EGYPTIANS AT ASHKELON?
AN ASSEMBLAGE OF EGYPTIAN AND EGYPTIAN-STYLE POTTERY

By Mario A.S. Martin

Abstract

The 2004 excavations of the Leon Levy Expedition in Grid 38 at Ashkelon uncovered a mudbrick wall of what appears to be another 'Egyptian fortress' in Late Bronze Age Canaan. In context with this building as well as in contemporaneous layers elsewhere on the tell (Grid 50) appear considerable amounts of Egyptian ceramic forms alongside the usual Canaanite ceramic material. The bulk of the Egyptian forms consists of locally produced household wares, mainly simple bowls and beer jars. Due to Ashkelon's coastal location the Egyptian assemblage is enriched with a nice collection of Egyptian imported transport containers. Together, Egyptian forms account for ca. 30% of the retrieved ceramic material. The 'Egyptian fortress' and the considerably large assemblage of characteristic Egyptian household wares argue for the presence of Egyptians among the site's inhabitants somewhere at the end of the Late Bronze Age. This 'Egyptian' phase is directly succeeded by the first 'Philistine' phase (first appearance of locally produced Mycenaean IIIC wares) with no evident signs of destruction. Morphological properties of the Egyptian-style beer jars date the end of the 'Egyptian' phase – and the end of the Late Bronze Age at Ashkelon – into the beginning of the twelfth century BCE at the earliest.

Introduction

The ancient city of Ashkelon was one of the most impressive urban centres in southern Canaan (Fig. 1). Its prominent size and function as harbor town made it a focal point of activity throughout all periods. The article at hand concentrates on the Egyptian interest in this site in the Late Bronze Age, the time of the Egyptian hegemony over Canaan.[1] Interaction between Ashkelon and Egypt is already displayed in the Amarna letters of the fourteenth century BCE (EA 287, 320–326, 370; Moran 1992). For the Ramesside period – the time in which Egypt drastically intensified its grip over Canaan – the Egyptian record produced two important pieces of evidence relating to Ashkelon: the 'Israel Stela', which alongside the defeat of Gezer, Yenoam and 'Israel' mentions the capture of Ashkelon by Merenptah (Year 5, ca. 1209 BCE) (CCG no. 34025; for English translation see Wilson 1955: 376–378), and a relief at Karnak arguably of the same king (Wreszinski 1935: pl. 58), depicting Egyptian groups assaulting Ashkelon.[2] Another piece in the puzzle of Egypt's involvement at Ashkelon in the Ramesside

Fig. 1

[1] I would like to thank Lawrence Stager, who entrusted me with the publication of the material presented here.

[2] Originally ascribed to Ramesses II the relief was later attributed to his son Merenptah (Yurco 1978; Stager 1985).

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period comes now from the excavations of the Leon Levy Expedition directed by Lawrence E. Stager. A segment of a massive mudbrick wall (Wall 1080) was exposed in squares 83–84 in Grid 38 (MASTER 2005: 337–340; STAGER 2006; 2008: 1580). It belongs to Phase 21 of the local stratigraphy. The fact that this wall was (1) founded on a brick foundation, (2) laid on a spread of sand, (3) possibly buttressed on its western end, and (4) that its brick sizes and width conform to Egyptian royal cubits make it more than likely that it forms the remaining part of an Egyptian fortress (MASTER 2005: 339), as we know them from sites such as Deir el-Balaḥ (T. DOTHAN 1993: 343–344; Stratum 7), Beth Shean (MAZAR 2006: 83–97; Stratum Q-2 in Area Q of the Hebrew University excavations), and Tel Mor (M. DOTHAN 1993: 1073; Stratum VI). The lack of enough mudbrick detritus suggests that the building was never completed. Directly on top, without any signs of destruction, the first Philistine settlement was built (Phase 20), in which locally produced Mycenaean IIIC wares appear for the first time.

Grid 38	Grid 50	Period
Phase 21 ('Egyptian fortress')	Phase 10 (courtyard building)	LB IIB
Phase 20 (Philistines)	Phase 9 (Philistines)	Iron IA

Table 1 Stratigraphy at Ashkelon

From contexts affiliated with the mudbrick building of Phase 21 comes a fragmentary ceramic assemblage of LB IIB date. Alongside the usual Canaanite material it includes Egyptian forms, most of them locally produced, and as such referred to as 'Egyptian-style' vessels. Additional Egyptian ceramic material was retrieved from within and around the remains of a courtyard building in Grid 50, which is located ca. 200 m southwest of Grid 38 next to the seashore. As in Grid 38 this material mainly comes from LB IIB layers (Phase 10) directly beneath the first phase with Mycenaean IIIC wares (Phase 9). Again, no signs of destruction were encountered. Egyptian-style beer jars found within the ceramic material of both Grids 38 and 50 signal a date of ca. 1200 BCE at the earliest (*terminus post quem*) for the end of the last Late Bronze Age phase at Ashkelon. It is therefore more than tempting to ascribe the 'fortress' to a short Egyptian interlude somewhere in the late Nineteenth–early Twentieth Dynasties following an assumed capture of Canaanite Ashkelon under Merenptah and preceding the settlement of the Philistines (for a Ramesses III scarab from a Phase 20 floor see below).

The locally produced Egyptian forms at Ashkelon comprise characteristic Egyptian household wares, mainly simple bowls and beer jars. Apart from those a nice collection of Egyptian imports completes the Egyptian assemblage (Fig. 8). Appearing mainly in the thirteenth and twelfth centuries BCE, such assemblages are well-known from sites such as Beth Shean, Tel Aphek, Tel Mor, Tel Sera^{c} (MARTIN 2004; 2005; 2006b),[3] and Deir el-Balaḥ (GOULD forthcoming). It was previously argued that namely the locally made Egyptian-style vessel collections at these sites indicate physical Egyptian presence (MARTIN 2004: 279–280). On the strength of its Egyptian-style architecture (the 'Egyptian fortress') and Egyptian-style ceramic material a physical presence of Egyptians can now also be postulated for the late LB IIB at Ashkelon.

CONTEXTS

Grid 38. In Phase 21 the main architectural feature is the above-mentioned massive mudbrick wall in squares 83 and 84 in the southern part of the grid. Unfortunately, no floor surface could be directly tied to this wall. A channel or gully of water-laid striated sands and clay runs along its northern face (84.1032 = 84.1104). The ceramic material from this phase comes mostly from this channel and from fills north (84.1108, 84.1113, 74.1079, 74.1082, 74.1089) and south (83.614, 84.1098) of the mudbrick wall.

Egyptian imported and locally made Egyptian-style pottery was also found in Phase 20. However,

[3] The Egyptian assemblages of these four sites were discussed in detail in the author's Ph.D. thesis (MARTIN 2005). For a concise overview of the imported Egyptian and locally made Egyptian-style pottery in the Late Bronze Age and Iron IA see MARTIN 2004. The assemblages of each site are separately discussed in MARTIN 2006b and MARTIN forthcoming a (Beth Shean, Areas Q, N and S of the Hebrew University Excavations); MARTIN, GADOT and GOREN forthcoming (Tel Aphek); MARTIN and BARAKO 2007 (Tel Mor); and MARTIN forthcoming b (Tel Sera^{c}).

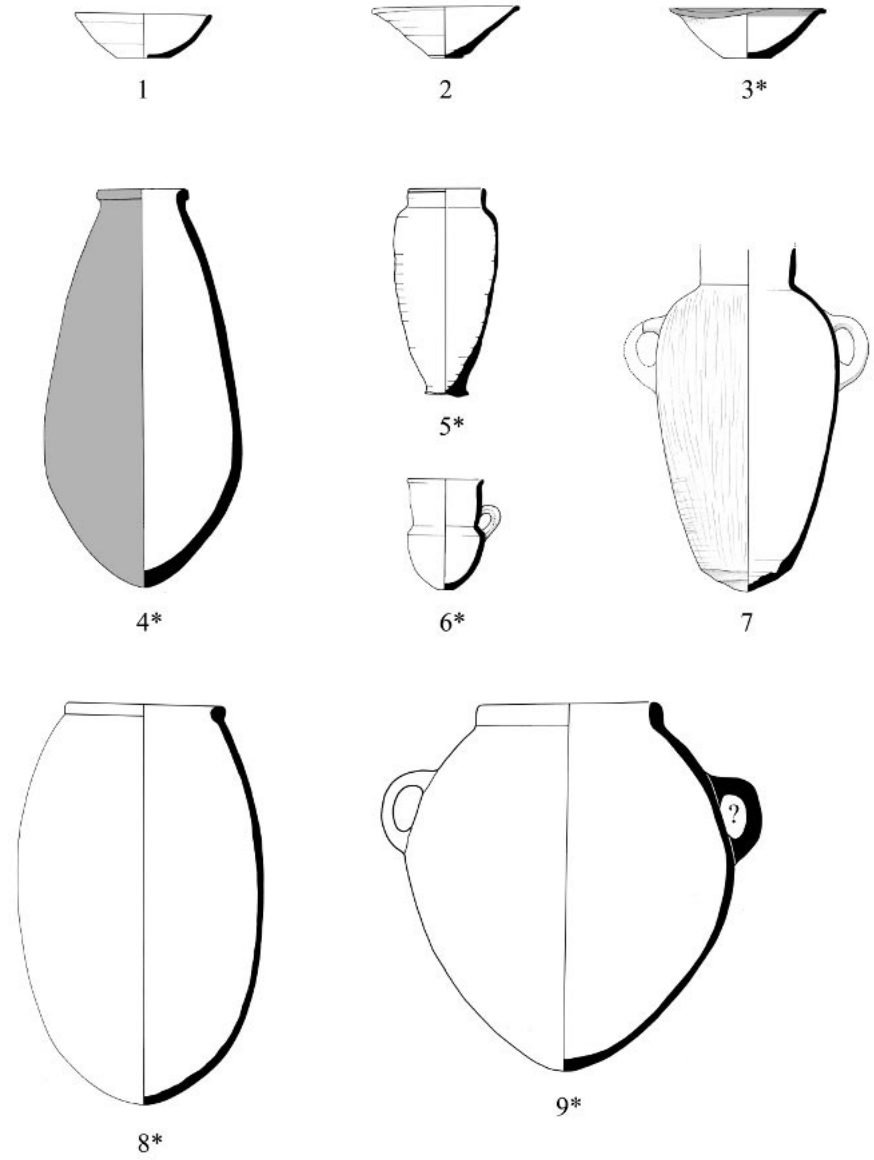

Fig. 2 Locally produced (1–5) and imported (6–9) Egyptian types at Ashkelon (Scale 1:10). Types marked with * are represented by sherd material only; thus, prototypes from other sites are illustrated, namely Beth Shean (3, 4, 6), Tel Sera^{c} (5) and Qantir (8, 9)

the fact that the bulk of the material was retrieved from an open courtyard, while being almost absent from floors within rooms of houses, argues for its residual nature.

Grid 50. The last Late Bronze phase in Grid 50 is represented by the remains of a courtyard building in square 59 (Phase 10). Material of this phase also comes from squares 47–49, 58 and 67. It mostly originates from fills, outdoor deposits and pits. Layers with rich ceramic collections from within the building include occupational debris 59.597 and fills 59.579 and 59.546. The most impressive collection of Egyptian forms comes from an alleyway running along the northern wall of the building (59.530 and 59.585 below; pit 59.561 and fill 59.568). Rich layers in square 58 include 58.427 and 58.409 in the northern and southern halves of the square respectively. As in Grid 38 some Egyptian material was also encountered in layers containing the earliest Mycenaean IIIC wares (Phase 9), where it should be regarded as residual.[4]

An almost intact Egyptian imported amphora, finally, comes from a tomb in square 47 of Grid 50

[4] A few additional sherds come from mixed contexts.

(Tomb 315). This multiple period tomb was used from the MB IIC to the LB IIB. With its morphological features the amphora must belong to the terminal phase of occupation.

Assemblage

Nature of the assemblage. Due to its derivation mainly from fills and to the lack of a destruction level the ceramic collection of Phase 21 in Grid 38 is very fragmentary. On a total of more than 2000 rim fragments come only a few complete profiles. A very similar situation was encountered in Phase 10 of Grid 50.

Egyptian Types. Despite the fragmentary nature of the assemblage a number of Egyptian types can be specified. A typology is presented in Figure 2. It includes complete or almost complete examples from Ashkelon and, in case a type was represented by sherds only, prototypes from other sites. As noted earlier, the overwhelming percentage of the Egyptian forms at Ashkelon is made of local clays, Egyptian imports being represented by only a small collection. Among the locally produced forms the vast majority comprises simple bowls with flat bases.[5]

Simple bowls comprise mainly rounded (Fig. 2:1=3:1) and straight-sided bowls (Fig. 2:2=3:5) with plain rim.[6] The former also occur in small variants (Fig. 3:3). Straight-sided simple bowls are occasionally very shallow, and may then be referred to as plates (for a prototype see Oren 1984: fig. 4:1).[7] Much less common than their plain-rimmed counterparts are simple bowls with flaring (say also: splayed) rim (Fig. 2:3 [prototype]; Fig. 3:4, 6). They can also be divided in medium-deep and shallow – hence termed as plates – examples.

As to Egyptian closed types a considerably large collection of rims and bases attests to the existence of Egyptian-style beer jars (Fig. 2:5 [prototype]; Figs. 5–6). A single rim fragment belongs to an elongated neckless storage jar with rolled rim (Fig. 2:4 [prototype]; Fig. 7). Among the Egyptian imported vessels two-handled storage jars – henceforth 'amphorae' – are the prevailing type (Fig. 2:7=9; Fig. 10). Other imports include fragments of large ovoid to globular storage jars – among them an example with rolled rim (Fig. 2:8 [prototype]; Fig. 11:1; a so-called 'meat jar') and a few pieces with folded rim (Fig. 2:9 [prototype]; Fig. 11:2–6) – , and small handled cups (Fig. 2:6 [prototype]; Fig. 12).

Types

Locally produced bowls and plates (Fig. 3). Generally speaking, it is the flat- and round-based bowl and plate types within the Ashkelon assemblage, which find their parallels in New Kingdom, and particularly Ramesside, Egypt, and, accordingly, were classified as Egyptian-style (for comparanda see, for instance, Martin 2005: Types BL10–13). These types are also highly popular at other south Levantine sites under direct Egyptian control, such as Beth Shean, Tell es-Saᶜidiyeh, Tel Aphek, Tel Mor, and Tel Seraᶜ (for references see Martin *op.cit.*). Ring- and disc-based bowls, on the other hand, can be attributed to the local, Canaanite pottery repertoire. As simple rounded and straight-sided bowls with plain rim may stand on any kind of base, rim sherds of these shapes cannot unequivocally be attributed to either the Egyptian-style or Canaanite assemblage.[8]

Apart from the small variants of rounded bowls with plain rim (Fig. 3:3), which measure 11–16 cm in diameter, the various types listed above range between 17–30 cm in size with smaller examples (17–24 cm) prevailing (see Appendix 1). Flat bases mainly range between 4 and 8 cm in diameter.

At Ashkelon the overwhelming majority of Egyptian-style bowls and plates stands on flat bases, while round bases are extremely rare and occur

[5] Note that among the hundreds of fragmentary bowls only a few better preserved examples are presented in the figures. Egyptian closed types, which were regarded as more significant, are represented almost in their entirety. Thus, the figures do *not* reflect the quantitative distribution of types.

[6] Plain-rimmed straight-sided bowls also include examples with slightly flaring sidewalls, not to be confounded with the flaring rim of 'flaring rim bowls'.

[7] The shallowness of a bowl may be defined by the *vessel index*, which is calculated by multiplying the maximum body diameter (the rim diameter in case of simple bowls) with 100 and dividing the result through the vessel height. With a vessel index of 500 or more a bowl is defined as 'plate' (Aston 1998: 43).

[8] Also no differential technological characteristics were observed. For an estimate of the share of Egyptian versus Canaanite forms in the assemblage the rim count therefore had to be combined with a base count.

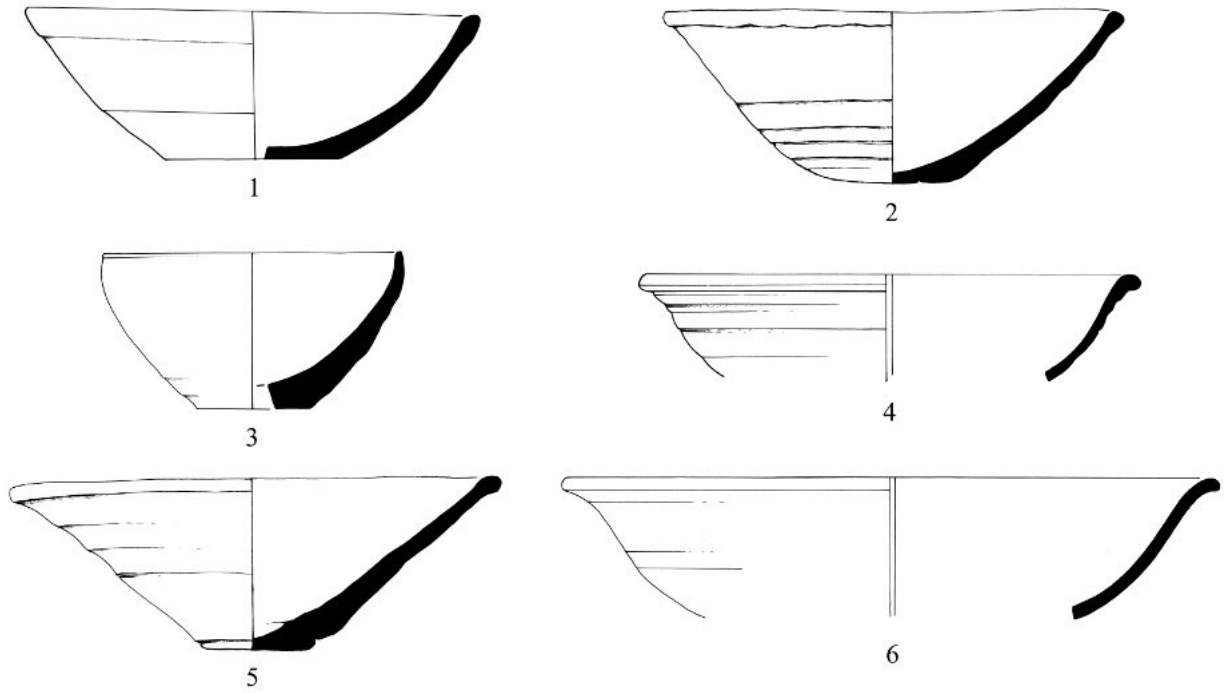

Fig. 3 Locally produced Egyptian-style bowls (Scale 1:3)

No.	Grid	Square	Context	Basket	Reg.No.	Phase	Fabric
1	50	48	Layer 475	197	43	mixed context	Local
2	50	59	Layer 650	111	9721	Phase 10	Local
3	50	58	Layer 539	281	8979	mixed context	Local
4	38	74	Layer 1079	158	8762	Phase 21	Local
5	50	59	Layer 650	111	9722	Phase 10	Local
6	38	74	Layer 1079	133	8763	Phase 21	Local

only on small rounded bowls. The prevalence of flat bases at the expense of round ones is paralleled at Beth Shean, Tel Mor and Tel Sera^{c}. This is slightly different from Ramesside Egypt, where round bases are very common (MARTIN 2005: 77 and table 6). Flat bases are often only string-cut without further embellishment, in other instances the leather-hard vessel was returned to the wheel for secondary trimming of base and lower sidewalls, which is also the method used to produce round bases.

While most of these simple bowls and plates remained undecorated, a small number either bears a red band around the rim or a red slip, both very popular decoration styles in New Kingdom Egypt (ASTON 1998: 75, 77). The rarity of decorated examples at Ashkelon is paralleled at Tel Sera^{c}, and, although slightly less so, at Tel Aphek and Tel Mor (MARTIN 2005: 183–189). A completely different situation prevails at Ramesside Beth Shean, where up to 90% of the Egyptian-style bowls are decorated with a red rim or a red slip (MARTIN forthcoming a).

As to vessel chronology, the regular plain-rimmed bowls are of no help. Egyptian-style plates and flaring rim bowls, however, are chronologically significant in that in Canaan they do not seem to make their appearance before the thirteenth century BCE (MARTIN forthcoming b; MARTIN 2006b: 143).

Locally produced beer jars (Figs. 4–6). Beer jars or 'beer bottles', as these vessels were first called by R. HOLTHOER (1977: 86–87),[9] are characterized by

[9] In their earliest form (early to mid-Eighteenth Dynasty) these vessels had a slender body and tall neck, hence their designation as bottles. By the late Eighteenth and Nineteenth Dynasties they have developed into their typical jar shape. HOLTHOER (1977: pl. 18) divided his beer bottles into four subtypes, BB 1–BB 4. BB 1 he defined as "cylindrical", BB 2 as "transitional", BB 3 as "simple", and BB 4 as "ordinary" beer bottle. While types BB 1–3 are restricted to the early to mid-Eighteenth Dynasty, type BB 4 first appears in the early Eighteenth Dynasty, but does not become popular until the Nineteenth Dynasty (ASTON 1998: 182). Only type BB 4 is attested in the southern Levant.

Fig. 4 Egyptian-style beer jars at Ashkelon

an elongated body with a short neck and a flat base. At Ashkelon this type is represented by a considerable number of rim and base fragments. Rims can be inward-sloping (e.g. Fig. 5:4), straight (e.g. Fig. 5:14) or slightly outward-sloping (Fig. 5:3). The main characteristic of these jars is their crude manufacture and careless finish. This is most evident on their exterior bases, on which superfluous lumps of clay and fingerprints often remain (Fig. 6). The fingerprints were evidently created, when the vessel was removed from the wheel with the hands during the manufacturing process (Bourriau and Aston 1985: 34–35), and not eradicated at a later stage. Above that, all bases at Ashkelon were perforated at their bottom, mostly in a crude way. The sidewalls of beer jars generally exhibit heavy ribs on the outside and inside. The surface is almost exclusively left undecorated, as at all examples at Ashkelon.

These jars were found throughout Egypt in massive amounts (for discussions see Aston 1996: 12–13, 69; Aston and Pusch 1999: 42; Aston 2001: 169–171). In the southern Levant beer jars appear mainly at the most strongly Egyptianized sites in the Ramesside period: Beth Shean, Tell es-Saᶜidiyeh, Tel Mor, Tel Seraᶜ, Deir el-Balaḥ, and now Ashkelon (for comparanda at the various sites see Martin 2006b: 148). Thus, these vessels seem to be strongly linked to physical Egyptian presence. Their distribution and distinguished appearance make them one of the hallmarks of Egyptian-style material culture in Ramesside Canaan.

In Egypt beer jars are exclusively made of Nile silt, while in the southern Levant they are always locally produced and generally tempered with massive amounts of chopped straw, as at Ashkelon. In accordance with Egyptian examples beer jar rims at Ashkelon vary between 8 and 14 cm in diameter, bases between 5.5 and 7.8 cm.

Then, there is the matter of perforations. All beer jar bases at Ashkelon are pierced through the bottom. In all cases this perforation was executed prior to firing, evidently immediately or not long after the vessel was removed from the wheel, whilst the clay was still in a wet and soft condition. Beer jars with pierced bottom are also known from Egypt itself (for a complete profile at Qantir see Aston and Pusch 1999: no. 2). They are also attested at Egyptian-influenced sites in the southern Levant, being most common at Beth Shean and Tel Mor. At Beth Shean almost half of the beer jar bases were pierced (Martin forthcoming a), a proportion that agrees with the evidence at Tel Mor (Martin and Barako 2007: 149). Additional perforated beer jars come from Tell es-Saᶜidiyeh (Pritchard 1980: fig. 7:5 [Tomb 104] and p. 7), Stratum IX at Tel Seraᶜ (Martin forthcoming b), and Stratum XIV at Ashdod (M. Dothan 1971: fig. 81:14). The answer to why in contrast to other south Levantine sites *all* beer jars at Ashkelon were pierced probably lies in the correct interpretation of the (arguably different) functions of perforated and unperforated beer jars; an interpretation which unfortunately enough is still a matter of mere guesswork (see below).

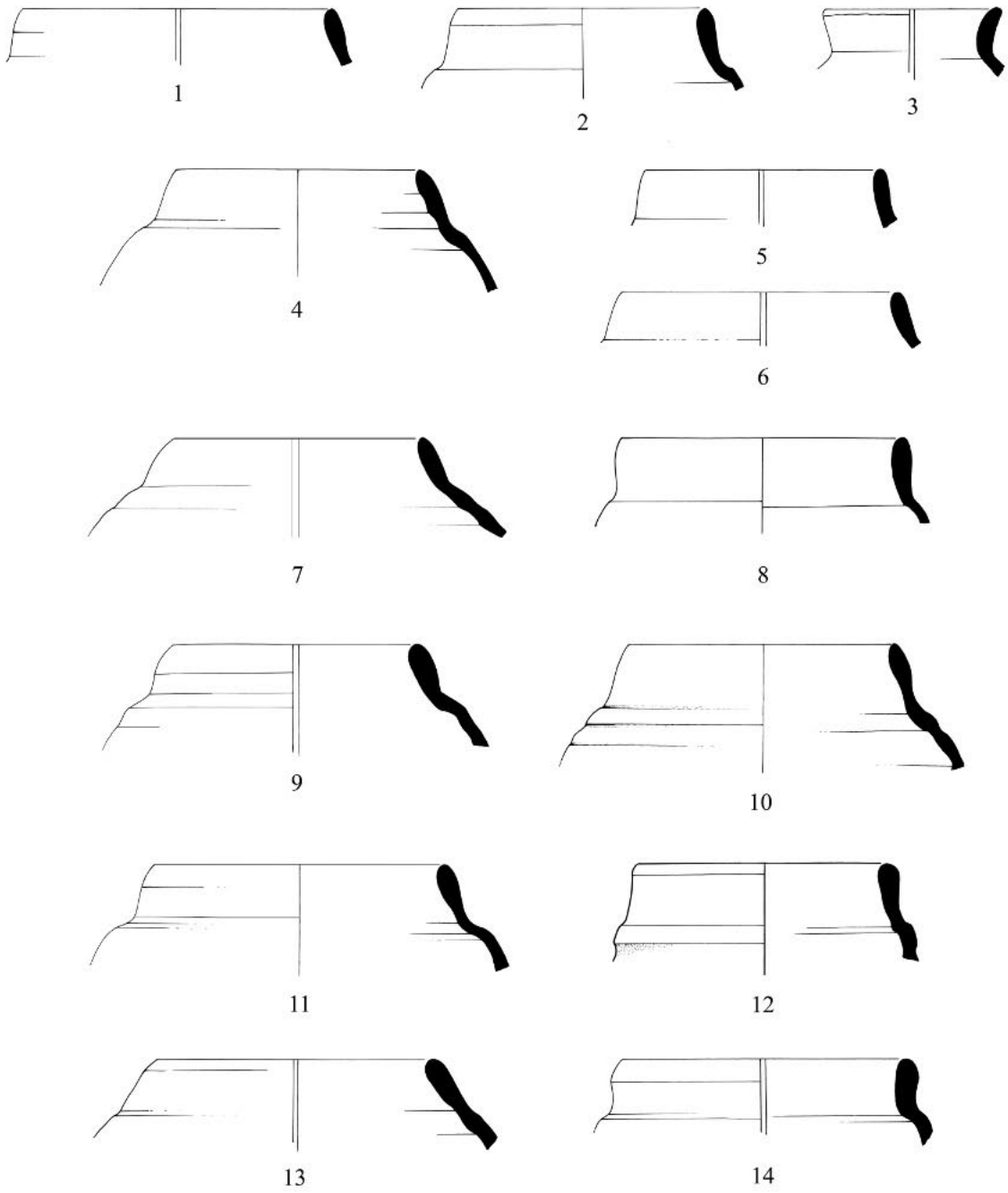

Fig. 5 Beer jar rims (Scale 1:3)

No.	Grid	Square	Context	Basket	Reg.No.	Phase	Fabric
1	38	84	Layer 1108	460	8769	Phase 21	Local
2	38	74	Layer 1079	137	8757	Phase 21	Local
3	38	84	Layer 1104	419	8771	Phase 21	Local
4	38	84	Layer 1113	469	8770	Phase 21	Local
5	38	84	Layer 1104	442	8773	Phase 21	Local
6	38	84	Layer 1104	442	8772	Phase 21	Local
7	50	59	Layer 546	31	21	Phase 10	Local
8	50	59	Layer 530	48	30	Phase 10	Local
9	50	59	Layer 530	200	27	Phase 10	Local
10	50	59	Layer 621	31	9780	Phase 10	Local
11	38	84	Layer 1074	424	8750	Phase 20	Local
12	38	74	Layer 1067	27	8751	Phase 20	Local
13	38	84	Layer 1056	261	8753	Phase 20	Local
14	38	83	Layer 581	130	8752	Phase 20	Local

When examining the Ashkelon beer jars, it is apparent that the hole in their bottom was mostly poked through with a finger, obviously from the exterior towards the interior of the vessel.[10] Most conveniently, one would hold the vessel on its base with one hand, and pierce it with one finger of the other, probably the index or little finger. During this process the base was often deformed (e.g. Fig. 6:2). While shrinkage during drying and firing must be taken into consideration, the size of most of the perforations fits well to the average size of human fingers. Poking the hole, superfluous clay remained on the interior bottom of the vessel, commonly and most characteristically in form of a tongue smeared against the interior sidewall (best visible on Fig. 6:3). On other examples the interior bottom was smoothed to remove the remains of the perforation process (Fig. 6:8, 17).

The function of these jars, perforated or not, is puzzling. While their designation as 'beer jars' seems to say it all, the truth is that without being provided with any conclusive data – for instance, residual analysis[11] or *in situ* evidence – we are still groping in the dark. While unperforated jars might well have been used to store beer (note that beer jars are a mass product and beer was a staple food item in Ancient Egypt; MARTIN 2005: 114), they might also have contained any other liquid or non-liquid commodity. In this aspect perforated examples might be more illuminating. While the hole in the base eliminates the possibility to contain liquids, a function in the beer production process seems an appealing alternative (see below).

The first to connect these vessels with beer was R. HOLTHOER (1977: 83). He based his assumption on their occasional contextual association with deep, conical bowls, so called 'flower pots', which seem to be closely related to our beer jars in their entire appearance – ribbed sidewalls, fingerprints and, commonly, perforated bottoms, which led to their designation. As these bowls are similar in shape to Old Kingdom bread moulds (cf. for instance STEINDORFF 1913: pl. 84, Tomb of Ti), he suggested this function also for the flower pots (with perforated and unperforated specimens used in an ensemble of two; HOLTHOER 1977: fig. 61).[12] Holthoer observed a weak point in his theory, when he admitted that there is only very little evidence that flower pots were subject-

Description table for Fig. 6 [beer jar bases]

No.	Grid	Square	Context	Basket	Reg.No.	Phase	Fabric
1	38	84	Feature 1110	482	8586	Phase 21	Local
2	38	84	Layer 1108	446	8486	Phase 21	Local
3	38	84	Layer 1104	414	8565	Phase 21	Local
4	38	74	Layer 1079	138	8475	Phase 21	Local
5	50	59	Layer 530	53	31	Phase 10	Local
6	50	59	Layer 530	7	29	Phase 10	Local
7	50	59	Layer 530	64	32	Phase 10	Local
8	50	59	Layer 530	67	33	Phase 10	Local
9	50	59	Layer 530	71	34	Phase 10	Local
10	50	59	Layer 530	80	35	Phase 10	Local
11	50	58	Layer 409	98	8	Phase 10	Local
12	50	58	Layer 500	194	9459	Phase 10	Local
13	50	58	Layer 514	307	9367	Phase 10	Local
14	50	59	Layer 505	98	21	Phase 10/9	Local
15	50	47	Layer 313	1	15	LB II material washed into earlier tomb	Local
16	50	48	Layer 513	18	14	mixed context	Local
17	38	74	Layer 1067	136	8749	Phase 20	Local

[10] This seems to have been the prevailing method also at other sites. Instead of the finger, a pointed object may have been used alternatively. A different method is to create the perforation in an earlier stage, namely by cutting the vessel off the wheel slightly too high, leaving a base-less centre at the bottom of the jar.

[11] Unfortunately, spot testing for calcium oxalate ("beerstone") carried out by Margie Burton at the Scripps Institution of Oceanography at the University of California on a beer jar from Tel Mor produced negative results (MARTIN and BARAKO 2007: 165 note 30).

[12] That at least some of these conical bowls served as actual flower pots is indicated by contextual evidence at Tell el-Dabᶜa, where a group of perforated examples occurs in a garden complex (JÁNOSI 1994: 30-31 and fig. 8; HEIN 1994: 39-40 and fig. 11a).

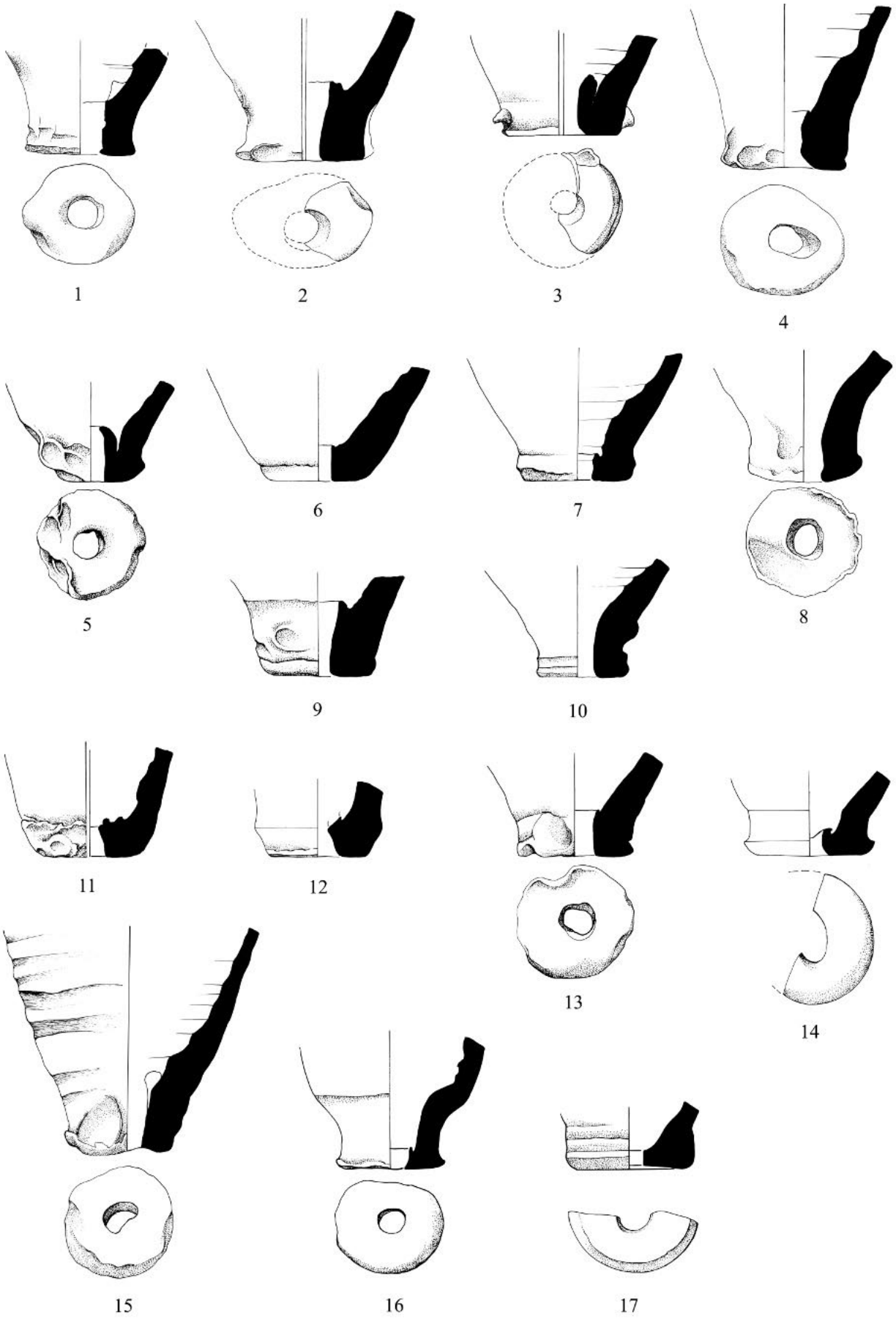

Fig. 6 Beer jar bases (Scale 1:3)

ed to secondary exposure of heat. To bypass this problem, he concluded that some vessels might have functioned as mere votive symbols for bread. Such a votive function he also assigned to beer bottles. He assumed that together these vessels were representative of the Egyptian bread (flower pot) and beer (beer jar) offering, typical for the Egyptian *ḥtp dj nsw* offering formulae (1977: 86; for bread and beer in the offering formulae see, e.g., BARTA 1968). In short, in Holthoer's interpretation the association of our jars with beer is entirely built upon the similarity of flower pots with Old Kingdom bread moulds. Not enough that this association is already standing on shaky ground, the theory further founders on the fact that flower pots and beer jars mostly do not occur together. While the former are restricted to the Eighteenth Dynasty (WILLIAMS 1992: 34–35), the latter are most common in the Nineteenth and Twentieth Dynasties.

Perhaps a more promising line of evidence starts with an observation of W.M.F. Petrie. He mentioned a specimen of a *large conical bowl with a hole in the bottom* – clearly referring to a flower pot – that contained a pressed cake of barley mash and grains (PETRIE 1977: 23). He then suggested that vessels of this type *were used to squeeze out the fermented beer from the grain, the cake being sufficiently tenacious not to break through at the hole.* In other words, Petrie's flower pot may have served as filtration container to strain liquid from the beer mash. GOULD suggested expanding this function also to our beer jars (forthcoming). Thinking of our perforated jars in this connection, one may recall the description of how beer drips out of perforated fermentation containers in Mesopotamian texts (cf. HOMAN 2004: 89 for a recent summary of the evidence). With the opening of the container sealed and the hole stopped up with a cloth, the beer would slowly drip out due to an increased pressure caused by fermentation (*op.cit.*).[13]

While beer jars leave us still puzzled as to their function, their value as a dating tool is clear: As shown by ASTON Egyptian beer jars undergo a morphological development (1996: 68 and 89; 1999: 26–27), which is most evident between Phase 3 (late Eighteenth–Nineteenth Dynasties or Amenophis III–Merenptah) and Phase 4 (late Nineteenth–Twentieth Dynasties, *i.e.* post-Merenptah) of the Egyptian ceramic sequence.[14] As opposed to earlier examples Phase 4 beer jars have a tendency to have a smaller base in relation to the vessel height, which is often restricted to form what resembles a stump, and to have a very slender body. In Phase 4 the base diameter commonly ranges around 6 cm or even less, while in Phase 3 examples with a diameter of 7–9 cm prevail.[15]

At Ashkelon fourteen beer jar bases come from the last Late Bronze Age layers in Grid 38 and Grid 50 respectively (Fig. 6:1–14; Appendix 3). Additional examples come from Philistine (residual) or mixed contexts. Bases from the last Late Bronze Age horizon at Ashkelon range around 6 cm in diameter, with an average of 6.2–6.5 cm (considering minimum and maximum width of deformed examples). They therefore clearly indicate a Phase 4 date in the Egyptian sequence. Two beer jars from twelfth century contexts at Tel Sera^{c} (Stratum IX) have bases with a diameter of 5 and 6 cm respectively (MARTIN forthcoming b). While in twelfth century levels at Beth Shean also slightly larger beer jar bases occur (7–8 cm), variants with a diameter around 6 cm are well attested in the assemblage (MARTIN

[13] Another interpretation that attempts to explain perforated beer jars as moulds to bake barley bread (HOMAN 2004: 89) is rejected by the author.

[14] The pottery corpus of New Kingdom Egypt was divided into four major chronological phases by BOURRIAU (1981: 72–73; 1990: 19*). While Phase 3 was dated from the reigns of Amenophis III to Ramesses II by BOURRIAU (1990: 19*), it was extended to the reign of Merenptah by ASTON, ASTON and BROCK (1998: 145) in light of the material from the tomb of this pharaoh (KV 8). The transition to Phase 4 clearly occurred after Merenptah (1213–1203) and before Ramesses III (1184–1153) (ASTON 1996: 20; ASTON and PUSCH 1999: 41; dates after KITCHEN 2000).

[15] The author conducted a survey of ca. thirty Nineteenth and Twentieth Dynasty beer jars from the published Egyptian record. First, the average base diameter clearly decreases in the late Nineteenth–Twentieth Dynasties. Secondly, while the proportion between base and height approximates 1:3 with the Nineteenth Dynasty (until Merenptah) jars, it decreases to 1:4 with the late Nineteenth and Twentieth Dynasty examples (ca. 20 examples with complete profiles were included).

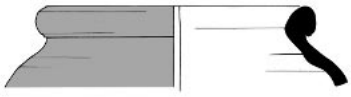

Fig. 7 Locally produced neckless jar (Reg. No. 8754, Phase 20; Scale 1:3)

forthcoming a).[16] The average width is 7 cm. In contrast, a collection of beer jar bases at Tel Mor, mostly originating from fourteenth (?) – thirteenth century contexts,[17] has an average width of 8.8 cm (MARTIN and BARAKO 2007: 148), which fits well to Phase 3 of the Egyptian sequence.

Apart from their narrow base some of the Ashkelon beer jars show a prominent restriction several centimetres above their bottom, creating a stump-like lower part of the vessel (e.g. Fig. 6:1–2, 8, 16). Such a stump is known on Phase 4 beer jars in Egypt but is not characteristic on Phase 3 beer jars. In sum, narrow base diameter and restricted lower part on beer jar bases at Ashkelon clearly argue for their date at the very end of the Nineteenth or in the Twentieth Dynasty (*i.e.* not earlier than ca. 1200 BCE). The best parallels from Egypt can be cited from Elephantine (ASTON 1999: nos. 57–60).[18]

Locally produced elongated neckless jars with rolled rim. The rim fragment shown in Fig. 7 clearly belongs to a large, Egyptian-style neckless jar with rolled rim. These around 50 cm high jars have an elongated sausage- or bag-shaped body and rounded base (for a complete example from Beth Shean see Fig. 2:4). The rim diameter of the Ashkelon fragment (11 cm) agrees with the average rim size of this vessel type. In Egypt these neckless storage jars form one of the characteristic Nile silt types of the Ramesside period, first appearing in the early Nineteenth Dynasty (ASTON and PUSCH 1999: 42). Well-dated examples from the Nineteenth Dynasty were found at Qantir (ASTON 1998: nos. 999–1008; Stratum B3/2), Saqqara (ASTON 1991: pl. 48, no. 45), and Qau el-Kebir (BRUNTON 1930: pl. XXVII:71). This vessel type is very fashionable in the Twentieth Dynasty, with known examples from Qantir, datable between the reigns of Seti II/Tauseret and Ramesses III (ASTON and PUSCH 1999: nos. 10 and 41; Stratum Bb), from two foundation deposits of Ramesses IV dug into the temenos of the mortuary temple of (Tutankhamun)-Ay-Horemheb at Medinet Habu (ANTHES 1939: 116–117, pls. 56, 58), from the tomb of Ramesses VII in the Valley of the Kings (ASTON, ASTON and BROCK 1998: pl. 43, no. 373), and from Elephantine, where such a jar was found inscribed with the titulary of Ramesses IX (ASTON 1999: pl. 9, no. 198 and p. 44). The rim fragment from Ashkelon has a red-slipped exterior, a common feature on such jars in Egypt and elsewhere in Canaan. A nice collection of intact and fragmentary red-slipped vessels of this type comes from Beth Shean (MARTIN 2006b: pl. 5:16–17; MARTIN forthcoming a). As the Ashkelon fragment was retrieved from a Phase 20 context, it should be regarded as residual.

Imported Amphorae. At Ashkelon these two-handled storage jars are represented by an almost complete specimen (Fig. 9) and a considerable collection of rims, bases, handles, and body fragments (Fig. 10). As at sites outside Egypt in general these transport vessels were imported from Egypt and not locally reproduced.[19] Originally for-

[16] A large collection of beer jars comes from Strata S-5 to S-3 in Area S of the Hebrew University excavations. While S-4 and S-3 can be entirely dated to the twelfth century, S-5 probably starts in the (late?) thirteenth century and continues into the early twelfth century.

[17] Examples affiliated with fourteenth century contexts (Stratum IX) may alternatively belong to sub-floor fills of Stratum VIII, which can be dated into the thirteenth century.

[18] Apart from base and body also the rim stance of beer jars was regarded as chronological indicator. ASTON argued that inward-sloping rims prevail in the Eighteenth and Nineteenth Dynasties, while they are outnumbered by straight or slightly outwardly slanted rims in the Twentieth Dynasty (1996: 89). This observation creates a certain discrepancy with the evidence from Ashkelon, where beer jar rims are prevalently inwardly slanting in the last Late Bronze Age level, which would relate them to the Nineteenth Dynasty (until Merenptah) from this point of view. However, upon closer examination Aston's guideline is not conclusive. Looking through published Nineteenth Dynasty material from Qantir (ASTON 1998, Stratum B3/2) and Elephantine (ASTON 1999, Phase 1), for instance, no prevalence of inwardly slanted beer jar rims can be observed (only 25% of n=38 at Qantir and 10% of n=10 at Elephantine). Therefore it is doubtful, whether the stance of beer jar rims can be taken as chronological marker at all. It is to hope that future work will shed light on this problem. For now, base diameter and base restriction are clearly the stronger indicators, and there is no reason to doubt the Phase 4 affiliation of the Ashkelon beer jars.

[19] Single locally produced examples are but exceptions (MARTIN 2005: pl. 24:8).

Fig. 8 Egyptian imports at Ashkelon

eign to the Egyptian pottery tradition, Egyptian amphorae are an imitation and adaptation of two-handled Canaanite storage jars (GRACE 1956: 86; T. DOTHAN 1979: 10). New Kingdom Egyptian amphorae are typical marl types, produced of marl clays or closely related mixed marl-and-silt clays but only rarely of pure Nile clays. Specimens that were exported to the southern Levant are mostly produced of Egyptian Marl D or Mixed Clay (III.A; see below), such as almost all examples from Ashkelon. In such clays, they are characterized by their tell-tale cream slip and, generally, burnishing, which makes them easily distinguishable from local, south Levantine wares.

New Kingdom Egyptian amphorae were discussed by HOPE (1989: 87–125), ASTON and PUSCH (1999: 43–45) and ASTON (2001: 174–175; 2004). In Marl D and mixed marl-and-silt clays the two main amphora types are a slender variant with tapering body and pointed base (1) and a wide-bodied ovoid to bag-shaped one with either a carinated[20] base (2a), which occurs earlier, or a rounded base (2b), which is later (ASTON 2004: figs. 7, 8a–b). Wide-bodied amphorae have a longer neck in relation to the vessel height than their slender counterparts. Both are characterized by a rolled rim and, occasionally, slightly bulging neck. The slender variant develops in the Eighteenth Dynasty, being most common towards its end (for a nice collection from the tomb of Tutankhamun see HOLTHOER 1993: 44–56; fig. L; pls. 5–9, 26–32). It continues to be attested in the Nineteenth Dynasty but seems to disappear in the Twentieth Dynasty. During the early years of the Nineteenth Dynasty a split occurs between the north and the south of Egypt. While the pointed type continues to be dominant in the south, in the north it becomes far outnumbered by the

[20] 'Carinated' bases define slightly convex, generally mould-made amphora bases with rounded or pointed tip and a soft carination between base and body wall (ASTON 1998: 51).

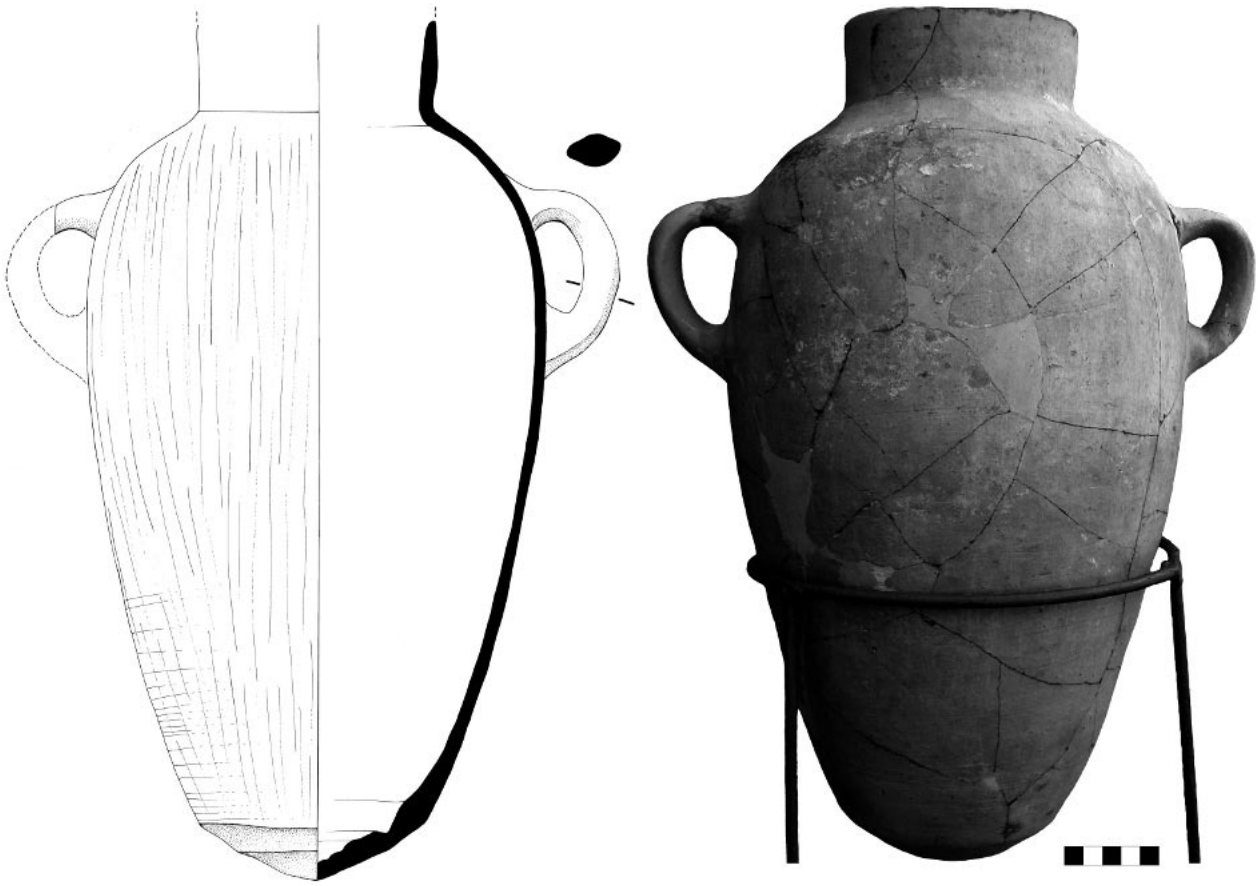

Fig. 9 Egyptian Marl D amphora from Tomb 315 (Reg. No. 62; Scale 1:4)

newly introduced wide-bodied type with carinated base. In the short period between Seti II (1200–1194)[21] and Tauseret (1188–1186) the wide-bodied amphora with carinated base (2a) develops into its classical Twentieth Dynasty shape with rounded base (2b).[22]

In Canaan a complete profile of the slender type (1) was found in a tomb at Deir el-Balaḥ, which can be dated into the Nineteenth Dynasty (T. Dothan 1979: 10; 12–14 Ills. 14 and 16). The almost intact amphora from Tomb 315 at Ashkelon (Fig. 9) belongs to the wide-bodied type with carinated base (2a) and is the first well-preserved example of its kind so far encountered in the southern Levant. The wide-bodied type with rounded base (2b) is represented by an almost complete profile from Beth Shean. It was retrieved from Stratum N-4 in Area N North of the Hebrew University excavations, the end of which was dated to the early twelfth century (Martin 2004: 273–274; for a photo of the vessel see *op.cit*: fig. 5).

The almost intact amphora from Tomb 315 is preserved to a height of 45 cm. The rim is missing. The neck was clearly cut off in a horizontal line to form a new 'rim', evidently to 'repair' a damage whilst the vessel was still in use. The carination at the base is clearly discernible. While neck and body of the vessel were wheel-made, fingerprints on its interior bottom are evidence that the base was produced in a mould, the prevailing production technique of such carinated amphora bases (Aston 1998: 51). The exterior of the vessel is covered with a thick creamy slip, varying between 10YR 8/3 ("very pale brown") and 5YR 7/6 ("reddish-yellow") in shade – clearly the result of different firing conditions in different parts of the vessel. Body and neck of the ampho-

[21] Dates follow Kitchen 2000.

[22] The change definitely takes place after Merenptah and has fully evolved by Ramesses III.

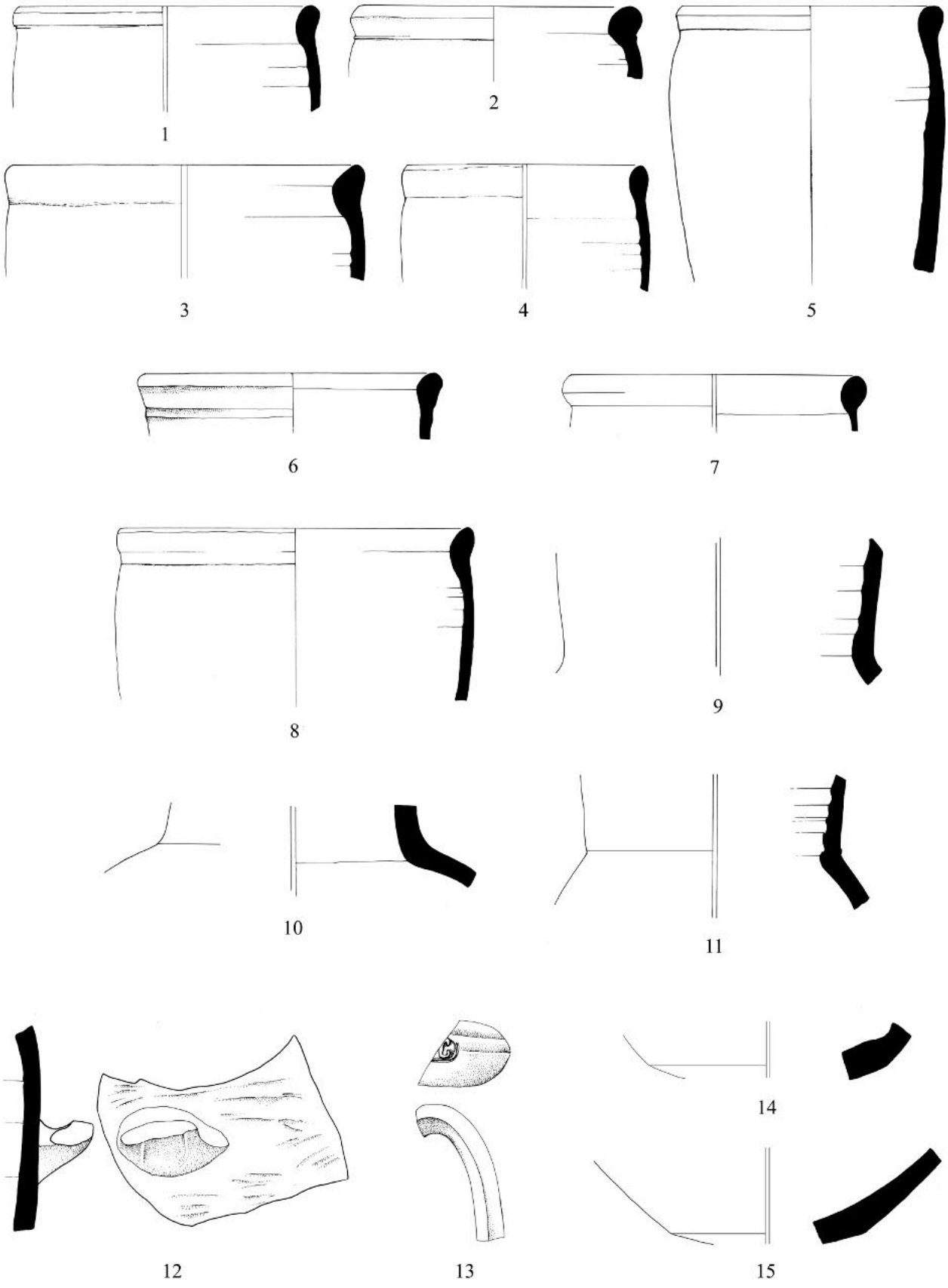

Fig. 10 Egyptian imported amphorae (Scale 1:3)

ra are vertically burnished.[23] The fabric was identified as Egyptian Marl D.

As to sherd material, around twenty rim fragments of Egyptian amphorae were identified in the assemblage from Grids 38 and 50 (for illustrated examples see Fig. 10:1–8). They come from the last Late Bronze Age phase and, probably as residual pieces, from the earliest phase with Mycenaean IIIC pottery. Rim diameters vary from 12–19 cm, which is in good accordance with the size range of Egyptian amphorae. All fragments bear the characteristic cream slip.[24] On many of the fragments vertical burnishing is clearly discernible, others were either never burnished, not burnished in the area of the neck, or any signs of burnishing are worn off. Above-referred subtype, to which such a rim originally belonged, cannot be specified.

Additionally, a few fragments of neck or neck and shoulder can be added to our collection (Fig. 10:9–11), as well as several handles. There is a possibility that some of the handles belonged to imported ovoid to globular storage jars (see below). The handle shown in Fig. 10:13 bears mentioning in particular, as on it part of an Egyptian scarab impression is preserved. The piece comes from a Phase 10 context in Grid 50. The preserved part of the scarab impression shows the hieroglyphic sign *pr* (house, estate). The lost part of the impression is expected to show a pharaonic name. According to B. Brandl, who will analyze this impression in the near future, one should assume the name of a Ramesside pharaoh, Seti I being the most likely candidate (personal communication).[25] The fragment is cream slipped, the fabric, however, was identified as Egyptian Marl F (Variant F.02), an otherwise unattested

Description table for Fig. 10 [amphorae]

No.	Grid	Square	Context	Basket	Reg.No.	Phase	Fabric	Note
1	50	58	Layer 409	206	3	Phase 10	Marl D	cream slip (7.5YR 8/4 “pink”), burnished (vertically)
2	50	58	Layer 418	114	8	Phase 10	Mixed Clay IIIA	cream slip (7.5YR 8/4 “pink”), no traces of burnishing
3	50	58	Layer 377	39	17	Phase 9	Marl D	cream slip (2.5Y 8/3 “pale yellow”), no traces of burnishing
4	50	49	Layer 473	177	9	Phase 9	Marl D	cream slip (2.5Y 8/3 “pale yellow”), no traces of burnishing
5	38	84	Layer 1067	258	8482	Phase 20	Mixed Clay IIIA	cream slip (varying from 2.5Y 8/3 “pale yellow” to 5YR 7/6 "reddish-yellow"), no traces of burnishing
6	38	84	Layer 973	363	8428	Phase 20	Marl D	cream slip (2.5Y 8/3 “pale yellow”), no traces of burnishing
7	50	67	Layer 106	145	9906	Iron I context	Mixed Clay IIIA?	cream slip, no burnishing
8	50	49	Layer 470	140	1	Phase 9	Marl D	cream slip (2.5Y 8/3 “pale yellow”), burnished (vertically)
9	38	74	Layer 1079	119	8443	Phase 21	Marl D	cream slip, no traces of burnishing
10	50	58	Layer 427	46	6	Phase 10	Marl D	cream slip (5Y 8/2 “pale yellow”), no traces of burnishing
11	38	84	Layer 973	314	8419	Phase 20	Mixed Clay IIIA	cream slip (10 YR 8/3 “very pale brown”), burnished (vertically)
12	38	74	Layer 1067	193	8748	Phase 20	Mixed Clay IIIA	cream slip (2.5Y 8/2 “pale yellow”), no traces of burnishing, probably belonging to no. 5
13	50	59	Layer 568	81	7	Phase 10	Marl F	cream slip, no traces of burnishing
14	50	58	Layer 427	8	5	Phase 10	Marl D	cream slip (2.5Y 8/3 “pale yellow”), no traces of burnishing
15	38	74	Layer 1051	93	8747	Phase 20	Mixed Clay IIIA?	cream slip (10YR 7/3 “very pale brown”), burnished?

[23] The handles are not burnished, which is usually the case with amphora handles.

[24] Often the slip overlaps the interior of the neck.

[25] Evidently, the handle may be residual from an earlier level.

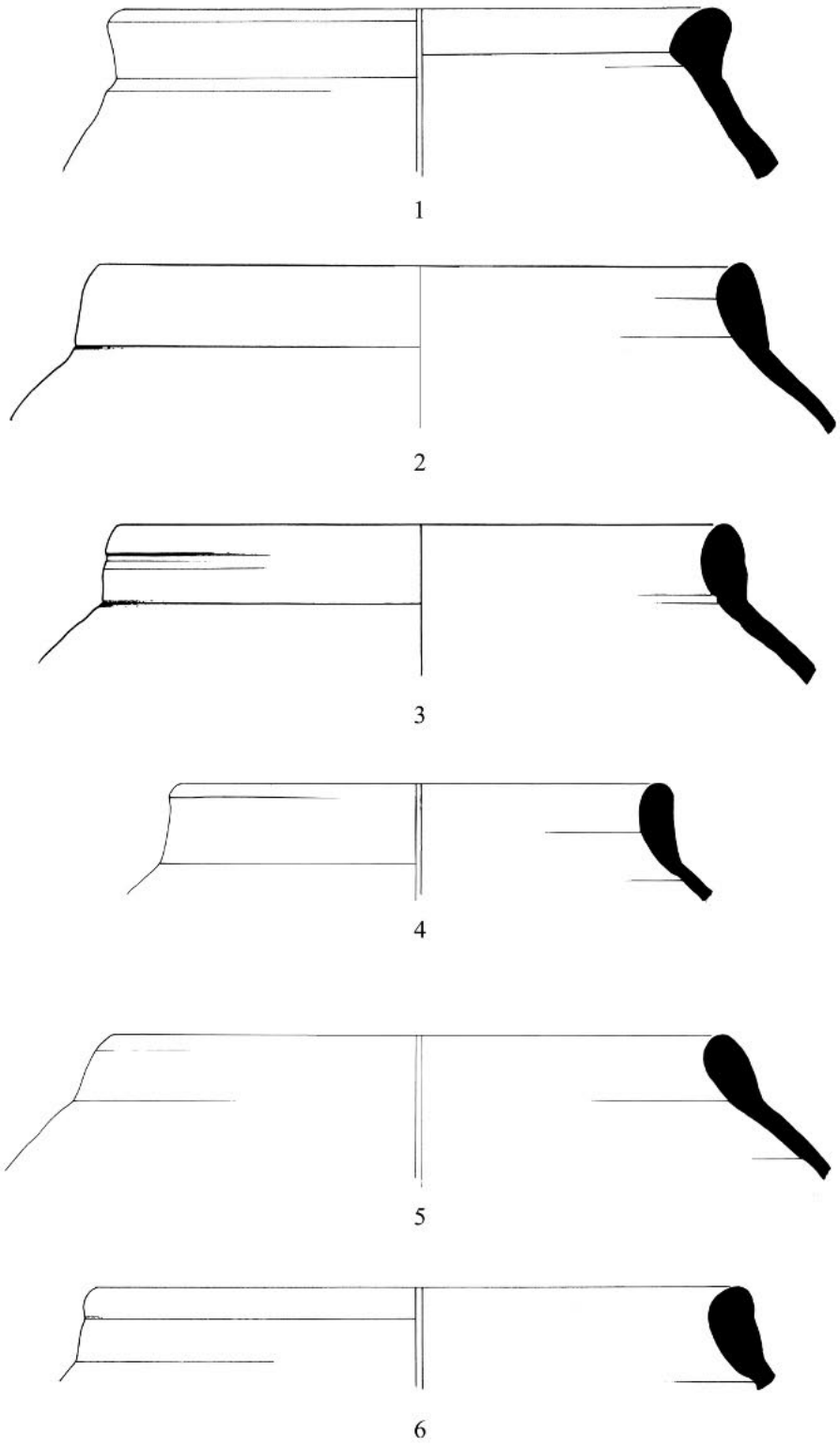

Fig. 11 Egyptian imported large ovoid to globular jars (Scale 1:3)

ware in our assemblage. Marl F was probably an Eastern Delta product (for a description of this fabric see ASTON 1998: 66–67).

As to bases, the two fragments shown in Fig. 10:14 and 10:15 belong to the carinated (mould-made) type (Subtype 2a). It was already mentioned above that amphora bases of this type are typical for the Nineteenth (and *not* Twentieth) Dynasty. Fig. 10:14 was found in a Phase 10 context in Grid 50, Fig. 10:15 comes from Phase 20 in

Grid 38. Co-occurring with Mycenaean IIIC pottery the latter *must* therefore be residual. The presence of at least three Egyptian amphorae with carinated base and the absence of the later, round-based subtype (2b) might be chronologically significant (see below).

Finally, distinct fabric and surface treatment of Egyptian Marl D and Mixed Clay (III.A) helped in identifying an additional collection of more than 120 body fragments of Egyptian imports, which probably belonged to Egyptian amphorae for their most part (others may have belonged to imported ovoid to globular jars).

Imported ovoid to globular storage jars. Six rim fragments belong to rather large (up to 70–80 cm high) Egyptian storage containers with ovoid or, in squatter versions, globular bodies and round bases (Fig. 11; Fig. 2:8–9 [prototypes]). The rim size ranges between 20 and 27 cm. All fragments bear the characteristic cream slip; two were identified as Egyptian Marl D, four as Mixed Clay (III.A). In contrast to the amphorae none of the fragments shows traces of burnishing, which is typical for these jars also in Egypt. All six rims were retrieved from early Philistine or even later contexts. While it is possible that they are all residual, their complete absence from the last Late Bronze Age levels is somewhat peculiar.

According to the rims two types can be specified. Fig. 11:1 belongs to a type with rolled rim (for a prototype see Fig. 2:8), which can readily be identified as Egyptian 'meat jar' (Aston 1998: 44; Aston and Pusch 1999: 45–46 including a list of Egyptian comparanda). These jars received their colloquial term at Tell el-Amarna, where a number of them bore hieratic dockets, which indicated that they contained pieces of meat (Rose 1987: 20). Evidently, their function does not have to be restricted to the storage of this commodity. First appearing in the late Eighteenth Dynasty 'meat jars' are among the most characteristic marl vessels of Ramesside Egypt. In the southern Levant fragments of such jars are known from Deir el-Balaḥ (Gould forthcoming: Type II:6) and Tell Abu Hawam (Balensi 1980: pls. 12:6 and 130:27). They also occur at Hala Sultan Tekke in Cyprus (Eriksson 1995: 202–203; in a Late Cypriote IIIA1 context [1190–1175 BCE]).

The remaining five rims are representatives of another Egyptian type (Fig. 11:2–6). In size, body profile, fabric, and, arguably, function this type can closely be related to the 'meat jar'. The distinguishing feature is a straight or slightly inslanting folded rim instead of the rolled rim of the 'meat jar', resulting in a short neck (see Fig. 2:9 for a handled prototype).

While 'meat jars' appear handle-less in the late Eighteenth and throughout most of the Nineteenth Dynasties, they may bear two vertical handles in the upper third of the body from the very end of the Nineteenth Dynasty onwards (= Phase 4, starting at ca. 1200 BCE; Aston and Pusch 1999: 45–46).[26] Our type with folded rim in Egypt commonly appears with handles, yet again the handled specimens do not seem to predate the late Nineteenth Dynasty (Aston 1998: no. 2526, Stratum B1, Twentieth–Twenty First Dynasties; Aston and Pusch 1999: nos. 11 and 69, Stratum Bb, datable between the reigns of Seti II/Tauseret and Ramesses III; all Qantir).[27] Bearing in mind

Description table for Fig. 11 [ovoid to globular jars]

No.	Grid	Square	Context	Basket	Reg.No.	Phase	Fabric	Note
1	50	47	Layer 285	60	23	mixed, Iron IA and later	Mixed Clay IIIA	cream slip, no burnishing
2	50	59	Layer 532	228	3	Phase 9	Mixed Clay IIIA	cream slip (7.5YR 8/4 "pink"), no burnishing
3	50	59	Layer 547	44	2	Phase 9	Marl D	cream slip (10YR 8/3 "very pale brown"), no burnishing
4	50	58	Feature 369	230	3	Phase 9	Marl D	cream slip (10YR 8/4 "very pale brown"), no burnishing
5	50	58	Layer 377	43	25	Phase 9	Mixed Clay IIIA	cream slip (5YR 7/4 "pink"), no burnishing
6	50	48	Layer 471	130	3	mixed, Iron IA and later	Mixed Clay IIIA	cream slip, no burnishing

[26] For two handled examples from Stratum Bb at Qantir, datable between the reigns of Seti II/Tauseret and Ramesses III, see Aston and Pusch 1999: nos. 59 and 70.

[27] An example of unknown stratigraphic provenience comes from Elephantine (Aston 1999: no. 176).

Fig. 12 Egyptian imported handled cups (Scale 1:3)

Fig. 13 Base of locally produced Egyptian-style jar (Reg. No. 8460, Phase 20; Scale 1:3)

Description table for Fig. 12 [handled cups]

No.	Grid	Square	Context	Basket	Reg.No.	Phase	Fabric	Note
1	38	74	Layer 1079	143	8765	Phase 21	Marl D	cream slip (7.5YR 8/4 "pink"), burnished (vertically)
2	50	48	Layer 512	17	18	mixed, mainly LB IIB	Marl D	cream slip, no traces of burnishing

that on the basis of Egyptian-style beer jars (see above) the last Late Bronze Age phase at Ashkelon ends no earlier than the early twelfth century BCE, all our six rims may possibly – if also not necessarily – have belonged to handled specimens, also if they were residual (to illustrate the possible options a handle-less variant was chosen for Fig. 2:8 and a handled one for Fig. 2:9).

Imported Handled Cups. Two fragmentary bases of small closed vessels of Egyptian cream-slipped ware (Marl D) can be attributed to Egyptian small, necked cups with a handle being attached to neck and body, commonly also referred to as 'squat juglets' or 'mugs' (Fig. 12; for a prototype see Fig. 2:6). These vessels have a rolled rim and a round or narrow button base, occasionally also a disc base. Handled cups are typical marl vessels and occur from the late Eighteenth Dynasty onwards (for a discussion of this type and Egyptian comparanda see, e.g., MARTIN 2006a: 204–209). They were exported to almost every south Levantine site with strong Egyptian influence, if also only in very small numbers. Examples come from Tell es-Saᶜidiyeh (PRITCHARD 1980: figs. 5:1 and 52:6, Tomb 102), Beth Shean (JAMES 1966: fig. 123:4, Level VI; OREN 1973: figs. 46:19 and 74:11, northern cemetery; COHEN-WEINBERGER 1998: fig. 2:9, Stratum S-4), Megiddo (LOUD 1948: pl. 67:15, Stratum VIIA), Aphek (MARTIN 2005: pl. 24:10, Stratum X-12), Tel Seraᶜ (OREN 1984: fig. 7:4a and plate IIIa, Stratum IX), Tell el-ᶜAjjul (e.g. PETRIE 1933: pl. XI:67, Tomb 419), and Deir el-Balaḥ (T. DOTHAN 1979: 13, 16–17 Ills. 24 and 29, Tomb 114).

The two pieces from Ashkelon come from Phase 21 in Grid 38 (Fig. 12:1) and from a less reliable context in Grid 50 (Fig. 12:2), which yielded predominantly LB IIB ceramic material. Fig. 12:1 has a small, low disc base, Fig. 12:2 a button base. The former is vertically burnished.

Miscellaneous. A small round base of a closed vessel (Fig. 13) clearly belongs to an Egyptian form. The piece is of local clay and tempered with large amounts of chopped straw. The exterior is covered with a light red (10R 6/8) slip. Morphology in conjunction with fabric properties and surface treatment clearly identify the fragment as base of an Egyptian-style jar, with small ovoid to drop-shaped jars (for prototypes see MARTIN 2007: fig. 3:9a–b) or smaller variants of funnel-necked jars (for a prototype see MARTIN 2007: fig. 8:1) being the two possible candidates. At Egyptian-influenced sites in the southern Levant both local reproduction and red slip are characteristic for these jars (for a collection of red-slipped small drop-shaped and funnel-necked jars at Beth Shean see MARTIN forthcoming a). The fragment from Ashkelon comes from a Phase 20 context in Grid 38 and is therefore most likely a residual piece.

FABRIC PROPERTIES

Locally produced Egyptian-style wares. Already a preliminary analysis of the Egyptian-style ceramic material revealed that the admixture of large amounts of chopped straw into the paste was common.[28] From a functional point of view, straw is an ideal temper for mass-produced vessels, such as

[28] Straw temper is generally visible to the naked eye as elongated, burnt-out voids in the section and on the surface or, if not burnt out, as whitish-yellow, rod-shaped fibres rather than the voids. Burnt-out organic inclusions result in a quite porous matrix.

the Egyptian-style bowls (for the advantageous properties of straw-tempered clays in the production and firing process see ARNOLD 1993: 105). This technological practice is a well-known trait of Egyptian-style wares also at other Egyptian-controlled sites in Late Bronze Age Canaan, such as Beth Shean, Tel Aphek, Tel Mor, and Tel Sera^{c} (for a discussion see MARTIN 2005: 213–234). Due to the fact that the admixture of chopped straw, especially in large amounts, is a characteristic property of Egyptian Nile clays, and that the locally produced Egyptian-style wares in Canaan reproduce namely typical Nile clay types, it was assumed that this method of clay preparation has an Egyptian technological background, being an imitation of Egyptian Nile clays (*op.cit.*). Note that this connection was not straight forward: The admixture of large amounts of straw temper cannot be defined as purely Egyptian practice from the outset, as it is well known in the Canaanite pottery industry throughout all times and at above-mentioned sites in the period under review occurs also in several Canaanite forms.[29] However, upon further examination this link proved to be sound. Three observations at the sites under review helped to clarify the matter: 1) Straw temper in large amounts is rare in strata prior to the appearance of Egyptian-style wares (*i.e.* in an earlier part of the Late Bronze Age); 2) it is more common in Egyptian than in Canaanite forms in Egyptianized strata;[30] and 3) co-occurring with an increasing Egyptian influence and an increasing share of Egyptian-style vessels in the thirteenth and twelfth centuries, straw gradually is added in larger amounts and in more vessels of both Egyptian *and* Canaanite shape. Based on these three lines of evidence it was not only argued that at these sites the addition of straw in the Egyptian forms has an Egyptian cultural background, but also that the intensified use of straw temper in the thirteenth and twelfth centuries in *both* the Egyptian *and* Canaanite forms can be regarded as direct result of an increasing Egyptian influence in the local pottery industry.

To shed light on the use of straw temper in the assemblage from Ashkelon the author analyzed fresh breaks of more than 150 fragmentary vessels in a binocular microscope at 20 × magnification (Appendix 2).

(1) Both, Egyptian and Canaanite forms are predominantly produced of the same silty fabric with abundant particles of quartz, only Canaanite storage jars occasionally appear in different fabrics.

(2) Medium to large amounts of straw (for the estimate of the amount of straw see Appendix 2) are common among the Egyptian-style flat-based bowls and beer jars but also – and equally common – among the Canaanite ring- and disc-based bowls and kraters. In analogy to the evidence at Beth Shean, Tel Mor and Tel Sera^{c} straw temper is rarer among Canaanite jar types.

(3) Circa one third of the Egyptian-style bowls and Canaanite bowls and kraters are tempered with large amounts of straw, a half to three quarters with medium *or* large amounts. Straw temper is especially common among the beer jars (more than half of them are tempered with large amounts of straw), a very characteristic trait also at Beth Shean and Tel Mor.

(4) Straw rods are often un-combusted, suggesting a rather low firing temperature (probably not more than 600°C; NORDSTRÖM and BOURRIAU 1993: 155 referring to R. MACKENZIE 1957). Low firing temperatures were also postulated for other sites under direct Egyptian control (JAMES and MCGOVERN 1993: 245; MARTIN 2005: 219–220).

Due to the fact that straw temper is as common (in quantity and frequency) in Egyptian-style flat-based bowls as in Canaanite ring- and disc-based bowls and kraters, presently there is no way to prove that the admixture of straw in general is the result of Egyptian technological influence also at Ashkelon (although one probably does not have to refrain from assuming it).[31] The analysis of material from earlier phases will be needed to track a possible development throughout time. Directly connected to the question of Egyptian technological influence is the question of the identity of the potters at Ashkelon, a topic briefly discussed below.

In any case, the situation decisively changes in the Philistine pottery tradition. While the first

[29] Excluding Aphek, where straw temper in considerable quantities appears only in the Egyptian-style wares.

[30] This refers to the frequency of straw-tempered vessels as well as to the amounts of added straw within these vessels.

[31] Other reasons behind it might be a shortage of other temper or raw material or of fuel material (straw temper shortens firing time; ARNOLD 1993: 105).

Mycenaean IIIC wares seem to be made of the same silty fabric as the Canaanite and Egyptian-style wares before, the clay is much better levigated. Aegean-style cooking jugs and Philistine bowls are almost never tempered with straw.

Egyptian imported wares. With the exception of the stamped handle (Fig. 10:13; classified as Marl F), all Egyptian imported fragments in the assemblage presented here were either identified as Marl D or as mixed marl-and-silt clay, Marl D being the most common fabric for Egyptian imports in Late Bronze Age Canaan (for a list of occurrences see MARTIN 2005: 211–212). In the Ashkelon assemblage the two fabrics are more or less evenly distributed.

Marl D is a very hard and dense fabric that probably derives from the Memphis-Fayoum region (ASTON 1998: 65–66; ASTON, ASTON, and BROCK 1998: 139–140). The section colour ranges from red 2.5YR 4/8 to greyish brown 2.5Y 5/2 and pale olive 5Y 5/3, very often also dark brown occasionally with bands of red on either side at the inner and outer surfaces (NORDSTRÖM and BOURRIAU 1993: 181–182). In some examples the entire section is red. Most characteristic of the Marl D fabric is a large amount of irregular limestone particles scattered throughout the matrix, resulting in a gritty texture. Finer inclusions such as sand, fine mineral particles and sometimes a little fine chaff, as well as the occasional air hole are also attested. The fabric appears from the mid-Eighteenth Dynasty onwards (ASTON 1999: 5).

As to mixed marl-and-silt clay, all identified fragments in the Ashkelon assemblage can be attributed to ASTON's Fabric III.A, which he defined as a deliberate or natural mixture of marl and silt clay components (1998: 68). It is a dense fabric, which fires either a uniform red 2.5YR 4/6–8 in section, or, in thicker walled vessels, light red 2.5YR 6/8 at the inner and outer surface with a wide grey N 5/0 or 5Y 5/1 core. The clay is micaceous and includes sand, the occasional limestone particle and, rarely, chaff within the matrix. In terms of shapes and surface treatment Fabric III.A is closely related to the Marl D group and like the latter probably derives from the Memphis-Fayoum region.

Most characteristic of both Marl D and Mixed Clay (III.A) vessels is a thick cream slip, 10YR 8/3 ("very pale brown") and 2.5Y 8/3 ("pale yellow") being the most common shades at Ashkelon. Colour differences occur on the same vessel as a result of varying firing conditions on different parts or sides. Often, the slip appears pink (7.5YR 8/4) to reddish-yellow (5YR 7/6) in various spots, especially in the area around the handles. More rarely, a reddish-yellow (5YR 7/6) to light red (10R 6/8) slip covers the entire vessel. At Ashkelon very pale brown and pale yellow tones are prevalent among the Marl D wares, pink to reddish-yellow tones being more typical of the Mixed Clay (III.A) vessels. Apart from the slip, Marl D and Mixed Clay (III.A) vessels are commonly – at least partly – burnished. Burnishing lines are vertical, indicating hand-burnishing.

DISCUSSION OF THE EGYPTIAN ASSEMBLAGE

Share of Egyptian forms. It was mentioned earlier that plain rims of simple rounded and straight-sided bowls might originally have belonged to either flat- or round-based Egyptian-style bowls or to ring- or disc-based bowls of local Canaanite tradition. A rim statistics is therefore not sufficient to obtain an estimate of the proportion of Egyptian versus Canaanite forms in the assemblage. Therefore, the rim statistics was combined with a base statistics (see Appendix 4). Taking the Phase 21 assemblage as study sample this resulted in a share of Egyptian forms of ca. 30% (Fig. 14). Among the Egyptian forms ca. 98% belong to simple bowls and plates, and only ca. 2% to closed vessels. Among the Egyptian-style open vessels ca. 11% are plates (ca. 5% straight-sided plain-rimmed plates and ca. 6% flaring rim plates) and ca. 4% flaring rim bowls, the remaining 85% belong to rounded and straight-sided plain-rimmed bowls. The proportion of Egyptian-style bowls/plates versus bowls of local Canaanite tradition can be estimated to circa 50:50.[32]

Repertoire and function. The repertoire of Egyptian types at Ashkelon is limited when compared to the two 'classic' Egyptian garrison sites Beth Shean and Deir el-Balaḥ, and even more so when compared to Egypt itself. Despite that, two

[32] A similar proportion was observed at Stratum X at Tel Sera^{c} (MARTIN forthcoming b), a marked preponderance of Egyptian-style bowls was encountered at Stratum IX at Tel Sera^{c} (ca. 75%) and at late (?) thirteenth to twelfth century strata at Beth Shean (ca. 80–90%; MARTIN forthcoming a).

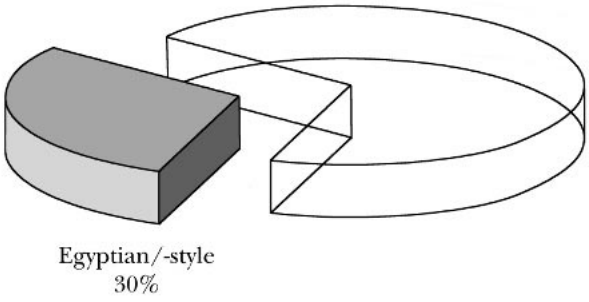

Fig. 14 Share of Egyptian forms in Phase 21 (Grid 38) at Ashkelon

functional groups can be distinguished within the assemblage: (a) locally produced types and (b) imported types. The locally produced types, in Egypt characteristic Nile silt forms, comprise household wares for daily use. Apart from their shape their utilitarian character is indicated by their somewhat careless manufacture (mass production). Open forms – bowls and plates – form the overwhelming percentage (98%). They functioned as serving vessels for eating and drinking. Locally produced closed forms are characterized by the absence of handles. Elongated neckless jars with rolled rim served as storage containers. For the conjectured function of perforated beer jars see above. Egyptian imports at sites in the southern Levant in general and at Ashkelon in particular are most commonly Egyptian marl wares (of marl or closely related mixed marl-and-silt clays). They mainly comprise medium- to large-sized transport containers (amphorae and ovoid to globular storage jars) and small handled cups. These types were generally not locally reproduced. Handled cups probably contained some precious ointment.

At the various sites under direct Egyptian control the Egyptian ceramic repertoire *supplements* – never *substitutes*! – the Canaanite, in a way that certain needs and traditions of the resident Egyptians in connection with food production, consumption, and storage were met (cf. also KILLEBREW 1998: 273). At all the sites the range of Canaanite forms is complete, when compared to purely Canaanite centres. Also, no Egypto-Canaanite hybrid ceramic tradition emerged over time.[33]

Important information can be deduced from the distribution pattern of Egyptian imported transport containers in the southern Levant: First, such transport vessels are more common at Egyptian-controlled coastal sites than at inland centres. Secondly, they appear also at coastal sites which are not assumed to have been Egyptian garrisons, such as Akko, Tel Nami and Tell Abu Hawam (MARTIN 2005: 315–317). This evidence allows for following conclusions:

1) Egyptian transport containers arrived in Canaan mainly by sea. Evidence for the shipment of these vessels also comes from as far as Hala Sultan Tekke in Cyprus (ERIKSSON 1995: 202–203; Late Cypriote IIIA:1) and Kommos in Crete (WATROUS 1992: 162–163: fig. 73 and pls. 54–55; Late Minoan IIIA:1–2).
2) From the relative scarcity of Egyptian transport containers at such important Egyptian garrison sites as Beth Shean and Tel Sera^{c} (see below), it might be inferred that the imports arriving on the coast were not intended to supply the Egyptian garrisons but rather to be traded on the Canaanite market.[34] This also would explain their appearance at Akko, Tel Nami and Tell Abu Hawam, sites that did not produce local Egyptian-style household assemblages. Thus, unlike the locally made, mass-produced household wares, imported transport containers do not function as ethnic markers for physical Egyptian presence.[35]

In agreement with the distribution pattern of Egyptian imports, a considerable collection of them can now be presented from Ashkelon. Also from nearby Tel Mor (ca. 20 km north), a very

[33] A few vessels were regarded as possible hybrids but they are clearly exceptional (MARTIN 2005: 180–182); no hybrid vessel was identified in the Ashkelon assemblage.

[34] The only possibility would be to assume that supplies, which had been transported by sea, were refilled into local Canaanite containers at the coastal sites, and only then traded to the inland garrisons by local intermediary tradesmen. It is more likely, however, that Egyptian inland garrisons were largely self-reliant (JAMES and MCGOVERN 1993: 239 referring to AHITUV 1978 and NA'AMAN 1981).

[35] Imported handled cups, on the other hand, seem to appear almost only in Egyptian centres and can therefore be closely tied to the Egyptian cultural sphere and to physical Egyptian presence. The commodity they contained might have marked them as personal luxury items.

small coastal site with an equally small assemblage, come a dozen Egyptian imports, many of them transport containers (MARTIN and BARAKO 2007: 159 fig. 4.9). At inland sites the situation is different: Only two Egyptian imports come from Tel Sera^{c}, both of them handled cups – *i.e.* no transport containers (MARTIN forthcoming b). Beth Shean comes up with a nice collection of small handled cups but with only three amphorae within a very large assemblage (MARTIN forthcoming a).

Comparative analysis with other Egyptian assemblages. A comparison of the Egyptian assemblage at Ashkelon with other south Levantine Egyptian assemblages from the thirteenth–twelfth centuries BCE is illuminating. Apart from the differential distribution of Eyptian imports, the collection from Tel Sera^{c} (ca. 30km southeast) is the most similar in many aspects.

1) At both Ashkelon and Tel Sera^{c} (Strata X–IX) Egyptian shapes form around one third of the assemblage. At Beth Shean, Aphek and Deir el-Balaḥ the share of Egyptian forms ranges around one half (MARTIN 2005: 320–325).

2) The prevalence of open forms was also noted at the other sites. Similarly high percentages of open types were encountered at Tel Sera^{c} and Tel Aphek, slightly lower ones – however, still more than three quarters of the assemblages – at Beth Shean and Tel Mor (MARTIN 2005: 311–312). The scarcity of locally produced Egyptian-style closed vessels (especially at Tel Aphek, Tel Sera^{c} and, now, Ashkelon) is somewhat puzzling. The only likely explanation at hand is that resident Egyptians used Canaanite storage jars to store their foodstuff. This argument is supported by the fact that at all sites under direct Egyptian control Egyptian and Canaanite forms were always found in the same contexts without spatial segregation.

3) Ashkelon and Tel Sera^{c} show the strongest similarity in the range and distribution of small to medium-sized bowls and plates: (a) In the two assemblages Egyptian-style plates are well-known (11% in the Egyptian assemblage at Ashkelon). At Beth Shean, Aphek and Tel Mor they are much less common, only the plate with flaring rim being attested (MARTIN 2005: 328). (b) In both assemblages bowls (and plates) with flaring rim are rare when compared to other types (10% at Ashkelon). This contrasts to Beth Shean and Aphek, where these vessels are very popular (30% and 40% respectively). (c) Decorated bowls are extremely rare at Ashkelon and Tel Sera^{c}, which is parallel to Aphek and Tel Mor but stands in direct contrast to Beth Shean, where up to 90% of the bowls are decorated (MARTIN forthcoming a).

ETHNICAL AND CULTURAL CONSIDERATIONS

Recently the author elaborated on the theory that locally produced Egyptian-style ceramic assemblages appearing mass-produced and in a co-occurrence of various types (open and, more importantly, closed forms) at certain sites in LB IIB–Iron IA Canaan are important ethnic markers to argue that Egyptians were among these sites' inhabitants (MARTIN 2004: 279–280; MARTIN 2005: 342–348).[36] Arguments in favour of this assumption were based on observations of geographical and chronological distribution, function, as well as manufacture and fabric properties of this pottery. The fact that many of the technological properties of this pottery can be linked to the Egyptian pottery tradition led to the supposition that it was produced by resident Egyptian potters or, at least, potters who were trained by Egyptians and intimately familiar with Egyptian modes of pottery production (see already JAMES and MCGOVERN 1993: 244–245, COHEN-WEINBERGER 1998: 411 and KILLEBREW 1998: 275).

Evidently, one cannot argue for the Egyptian craftsmanship of a single vessel. This is especially valid for the simple plain-rimmed bowls, which are so basic and universal in shape and function and so simple in the manufacture techniques required. How can one prove that a flat- or round-based simple bowl was thrown by an Egyptian potter and a ring- or disc-based one by a Canaanite – especially when they both may be straw-tempered like at Ashkelon? One cannot! While one should not hesitate to assume the presence of Egyptian potters at sites under

[36] Closed forms are the more significant ethnic markers, as they are characteristic enough to argue for an Egyptian derivation solely on the basis of their shape. Certain simple bowls, on the other hand, are so basic in shape that they may have evolved in all regions without a necessary relationship. A set of parameters other than shape is needed to argue for their Egyptian affiliation (MARTIN 2005: 76–80).

direct Egyptian control in Ramesside Canaan in general, specific scenarios are probably intricate and multifaceted: For example, Egyptian and Canaanite potters may have worked in the same workshop (MARTIN 2005: 220–221).[37] In such a scenario Egyptian potters may also have produced Canaanite forms and Canaanite potters Egyptian forms. As noted above Egyptian potters may have instructed Canaanite ones, which on their turn may have carried down their knowledge to their descendants. In any case, the pottery production would have been under the control of the Egyptian administration at the site.

The size of the Egyptian population component at an Egyptian garrison site in general or at Ashkelon in particular is hard to guess on the basis of pottery. While strongly varying shares of Egyptian forms (a) at different sites or (b) in different periods at a single site arguably function as a general guideline to pinpoint a differential population composition to a certain extent, one should refrain from calculating a population estimate ('one third Egyptians') based on these shares. Certain Egyptian or Canaanite forms might well have been used by both the Egyptian and Canaanite population component.

Summarizing the evidence, at Ashkelon two principal markers may lead to the conviction that Egyptians were among the site's inhabitants in the terminal phase of the Late Bronze Age: (1) the presence of Egyptian-style architecture (the 'Egyptian fortress')[38] and (2) the existence of a considerably large locally produced Egyptian-style ceramic assemblage, including beer jars in particular. With their unequivocal Egyptian origin from a morphological point of view, their distinct Egyptian technological traits and surface appearance, and, last but not least, their arguably specific function, beer jars are among the main ethnic markers within the ceramic repertoire.

EGYPTIANS AND PHILISTINES. DATE OF THE EGYPTIAN ASSEMBLAGE AND THE PHILISTINE SETTLEMENT

The end of the Late Bronze Age and beginning of the Iron Age at Ashkelon are part of the Philistine debate raging among scholars in the last decade (for an overview consult, for instance, FINKELSTEIN 1995). The main chronological anchor for the arrival of the Philistines in Canaan was sought in Ramesses' III Year 8 inscription from Medinet Habu, which records land and sea battles between Egyptians and Sea Peoples. Whether the Philistines settled down in the area of the later Pentapolis shortly thereafter (BIETAK 1993, STAGER 1995) or only a generation later (FINKELSTEIN 1995), is one of the main issues of the Philistine debate.

Along with the earliest Philistine material in Grid 38 a Ramesses III scarab was found, providing a *terminus post quem* for the first Philistine settlement of Phase 20 (MASTER 2005: 344 and fig. 20.6). Another chronological hint may be found in the Egyptian-style beer jars. The narrow-based variants in the last LB layers in Grids 38 and 50 date this horizon to the very end of the Nineteenth Dynasty – *i.e.* around 1200 BCE – at the earliest and provide an upper peg for the end of the last Late Bronze Age horizon at Ashkelon. Negative evidence of the distinct, round bases of twelfth-century Egyptian amphorae (see above Type 2b) may supply us with a lower peg very close to the upper one. However, while the beer jars provide a clear *terminus post quem*, the fact that all in all only three Egyptian amphora bases (two fragments and one intact vessel) were retrieved from the Ashkelon assemblage hardly makes the conjectured absence of the twelfth century type sound. Therefore, while beer jars tell us how early the Philistines could not have come, the negative evidence of amphorae is not strong enough to reveal us how late they could have come. While we should not disregard the new clues as further pieces of the puzzle, they cannot give any clear-cut answer for the moment.

Summarizing the evidence we may ascribe the erection of the 'Egyptian fortress' at Ashkelon to a short Egyptian interlude somewhere in the very late Nineteenth–early Twentieth Dynasties following the assumed capture of Canaanite Ashkelon by Merenptah in Year 5 of his reign (1209 BCE; 'Israel Stela') and preced-

[37] It was argued by COHEN-WEINBERGER that vessels of the same petrographic family were probably produced in one and the same workshop, vessels of differing families in separated workshops (1998: 411). It was noted above that most of the Egyptian and Canaanite forms at Ashkelon do not differ in fabric.

[38] Unlike a scarab or an alabaster vessel, an Egyptian building cannot 'wander' to a site by trade or as gift.

ing the settlement of the Philistines. As noted above the lack of enough mudbrick detritus suggests that the Egyptian building might have been abandoned before it was completed. In the areas of the Leon Levy Expedition there is no evidence of destruction at the end of the Late Bronze, which questions D. MACKENZIE's (1913: plate I) and PYTHIAN-ADAMS' (1923: figs. 3–4) claims of such an event.

After the Egyptians' retreat from Ashkelon the Philistines settled at the site. In clean Philistine contexts of Phase 20 in Grid 38 Egyptian material decreases to a share of less than 5%. The few sherds should be regarded as residual.[39] One can assume that the local production of Egyptian forms has ceased after the Egyptians' withdrawal, which would well reflect the tight connection of Egyptian-style assemblages with physical Egyptian presence (for an analogous situation at Beth Shean see MARTIN forthcoming a). Somewhat puzzling are the six imported storage jar rims of the rolled or folded type (Fig. 11), which all come from early Philistine contexts, while not a single piece was found in the Late Bronze Age layers. Although this may be coincidence, one has to consider the possibility that it is not. If the latter, these jars arrived at Ashkelon under Philistine hegemony. While this would not prove ongoing Egyptian activity at the site, it would attest to continuing trade contacts with Egypt.

APPENDIX 1: RIM DIAMETER OF EGYPTIAN FORMS

Distribution	Type	Type in MARTIN 2005	Rim Diameter
Most common bowl types	Rounded bowl (Fig. 2:1=3:1)	BL10a	Mainly 17–22 cm (up to 30 cm)
	Small rounded bowl (Fig. 3:3)	BL11	12–16 cm
	Straight-sided bowl (Fig. 2:2=3:5)	BL12a–b	Mainly 15–24 (up to 34 cm)
Rarer bowl types	Straight-sided plate	BL12c	17–30 cm
	Flaring rim bowl (Fig. 3:4, 6)	BL13a	18–30 cm
	Flaring rim plate	BL13b	17–30 cm
Closed types	Beer jar (Fig. 5)	BB10	8–14 cm
	Amphora (Fig. 10:1–8)	AM10	12–19 cm
	Ovoid to globular jar (Fig. 11)	JR33a ('meat jar')	20–27 cm

Table 2 Size ranges of Egyptian forms at Ashkelon

APPENDIX 2: STRAW TEMPER

0	No temper	
1	1–3 short and thin voids = clearly no deliberate temper	Rough Estimate in a fresh break of ca. 2 cm length
2	Medium amount of combusted or un-combusted chopped straw (also in considerable length and width) in fresh break	Rough Estimate: 4–6 voids or rods in a fresh break of ca. 2 cm length
3	Large amount of combusted or un-combusted chopped straw (also in considerable length and width) in fresh break	Rough Estimate: >6 voids or rods in a fresh break of ca. 2 cm length

Table 3 Estimate of the amount of straw as temper (viewed in a binocular microscope at 20 × magnification)

[39] Clean Philistine contexts are mainly represented by a series of rooms arranged around a large courtyard. The material of the courtyard itself was clearly mixed with that of earlier levels and contained considerable amounts of Egyptian/-style material.

			Amount of straw temper				Percentage	
Type	Origin	N =	0	1	2	3	2+3	3
Flat bases (Egyptian-style bowls)	Phase 21 (Grid 38)	25	5	7	5	8	52%	32%
Beer jar bases (Egyptian-style)	Entire assemblage[40]	15	1	3	2	9	73%	60%
Ring bases (Canaanite bowls)	Phase 21	33	3	6	11	13	73%	39%
Disc bases (Canaanite bowls)	Phase 21	2	0	1	0	1	50%	50%
Krater rims (Canaanite)	Phase 21	25	4	6	7	8	60%	32%
Storage jar rims (Canaanite)	Phase 21	21	8	8	4	1	24%	5%
Storage jar stump bases (Canaanite)	Phase 21	11	5	2	2	2	36%	18%
Cooking pots [41] (Canaanite)	Phase 20 (Grid 38)	8	1	3	3	1	50%	13%
Aegean-style cooking jars [42]	Phase 20	11	9	1	1	0	9%	0%
Philistine angular bowls	Phase 20	2	2	0	0	0	0%	0%
Philistine bell-shaped bowls	Phase 20	15	14	1	0	0	0%	0%
		168						

Table 4 The amount of straw temper in various vessel classes

Appendix 3: Beer jars

Table 5 includes a list of measurable beer jar bases from the Grid 38 and 50 material. Fourteen bases come from the last Late Bronze layers. Examples from Philistine contexts should be regarded as residual.

Beer jar bases are often deformed. In this case minimum and maximum width are specified. For the calculation of the average diameter both were taken into consideration.

Grid	Context	Reg.No	Affiliation	Min	Max	% of preservation
38	74.L1079.B138	8475	Phase 21	5.8 cm	6.7 cm	100%
38	84.L1104.B414	8565	Phase 21		6.5 cm	20%
38	84.L1108.B446	8486	Phase 21		7 cm	20%
38	84.F1110.B486	8586	Phase 21	5.7 cm	6.3 cm	100%
50	58.L409.B98	8	Phase 10	6 cm?	7 cm?	30%
50	58.L500.B194	9459	Phase 10		6 cm	30%
50	58.L514.B307	9367	Phase 10	6.3 cm	6.6 cm	100%
50	59.L505.B98	21	Phase 10/9		6.9 cm	50%
50	59.L530.B7	29	Phase 10	6.2 cm	76.5 cm	50%

Table 5 Beer jar bases from Grid 38 and Grid 50 at Ashkelon

[40] Grid 38 and Grid 50, including residuals from later levels.

[41] Beside straw temper also shell temper is common. While crushed shell is a characteristic cooking pot temper in Late Bronze Age Canaan, straw temper is unusual.

[42] Apart from straw temper also shell temper is not common in these vessels.

Grid	Context	Reg.No	Affiliation	Min	Max	% of preservation
50	59.L530.B53	31	Phase 10		6.1 cm	100%
50	59.L530.B64	32	Phase 10		5.7 cm	50%
50	59.L530.B67	33	Phase 10	5.9 cm	6.7 cm	100%
50	59.L530.B71	34	Phase 10		6.7 cm	30%
50	59.L530.B80	35	Phase 10	5.5 cm	6 cm	30%
				Average: 6.2–6.5 cm		
Additional examples from Philistine levels and mixed contexts						
38	74.L1020.B214	1791	Phase 20	7.4 cm	7.8 cm	100%
38	74.L1067.B196	8749	Phase 20		7 cm	50%
38	74.F874.B76	10309	Phase 18b		7 cm?	20%
38	74.L1008.B125	1792	Phase 18b		6 cm	100%
38	74.L1008.B113	1679	Phase 18b	7.1 cm	7.6 cm	100%
50	49U.F489.B207	1	Phase 9	6.9 cm	7.5 cm	80%
50	47.L305.B84	6	LB II material washed into earlier tomb	6.5 cm	7.5 cm	100%
50	47.L313.B1	15		5.6 cm	6 cm	100%
50	48.L408.B395	1	unknown	6.1 cm	6.3 cm	100%
50	48.L513.B18	14	mixed context	5.5 cm	5.8 cm	100%

Table 5 continued Beer jar bases from Grid 38 and Grid 50 at Ashkelon

Appendix 4: Rim and Base Statistics and Share of Egyptian forms in Phase 21 (Grid 38)

Rim statistics: Rims were counted in two different ways: (1) by a simple rim count and (2) by the adding of rim fractions. In the second method the percentage of the preserved perimeter of the rim is measured on a rim chart.[43] Then, the fractions are added up within the various types. Canaanite kraters, for example, are represented by 362 rim sherds. Adding their preserved rim fractions results in 1531% (thus, the rims belong to a minimum of 16 vessels). As in this method also the size of a fragment is taken into account, it can be regarded as slightly more exact. Table 6 shows that the shares of the vessel classes resulting from the two different methods do, however, not differ a great deal (more substantial oscillations are only encountered with Canaanite jars). The same holds true for the share of Egyptian forms (29% *versus* 28%).

Base statistics: As rims of simple plain-rimmed bowls may originally either have belonged to flat- or round-based Egyptian-style bowls or to ring- or disc-based Canaanite-type bowls, open-form bases had to be counted, in order to estimate their quantitative distribution between the Egyptian and Canaanite assemblage. Open-form bases comprise flat and round bases of Egyptian-style bowls and plates[44] (FB/RD) and ring and disc bases of Canaanite-type bowls and kraters (RB/DB).[45] After the bases were counted, they were distributed among the bowls and kraters (SBL, CBL, KR) according to their percentual share. Like this it was possible to estimate how many of the 1040 simple bowl rims (SBL) originally belonged to Egyptian-style bowls and plates (627).

Due to the fact that Egyptian-style bowls and plates account for almost the entire Egyptian assemblage (98%), the simplest method to obtain a rough estimate of the share of Egyptian forms is to calculate the share of flat and round open-form bases among the total of bases within the assemblage (33%). The result is reasonably close to the ones obtained by the rim counts.

[43] On a rim chart diameter of a rim as well as preserved fraction of its perimeter are measured.

[44] Flat bases may probably sometimes also occur on typical Canaanite-type bowls (e.g. S-profiled bowls), such as at nearby Tel Sera^{c} (Martin forthcoming b), where this phenomenon may be regarded as result of the increasing Egyptian influence towards the end of the Late Bronze Age. Nevertheless, the bulk of the flat bases will have belonged to Egyptian-style bowls. Thus, above-referred phenomenon was neglected for the estimate presented here.

[45] Bases of larger bowls and kraters are indistinguishable. Thus, they were merged in the count.

Base statistics – Total of bases						
EHC	**BJR**	**FB/RD bowls**	**RB/DB bowls and kraters**	**CJR**	**CYP/MYC**	
1	5	170	259	73	6	514 (Total of bases)
0.2%	*1%*	*33.1%*	*50.4%*	*14.2%*	*1.2%*	

Base statistics – Total of bowl and krater bases		
FB/RD bowls	**RB/DB bowls and kraters**	
170	259	429 (Total of bowl and krater bases)
39.6%	*60.4%*	

Rim statistics												
	BJR	**AM**	**SBL**	**CBL**	**KR**	**CP**	**CJR**	**OT**	**CYP**	**MYC**	**INTR**	**Total**
Rim count	7	1	1040	179	362	211	215	41	76	20	9	2161
Rim fraction (%)	65	12	5714	911	1531	717	2209	432	185	19	58	11853
Rim count	0,3%	0,0%	48,1%	8,3%	16,8%	9,8%	9,9%	1,9%	3,5%	0,9%	0,4%	
Rim fraction (%)	0,5%	0,1%	48,2%	7,7%	12,9%	6,0%	18,6%	3,6%	1,6%	0,2%	0,5%	

Rim statistics with simple bowls distributed according to base statistics													
	BJR	**AM**	**SBL**	**SBL**	**CBL**	**KR**	**CP**	**CJR**	**OT**	**CYP**	**MYC**	**INTR**	**Total**
Rim count	7	1	627	413	179	362	211	215	41	76	20	9	2161
Rim fraction	65	12	3232	2482	911	1531	717	2209	432	185	19	58	11853
Rim count	0,3%	0,0%	29,0%	19,1%	8,3%	16,8%	9,8%	9,9%	1,9%	3,5%	0,9%	0,4%	
Rim fraction	0,5%	0,1%	27,3%	20,9%	7,7%	12,9%	6,0%	18,6%	3,6%	1,6%	0,2%	0,5%	
	Egyptian/-style			Canaanite						Cyp./Myc.			

Table 6 Statistics of the Phase 21 (Grid 38) assemblage

EHC Egyptian handled cup
BJR Beer jar
FB flat base (open form)
RD round base (open form)
RB ring base (open form)
DB disc base (open form)
CJR Canaanite jar
CYP Cypriote import
MYC Mycenaean import
AM Egyptian amphora
SBL Simple bowl; including Egyptian-style plain and flaring rim bowls and plates (flat or round bases) and Canaanite rounded or straight-sided plain rim bowls (ring or disc bases)
CBL Canaanite bowl (other than simple bowl, e.g. S-profiled bowls)
KR Canaanite krater
CP Canaanite cooking pot
OT Other Canaanite shapes
INTR Intrusive piece

Figure references

Fig. 2:1 (= 3:1) – Ashkelon, Grid 50, Square 48, Layer 475, Basket 197, Reg. No. 43

Fig. 2:2 (= 3:5) – Ashkelon, Grid 50, Square 59, Layer 650, Basket 111, Reg. No. 9722

Fig. 2:3 – Beth Shean, Stratum S-4, Cohen-Weinberger 1998: 408 fig. 2:1

Fig. 2:4 – Beth Shean, Stratum S-4/3b, Cohen-Weinberger 1998: 408 fig. 2:7

Fig. 2:5 – Tel Sera^{c}, Stratum IX, Oren 1984: fig. 7:1

Fig. 2:6 – Beth Shean, Stratum S-4, Cohen-Weinberger 1998: 408 fig. 2:9 (slightly corrected drawing)

Fig. 2:7 (= 9) – Ashkelon, Grid 50, Square 47, Tomb 315, Basket 38, Reg. No. 62

Fig. 2:8 – Qantir, Stratum Bc, Aston and Pusch 1999: no. 83

Fig. 2:9 – Qantir, Stratum Bb, Aston and Pusch 1999: no. 11

Fig. 7 – Ashkelon, Grid 38, Square 84, Layer 1094, Basket 408, Reg. No. 8754 (Phase 20)

Fig. 9 – Ashkelon, Grid 50, Square 47, Tomb 315, Basket 38, Reg. No. 62

Fig. 13 – Ashkelon, Grid 38, Square 84, Layer 1074, Basket 398, Reg. No. 8460 (Phase 20)

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