vats (class D), juglets (class G), amphoriskoi (class I) and pi-

<sup>2</sup> From Tall al-'Umayri and Bāb adh-Dhrā' fragments of incised quadrupeds are known (London 1991: 389; Lapp 1995, Fig. 6:13). Tall Yaqush produced an incision of an ibex (Esse 1993: Fig. 7:E).

<sup>3</sup> This seems to be true for most other sites from the Southern Levant.

Only Tall Halif shows a case of two different signs on one vessel (Jacobs 1996: Fig. 55:15). Two or more different signs are a feature more commonly known from Egypt (Van den Brink 1992: 267) and from Syria (Kolinski 1993-94: 11; Holland 1976: Fig. 8:4).





8. Jars with two potmarks (one pre-, one post-firing) from Khirbat az-Zayraqūn. 1: HZ87-314; 2: HZ88-460.

thoi (class L)<sup>4</sup>. This seems to be true for all other sites from the Southern Levant as well (Guy 1938: 12; Amiran *et al.* 1978: 49; Fargo 1979a: 27ff.; Nodet 1988: 125ff.; London 1991: 388ff.; Harrison 1995: 153).

For az-Zayraqūn this distribution is clearly demonstrated by the restorable vessels with potmarks from the last urban phase (Early Bronze Age III). Of the 266 restorable

vessels from this phase, 48 show potmarks. The distribution of the marks to the vessel classes is shown in TABLE 1.

### Function

For the discussion of the meaning of these potmarks only the pre-firing incisions are considered, because a post-firing incision is not necessarily connected to the vessel, but could have also been applied on a sherd after breakage.

The majority of scholars interprets the pre-firing incisions as potters' marks, to mark the producer or locality of production (Bliss 1894: 42; Frankel 1975; Amiran *et al.* 1978: 49; Rice 1987: 183; Wood 1990: 45ff.; London 1991: 388ff.).

Fargo (1979: 38) cautiously suggested to see a numerical system behind these marks. This idea probably goes back to Guy (1938: 12), who suggested volume measures for the marks from Megiddo. This idea was taken up by Helms (1987: 46ff.) for the potmarks from the Early Bronze Age IV cemetery of Umm al-Bighāl near 'Ammān, but London (1991: 393) convincingly disproved his suggestions by showing that no relationship existed between the signs and the vessel sizes.

The potmarks from Ebla/Tall Mardikh are interpreted by Mazzoni (1988, 90ff.) as indicating the place of origin of the vessel contents, but for open vessels like chalices she accepts the common idea of potters' marks.

For the potmarks from the Dead Sea Region, Lapp differentiated two groups. The potmarks from the Early Bronze Age I tombs on the one hand are seen as mainly decorative elements. Since certain motifs are restricted to certain tombs, these decorative elements are thought to be indicators of family or clan membership (Lapp 1995: 566). The potmarks from Early Bronze II and III contexts from the city are recognized by her as having a different background, but without further specifying their meaning (Lapp 1995: 566).

Most attempts at clarifying the meaning of these potmarks are hampered by too small databases. From Tall al-'Umayrī 14 potmarks are known (London 1991, 388), from Arād 14 pre- and 5 post-firing incisions (London 1991: 391), Bāb adh-Dhrā' and an-Numayra together produced about 120 potmarks (Lapp 1995), for all other assemblages the exact numbers are not even known.<sup>5</sup>

With 545 pre-firing incisions az-Zayraqūn offers a great potential for new investigation of the meaning of these incisions.

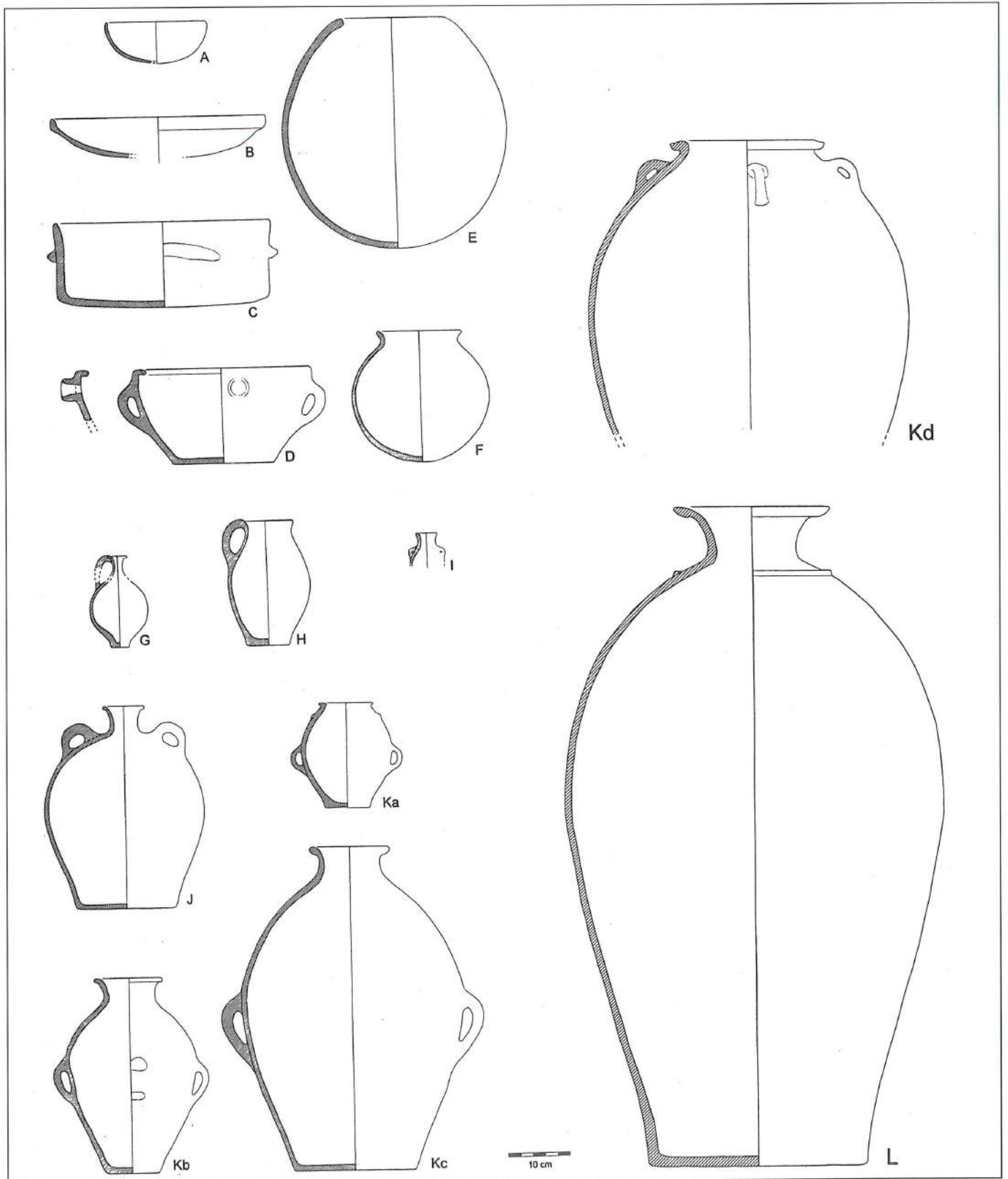
Of the 266 restorable vessels from the last urban phase,

<sup>4</sup> The pithoi in Khirbat az-Zayraqūn and the North of Palestine quite often show seal impressions around the neck. It is quite unlikely that these are purely decorative (Chesson *et al.* 1995: 120ff.), so these seal impressions may represent an additional marking system to the incisions. This may explain the scarcity of pithoi with potmarks in

the north. In the south, however, where cylinder seal impressions on pithoi are absent, potmarks do appear on pithoi, for instance at Tall Yarmut (Miroschedji 1988: 80 and 84).

<sup>5</sup> The possibilities of a quantitative investigation are shown by Van den Brink 1992 for Early Dynastic potmarks from Egypt.





9. Vessel classes from Khirbat az-Zayraqūn.

**TABLE 1.** Quantity and percentage of vessels with potmarks from the last urban phase at Khirbat az-Zayraqūn.

Vessel class	A	B	C	D	E	F	G	H	I	J	Ka	Kb	Kc	Kd	L
quantity	4	1	0	1	15	0	0	1	0	4	0	3	18	0	1?
percentage	9%	2%	0%	2%	32%	0%	0%	2%	0%	9%	0%	6%	38%	0%	0%

48 (18%) show pre-firing incisions (TABLE 1). As already mentioned above, most potmarks are found on holemouthjars and large jars of the Kc type. Fifteen (23%) of the altogether 47 restorable holemouthjars from the last urban phase show incisions,<sup>6</sup> in the case of the jars of the type Kc 18 (37%) of the 49 complete specimens are marked.

The observation that the incisions are not evenly distributed on the different vessel classes, but concentrate on certain forms like jars and holemouth jars seems to speak against the interpretation of these marks as potters marks. The concentration of the potmarks on these two classes was already recognized by London (1991: 394) and Harrison (1995: 153ff. and 157), but was interpreted as evidence of specialist production. The other, mostly unmarked vessel types would thus represent household production. While different ways of manufacture are very likely to have existed side by side, it seems not justified to see the potmarks as evidence of specialist production. Why should the specialist potters only have marked about one third of their production? Some vessels types like pithoi, that were very likely produced by specialists, hardly ever show incisions. With 57 different motifs the number is simply too large to represent individual potters or even potters workshops for a middle sized town of about 7 ha like az-Zayraqūn.<sup>7</sup> Even if some of the marked vessels are counted as imports, there still remains the problem that the absolute number of the same motif is in all cases too small for a mass-produced class of objects like pottery vessels. The most often occurring motif in az-Zayraqūn (motif 2) is only represented 29 times! Lastly, potters' marks should be expected to occur in less prominent positions on the vessels than is actually the case. As was shown above, most incisions occur on the shoulder or near the rim of the vessels. In most other known cases producers marks are rarely found on such prominent positions. All these observations are strong arguments against seeing the pre-firing incisions as producers' marks.<sup>8</sup>

Another interpretation found quite often in the literature is that as owners marks. In that case one would expect

the same sign to repeat itself on all or most vessels in the same building. The evidence from az-Zayraqūn is negative in this respect. Most buildings show a large variety of up to 13 different motifs, while only in rare cases the same motif occurs twice in the same building.

The suggestion to see potmarks as marking the volume of the vessels cannot be supported from the az-Zayraqūn vessels. In no case was there any recognizable correlation between the motif and the volume of the vessel. On the contrary, the same motifs occurred on small and large vessels alike.

The marked vessels have a very even spatial distribution within the site of Khirbat az-Zayraqūn. In no building any obvious concentration can be recognized. If the potmarks are interpreted as being connected to a redistributive system or any other kind of administrative activity, one would expect to find a concentration of marked vessels in public buildings. Neither the palace (B0.8) nor the temple in az-Zayraqūn show any obvious concentration of marked vessels (see TABLE 2).<sup>9</sup>

Thus, the most likely explanation for these potmarks is to see them in connection with the contents of the vessels. This seems quite plausible for the visible potmarks (Bikaki 1984: 43; Müller-Karpe 1988: 148ff.; Roller 1987: 2ff.). They are usually found on closed vessel shapes, where it is difficult to recognize the contents from the outside.<sup>10</sup> Less likely is this explanation for the invisible signs on the bases of vessels.

The interpretation of the pre-firing incisions as marking the contents of the vessels intends that already during the production process the potter must have had ideas what the vessels might have been used for. This assumption

**TABLE 2.** Spatial distribution of potmarks during the last urban phase at Khirbat az-Zayraqūn.

	Temple-area	B0.8	B0.9	B1.2	B1.3	B1.4	B1.6
Number of restorable vessels	28	47	19	29	90	12	18
Vessels with potmarks	4	10	2	6	16	4	4
Percentage	13%	21%	11%	21%	15%	33%	18%

<sup>6</sup> For Tall Yarmut Nodet (1988: 125ff. and footnote 2) estimates that about every sixth holemouth jar had an incision.

<sup>7</sup> The same observation was made by Kolinski (1993-94: 14) for Early Bronze Age sites in Syria.

<sup>8</sup> In contrast to the interpretation favoured here, Wood (1990: 47) and London (1991: 391ff.) mention cases where recent potters do mark their products, for instance when different potters are firing together in the same kiln. Unfortunately in neither case the quantity of the

marked vessels and the positions of the marks are recorded.

<sup>9</sup> In Egypt, however, potmarks are mainly restricted to vessels in the tombs of kings or higher court officials during the Early Dynastic period (Van den Brink 1992: 267).

<sup>10</sup> At az-Zayraqūn, pithoi are hardly ever marked, but here the frequently occurring cylinder seal impressions on the shoulders of these vessels may have provided information about the contents, see Chesson *et al.* (1995: 121).



tion is not too unlikely, given the fact that also by selecting the clay, the temper, the shape, the surface treatment and firing temperature the potter decided about the future use of the vessels he produced.

The fact that only a certain part of the vessels were marked, seems to indicate that only the marked vessels were reserved for special contents, whereas the unmarked ones could be used for varying contents and purposes.

The most difficult question is, whether each of the motifs had a special meaning in the true sense of a writing system. This cannot be answered with the evidence available at the moment. As has already been said, all different motifs in az-Zayraqūn occur only in very small numbers, which does not agree very well with the fact that most households probably stored and used the same commodities like olive-oil, wine etc. This is the strongest argument against assigning a certain, generally accepted and recognized meaning for each of the motifs. It seems thus more likely that the principal difference was not between different motifs, but between marked and unmarked vessels. If these motifs ever had some kind of special meaning, these meanings were probably only assigned *ad hoc* and individually, perhaps separately for each household. Why on the other hand the same signs occur at different sites and even in widely separated regions like the Southern Levant and Syria cannot be explained at the moment.

From Egypt (Emery 1972, 201; Arnett 1982; Van den Brink 1992) and other regions (Potts 1981; Bikaki 1984) it is well known, that the use of signs and markings directly precedes the use of true writing systems. The potmarks in Palestine, however, never developed into a true writing system, maybe because of the decline of urban societies at the end of the Early Bronze Age III.

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