NEUTRON ACTIVATION ANALYSIS OF AEGEAN-STYLE IIIC POTTERY FROM 11 CYPRIOT AND VARIOUS NEAR EASTERN SITES

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Introduction[3]

A programme of Neutron Activation Analysis (NAA) has been carried out in Bonn to try to establish the chemical profile of the twelfth century Aegean-style pottery at the different Cypriot sites in order to monitor exchange of pottery between sites and, most importantly, to pin down exports found in Turkey and the Levant to a particular Cypriot site. The twelfth century Aegean-style pottery on Cyprus dates to LH IIIC Early and Middle in Greek mainland terms. Work on Sinda has already been carried out and the Sinda profile isolated.[4] Since not much work has been done so far on other twelfth century Aegean-style pottery on Cyprus, a large number of samples was needed to make a viable data bank; our aim was a minimum of 30 Aegean-style samples per site, concentrating on decorated pottery, which is more easily datable than coarse and unpainted wares. Where possible, we tried to sample meaningful pieces rather than linear body sherds; the latter can give information as to the chemistry, but offer nothing to the identification of workshops, the consumption of high quality pottery and the trade of the different pottery shapes for their contents. Pottery was sampled from nine of the 14 sites with Aegean-style IIIC pottery (see Fig. 1). Samples were also taken from Kalavasos which was abandoned in late LCIIC. No pottery was sampled from Pyla: Kokkinokremos, Maa: Palaiokastro, Myrtou: Pigadhes and Toumba tou Skourou.

PART I

Neutron Activation Analysis of 256 samples from different Cypriot sites and 8 samples from Palestine

Neutron Activation Analysis (NAA) and statistical data evaluation

NAA is very well suited to determine the provenance of pottery.[5] It is generally accepted today that the elemental concentration pattern measura-

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4 Mommsen and Sjöberg 2007, 359–71.

5 Sayre 1957; Perlman and Asaro 1969; Harbottle 1976; Mommsen 2007; Mommsen 2011.

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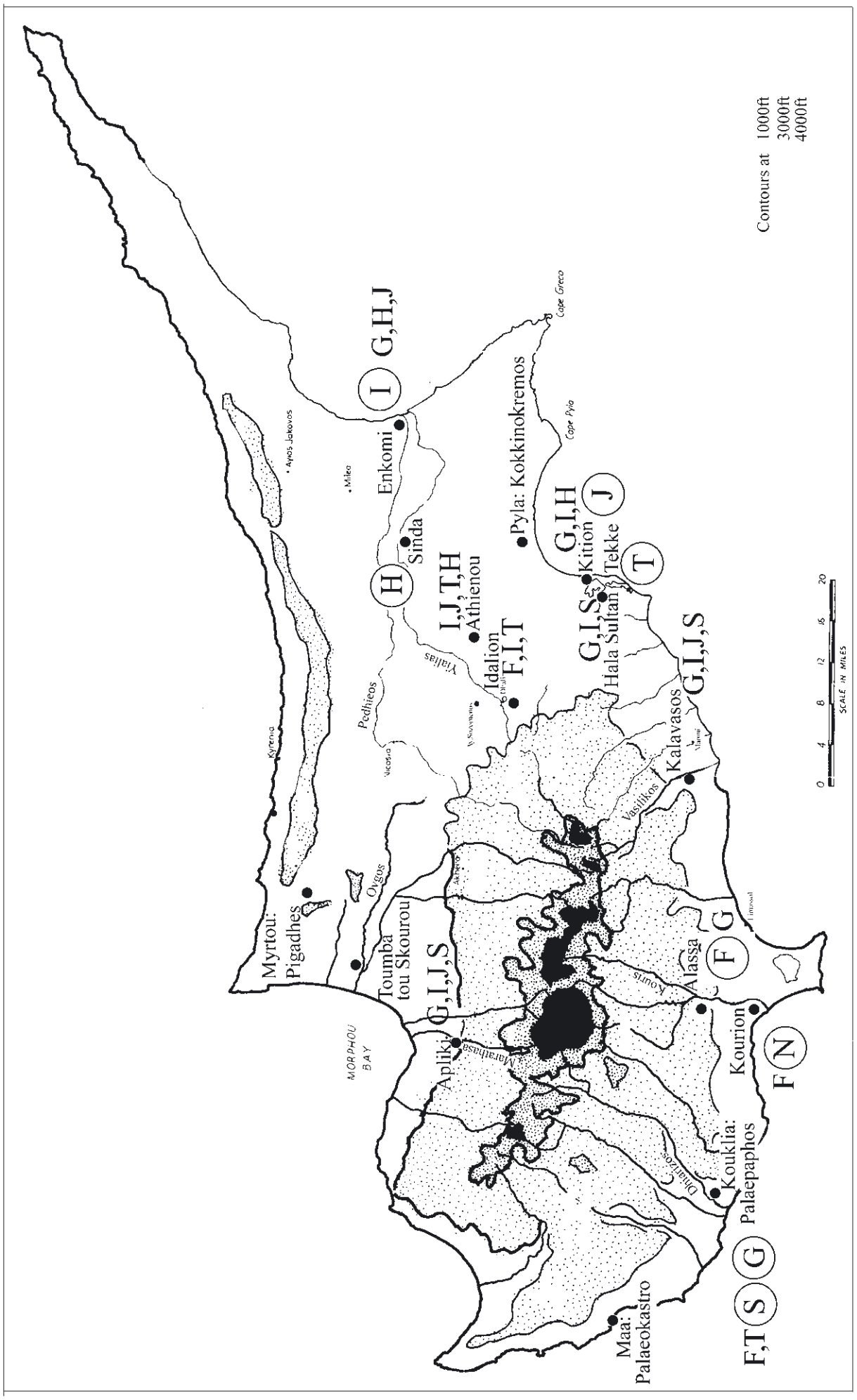

Fig.1 Cyprus. To show the location of the sites and the chemical profiles obtained by NAA. The encircled letter by a site is the chemical profile of the site; the letters not encircled denote imports from other sites.

ble in pottery indicates the production centre used by the ancient potters. If more than 20 elements (the more the better) are measured with low experimental uncertainties, the probability of finding the same elemental pattern for a claybed somewhere else is very low. Therefore the elemental pattern can be considered as being probably unique and as pointing to the location of the pottery workshop exploiting this claybed. Provenance of single pottery pieces is established by pattern comparison with so-called reference pieces of known origin. The method is therefore also called chemical fingerprinting.

There are a large number of publications describing archaeometric analyses of Cypriot pottery. In addition to the summary of earlier work by Richard Jones in 1986,[6] the NAA laboratories at Berkeley,[7] Manchester,[8] and Missouri[9] have applied NAA to investigate different ware types and different sites of pottery production on the island. Only samples from the Myc IIIC period will be discussed here.

NAA has been used in Bonn for about 30 years; the measurement procedure is described at length in Mommsen *et al*.[10] Most of the Late Bronze Age pottery vessels and sherds from the different Cypriot sites have been sampled by an electric drilling machine with a corundum pointed drill bit with a diameter of 10 mm to obtain the c. 80 mg of pottery powder needed for the analysis. A shallow depression of this size on the sherd indicates the sampling. Pieces from Museum exhibitions or vessels or sherds planned to be exhibited have been carefully scraped with the edge of a korundum piece over a wider area at the break or at a position indicated by the Museum personnel. In these cases traces of the sampling are not easily seen. In order to have a fixed measurement geometry the pottery powder of each sample is pressed to a pill of 10 mm diameter and a thickness of about 1 mm using pure cellulose as a binder. A set of such sample pills together with six pills of the Bonn pottery standard material of known composition[11] to correct for flux inhomogeneities is sent to a research reactor and irradiated there with neutrons. Since 2010 the reactor of the Reactor Institute Delft, The Netherlands, has been used. Irradiations take place for 10 h at a thermal flux of $5 \cdot 10^{12}$ neutrons/(cm^2 s). The six Bonn standard pills are placed at different positions between the sample pills to monitor local neutron flux inhomogeneities. Since our standard was calibrated with the well known Berkeley pottery standard, concentration data measured in Berkeley (and later in Jerusalem) can be compared directly with our data. After the transport of the radioactive samples to the Bonn laboratory the samples are measured during the following four weeks twice with a Ge-detector in the energy range up to 1.7 MeV and in between a third time with a second Ge-detector with higher energy resolution in the energy range up to 450 keV. The intensities of the gamma-rays emitted by the activated elements are determined and quantitative weight concentration raw values are obtained by comparing corresponding intensities in the samples to those in the standards. Before averaging the corresponding concentration values of the 6 standards a best relative fit of the data of each standard is performed with respect to a standard in a central position to correct for neutron flux inhomogeneities. This turned out to be necessary, since a non-revolving irradiation position is used and the neutron flux decreases from its maximum value at the central position in vertical directions.

The first aim of the following raw data evaluation is to find vessels that have the same composition and hence the same origin. In Bonn a special statistical, computer-based method has been developed to work like a filter sorting out of a large data bank all the samples close in composition to a given one. Starting with the pattern of e. g. one sample the similarity of further samples is obtained by calculating a modified Mahalanobis distance in the multidimensional concentration space considering a) the experimental measurement uncertainties and b) a possible variation of all concentration values due to a constant factor often called dilution factor.[12] Whereas b) can be taken into account by other statistical group forming procedures if concentration ratios are used, a) cannot be considered by the often used Principal Component Analyses (PCA) or common Cluster Analyses (CA) that calculate dendrograms. Furthermore the modified

6 Jones 1986.

7 Artzy *et al*. 1976, 1981and references therein.

8 Bryan *et al*. 1997; French *et al*. 2004.

9 Rautman *et al*. 1993; Gomez *et al*. 1995.

10 Mommsen *et al*. 1991.

11 The composition of the Bonn pottery standard is given in Mommsen and Sjöberg 2007.

12 Mommsen *et al*.1988; Beier and Mommsen 1994a, b; Mommsen *et al*. 2002.

distance value is constructed in such a way that it describes the probability of group membership. Generally speaking, its value allows a test of the hypothesis, 'data point belongs to that group', and this hypothesis is by statistical means either accepted or rejected. The filter method, either uni- or multivariate, is advantageous and is always applied in Bonn. Very large databanks can be handled easily and the grouping results do not depend on the total variance of the dataset under investigation.

Results of statistical group formation and the Cypriot compositional patterns

With the help of this filter method the concentration data from 256 pottery sherds excavated at different sites in Cyprus have been assembled into groups which have similar elemental concentrations. In order not to bias the evaluation only the concentration raw data of the samples is considered. A summary of the grouping results is shown in Table 1. The result of a discriminant analysis depicting the eight groups assigned to an origin from different Cypriot sites or their surroundings is shown in Fig. 2.

The total Bonn databank now holds nearly 11,000 samples mainly from eastern Mediterranean sites (Aegean, Levant, Egypt, some from Cyprus). It includes many reference pieces that have concentration patterns already assigned to definite production sites or regions. In the new dataset from Cyprus 18 samples have been found to match one of these known non-Cypriot patterns. These pieces are therefore imports to Cyprus and they are given in Table 1 in the line named 'other'. Ten samples with the well known pattern MYBE come from the Argolid or from another area in the north-eastern Peloponnese.[13] Other imports stem from Attica,[14] Crete,[15] Boeotia,[16] Miletus,[17] and Troy.[18]

The remaining 238 samples can be divided into twelve groups of samples that have more than two members. Fourteen patterns belong to chemical sample pairs leaving 35 samples corresponding to about 15 % of the dataset ungrouped as chemical loners. This share is normally encountered in provenance studies of pottery. Nothing can be concluded about these chemical singles. They may have been contaminated during production in antiquity or during our laboratory work or they may represent a first member of a clay paste not yet analysed in Bonn.

The assignment of the groups to a specific production site in Cyprus is suggested mainly by the distribution of the samples from different sites into the NAA groups as shown in Table 1 and also by archaeological judgement of fabric, forms, and decorations of the wares, since kiln wasters or clay samples as reference material were not available. The names of the groups are chosen arbitrarily beginning with the letters Cyp~ indicating that these samples have with high probability a Cypriot origin. However, since we do not have good reference material from the different Cypriot sites apart from Enkomi, the proposed assignments of the chemical patterns need to be tested and verified by future analyses, if and when appropriate material becomes available.

The result of a comparison of these group patterns with our databank of patterns was that six of these patterns were already known to us. But most of them have only been assigned until now to a general Cypriot origin and not yet to definite Cypriot sites or geographical regions, since the number of samples from Cyprus in our bank was not very high. Now with the new large set of data different Cypriot production areas can be distinguished. Table 2 gives the average concentration patterns of the groups and Table 3 lists the individual group members together with the individual best relative fit (dilution or enhancement) factors with respect to the average concentration values of the group.

A consequence of the large amount of new data from Cyprus was that small groups formed tentatively and already published in older projects turned out to be just subgroups of the larger groups presented here. A second reason for merging different small groups, which do not have a very different composition and which deviate in only 2 or 3 elements, was that no archaeological motivation for a separation was apparent. For example, a deviation of the elements K, Rb, or Cs

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13 Recently Mommsen 2012 and references therein.

14 Mommsen 2003, group KroP.

15 Unpublished, groups KnoK and KnoL.

16 Recently Mommsen mit Schöne-Denkinger 2009, group Theb.

17 Akurgal *et al.* 2002, group D (Miletus D).

18 Mountjoy and Mommsen 2006, group TroB, there called B-Troy.

is often seen and such samples have been published as separate groups, such as CypH and ChKR[19] or MYBE and MBKR.[20] The large variances of these elements shown in Table 2 reflect the merging of these different subgroups. We will point to such group re-allocations and merging below.

Pattern CypI – Enkomi

The largest group is assigned to a workshop at or close to Enkomi and has the pattern CypI. The assignment to Enkomi is supported by data of a clay sample from Enkomi measured in Berkeley[21] which is similar in composition, if multiplied by a best relative fit factor of 0.89. Except for Lu which is known to be generally about 20% higher in Bonn, all the elements measured in both laboratories agree.[22] Artzy *et al.*[23] distinguished three patterns assigned to Enkomi; they comprise ENK alpha: 30 mixed local Late Bronze (LB: date given 1400 – 1200 BC) sherds; ENK beta: 18 other mixed local LB sherds, and ENK gamma: 14 Proto White Painted sherds, all from the Enkomi excavations. The group ENK gamma is described as similar to ENK beta, comprising a well defined ware type of a later period (date given: 1100 – 1050 BC). Both patterns ENK alpha and ENK beta are very similar to the pattern CypI. ENK alpha matches CypI, if a best relative fit factor of 1.02 is applied; ENK beta has to be multiplied with a factor 0.91 for a good fit to CypI (except again for Lu).

The LB pottery workshop(s) at Enkomi exported vessels mainly to nearby sites in eastern Cyprus, such as Idalion or Kition; no sample in our data set with the pattern CypI is found at the more distant sites of Alassa, Kourion, and Kouklia (Palaepaphos). But one of the non-Cypriot sherds included here, Ashkelon 7, has the pattern CypI and is considered to be an export from Enkomi to Ashkelon.[24] Many more samples in our databank belong to this newly formed large group with the pattern CypI; it includes different subgroups arising from other already published projects, such as EnkA[25] or EmeA.[26] These can now be assigned to workshops in the area of Enkomi, which produced pottery over a long time-span using the locally available clays.

Pattern CypJ – Kition, Hala Sultan Tekke

The second largest group has the pattern CypJ and was made from clay(s) in the vicinity of Kition or nearby Hala Sultan Tekke. Twenty-one vessels from these two sites belong to CypJ. CypJ differs from CypI mainly in Fe, Co, and Sc. Again similar data from Berkeley support the assignment to the area of Kition: a pattern of six samples of MycIIIC1 vases from Kition[27] and also a pattern of 15 pieces from Kition[28] match CypJ statistically except for Lu, although it is not stated explicitly that any of these samples from Kition were locally made there. Many of the Simple Style vessels from Qantir and the Levant analysed earlier (see below part CypH) belong to the group CypJ, as also the five additional vessels found outside Cyprus included here (Dothan 1–3, Megi 3, Afula 1).

Pattern CypT – Hala Sultan Tekke?

This pattern is assigned at the moment to Hala Sultan Tekke (HST) or its surroundings. It is not very close to the other Cypriot patterns, but it has a general Cypriot composition well separated from other non-Cypriot Mediterranean patterns. The argument of its distribution pointing to HST is weak because of the small number of samples in this group; however six, that is more than half of the eleven sherds sampled, were found at HST. An additional supporting archaeological argument exists in the form of a piriform jar FS 47 found at HST, with characteristic reversed curved-stemmed spirals, which also belongs to the CypT group.[29]

Pattern CypH – Sinda

As a result of the many new samples from Cyprus the Cypriot concentration patterns are now better

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19 Mommsen and Sjöberg 2007; Mommsen *et al.* 2009.

20 Mountjoy and Mommsen 2001, 125; Buxeda *et al.* 2002; Ben-Shlomo *et al.* 2008. MBKR 959.

21 Gunneweg *et al.* 1983, Grey clay sample ENK 278, Table 2, column 5.

22 Besides Lu the largest, but small deviations occur for Cr and Rb.

23 Artzy *et al.* 1976, Table 1.

24 Master *et al.* 2015, 238–41.

25 Zuckerman *et al.* 2010, 412, Table 5.

26 Mommsen *et al.* 2006, 200, Tables 3,4; Ben-Shlomo *et al.* 2008, 962, Table 3, fig. 5.

27 Asaro *et al.* 1971, Table 2, column 5 (Kition).

28 Artzy *et al.* 1976, Table 4.

29 Mommsen *et al.* 2003, 6, Sample HST 7, published there as single.

defined; in particular the pattern CypH is now well separated from the pattern CypJ. CypH was defined earlier from many pieces of a set of Cypriot LB sherds from Sinda and, therefore, assigned to this site.[30] When compared with the not very different pattern CypJ, CypH has about 10 % higher elemental abundances (factor 0.89 to match best CypJ). After application of the factor it is still higher in Th and Cs, both elements measured with low uncertainty. Only eight sherds in the sample set of the present project have the pattern CypH and so very probably come from Sinda. The good separation of the patterns CypH and CypJ made a re-evaluation of the assignment of samples to CypH in former projects necessary. A number of Simple Style sherds from Qantir in Egypt[31] and all samples from sites in the western Negev and northern Sinai[32] assigned to the pattern CypH have now been reassigned to the pattern CypJ. But the samples from Bethshean, published first as members of new groups named SEAN and SEKR, [33] and later as members of the renamed groups CyHH and ChKR[34] now all join the group CypH.[35]

Pattern CypF – Alassa

The composition of this group has unusually large spreads (root mean square deviations) for many elements. The reason is that five subgroups a) – e) deviating in several elements are put together to form one joint group CypF. All 19 members of this group come from Alassa, apart from one sample from Idalion and one from Kourion. The average concentration values of the group CypF are shown in Table 2–1 and the elemental compositions of the five subgroups are presented in Table 2–2. These show the large differences of the elemental concentrations in the wares from Alassa; this ambiguity needs further studies, such as petrography. Either different local clay beds and/or various clay mixtures may have been used. These differences are also apparent in Fig. 3, which presents the result of a discriminant analysis for the five subgroups of CypF. Since archaeologically the sherds from Alassa are a good group, all these five concentration groups have been assigned tentatively to an origin from Alassa or its close neighbourhood. The four samples from Alassa of the group X075 are so different, that they have been not included in the joint group CypF; in particular the Sc value in X075 measured very precisely with NAA is unusually high with 35 ppm (see below).

Pattern CypN – Kourion

All the samples from sherds excavated at Kourion belong to this group. No piece exported from there to another site is present in our data set. Therefore this pattern is assigned with high probability to workshop(s) at or close to Kourion. The composition is not similar to other Cypriot patterns and also not to any other pattern in our databank. The unusually high Sc value of this Cypriot group is remarkable (see below).

Pattern CypG, CypS, and X080 – Kouklia/ Palaepaphos

The composition of the samples with these three patterns is not very different from each other. All three groups presumably belong to one or more pottery workshops at or close to Kouklia. This is also suggested by the distribution of the samples, which are well separated from all other groups. CypS with best relative fit factor of 1.03 with respect to CypG has higher Sc and Fe and lower Ta values; X080 with factor 0.99 is higher in Ta and Cr and lower in Th compared to CypG. Here again the Berkeley data supports the assignment of these groups to Kouklia/Palaepaphos. Asaro *et al.*[36] present a pattern of 13 pieces of the MycIIIC1 period from Palaepaphos which is statistically similar to CypG, if multiplied with a best relative fit factor of 0.93 (again except for Lu). Karageorghis *et al.*[37] give the same pattern with an increased sample number of 19, but they also present a second pattern for Palaepaphos of six pieces, which turns out to be similar to our second

30 Mommsen and Sjöberg 2007, 365, Table 3.

31 Mountjoy and Mommsen 2001, 146–48, Cat.nos. 38, 39, 42, 45.

32 Mommsen *et al.* 2005, 153.

33 D'Agata *et al.* 2005, 375. We no longer name new groups after the site from which the samples were taken, since this is often not the site of origin and misinterpretations can result.

34 Mommsen *et al.* 2009, 512.

35 With the exception of samples BS 11 and 16, now both better CypJ, but also with lower probability CypH.

36 Asaro *et al.* 1971, Table 2, column 4 Kouklia.

37 Karageorghis *et al.* 1972, Table 1, column 3 (CypG), Table 2, column 2 (CypS).

group for Palaepaphos CypS, if a best relative fit factor of 1.07 is applied (exception Lu). Export pieces from Palaepaphos with these patterns occur at several other Cypriot sites, and also outside Cyprus at Tarsus[38] and at other sites in the Levant (eg. Acco 4, 7, 10: CypG, and Megiddo: Megi 1[39]). The sample from Ashkelon included in this project (Ashk 8) also has the pattern CypS or, with lower probability, CypG.

X075 – X079, Cypriot sample pairs, and non-Cypriot vessels Ajjul 1 and Fara 1 of unknown origin

An archaeological interpretation of these five groups is difficult because they comprise only a small number of samples. They are all well separated from other groups in our data bank. There are no special characteristic features in the data groups X076, X078 and X079. Group X075 of 4 samples from Alassa was formed because the pattern of the average values is well separable from all other groups despite the unusually high variances of some elements, which indicate possible subgroups or singles. As already mentioned for the joint Alassa group CypF, the large variation of elemental concentrations in vessels from that site is unusual and needs further studies. The high Sc value of group X075 points to a different clay source of unknown location for these 4 Alassa samples. The Sc value is also quite high for the groups CypN from Kourion, Group X077 of 4 samples from Idalion, the sub-group CypFd (Alassa 16 and 17), the pair Alassa 189 (1 and 10), and also pairs 151 and 200 from Apliki. Artzy *et al.*[40] describing a group of White Slip ware from Enkomi with high Sc values mentioned that the clays used have a profile which is 'apparently basaltic, since the distinctive composition pattern resembles that of some common basaltic rocks'. High Sc values have also been found in a compositionally different group of White Slip II ware from Ayios Jakovos.[41] The clay source or sources of this special clay have not yet been located. Gomez *et al.*[42] present NAA data with high Sc values of alluvial clay samples from the lower reaches of the Vasilikos valley and 'clay samples derived from the outcrop of highly weathered leucocratic grabbo at Sanida' close to this valley. Other sites with basaltic clays deposited by water courses draining the southern flanks of the Troodos near Limassol have also been proposed as the possible origin of the White Slip ware.[43]

The sample Ajjul 1 from Ajjul has the composition called PalJ. Its definite provenance is not yet determined, but it is assigned probably to the area somewhere in the coastal plain of southern Israel.[44,] The vessel Fara 1 from Tel Fara is a chemical loner, but has a composition associated to a group from the north-eastern Negev called NegE.[45]

Archaeological Discussion

The sampling results (Fig. 1)

We were able to get the chemical profile of six sites to add to the already known profile of Sinda, CypH (Fig. 1). We established the chemical profile of CypI for Enkomi. We obtained two profiles for Kouklia, CypG and CypS. CypS is differentiated by higher scandium and iron, but otherwise is the same as CypG. We have a profile CypT for Hala Sultan Tekke, but CypJ applies equally to Kition and Hala Sultan Tekke. We could not separate them, probably because the geology of both sites is similar. CypJ is certainly Kition, as some Proto-White Painted (PWP) pieces analysed from the site have the CypJ profile; at the time PWP was produced, that is LHIIIC Late to Submycenaean in Greek mainland terms, Hala Sultan Tekke had already been abandoned. We obtained no chemical profile for Apliki. There was an unusually large number of Singles and also several unattributed Pairs. It is a mining site which possibly imported all its fine decorated wares. Imports from Enkomi, Kition/Hala Sultan Tekke and Kouklia are attested; the imports from Kouklia would presumably have gone by sea. At Athienou, where the copper was processed, we also obtained no chemical profile, but this may be due to the limited sample numbers. It may be that these two mining sites produced their own coarse and unpainted wares,

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38 Mommsen *et al*. 2011.

39 D'Agata *et al.* (2005), 375. CypG is called there AKKO, sample Megi 1 is published as single and BS 18 as probable import from Cyprus.

40 Artzy *et al.* 1981, p. 44 and Table 4(WS).

41 Perlman *et al.* 1971, Table II.

42 Gomez *et al*. 1995, 114.

43 Bryan *et al*. 1997, 38.

44 Ben-Shlomo *et al.* 2008, PalJ: 961; Barkan *et al*. 2013, 133.

45 Gunneweg and Mommsen 1990. NegE is called there Qitmit group, p. 11:Tab. 2, column 1.

Table 1: Distribution of the 256 samples from different Cypriot sites into the formed compositional groups measured by NAA (No-: associated to the group, re: repetition measurement). The samples in the groups are identified in Tab. 2. Cyp-groups are assigned to a local Cypriot production. X-groups, pairs of samples (=No) and singles are of unknown provenance. Other pieces (imports, sample No and group name given) are from A: Attic(KroP), B: Boeotia(Theb), D: Miletus(D), K: Crete (KnoK), L: central Crete(KnoL), MB: northeastern Peloponnese (MYBE), T: Troy(TroB). The total number of samples of the groups in the Bonn databank belonging to other projects is also shown.

NAA group/ finding site	Enkomi	Kition	Hala Sultan Tekke	(Sinda)	Alassa	Kouri-on	Kouklia	Kalava-sos	Idalion	Athie-nou	Apliki	totals in data bank	totals this project
CypI	**17+3-** +1 re	6+1-	3	(2)				2	7	1	1	139	37+4- +1 re
CypJ	3	**13+3-**	**8**					9		1+1-	1	89	35+4-
CypT	1		**6**				1		2	1		17	11
CypH	5	1	1	(**24+1-**)						1		49	8
CypF					**17** +1 re	1	1-		1			19 +1 re	19+1- +1 re
CypN						8						8	8
CypG	1	1	1		3		**14**	1+1-			3	40	24+1-
CypS	1		3				**9**	4			1	25	18
X075					4							4	4
X076	5		1									6	6
X077									4			5	4
X078									1	2		5	3
X079		2										3	2
X080							2					3	2
pairs			=120 =195		=189			=91			=151 =200		12
other		7,35:D 9:MB 16,22:L 19:A sum: 6	22:Troy sum: 1	(3)			16:MB 21:K sum: 2	1:B 2,5,7,8: MB sum: 5	12:MB sum: 1	7,8:MB sum: 2	7:MB sum: 1		18
singles		5	5		4	3	1	6		1	10		35
totals	36 +1 re	38	33	(30)	30 +1 re	12	30	30	16	10	21		246+10- +2 re

Table 2-1: Average concentrations M of elements in µg/g (ppm), if not indicated otherwise, and variances σ in % of M of pottery groups assigned to a Cypriot origin. The individual samples have been multiplied by their best relative fit factors given in Tab. 3 with respect to the grouping value M.

	CypI Enkomi 139 samples		CypJ Kition/Hala Sultan Tekke 89 samples		CypT Hala Sultan Tekke? 17 samples		CypH Sinda 49 samples		CypF Alassa 19+1 re samples	
	M	σ(%)	M	σ(%)	M	σ(%)	M	σ(%)	M	σ(%)
As	11.5	44.	11.9	67.	9.51	26.	7.29	43.	9.35	48.
Ba	418.	36.	530.	67.	406.	37.	424.	39.	765.	25.
Ca%	9.51	24.	12.3	33.	11.3	21.	11.8	21.	10.3	36.
Ce	37.4	5.0	38.2	3.9	35.4	3.2	42.7	3.6	45.4	7.8
Co	28.3	6.2	19.6	9.4	22.3	9.4	22.3	11.	27.9	12.
Cr	312.	26.	294.	10.	321.	51.	309.	14.	207.	31.
Cs	3.76	13.	2.97	14.	2.36	11.	4.60	13.	1.33	48.
Eu	0.94	3.5	0.96	4.0	0.97	3.8	1.01	3.4	1.05	4.9
Fe %	5.34	4.9	4.05	5.9	4.71	4.7	4.74	2.9	5.29	11.
Ga	14.9	23.	11.9	31.	12.8	19.	15.4	13.	11.9	17.
Hf	2.93	6.3	3.02	5.2	2.78	5.3	3.16	4.5	3.57	9.7
K %	1.79	17.	1.80	19.	1.49	10.	1.85	33.	0.78	20.
La	18.0	5.5	19.1	5.3	17.9	4.3	22.1	2.8	20.8	7.5

	CypI Enkomi 139 samples		CypJ Kition/Hala Sultan Tekke 89 samples		CypT Hala Sultan Tekke? 17 samples		CypH Sinda 49 samples		CypF Alassa 19+1 re samples	
	M	σ(%)	M	σ(%)	M	σ(%)	M	σ(%)	M	σ(%)
Lu	0.37	6.0	0.34	5.1	0.37	6.1	0.36	5.1	0.41	6.4
Na %	1.00	19.	1.19	17.	1.23	20.	1.11	26.	0.58	39.
Nd	16.3	9.2	17.0	7.8	16.6	5.9	20.1	9.1	18.2	7.4
Ni	235.	22.	185.	19.	166.	27.	266.	25.	190.	38.
Rb	62.8	12.	58.1	13.	46.5	12.	65.8	33.	28.9	31.
Sb	0.80	22.	0.70	28.	0.58	24.	0.69	20.	0.59	30.
Sc	22.6	6.4	17.8	5.6	21.9	8.0	20.2	4.0	21.8	11.
Sm	3.33	7.0	3.44	7.2	3.34	4.2	3.91	6.1	3.70	6.7
Ta	0.56	8.7	0.56	7.1	0.51	9.6	0.65	4.5	0.76	15.
Tb	0.55	9.8	0.57	8.7	0.57	11.	0.61	8.0	0.66	11.
Th	5.95	6.9	5.72	4.2	5.02	5.8	7.28	3.7	6.16	8.0
U	1.82	20.	2.26	20.	1.79	17.	3.22	17.	1.20	22.
W	1.61	22.	1.44	18.	1.53	20.	1.48	19.	1.53	26.
Yb	2.19	4.8	2.15	4.2	2.24	4.3	2.26	3.3	2.47	4.4
Zn	99.7	13.	101.	26.	91.2	13.	99.5	25.	88.6	23.
Zr	111.	31.	125.	23.	108.	29.	86.9	50.	129.	24.

Table 2-2: The concentration values as in Tab. 2-1 of the five subgroups of the joint group CypF (Alassa). The factor is the best relative fit factor with respect to the subgroup CyFa.

	CyFa 5+1 re samples factor 1.00		CyFb 4 samples factor 1.09		CyFc 3 samples factor 1.02		CyFd 2 samples factor 1.17		CyFe 5 samples factor 0.96	
	M	σ(%)	M	σ(%)	M	σ(%)	M	σ(%)	M	σ(%)
As	7.87	(9.9)	9.25	(18.)	9.52	(23.)	19.8	(66.)	8.81	(70.)
Ba	811.	(15.)	733.	(19.)	836.	(14.)	1030.	(4.8)	687.	(44.)
Br	14.0	(64.)	--		9.49	(12.)	9.69	(12.)	8.81	(82.)
Ca %	16.5	(46.)	9.93	(17.)	8.67	(14.)	7.20	(14.)	10.1	(35.)
Ce	46.9	(2.6)	55.8	(5.1)	42.3	(2.9)	55.7	(1.0)	39.8	(10.)
Co	26.9	(3.9)	29.8	(6.2)	27.5	(2.4)	49.1	(4.8)	24.5	(5.6)
Cr	170.	(7.5)	237.	(29.)	219.	(7.4)	402.	(18.)	187.	(50.)
Cs	0.97	(24.)	1.96	(23.)	0.75	(31.)	2.91	(61.)	1.33	(39.)
Eu	1.04	(9.1)	1.21	(2.7)	1.08	(3.4)	1.31	(2.0)	0.96	(3.3)
Fe %	4.83	(6.5)	5.79	(8.9)	6.11	(3.1)	7.10	(3.0)	4.99	(12.)
Ga	11.6	(26.)	16.0	(19.)	11.3	(16.)	15.3	(12.)	10.5	(14.)
Hf	3.78	(8.9)	3.96	(8.6)	3.63	(6.9)	4.87	(2.5)	2.99	(4.4)
K %	0.64	(11.)	1.11	(5.8)	0.61	(16.)	1.07	(23.)	0.81	(9.1)
La	20.9	(11.)	25.0	(3.9)	20.2	(0.9)	26.7	(1.6)	18.7	(11.)
Lu	0.39	(7.4)	0.46	(10.)	0.43	(4.0)	0.58	(3.6)	0.38	(5.5)
Na %	0.41	(20.)	0.73	(37.)	0.50	(34.)	0.64	(13.)	0.75	(28.)
Nd	17.8	(12.)	21.8	(9.0)	18.7	(7.8)	23.1	(6.8)	16.4	(6.5)
Ni	177.	(25.)	175.	(25.)	157.	(23.)	473.	(9.9)	169.	(32.)
Rb	24.6	(11.)	44.7	(19.)	19.3	(25.)	37.6	(50.)	29.0	(28.)
Sb	0.57	(18.)	0.76	(41.)	0.67	(35.)	0.67	(21.)	0.47	(33.)
Sc	19.7	(6.9)	23.0	(3.9)	24.6	(3.5)	31.9	(0.2)	21.0	(13.)
Sm	3.68	(13.)	4.30	(9.6)	3.68	(1.8)	4.86	(1.0)	3.36	(5.3)
Ta	0.81	(8.1)	0.96	(8.5)	0.77	(6.3)	0.94	(6.2)	0.58	(16.)
Tb	0.68	(13.)	0.76	(11.)	0.65	(16.)	0.91	(9.7)	0.58	(11.)
Th	6.20	(3.7)	7.10	(4.3)	6.39	(3.9)	7.67	(2.6)	5.51	(15.)
U	1.26	(24.)	1.22	(26.)	1.24	(15.)	1.33	(33.)	1.19	(18.)
W	1.65	(21.)	1.71	(23.)	1.32	(12.)	1.57	(12.)	1.54	(36.)
Yb	2.46	(3.8)	2.76	(6.5)	2.51	(2.2)	3.45	(3.2)	2.21	(2.9)
Zn	77.9	(15.)	97.1	(26.)	92.2	(5.8)	87.7	(7.3)	101.	(18.)
Zr	148.	(21.)	127.	(21.)	136.	(20.)	189.	(24.)	101.	(27.)

Table 2-3: see Tab. 2-1

	CypN Kourion 8 samples		CypG Kouklia 40 samples		CypS Kouklia 25 samples		X075 Alassa? 4 samples		X076 6 samples	
	M	σ(%)	M	σ(%)	M	σ(%)	M	σ(%)	M	σ(%)
As	8.62	69.	8.30	62.	10.1	60.	4.31	32.	10.8	21.
Ba	472.	19.	532.	34.	516.	45.	700.	28.	423.	13.
Ca %	11.7	15.	8.19	18.	8.53	27.	7.39	17.	8.17	11.
Ce	26.6	12.	59.8	3.8	51.6	6.6	28.3	6.6	48.8	1.6
Co	34.6	8.1	21.7	5.6	22.3	8.0	47.1	14.	26.9	8.0
Cr	350.	15.	92.2	13.	130.	27.	525.	27.	632.	9.8
Cs	1.70	25.	3.71	11.	3.20	12.	1.19	32.	4.07	11.
Eu	0.83	8.1	1.11	4.8	1.09	5.2	0.92	5.3	1.17	3.0
Fe %	5.45	5.1	4.05	4.7	4.37	5.0	7.06	4.9	5.57	5.7
Ga	14.1	21.	15.7	19.	14.8	27.	11.6	16.	20.5	13.
Hf	2.14	9.5	3.43	3.1	3.24	6.4	2.43	5.0	4.07	8.6
K %	0.82	17.	1.58	15.	1.56	14.	0.52	20.	2.04	8.5
La	13.4	11.	28.1	4.2	24.7	5.8	13.0	1.9	24.1	2.6
Lu	0.41	7.3	0.35	4.9	0.37	7.2	0.47	3.8	0.42	4.6
Na %	0.89	11.	0.39	24.	0.66	28.	0.92	7.4	1.28	13.
Nd	13.2	14.	21.7	8.0	20.8	8.2	13.8	17.	22.0	7.5
Ni	230.	35.	127.	37.	137.	43.	415.	26.	216.	23.
Rb	27.7	16.	68.0	8.2	62.0	9.5	19.7	26.	67.0	17.
Sb	0.36	21.	0.51	17.	0.50	18.	0.28	13.	0.85	13.
Sc	27.9	7.7	14.5	6.9	17.7	7.9	35.5	4.5	23.2	3.4
Sm	2.65	9.0	4.05	8.1	4.01	6.2	3.16	1.5	4.24	5.1
Ta	0.39	15.	1.01	6.5	0.81	9.6	0.37	14.	0.70	6.7
Tb	0.58	13.	0.66	7.2	0.66	8.0	0.62	13.	0.65	10.
Th	3.26	15.	7.58	5.2	6.70	7.5	3.45	6.5	7.69	2.4
U	0.63	50.	1.62	27.	1.59	20.	0.45	49.	2.12	28.
W	1.90	15.	1.59	20.	1.67	20.	1.14	15.	1.84	11.
Yb	2.25	5.6	2.31	3.9	2.38	6.3	2.38	3.5	2.61	2.7
Zn	65.2	5.0	84.4	18.	93.6	12.	177.	60.	93.5	2.3
Zr	75.1	37.	128.	17.	126.	19.	95.5	32.	139.	18.

Table 2-4: see Tab. 2-1

	X077 5 samples		X078 5 samples		X079 3 samples		X080 Kouklia? 3 samples		=91 2 samples	
	M	σ(%)	M	σ(%)	M	σ(%)	M	σ(%)	M	σ(%)
As	7.96	18.	8.81	16.	7.18	38.	6.70	23.	9.53	97.
Ba	252.	23.	347.	51.	391.	56.	820.	30.	1076.	68.
Ca %	7.84	28.	10.4	41.	12.4	2.5	9.74	20.	14.8	6.9
Ce	22.5	7.9	27.5	4.2	41.5	1.9	58.9	1.0	38.7	1.3
Co	26.2	5.4	23.1	4.5	26.1	1.9	23.4	9.5	13.3	2.7
Cr	189.	24.	187.	14.	329.	7.5	130.	9.4	84.6	1.4
Cs	2.12	14.	2.42	11.	3.01	29.	3.10	4.3	2.70	12.
Eu	0.78	3.7	0.87	2.9	1.02	4.8	1.18	3.4	0.89	4.3
Fe %	6.16	6.2	5.21	9.8	5.30	4.7	3.98	2.8	3.33	15.
Ga	13.0	24.	10.9	18.	11.1	23.	14.7	14.	11.7	35.
Hf	2.21	4.3	2.37	7.4	3.30	4.0	3.51	3.0	2.72	6.0
K %	1.35	16.	1.44	11.	1.12	7.2	1.59	4.6	1.26	14.
La	10.4	9.4	13.7	6.7	20.0	5.1	29.7	2.3	20.1	3.0
Lu	0.40	6.9	0.37	12.	0.35	7.6	0.35	5.9	0.29	3.9

	X077		X078		X079		X080 Kouklia?		=91	
	5 samples		5 samples		3 samples		3 samples		2 samples	
	M	σ(%)	M	σ(%)	M	σ(%)	M	σ(%)	M	σ(%)
Na %	1.61	18.	1.52	14.	1.39	34.	0.38	14.	0.46	33.
Nd	13.0	14.	13.5	10.	19.3	6.4	21.9	11.	16.5	6.2
Ni	131.	35.	152.	23.	234.	13.	220.	43.	92.8	30.
Rb	40.8	9.2	46.8	7.0	34.9	18.	59.3	7.1	54.4	6.0
Sb	0.84	16.	0.55	30.	0.71	41.	0.38	21.	0.41	14.
Sc	29.7	5.6	22.9	9.6	22.1	8.8	13.3	3.8	12.3	1.9
Sm	2.69	3.0	3.15	4.6	4.00	4.0	4.19	12.	3.12	1.0
Ta	0.26	17.	0.42	14.	0.62	14.	1.33	8.9	0.61	6.5
Tb	0.51	14.	0.53	9.0	0.58	17.	0.67	7.1	0.59	13.
Th	3.06	4.5	3.84	4.3	6.26	6.3	6.86	1.7	5.38	1.7
U	4.22	50.	1.93	30.	2.36	35.	1.48	7.7	1.94	8.6
W	1.25	26.	1.86	72.	1.45	13.	1.48	29.	1.28	16.
Yb	2.18	5.9	2.25	6.6	2.14	10.	2.33	2.6	1.85	2.4
Zn	116.	18.	99.6	8.0	86.7	8.6	86.3	27.	255.	79.
Zr	95.2	29.	102.	25.	129.	18.	148.	14.	111.	18.

Table 2-5: see Tab. 2-1

	=120		=151		=189		=195		=200	
	2 samples		2 samples		2 samples		2 samples		2 samples	
	M	σ(%)	M	σ(%)	M	σ(%)	M	σ(%)	M	σ(%)
As	14.1	63.	3.72	47.	4.48	39.	6.66	12.	9.75	50.
Ba	683.	76.	127.	27.	535.	22.	283.	25.	114.	30.
Ca %	13.4	30.	5.79	6.9	7.96	3.2	12.0	1.9	3.87	3.8
Ce	30.8	2.1	12.7	3.0	41.0	1.1	32.3	1.0	10.0	3.7
Co	14.6	4.3	32.1	5.4	47.4	3.2	22.2	14.	76.5	47.
Cr	209.	2.9	65.9	1.1	556.	68.	152.	0.7	68.5	6.0
Cs	1.89	4.9	1.57	7.1	1.27	28.	2.56	30.	0.80	36.
Eu	0.88	2.6	0.82	5.4	1.11	3.5	0.71	2.6	0.81	6.1
Fe %	3.47	8.6	7.39	1.5	7.37	0.3	3.44	0.4	7.63	3.4
Ga	13.2	27.	16.6	44.	12.7	13.	8.66	16.	21.6	25.
Hf	2.70	2.0	1.89	3.3	3.53	5.6	2.18	2.2	1.89	3.4
K %	1.48	3.6	1.19	12.	0.68	7.4	1.13	4.0	0.86	4.6
La	16.0	1.2	6.77	14.	19.3	3.0	15.5	5.5	4.79	1.4
Lu	0.31	3.6	0.50	3.9	0.51	3.3	0.25	4.0	0.59	8.5
Na %	1.38	5.7	1.50	14.	0.83	9.8	0.95	11.	1.21	1.5
Nd	13.6	7.6	9.02	12.	19.3	7.1	13.3	7.3	7.17	16.
Ni	140.	25.	64.7	54.	383.	23.	200.	24.	68.5	53.
Rb	40.5	4.9	36.4	7.0	27.9	11.	44.3	16.	26.2	12.
Sb	0.45	19.	0.30	16.	0.46	25.	0.48	11.	0.42	7.3
Sc	17.1	9.5	32.8	2.9	35.0	4.0	14.2	1.4	31.4	1.2
Sm	3.03	14.	2.20	16.	4.20	2.0	2.53	0.5	2.01	7.7
Ta	0.43	9.2	0.14	52.	0.58	9.2	0.52	8.0	0.19	25.
Tb	0.57	9.5	0.49	14.	0.75	20.	0.37	14.	0.49	41.
Th	4.37	1.3	1.55	11.	5.30	8.3	5.21	1.1	1.67	4.2
U	2.10	21.	0.73	30.	0.70	33.	1.28	19.	0.49	64.
W	1.11	42.	2.51	20.	1.10	19.	1.45	9.8	2.64	27.
Yb	1.99	3.0	2.35	7.8	2.81	5.1	1.57	3.5	2.90	11.
Zn	78.4	16.	139.	12.	399.	7.1	105.	7.4	246.	2.1
Zr	104.	21.	79.7	35.	122.	25.	102.	22.	43.4	64.

Table 2-6: NAA concentration data C in µg/g (ppm), if not indicated otherwise, of samples that are not grouped (chemical singles). Average measurement uncertainties (errors) are given below, also in % of C.

Sample	As	Ba	Ca %	Ce	Co	Cr	Cs	Eu	Fe %	Ga
Alas 3	2.56	489.	8.85	48.6	27.2	149.	2.93	0.97	5.58	16.0
Alas 22	5.34	746.	5.37	61.1	27.8	106.	2.03	1.07	5.61	13.8
Alas 28	5.69	944.	15.8	42.1	34.4	639.	1.02	1.05	6.02	18.6
Alas 29	5.35	1132.	5.15	62.4	23.8	119.	1.65	1.15	4.98	12.0
Apli 1	5.67	272.	9.69	77.1	25.7	217.	6.46	1.41	4.82	19.3
Apli 6	4.62	176.	5.64	45.6	18.7	58.7	2.14	0.82	3.48	17.2
Apli 7	8.98	130.	6.36	18.0	43.2	73.2	1.47	0.94	6.44	21.1
Apli 15	13.7	110.	2.40	7.45	20.2	68.9	0.20	0.55	8.53	11.4
Apli 16	35.4	267.	2.64	36.5	26.6	336.	2.77	1.13	7.58	16.9
Apli 17	22.5	189.	4.60	36.2	23.8	332.	1.17	1.05	6.80	18.5
Apli 18	17.9	240.	4.61	39.7	26.0	306.	4.69	1.19	6.56	33.9
Apli 19	10.4	282.	9.85	44.9	28.1	352.	5.27	1.04	4.08	10.4
Apli 20	12.4	280.	8.01	41.3	42.6	326.	4.51	1.12	6.72	21.2
Apli 21	21.8	192.	8.49	40.0	32.7	281.	4.85	0.94	7.38	20.0
Athi 2	8.02	233.	6.17	38.8	34.3	346.	2.21	0.88	5.94	13.3
HSTp 1	17.3	510.	8.60	28.3	25.5	765.	2.04	0.96	5.63	10.7
HSTp 4	10.9	210.	8.30	29.0	19.0	230.	2.33	0.82	4.71	9.51
HSTp 8	12.7	202.	7.77	23.3	22.0	447.	1.39	0.73	4.67	7.59
HSTp 16	8.78	653.	10.2	35.9	34.4	345.	2.07	1.05	5.53	16.2
HSTp 33	12.8	301.	10.5	48.1	15.8	107.	1.21	1.04	4.55	12.6
Kalv 3	15.2	1143.	18.5	21.9	18.8	234.	0.87	0.62	3.78	12.2
Kalv 6	4.57	416.	9.22	49.1	23.4	168.	5.90	0.95	4.37	18.8
Kalv 14	21.6	504.	7.35	54.4	16.4	66.8	2.17	1.10	3.10	13.5
Kalv 21	3.49	1215.	10.8	54.6	19.2	118.	4.43	1.03	3.78	15.0
Kalv 28	2.40	2336.	7.54	52.8	27.1	117.	3.52	0.94	4.14	16.5
Kiti 2	8.46	295.	9.49	34.1	18.3	296.	3.05	0.78	3.82	12.9
Kiti 3	7.49	253.	13.2	59.8	24.0	233.	5.05	1.09	4.39	12.2
Kiti 14	45.3	304.	14.0	43.7	22.9	291.	2.47	1.16	5.40	9.42
Kiti 17	9.87	319.	11.3	43.5	21.7	651.	1.11	1.19	5.29	12.9
Kiti 29	9.56	251.	3.86	48.9	21.8	248.	5.01	0.98	4.40	16.9
Kouk 20	11.9	220.	6.83	83.2	16.2	75.7	6.94	1.33	3.96	22.4
Kour 4	7.19	478.	18.6	43.7	19.3	77.2	2.53	0.96	2.98	7.36
Kour 5	2.82	1017.	12.3	46.2	27.8	197.	2.93	1.04	4.55	15.2
Kour 7	7.36	348.	8.26	20.2	43.3	399.	1.13	0.80	7.18	11.5
ave. error	0.15	36.	0.26	0.40	0.13	1.1	0.10	0.021	0.016	2.6
in %	1.2	7.4	3.0	0.9	0.5	0.4	3.5	2.1	0.3	18.

Sample	Hf	K %	La	Lu	Na %	Nd	Ni	Rb	Sb	Sc
Alas 3	3.55	1.21	22.2	0.37	0.65	19.2	172.	56.1	0.35	21.5
Alas 22	4.09	0.96	28.3	0.44	0.54	23.9	233.	41.6	0.38	21.5
Alas 28	3.75	0.52	19.3	0.46	0.43	17.6	338.	21.3	0.60	25.5
Alas 29	3.87	0.86	28.1	0.39	0.26	19.3	194.	35.0	0.44	14.5
Apli 1	4.72	1.95	38.8	0.47	0.62	28.0	201.	118.	0.62	17.9
Apli 6	2.96	0.97	17.3	0.28	0.21	12.4	56.2	46.8	0.45	11.4
Apli 7	2.16	1.14	8.86	0.56	0.98	11.2	140.	28.9	0.53	28.0
Apli 15	2.53	0.82	4.10	0.40	1.13	3.27	50.0	13.4	0.49	27.6
Apli 16	4.53	2.29	17.0	0.64	0.79	17.2	269.	70.6	1.20	29.4
Apli 17	4.16	1.39	16.0	0.54	0.51	14.7	322.	36.3	1.21	26.0
Apli 18	3.66	1.91	18.9	0.62	0.97	19.2	188.	81.8	0.88	27.2
Apli 19	3.35	2.43	20.8	0.36	1.15	19.9	155.	84.6	1.09	20.5
Apli 20	3.61	2.04	19.1	0.51	0.94	19.7	384.	80.6	1.49	26.8
Apli 21	3.51	1.88	17.2	0.38	1.05	17.7	241.	80.1	1.12	26.6
Athi 2	3.26	2.00	17.7	0.33	1.14	16.2	362.	45.3	1.18	22.4
HSTp 1	2.54	1.22	14.3	0.39	1.53	14.0	221.	41.5	0.62	33.6
HSTp 4	2.75	1.74	13.7	0.33	1.45	15.8	149.	47.1	0.47	20.1
HSTp 8	2.20	1.27	10.8	0.28	1.46	14.0	110.	30.4	0.44	22.5
HSTp 16	2.84	1.33	17.6	0.42	1.53	16.2	210.	42.1	0.72	25.9

Sample	Hf	K %	La	Lu	Na %	Nd	Ni	Rb	Sb	Sc
HSTp 33	7.20	0.83	22.4	0.33	0.47	19.3	94.3	24.9	0.95	12.3
Kalv 3	1.38	0.95	11.6	0.25	0.48	8.21	93.6	26.1	0.36	14.1
Kalv 6	3.59	2.06	20.5	0.41	0.71	17.6	153.	110.	0.38	16.8
Kalv 14	3.08	1.18	21.9	0.31	0.38	18.5	86.8	44.0	0.54	12.1
Kalv 21	3.46	1.76	26.7	0.35	0.72	22.9	99.9	80.3	0.45	14.6
Kalv 28	3.60	1.35	25.6	0.32	0.31	20.3	176.	63.7	0.42	14.4
Kiti 2	3.31	2.37	16.1	0.31	1.21	11.9	115.	63.1	0.53	16.8
Kiti 3	3.89	1.96	29.3	0.36	0.58	23.7	202.	88.8	0.54	15.9
Kiti 14	3.42	1.19	21.7	0.40	1.81	24.8	163.	24.7	1.20	22.1
Kiti 17	3.68	1.64	21.1	0.43	1.70	21.8	142.	32.1	0.68	26.0
Kiti 29	3.71	2.65	21.8	0.35	1.45	20.4	135.	86.9	0.69	18.4
Kouk 20	5.47	2.75	40.6	0.48	0.47	29.0	61.6	141.	0.51	15.1
Kour 4	2.61	1.24	22.1	0.34	0.44	16.9	146.	48.8	0.56	11.9
Kour 5	3.14	1.17	23.5	0.34	0.51	18.0	368.	46.2	0.54	17.7
Kour 7	2.26	0.86	9.87	0.51	1.27	13.5	188.	26.2	0.40	36.3
ave. error	0.059	0.028	0.072	0.015	0.005	1.2	32.	2.3	0.032	0.023
in %	1.7	1.8	0.4	3.8	0.5	6.6	18.	4.2	4.7	0.1

Sample	Sm	Ta	Tb	Th	U	W	Yb	Zn	Zr
Alas 3	3.57	0.93	0.55	7.41	0.98	1.08	2.09	114.	114.
Alas 22	4.27	1.06	0.83	8.99	1.24	1.85	2.73	84.7	176.
Alas 28	3.72	0.73	0.73	6.33	1.19	2.04	2.68	69.4	191.
Alas 29	3.80	1.12	0.64	8.76	1.33	2.41	2.48	94.7	171.
Apli 1	5.49	1.25	0.82	11.9	2.13	2.31	3.17	89.8	185.
Apli 6	2.45	0.90	0.57	6.37	1.06	1.59	1.88	79.5	130.
Apli 7	2.69	0.22	0.60	2.84	1.24	2.22	2.86	130.	155.
Apli 15	1.22	0.43	0.29	1.94	0.88	3.74	1.71	243.	36.0
Apli 16	3.78	0.82	0.87	8.91	2.20	3.38	4.04	123.	163.
Apli 17	3.86	0.91	0.67	8.64	2.01	2.62	3.28	94.6	150.
Apli 18	4.17	0.68	0.80	8.28	2.00	5.12	3.67	146.	110.
Apli 19	3.77	0.66	0.68	7.28	2.17	1.40	2.37	139.	128.
Apli 20	4.07	0.76	0.65	7.47	1.99	1.85	3.01	86.8	162.
Apli 21	3.22	0.55	0.55	6.97	1.61	2.38	2.39	114.	108.
Athi 2	3.61	0.64	0.43	6.42	1.44	1.58	2.13	107.	118.
HSTp 1	3.59	0.41	0.69	3.76	0.61	1.43	2.24	95.1	65.2
HSTp 4	3.00	0.45	0.51	4.65	0.96	1.07	2.05	126.	142.
HSTp 8	2.48	0.36	0.44	3.28	0.88	0.89	1.56	102.	140.
HSTp 16	3.69	0.51	0.64	4.78	1.28	1.15	2.36	92.1	121.
HSTp 33	3.58	0.99	0.72	5.92	3.24	1.00	2.13	63.8	291.
Kalv 3	1.92	0.29	0.36	2.75	1.21	1.21	1.43	129.	37.4
Kalv 6	3.54	0.72	0.62	9.26	1.96	2.26	2.32	150.	155.
Kalv 14	4.02	0.82	0.61	7.53	1.33	1.24	2.06	84.0	152.
Kalv 21	4.15	0.88	0.64	8.35	2.05	1.69	2.36	79.8	174.
Kalv 28	3.43	1.26	0.56	6.85	0.96	1.53	1.99	113.	133.
Kiti 2	2.40	0.64	0.51	5.54	2.35	2.00	1.80	73.6	149.
Kiti 3	3.97	0.96	0.68	9.41	2.05	2.26	2.46	68.2	129.
Kiti 14	4.87	0.60	0.64	5.98	4.71	1.35	2.34	113.	139.
Kiti 17	4.63	0.70	0.61	6.29	1.96	0.96	2.67	92.4	144.
Kiti 29	3.84	0.86	0.62	8.49	2.03	1.98	2.13	103.	182.
Kouk 20	5.79	1.54	0.91	13.4	2.62	2.31	3.12	109.	208.
Kour 4	3.04	0.63	0.64	5.16	2.19	1.30	2.24	67.3	132.
Kour 5	3.35	1.05	0.68	5.71	1.24	1.59	2.17	73.7	130.
Kour 7	2.45	0.29	0.57	2.44	1.04	1.92	2.38	79.6	54.8
ave. error	0.019	0.046	0.062	0.066	0.21	0.21	0.059	2.1	24.
in %	0.5	6.1	9.9	1.0	12.	11.	2.4	2.0	17.

Table 3: List of group members and associated members [indicated by -] of the formed NAA groups. The best relative fit factors of the individual samples with respect to the group values are given in ( ). Sample labels point to finding/excavation sites: Alas = Alassa, Apli = Apliki, Athi =Athienou, Enkp = Enkomi, HSTp = Hala Sultan Tekke, Idal = Idalion, Kalv = Kalavasos, Kiti = Kition, Kouk = Kouklia/Palaepaphos, Kour = Kourion, and to the Non-Cypriot sites: Aful = Afula, Ashk = Ashkelon, Doth = Tell Dothan, Megi = Megiddo. The best relative fit factors are calculated with respect to the average group values of the total groups in the data bank.

1. Group **CypI** of 37 + 4 associated Cypriot and 1 Non-Cypriot samples:
Apli 10 (0.98), Athi 10 (1.00), Enkp 2 (0.92), 3 (0.98), 4 (0.92), 6 (0.85), 7 (0.86), 11 (1.11), 12- (1.09), 13 (0.94), 18 (0.92), 19 (0.94), 20 (0.85), 21 (0.86), 22 (1.03), 23- (1.13), 26 (0.98), 28 (0.98), 29 (0.94), 32 (1.09), 32re (1.13), 33- (0.95), 35 (1.00), HSTp 9 (1.17), 28 (0.93), 30 (0.93), Idal 1 (1.13), 4 (0.95), 5 (0.98), 6 (1.00), 7 (0.95), 8 (1.05), 9 (1.01), Kalv 26 (1.22), 30 (0.87), Kiti 4 (1.08), 6- (1.14) 8 (0.96), 12 (0.85), 18 (0.96), 31 (0.90), 36 (0.94), Ashk 7 (0.88)

2. Group **CypJ** of 35 + 4 associated Cypriot and 5 Non-Cypriot samples:
Apli 5 (0.71), Athi 6- (1.03), 9 (0.92), Enkp 14 (0.86), 25 (1.00), 34 (0.96), HSTp 3 (1.09), 6 (1.07), 7 (1.09), 13 (1.11), 17 (0.88), 18 (0.91), 19 (0.89), 27 (1.17), Kalv 9 (0.99), 11 (1.13), 13 (1.21), 15 (0.99), 16 (1.33), 23 (0.93), 24 (0.95), 25 (1.09), 27 (0.98), Kiti 1 (0.98), 10- (0.96) 11 (0.81), 15 (0.82), 20 (0.90), 24 (0.89), 25 (0.98), 26 (0.99), 27- (0.81) 28 (1.16), 30 (1.18), 32 (1.10), 33 (0.97), 34 (0.87), 37- (0.83) 38 (0.79), Aful 1 (1.07), Doth 1 (0.84), 2 (0.91), 3 (0.90), Megi 3 (1.06)

3. Group **CypT** of 11 and 2 already published (HST 7a,b)* Cypriot samples:
Athi 1 (0.96), Enkp 16 (0.95), HSTp 12 (1.02), 14 (1.07), 20 (1.08), 25 (1.00), 26 (1.31), 29 (1.01), Idal 15 (0.93), 16 (0.91), Kouk 19 (1.13), HST 7a (0.91), 7b (0.91)

4. Group **CypH** of 8 samples:
Athi 4 (0.99), Enkp 9 (0.95), 15 (1.07), 17 (0.98), 24 (0.91), 31 (0.85), HSTp 32 (1.03), Kiti 23 (0.97)

5. Group **CypF** of 19 + 1 associated samples:
Alas 2 (1.01), 4 (0.82), 5 (0.94), 7 (0.90), 9 (1.10), 9a (1.09), 12 (0.95), 13 (1.22), 15 (1.05), 16 (0.88), 17 (0.88), 20 (0.99), 21 (1.01), 23 (1.04), 24 (1.17), 25 (0.82), 27 (1.28), 30 (0.94), Idal 2 (0.95), Kouk 27- (0.97), Kour 8 (1.02)
(breakdown of joint group CypF into subgroups: a) Alas 5, 9, 9a, 12, 25, 27; b) Alas 4, 7, 23, Kour 8; c) Alas 15, 20, 21; d) Alas 16, 17; e) Alas 2, 13, 24, 30, Idal 2, Kouk 27 -)

6. Group **CypN** of 8 samples:
Kour 1 (0.93), 2 (0.96), 3 (1.02), 6 (0.88), 9 (1.02), 10 (1.04), 11 (1.06), 12 (1.05)

7. Group **CypG** of 24 + 1 associated Cypriot samples:
Alas 11 (0.97), 19 (0.93), 26 (0.93), Apli 2 (1.10), 8 (1.11), 9 (1.02), Enkp 36 (0.97), HSTp 21 (1.03), Kalv 18- (0.98), 20 (1.16), Kiti 5 (1.14), Kouk 1 (1.00), 2 (0.92), 3 (0.93), 5 (0.90), 6 (0.95), 7 (0.94), 8 (0.89), 9 (0.93), 11 (0.94), 12 (1.01), 23 (1.05), 24 (1.02), 25 (1.03), 26 (1.07)

8. Group **CypS** of 18 Cypriot and 1 Non-Cypriot samples:
Apli 3 (1.16), Enkp 10 (0.91), HSTp 2 (1.08), 15 (1.10), 23 (1.01), Kalv 10 (0.87), 12 (1.10), 22 (1.01), 29 (0.96), Kouk 10 (0.92), 13 (1.04), 14 (0.96), 15 (1.09), 17 (0.99), 18 (1.01), 22 (1.00), 28 (0.90), 29 (1.13), Ashk 8 (1.10)

9. Group **X075** of 4 samples:
Alas 6 (1.07), 8 (1.00), 14 (0.95), 18 (0.97)

10. Group **X076** of 6 samples:
Enkp 1 (1.02), 5 (0.96), 8 (0.99), 27 (1.01), 30 (0.92), HSTp 24 (1.09)

11. Group **X077** of 4 samples:
Idal 3 (0.99), 10 (0.99), 13 (0.98), 14 (0.95)

12. Group **X078** of 3 samples:
Athi 3 (1.09), 5 (1.04), Idal 11 (0.94)

13. Group **X079** of 2 samples: Kiti 13 (1.01), 21 (0.94)

14. Group **X080** of 2 samples: Kouk 4 (0.96), 30 (1.06)

1. Pair = 91: Kalv 4 (0.95), 17 (1.08)
2. Pair =120: HSTp 5 (0.94), 31 (1.06)
3. Pair =151: Apli 13 (1.00), 14 (1.00)
4. Pair =189: Alas 1 (1.02), 10 (0.98)
5. Pair =195: HSTp 10 (0.99), 11 (1.01)
6. Pair =200: Apli 11 (0.98), 12 (1.02)

* Mommsen et al. 2003

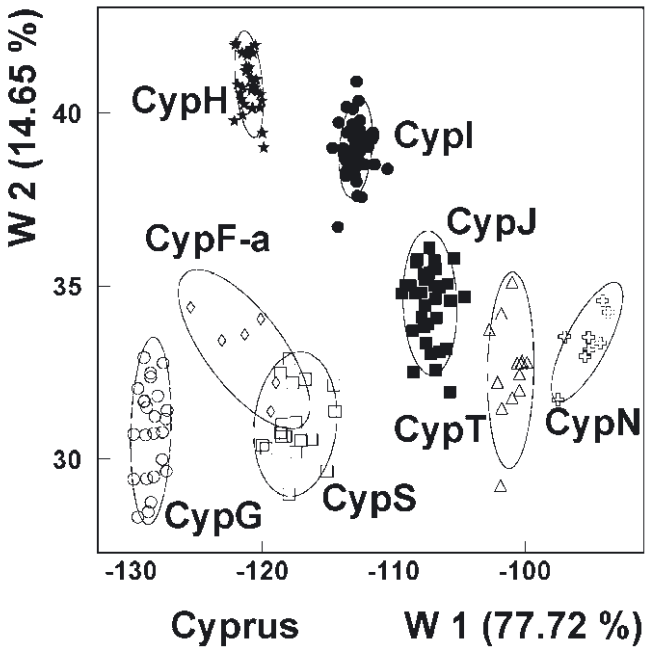

Fig.2 Result of a discriminant analysis of 162 samples, corrected for dilution, assuming a distribution into the 8 pottery clusters assigned to Cypriot workshops. Plotted are the discriminant functions W1 and W2, which cover 77.7% and 14.7% of the between-group variance. The ellipses drawn are the 2 sigma boundaries of the groups. The different groups are well separated. Overlapping groups are resolved in different projections.

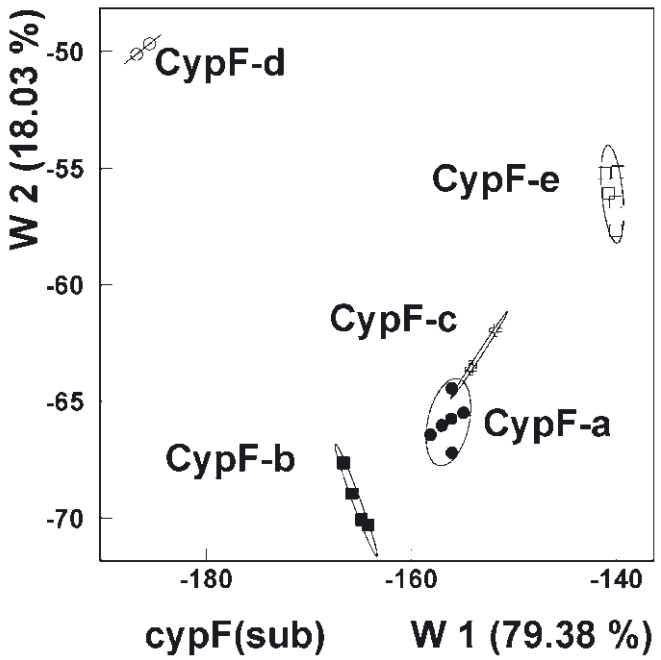

Fig.3 Result of a discriminant analysis of 19 samples, corrected for dilution, assuming the 5 pottery clusters assigned to the subgroups of Alassa. Plotted are the discriminant functions W1 and W2, which cover 79.4% and 18.0% of the between-group variance. The ellipses drawn are the 2 sigma boundaries of the groups. The different groups are well separated.

but not the fine decorated pottery. This would account for our lack of a local profile. For Idalion we also got no local profile, partly because sampling was limited and partly because the pieces available for sampling are late LCIIC not LCIIIA. In spite of a large number of samples, we obtained no local profile for Kalavasos. Alassa is CypF with exports to nearby Kourion and Kouklia, but also to Idalion. For Kourion we only had 12 pieces available for sampling, but 8 of them came out as CypN; stylistically they are all the slightly idiosyncratic local group, so we felt justified in assigning them as a Kourion group; the other Kourion samples comprise three Singles and an export from Alassa.

The Pottery

A number of pottery types included in the analysis may be unfamiliar to the reader; for discussion of these types, that is the Levanto-Helladic shapes, the Simple Style, the Rude/Pastoral Style, the Bowl Types 1–14, the Near Eastern Group and Proto-White Painted (PWP) pottery, see Part II below. The pottery catalogue, Part III, can be found in the last part of the article; it is organised by site.

Enkomi (Figs. 4–7)

The local chemical profile for Enkomi is CypI. Samples from Enkomi itself (Figs. 4–5) include a Levanto-Helladic piriform jar S35[46] with scale pattern, a favoured motif on this shape. S29 is a rare surviving example of a collar-necked jar with belly decoration. The carinated krater S32 is of interest for its rosette motif; a trace of double stems rising towards the left from the belly band suggest the rosettes are the centres of stemmed spirals running left; there is a good parallel on a krater from Bademgediği Tepe,[47] which NAA has assigned as local to that site.[48] S11,28 are examples of deep bowls with joining semi-circles pendent from the rim band, the most popular deep bowl motif at Enkomi; the deep bowl S33 depicts running spirals with long curving links typical of Cypriot

[46] S = sample number.

[47] Mountjoy 2009a, 68 fig. 4.1.

[48] Publication pending.

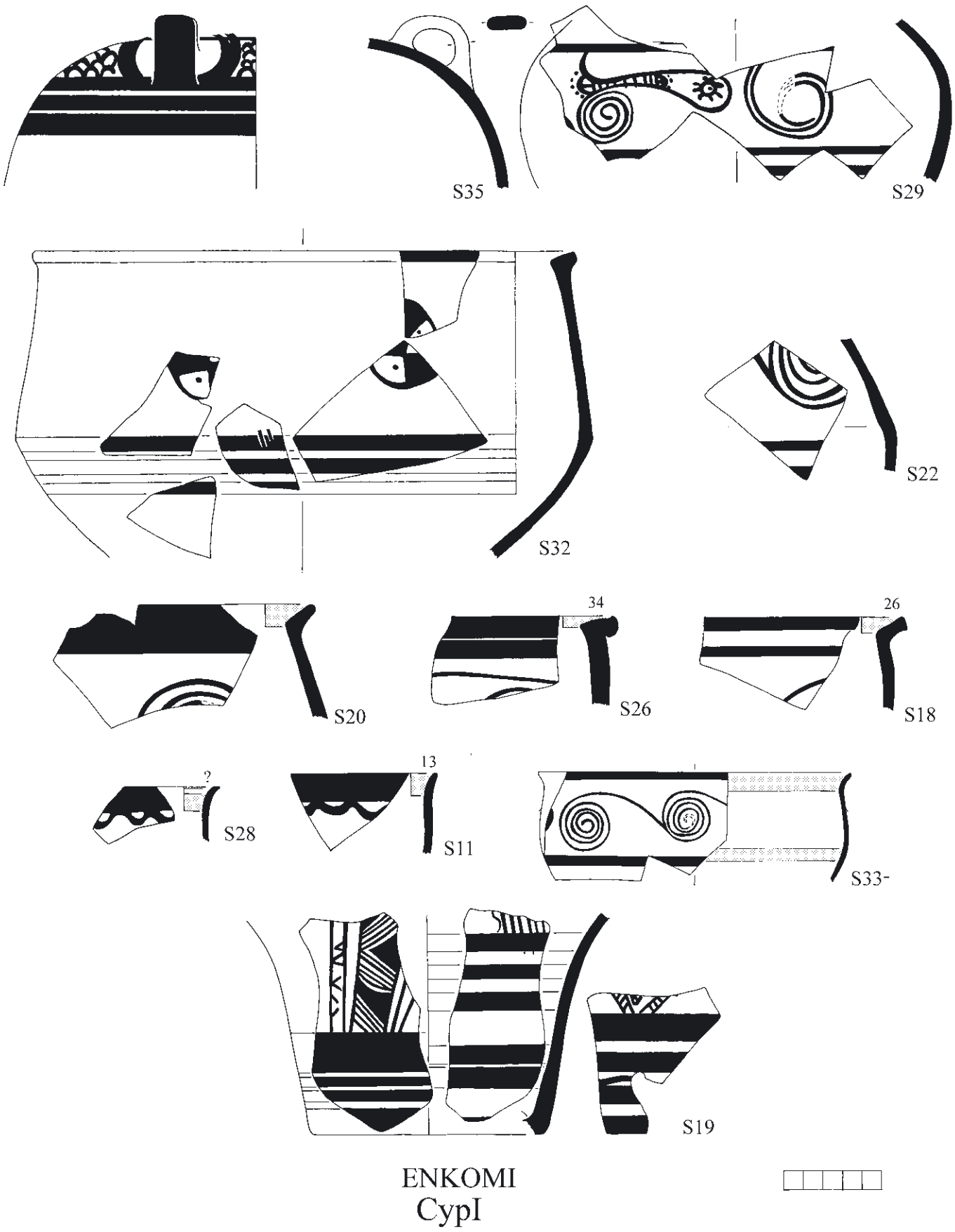

Fig.4 The CypI chemical profile. Scale 1:3.

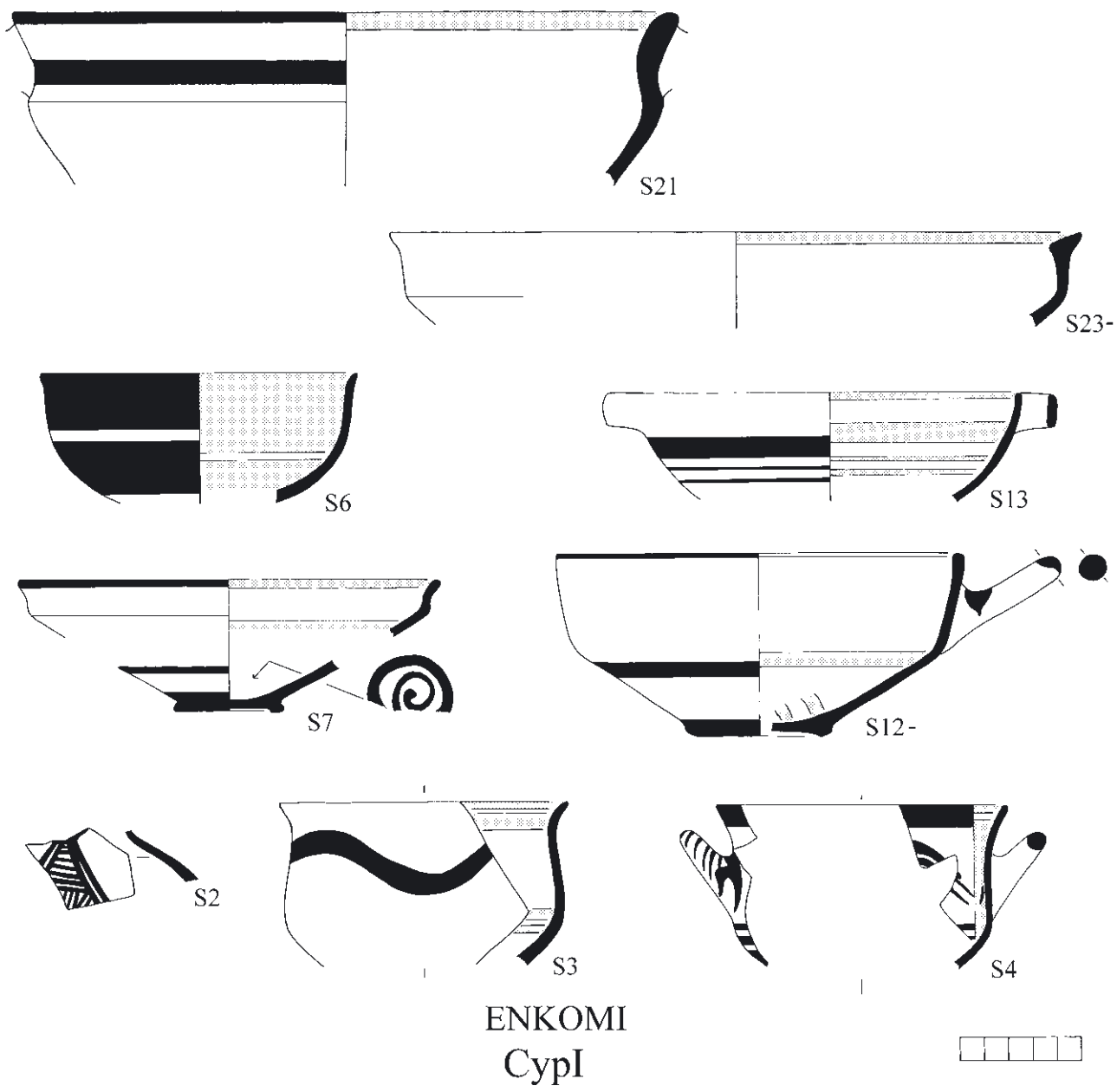

Fig.5 The CypI chemical profile. Scale 1:3.

IIIC pottery. S19 is a rare example of a late kalathos; it is from Enkomi Area I Floor II, which dates to Level IIIB Late; there is a parallel from the Sanctuary of the Ingot God Sol III.[49] S21 belongs to a large carinated basin. S6, S13, S7 and S12 are Bowl Types 5, 6, 8 and 13 respectively. PWP is represented by an amphoriskos sherd S2, and a deep bowl S4.

The exports from Enkomi to other island sites (Figs. 6–7) include a number of Bowl Types: Types 2, 5, 6 , 8, 13 and 13 Variant are all present at different sites, such as Kition, Kalavasos, Idalion Kafkallia and Apliki. Levanto-Helladic types are also present: **Idalion: Kafkallia S4**, a carinated version of the one-handled bowl FS 244, and **Kalavasos S30** and **Kition S8,S12**, the linear bowl FS 296. There is also a Simple Style stirrup jar **Kition S31** and a Rude/Pastoral Style krater **Idalion: Kafkallia S1** with running spiral. Other pieces include a pictorial krater **Kition S36** depicting birds above palm trees growing up from the bellybands. Similar palm leaves with dot fill are depicted on the deep bowl **Hala Sultan Tekke S30** (Fig. 6). This motif comes from Crete.[50] The

[49] Courtois 1971, fig. 99F 1220; see also Mountjoy, in press a.

[50] See Hallager and Hallager 2000, 77-P0147.

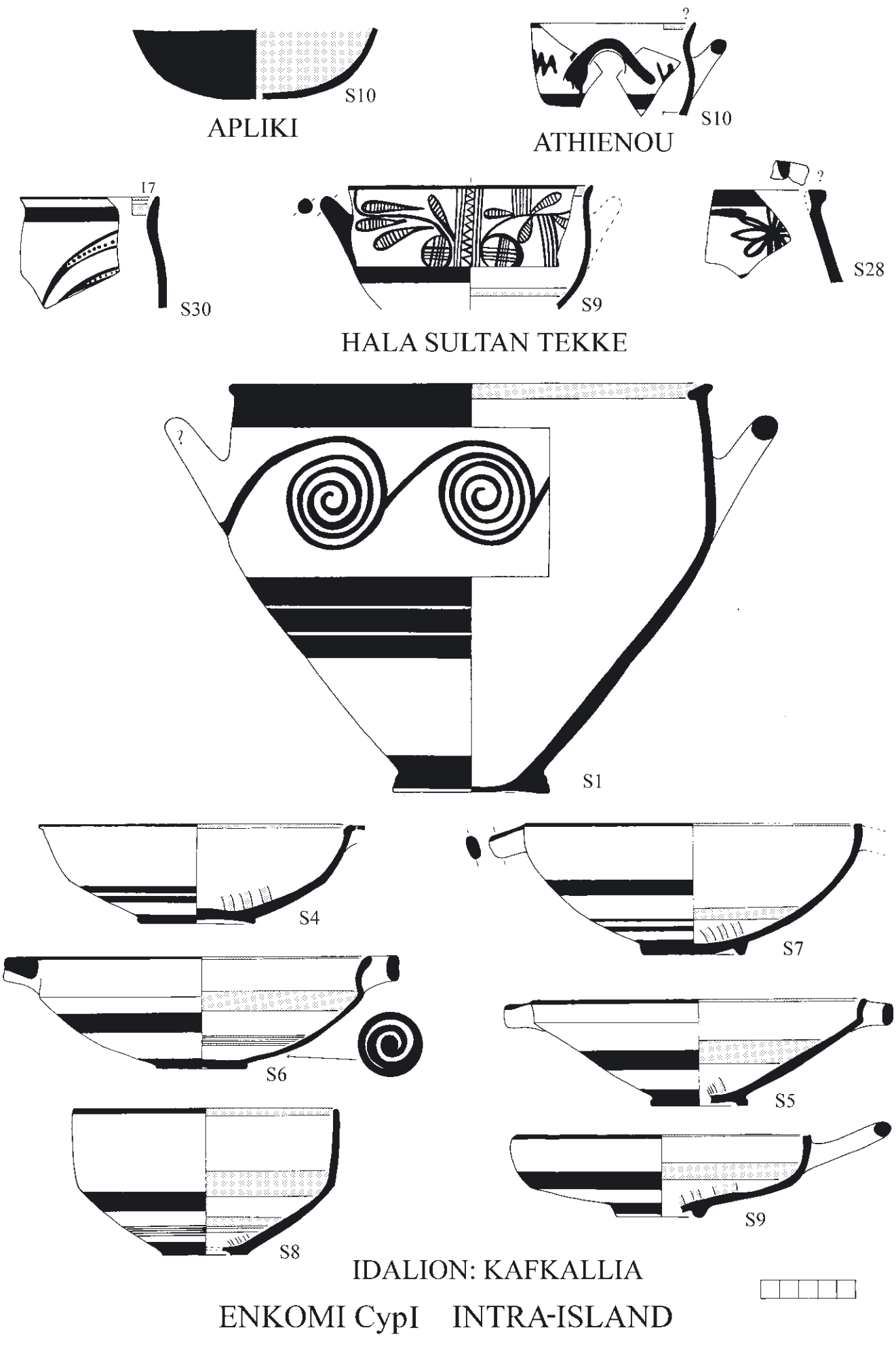

Fig.6 The CypI chemical profile. Exports from Enkomi. Scale 1:3.

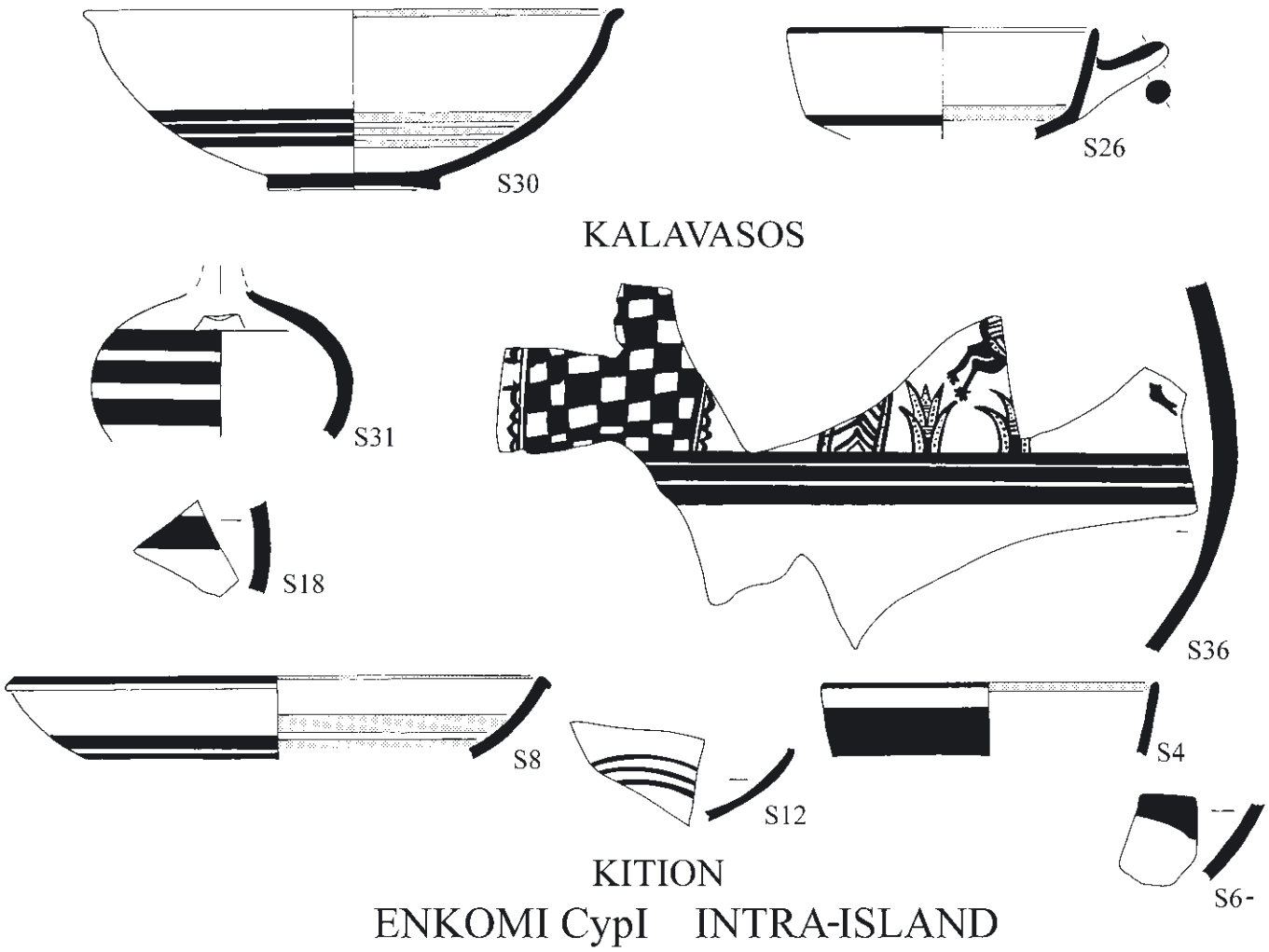

Fig.7 The CypI chemical profile. Exports from Enkomi. Tarsus, Mountjoy 2005b, 95 fig. 4.56, Tell Kazel, after Jung 2006, 188 fig. 13.52, Yoqneam, Zuckerman *et al*. in prep., Ashkelon, Master *et al*. 2015, 238 fig. 2.S7, Qantir, Mountjoy and Mommsen 2001, 140 fig. 1.5 S32. Scale 1:3.

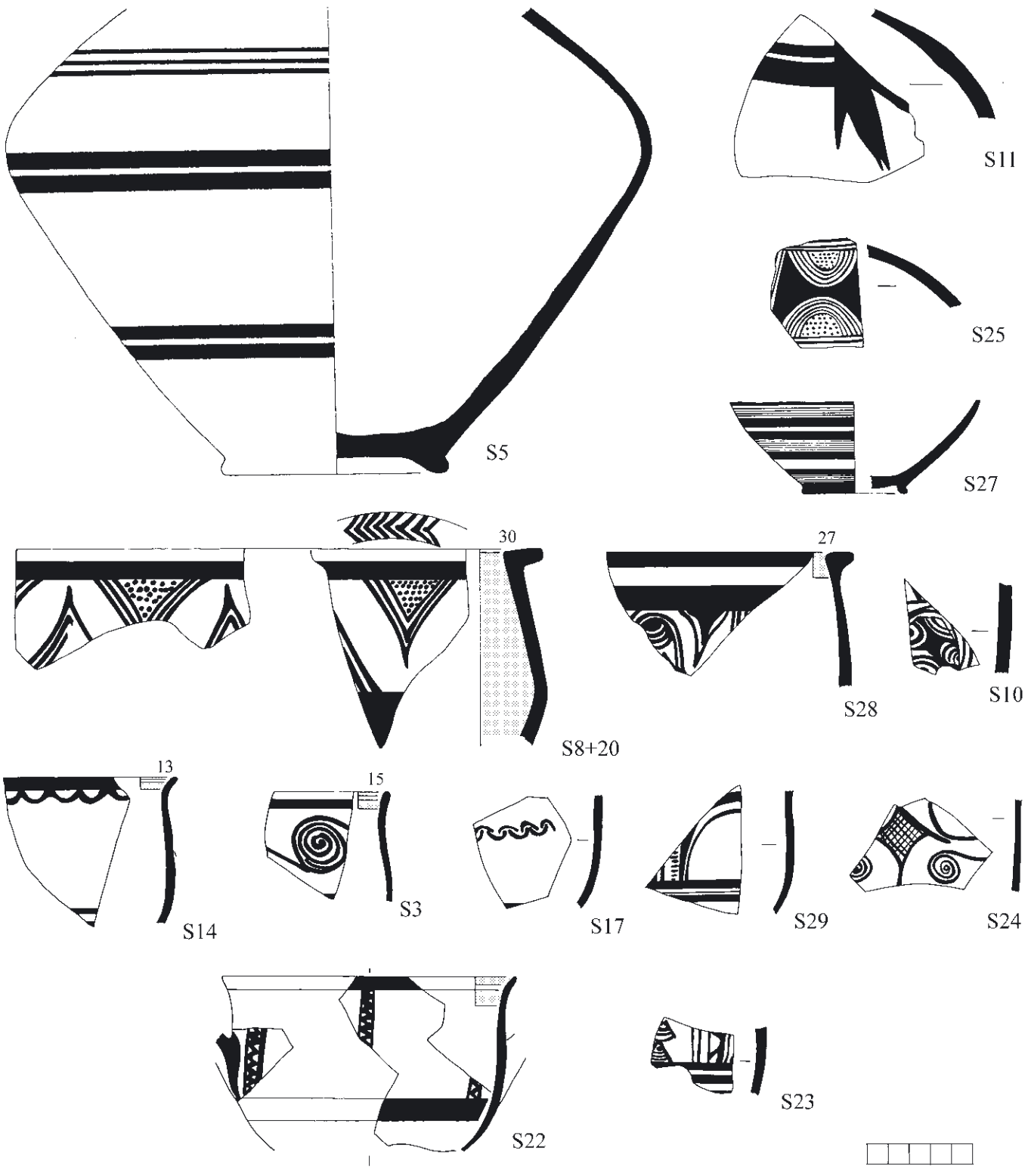

Fig.8 The CypH chemical profile. Scale 1:3.

deep bowl **Hala Sultan Tekke S9** also has Minoan filling motifs of barred almonds[51] set amid antithetic spirals, which have the centres filled with two groups of crossing lines. **Hala Sultan Tekke S28** has a Minoan petaloid flower;[52] **Athienou S10** comprises a small deep bowl with zigzag. Further

[51] See Andreadaki-Vlazaki and Papadopoulou 2005, 383 fig. 47 top right.

[52] See Andreadaki-Vlazaki and Papadopoulou 2005, 367 fig. 21 top right.

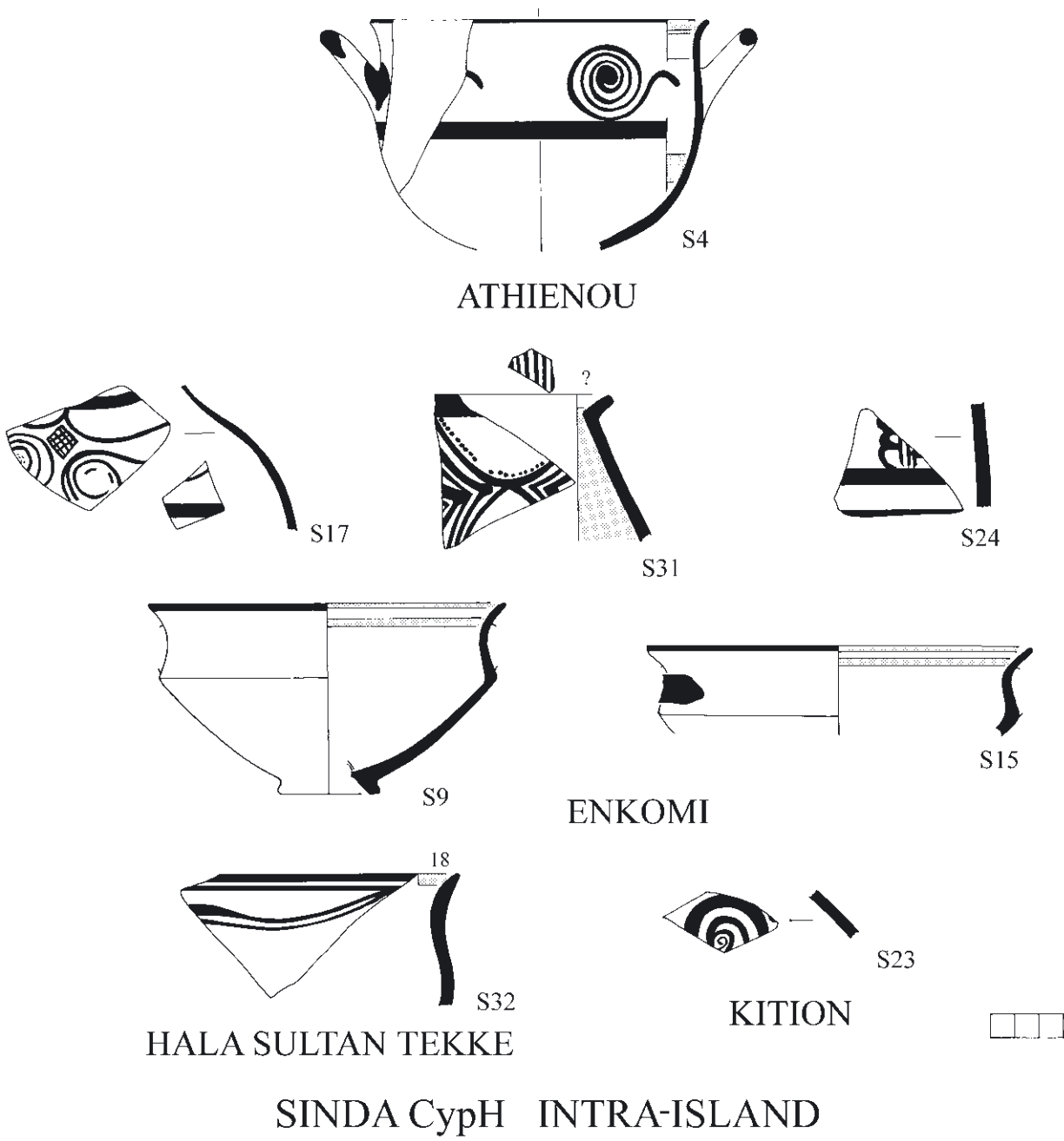

Fig.9 The CypH chemical profile. Exports from Sinda. Scale 1:3.

afield CypI pottery is found at a range of sites with single examples at Tarsus, Tell Kazel, Yoqneam, Ashkelon and Qantir (Fig. 7). A PWP stirrup jar was exported to Tarsus, **Tarsus S14**, and a closed shape, possibly a piriform jar FS 36, to Qantir in the Nile delta, **Qantir S32**. In the Levant a krater reached Ashkelon, **Ashkelon S7**,[53] a large deep bowl was exported to Tell Kazel (S15) and a closed vessel to Yoqneam (S1).

Sinda (Figs. 8–10)

The Sinda CypH chemical profile isolated by Mommsen and Sjöberg[54] has changed. The large number of analyses carried out by our sampling programme has allowed pieces designated as ChKR and CyHH to be amalgamated with CypH and has also moved a large number of CypH pieces from Sinda to the newly isolated CypJ profile of

[53] Master *et al*. 2015.

[54] Mommsen and Sjöberg 2007, 88.

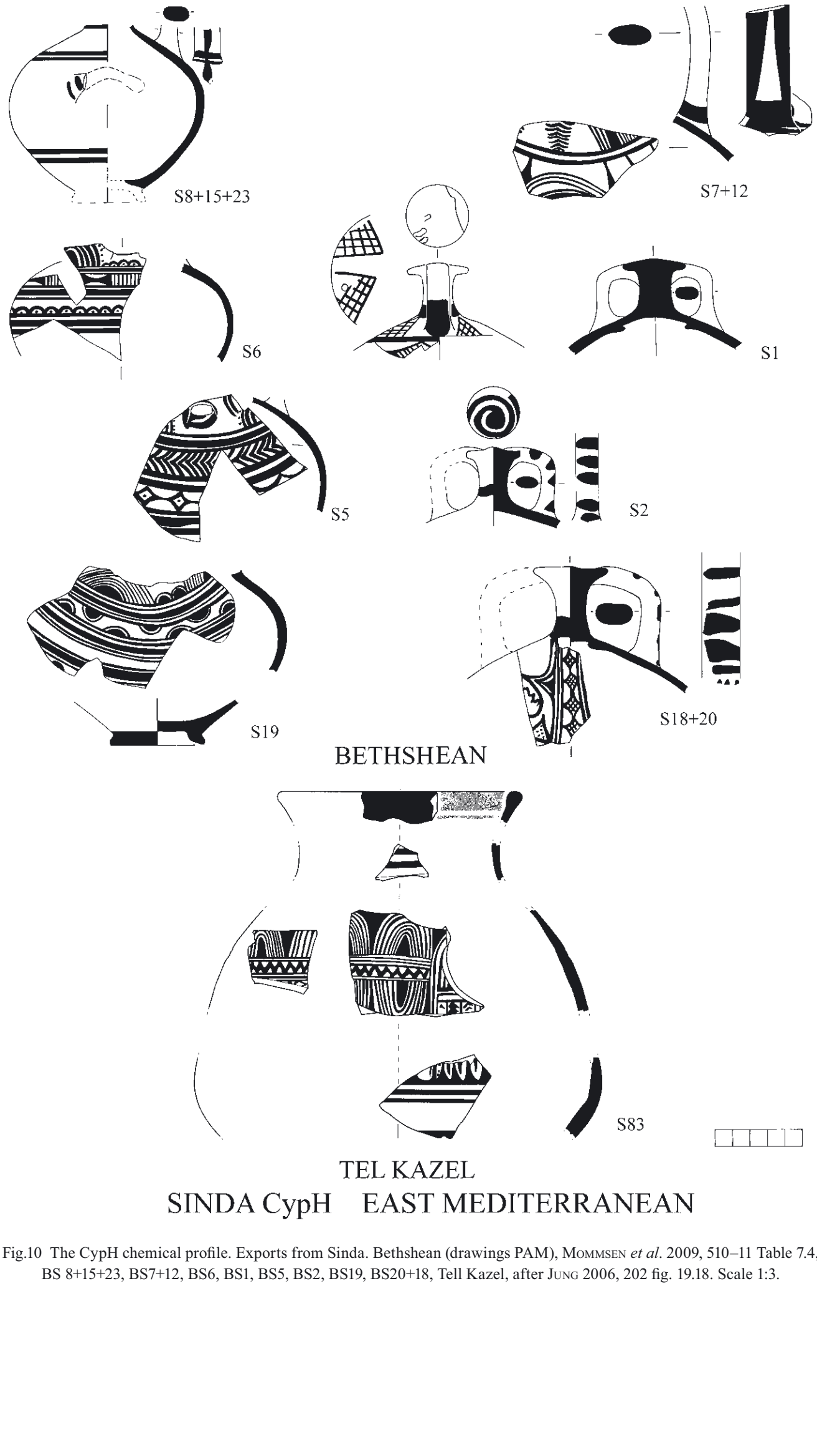

Fig.10 The CypH chemical profile. Exports from Sinda. Bethshean (drawings PAM), Mommsen *et al*. 2009, 510–11 Table 7.4, BS 8+15+23, BS7+12, BS6, BS1, BS5, BS2, BS19, BS20+18, Tell Kazel, after Jung 2006, 202 fig. 19.18. Scale 1:3.

Kition/Hala Sultan Tekke. The sherds (Fig. 8) are some of those analysed by Mommsen and Sjöberg. They include S14, a deep bowl with the popular Enkomi motif of joining semi-circles attached to the rim band. The motif was much less popular at Sinda, but NAA demonstrates that this type was produced at Sinda and not necessarily imported from Enkomi. The deep bowl S29 is an example of the streamer motif, which is as characetristic of deep bowls at Sinda as joining semi-circles are on deep bowls at Enkomi. The pleonastic style was especially used on kraters at Sinda, S10, S25, S28. The carinated krater S8+S20 has an uncommon motif of dot-filled triple-outlined triangles. It may have come from Crete, where it appears at Karphi, particularly on mugs,[55] but there are also instances in the Levant, such as at Megiddo and Tell Kazel.[56]

CypH vessels seem not to have moved much around the island (Fig. 9). They appear at nearby Enkomi, at Athienou on the way to the south coast and at the south coastal port of Kition/Hala Sultan Tekke. The deep bowl with button-hook spiral, **Athienou S4**, is a local version of a Minoan motif otherwise produced at Hala Sultan Tekke (see below), where there is much Minoan influence on the decoration of the pottery. The strainer jug **Enkomi S17** has antithetic spiral flanking a lozenge, a popular motif on deep bowls at Sinda. **Enkomi S31** is a pleonastic carinated krater with a chain of stacked lozenges. **Enkomi S9,15** are the Bowl Type 10, a popular type at Sinda. **Hala Sultan Tekke S32** is an example of the characteristic Sinda streamers. **Kition S23** with spiral belongs to a closed shape. CypH has been isolated so far at only two places outside Cyprus (Fig. 10). A number of small elaborately decorated stirrup jars was exported to Bethshean together with a small hydria **Bethshean S8+15+23**[57] and a strainer jug **Bethshean S7+12**. These vessels are published as ChKR or CyHH,[58] but are now all CypH. The pleonastic **Tell Kazel S83** is published as CypH assoc.[59] and as PWP.[60] However, Sinda was abandoned before PWP appeared. Also, the decorative syntax with zones of zigzags dividing the metopes is a feature of pleonastic decoration not of PWP; there are parallels from Enkomi, such as an alabastron FS 99,[61] Sinda[62] and Hala Sultan Tekke, such as **Hala Sultan Tekke S25** (Fig. 15).

Kition/Hala Sultan Tekke (Figs. 11–14)

Both sites have a number of sherds which can be assigned to the chemical profile CypJ. The profile cannot be assigned to one or the other site; they may well have used different ends of the same clay bed.[63] The CypJ group certainly belongs to Kition as a PWP sherd Kition S15 can be assigned to CypJ, whereas Hala Sultan Tekke was abandoned in Cypriot IIIC Middle before PWP appeared. The Kition samples (Fig. 11) include two Rude/Pastoral Style sherds S11, 28, two examples of Bowl Type 3, S34,38, the former in bichrome technique, one Bowl Type 10 S30 and two Simple Style pieces S32–33.

The Hala Sultan Tekke CypJ material (Fig. 11**)** comprises a Levanto-Helladic piriform jar FS 36 S3 and a large jug sherd S13 with decoration of bivalves in triglyphs, which is a twin to a vessel at Tarsus[64] assigned by NAA to that site;[65] there are also examples of the pleonastic style on the strainer jug S19 and the deep bowl S18, the latter a rare example, as pleonastic decoration is not often used on deep bowls on Cyprus. The deep bowl S7 is an example of the button-hook deep bowl. Two other Minoan derived motifs appear on the deep bowls S6, 27. S6 has a flower with the long fringe used on Crete[66] and S27 has the thread chevrons also found on Crete.[67] The pictorial krater S17 depicts a bird with a Cypriot basin with two vertical handles floating behind its head; the raquet motif on the right is too worn to ascertain what was represented.

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55 Day 2011, 89 fig. 4.4 K23.8, 119 fig. 4.21 K28.2, 244 fig. 8 K17.

56 Guy and Engberg 1938, pl. 64 T.73B P200; Badre *et al*. 2005, 30 fig. 5.1 TK32.

57 The samples of this vessel were muddled before they reached Bonn; the sample BS 15 published as a chemical loner, that is a Single, is a sample from another vessel. The original sample BS 15 from the hydria has now been identified and an extra sherd from the hydria, BS 23, has been analysed as a control.

58 Mommsen *et al*. 2009, 510 Table 7.4.

59 Badre *et al*. 2005, 40 Table TK 83.

60 Jung 2006, 200.

61 Dikaios 1969, pl.82.27, cited by Jung 2006, 200 as PWP.

62 Furumark and Adelman 2003, pl. 48 P336.

63 For the topography, see Nicolaou 1976, 43 fig. 10.

64 Mountjoy 2005b, 90 fig. 2.20.

65 Mommsen *et al*. 2011, 903 Table 1 Sample 4.

66 Knossos, Popham 1965, 328 fig. 5.42.

67 Hallager and Hallager 2000, pl. 37 70-P0253/0238.

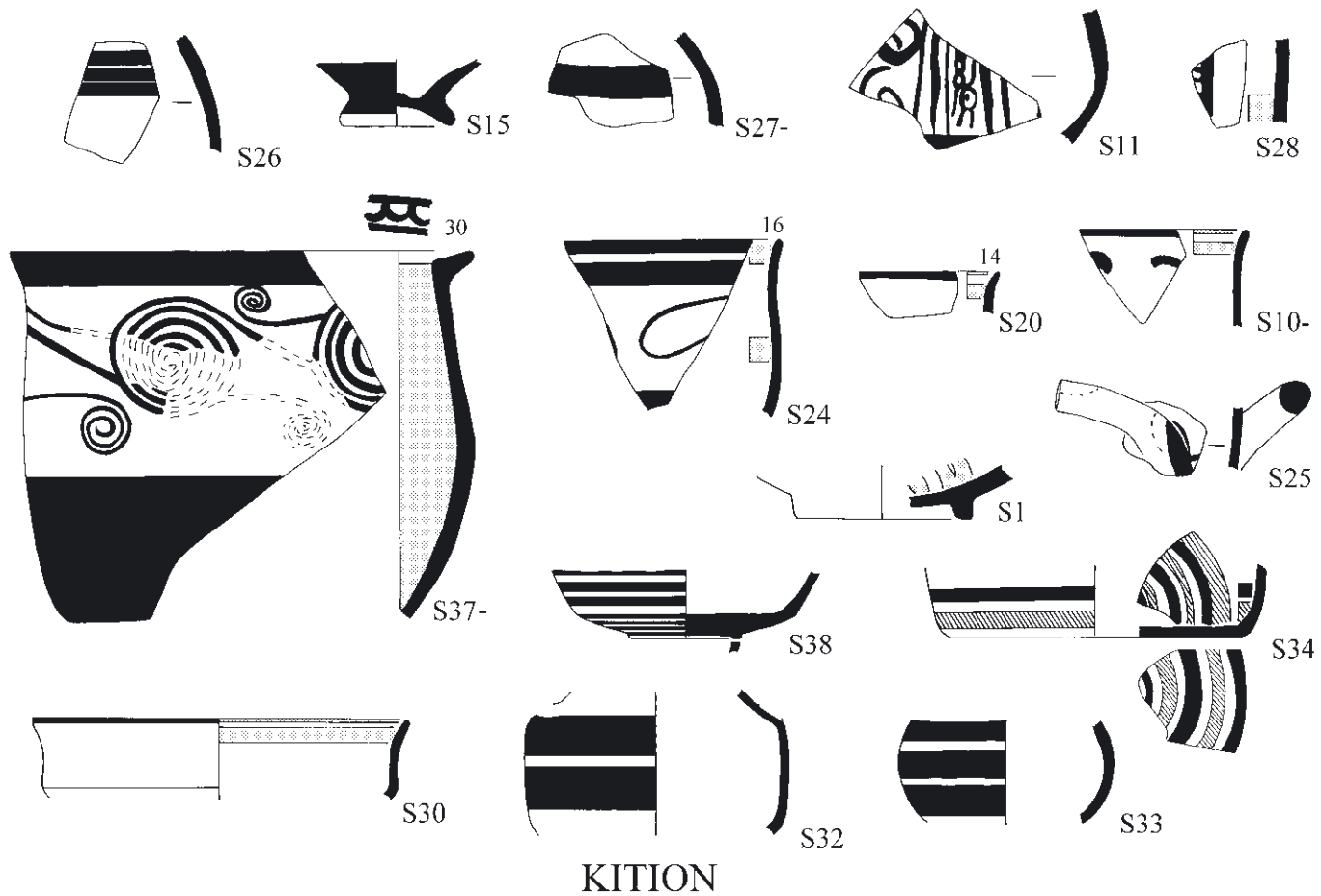


Fig.11 The CypJ chemical profile. Scale 1:3.

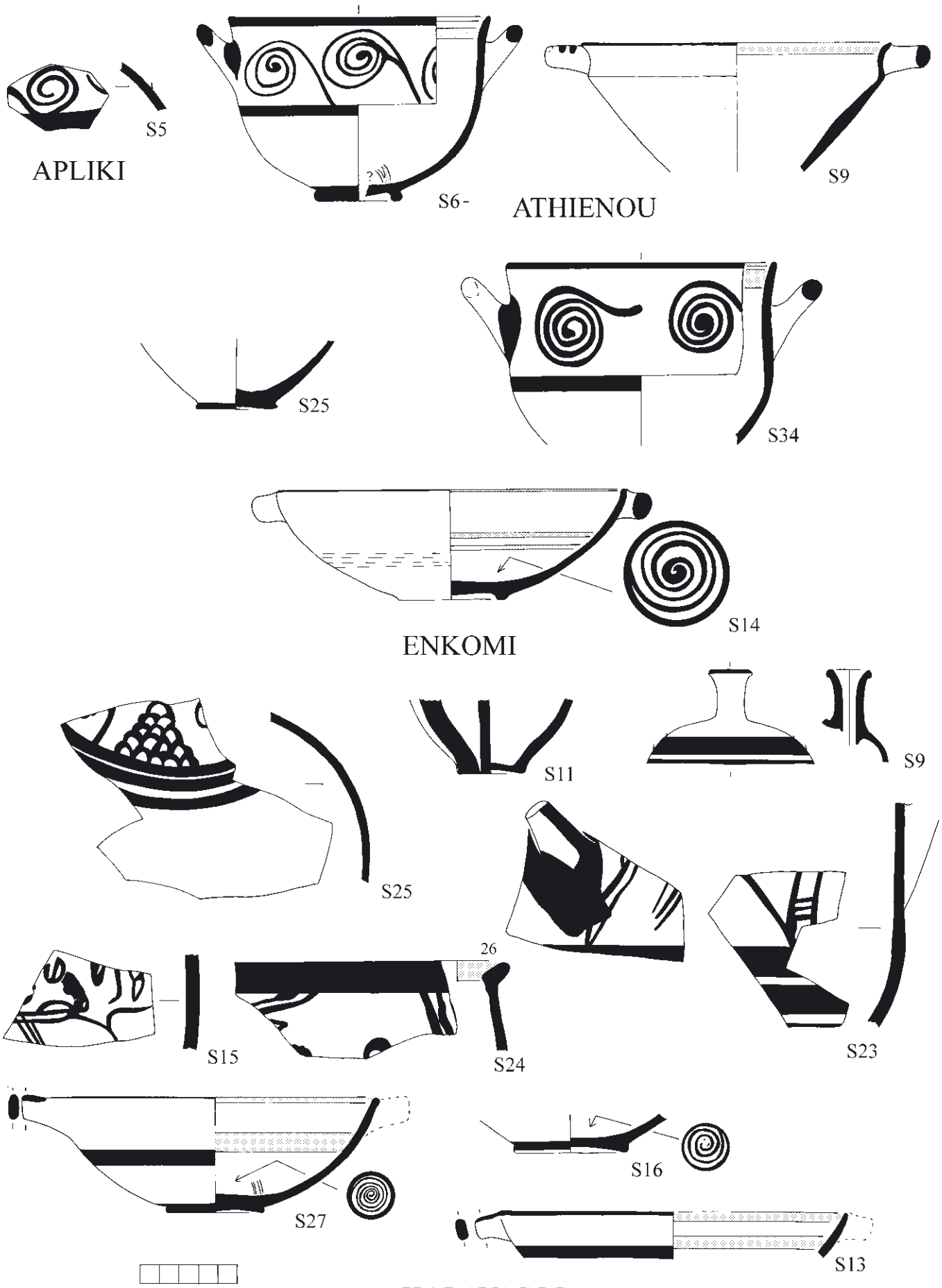
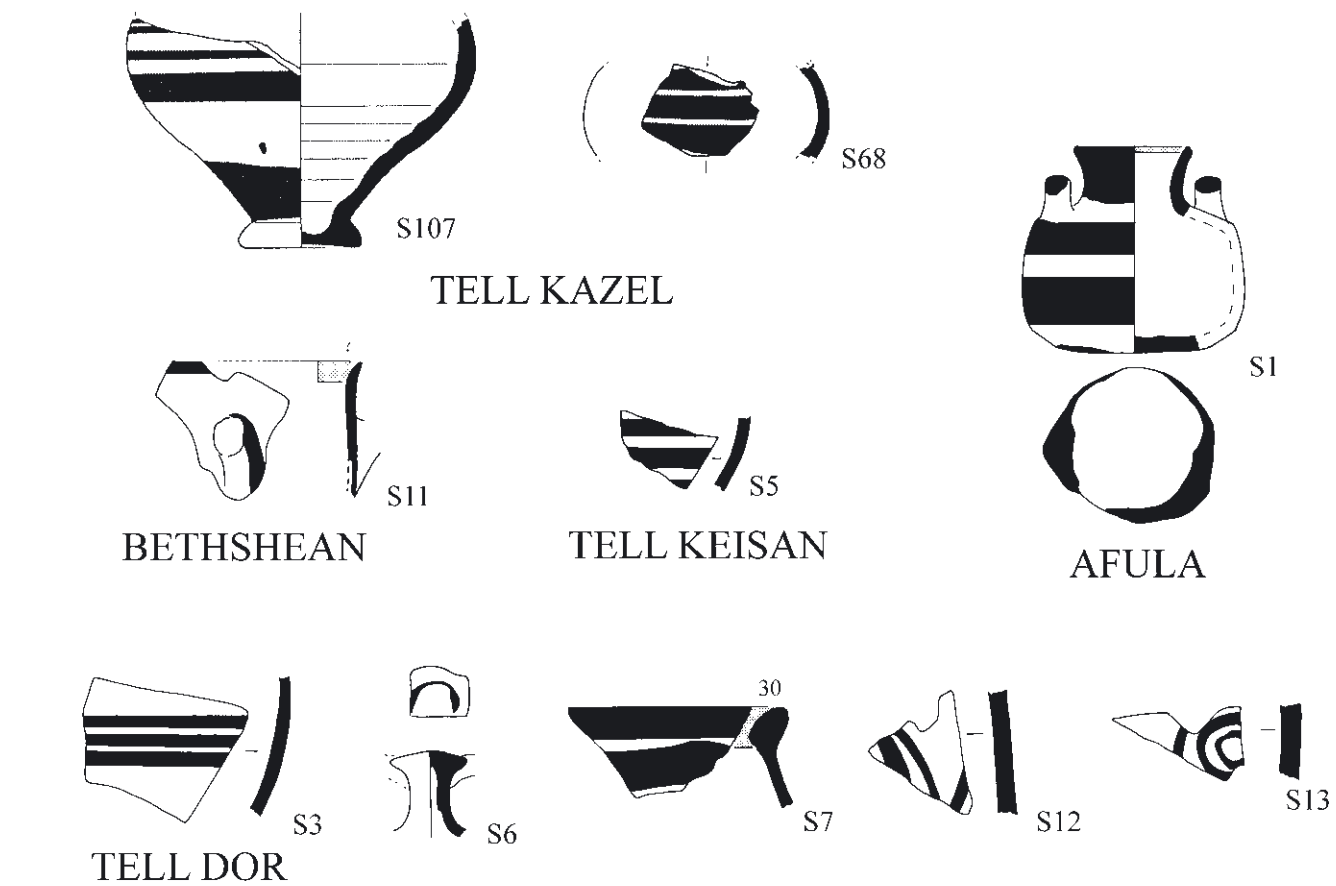


Fig.12 The CypJ chemical profile. Exports from Kition/Hala Sultan Tekke. Scale 1:3.



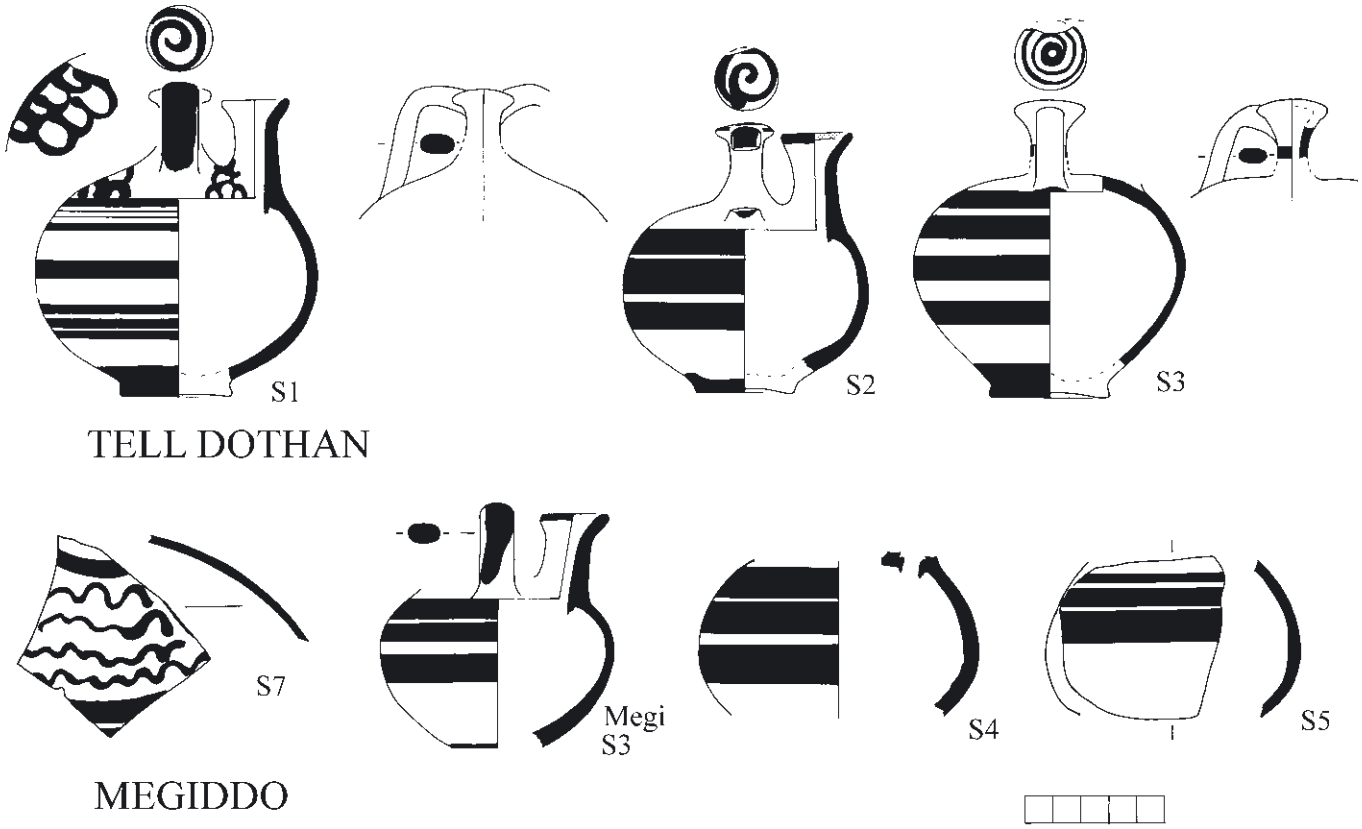


Fig.13 The CypJ chemical profile. Exports from Kition/Hala Sultan Tekke. Tell Kazel, after Badre *et al*. 2005, 33 fig. 8.4, 8.2, Bethshean (drawing PAM) Mommsen *et al*. 2009, 510–11 Table 7.4, BS 11, Tell Keisan and Tell Dor, Zuckerman *et al*. in prep., Megiddo (drawings PAM), Yasur-Landau 2013, fig. 11.5.1, 11.4.2, 4. Scale 1:3.

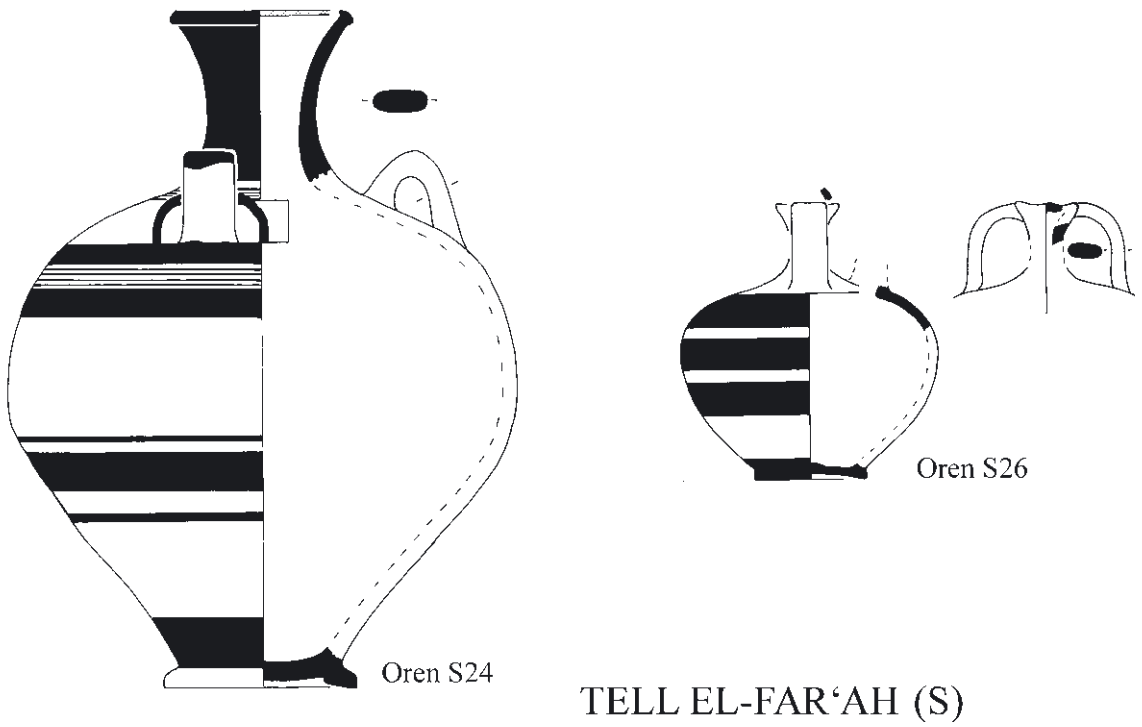


Fig.14 The CypJ chemical profile. Exports from Kition/Hala Sultan Tekke. Tell el-Fa'rah (S), Mommsen *et al* 2005, Table 1 Sample 24, 26, Qantir, Mountjoy and Mommsen 2001, 144 fig. 2.38 S24, 39 S10, 153 fig. 4.76 S61, 78 S56+57, 79 S81, 80 S98, 81 S70, fig. 2.42 S49, fig. 4.82 S53, fig. 2.45 S9. Scale 1:3.

CypJ pottery appears at four other Cypriot sites (Fig. 12). Nearby **Kalavasos** has a number of examples. They include the Simple Style stirrup jar (S9) and three Rude/Pastoral Style krater fragments (S15, 23–24). The piriform jar S25 has the popular triangular patch found island-wide in late LCIIC, often with dot fill; it seems to be set between small stemmed spirals. S11 is an example of the local feeding jug with the typical vertical stripes from neck to base, S16, 27 are the Levanto-Helladic bowl FS 296 and S13 is an early example of Bowl Type 6. **Enkomi S34** is another example of the button-hook deep bowl and **Enkomi S14** of Bowl Type 6; **Enkomi S25** is a strainer jug base. The deep bowl **Athienou S6** has a row of stemmed spirals, a relatively popular Cypriot IIIC motif on the island. **Athienou S9** is a Bowl Type 10, while **Apliki S5** may belong to a jug FS 110, 116.

There are a large number of CypJ exports to the East Mediterranean (Figs. 13–14), particularly Simple Style vases, such as **Dothan S2-3**, **Megiddo S3-5**, **Afula S1**, **Tell Kazel S68, 107**, **Tell el-Fa'rah Oren 26**; they are usually stirrup jars, but **Afula S1** and **Tell Kazel 107** are examples of the straight-sided alabastron and the piriform jar respectively. Simple Style vessels were also exported to Qantir in Egypt. **Megiddo S7**, which probably belongs to the large Levanto-Helladic piriform jar FS 36, is of interest as it has lustrous paint; this is also the case with **Megiddo S4–5**. The Simple Style vases usually have matt paint, as does the Cypriot IIIC pottery, but there are vessels with lustrous or semi-lustrous paint, particularly those of the Near Eastern group of stirrup jars (see below). It seems that this type of finish was produced on Cyprus in Cypriot IIIC Early 1–2. The deep bowl **Bethshean S11** was originally published as CypHH.[68] **Tell Dor S3** is a closed linear body sherd. The stirrup jar **Tell Dor S6** is very worn, but it has a trace of a spiral on the false mouth; it may be a Simple Style stirrup jar. **Tell Dor S12–13** belong to Rude/Pastoral Style kraters. The heavy rounded thickened rim of **Tell Dor S7** is unusual on Cyprus; indeed the best parallel is the Bademgedīği Tepe ship krater.[69] The large Levanto-Helladic piriform jar FS 36, **Tell el-Fa'rah Oren S24**, is not Simple Style, as thought by Furumark[70] (see below). The Tell el-Fa'rah and Qantir vessels have been published as HCyp,[71] but the information from our new analyses has reassigned them to CypJ.

Hala Sultan Tekke (Fig. 15)

The chemical profile CypT appears at Hala Sultan Tekke, but not at Kition. It may be local to Hala Sultan Tekke; it is possible that further NAA at other sites might assign it elsewhere, but the pottery is certainly at home in the Hala Sultan Tekke assemblage. Six of the 12 samples have pleonastic decoration, while S14 with fish belongs to the Near Eastern group of stirrup jars (see below). Two Minoan-type carinated kylikes, S26, 29, part of a small corpus at Hala Sultan Tekke exhibiting Minoan influence, are also assigned to this chemical profile. The kraters S12, 25 have pleonastic decoration, S12 being a carinated krater. The krater S20 has an unusually shaped rim with external ledge; the central triglyph, composed of very small chequers similar to those on Levantine style kraters,[72] seems to be flanked by elaborated antithetic spirals. One of the earliest locally made imitations of Mycenaean types on Cyprus is assigned to CypT (see below).

Other CypT pieces, a bowl Type 6–9 and a deep bowl, have been found at Athienou, **Athienou S1**, and Enkomi, **Enkomi S16**. The two Type 12 bowls, **Idalion S15–16**, are examples of a shape usually found at Enkomi and rare elsewhere. The CypT production is thus of interest. **Kouklia S19** has a ridge at the base of the neck, which suggests it may belong to the narrow-necked jug FS 121. The krater **Tarsus S23** is a typical example of pleonastic decoration and compares well to the Hala Sultan Tekke hippocamp krater.[73]

Alassa: Pano Mandilaris (Fig. 16)

The chemical profile CypF belongs to this site. Apart from the chemical information they give, most of the sherds are not very informative. A strainer jug rim S20 can be identified; S27 has a

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68 Mommsen *et al*. 2009, 510 Table 7.4.

69 Mountjoy 2011a, 486 fig. 3.

70 Furumark 1941b, 116.

71 Mommsen *et al*. 2005, 153 Table 1; Mountjoy and Mommsen 2001, 144 fig. 2.38–39, 42, 45, 153 fig. 4. 76, 78–82.

72 See Dikaios 1969, pl. 71.31 765/4, pl. 101.16 5705/5.

73 Åström 1988, 173–76; see Mountjoy 2007, 239 fig. 11 for a drawing.

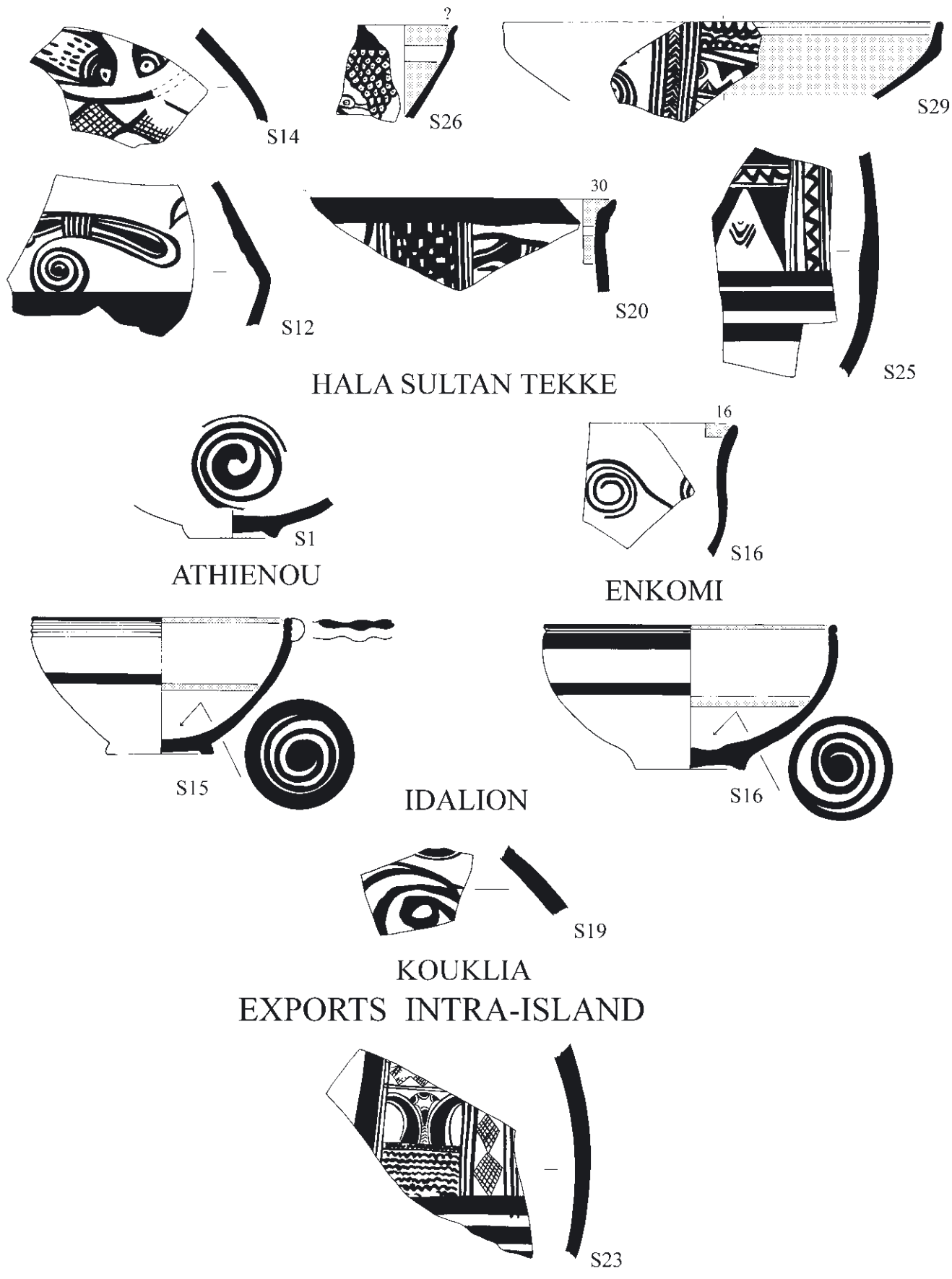


Fig.15 The CypT chemical profile. Tarsus, Mountjoy 2005b, 113 fig. 8.152. Scale 1:3.

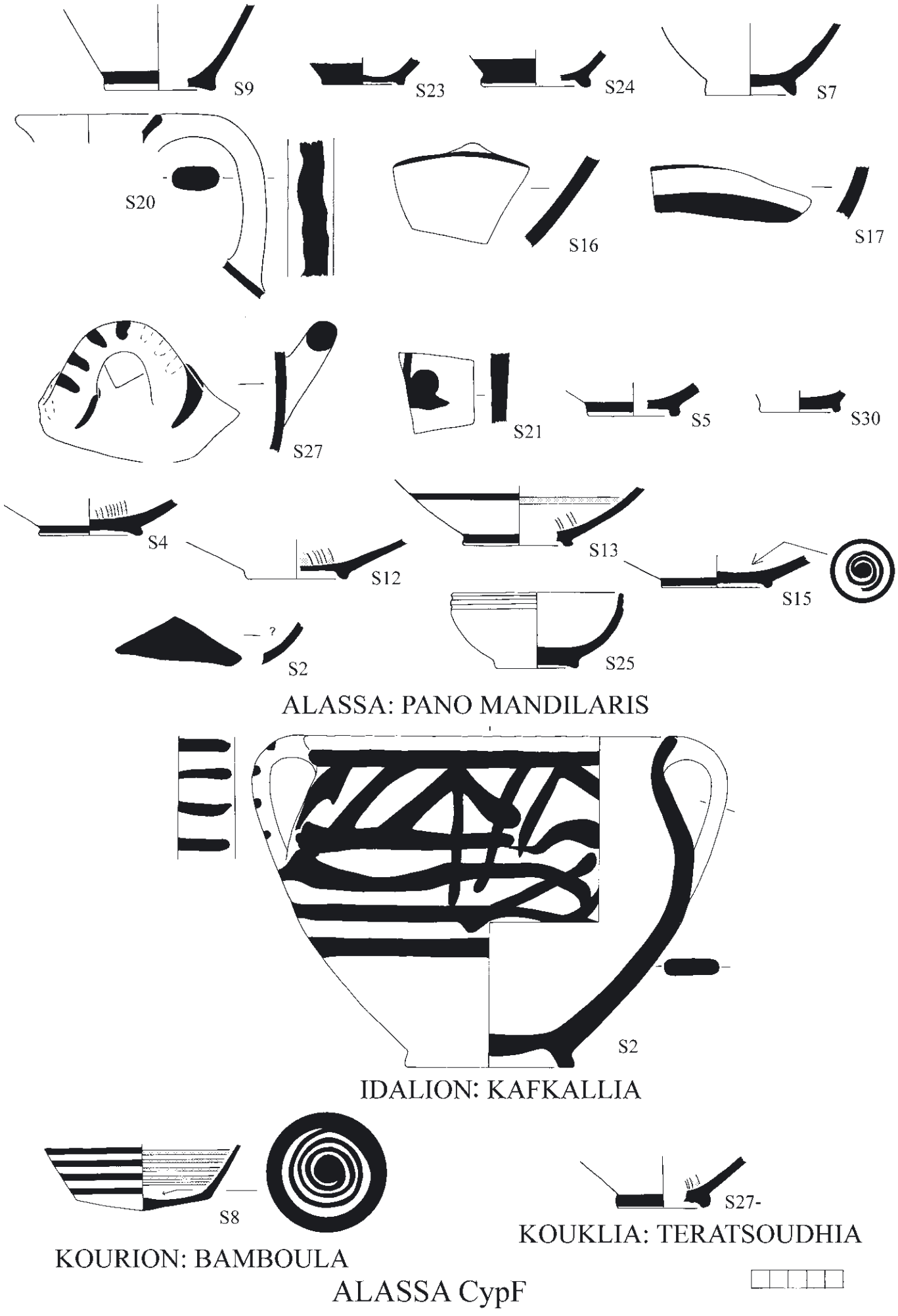


Fig.16 The CypF chemical profile, with exports to Idalion, Kourion and Kouklia. Scale 1:3.

rough interior, so could belong to a hydria or a krater, since the interiors of Cypriot IIIC kraters are often left unfinished. Jug bases are present (Fig. 16 top row) and deep bowl bases S5, 30. The bases (Fig. 16 4th row from bottom) belong to the bowl Types 6–9; not enough is extant to assign them more closely. Other bowl types present comprise a small example of Type 12 S25 and an example of Type 3, which was exported to Kourion, **Kourion S8**. A krater exported to Idalion, **Idalion S2**, is of interest. The bulging upper body and flaring lip is not that of the Aegean-style krater, but rather suggests a derivation from the Plain Wheelmade tradition. A deep bowl exported to Kouklia, **Kouklia: Teratsoudhia S27**, is assigned as associated to Alassa.

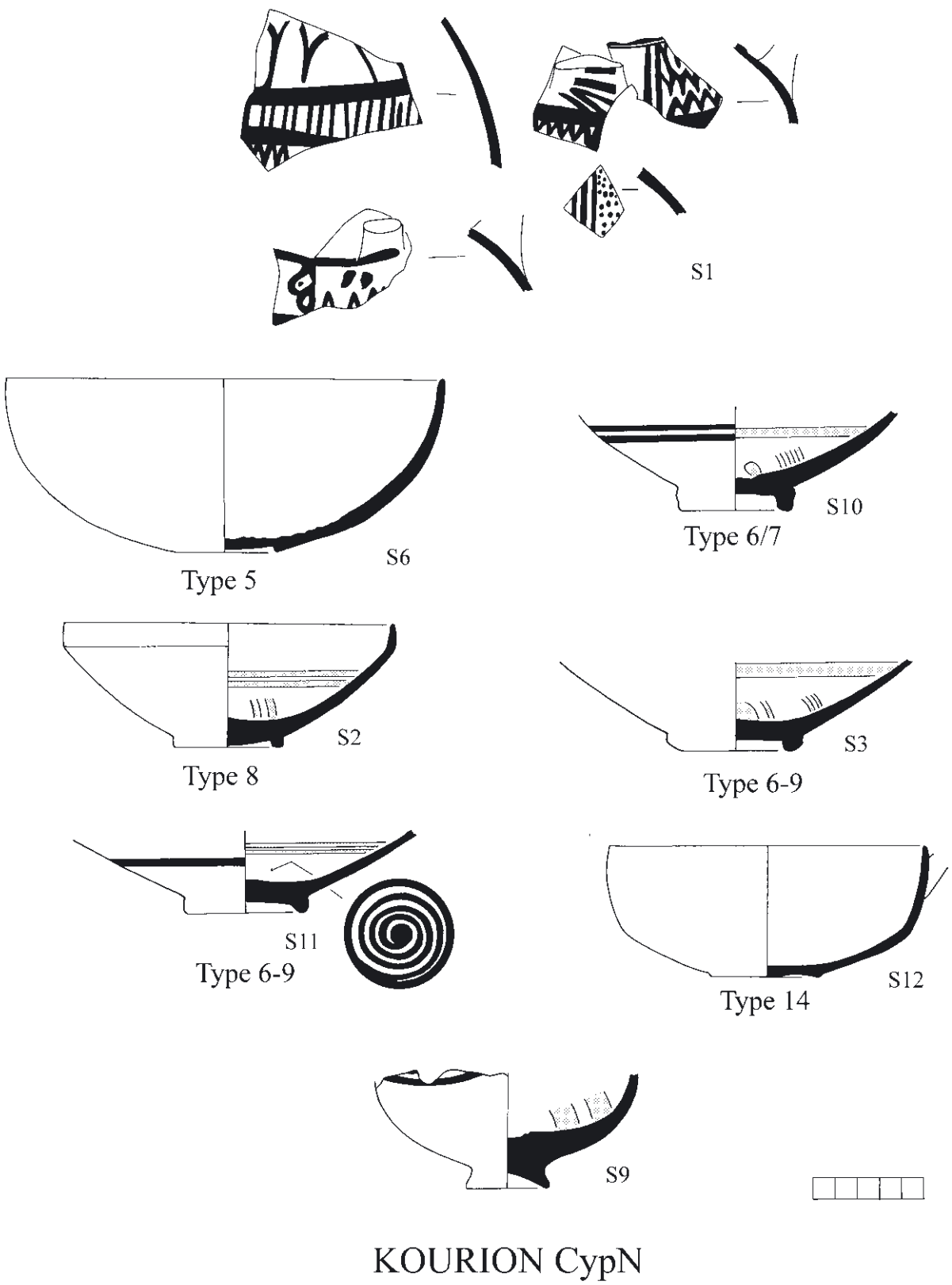


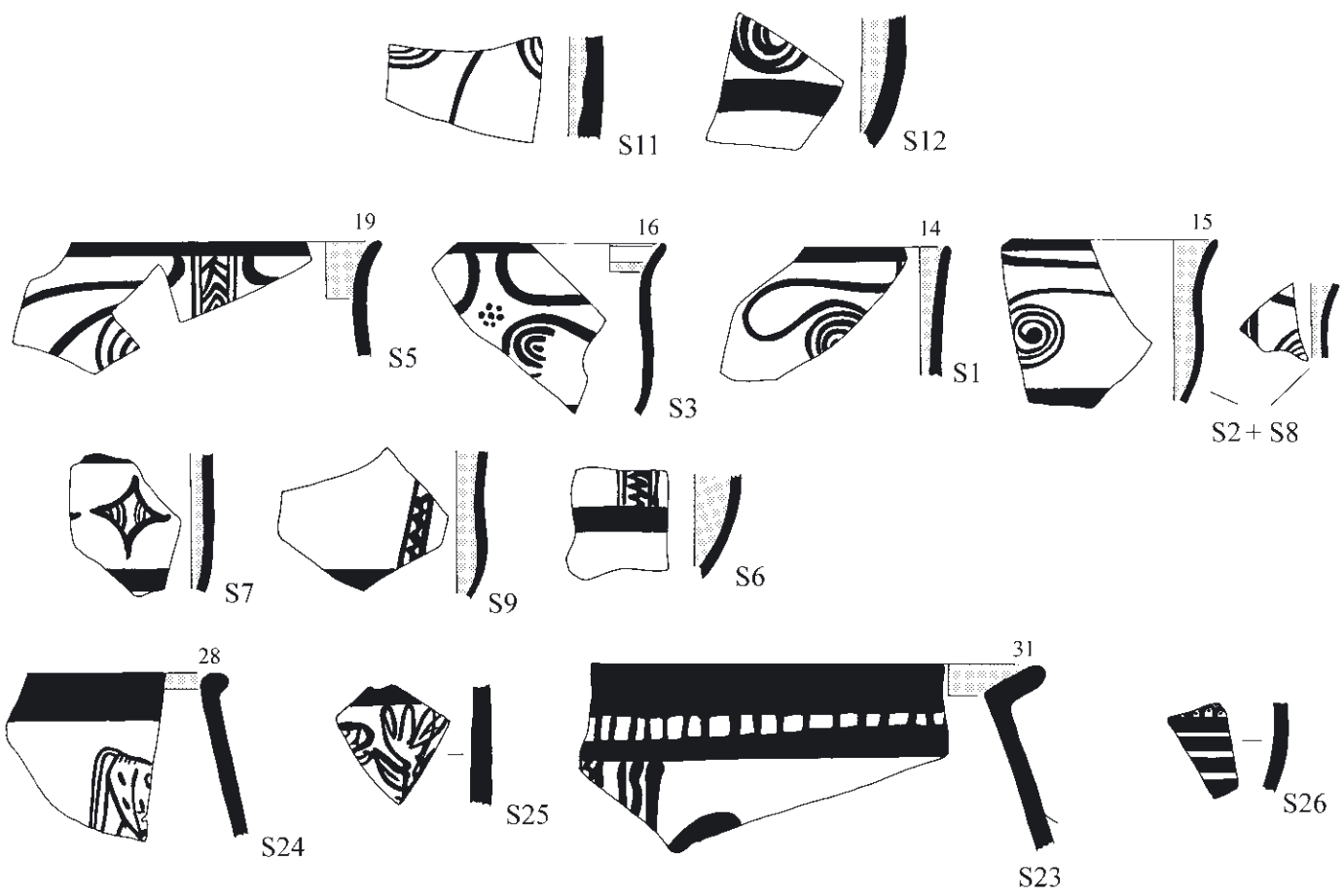
Fig.17 The CypN chemical profile. Scale 1:3.

Kourion: Bamboula (Fig. 17)

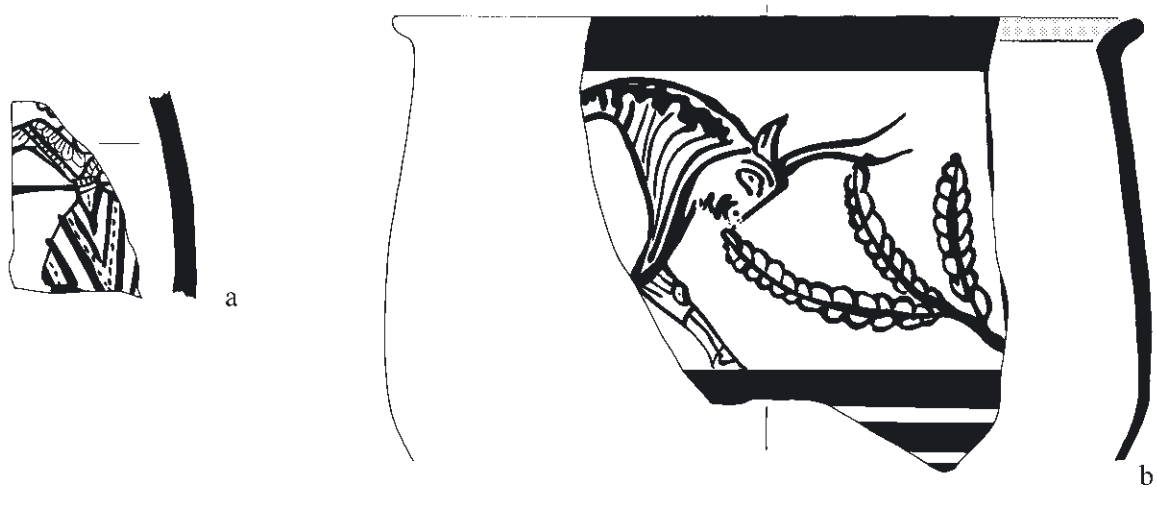
The CypN chemical profile is assigned to this site. Only 12 pieces could be analysed, but almost all had this profile, which suggests that it is indeed local to the site. The sherds S1 may belong to an amphoroid krater. The analysis demonstrates that the bowl Types were manufactured locally here and not imported from the Kouklia workshops. The same applies to the PWP/CGI cup S9.

Kouklia: Palaepaphos (Figs. 18–22)

Two chemical profiles could be isolated, GypG and CypS. Group X80 may also belong to this site.



KOUKLIA: TERATSOUDHIA



KOUKLIA CypG

Fig.18 The CypG chemical profile. a,b, Karageorghis *et al*. 1972, 189 fig.1, 191 fig.2 (drawings PAM). Scale 1:3.

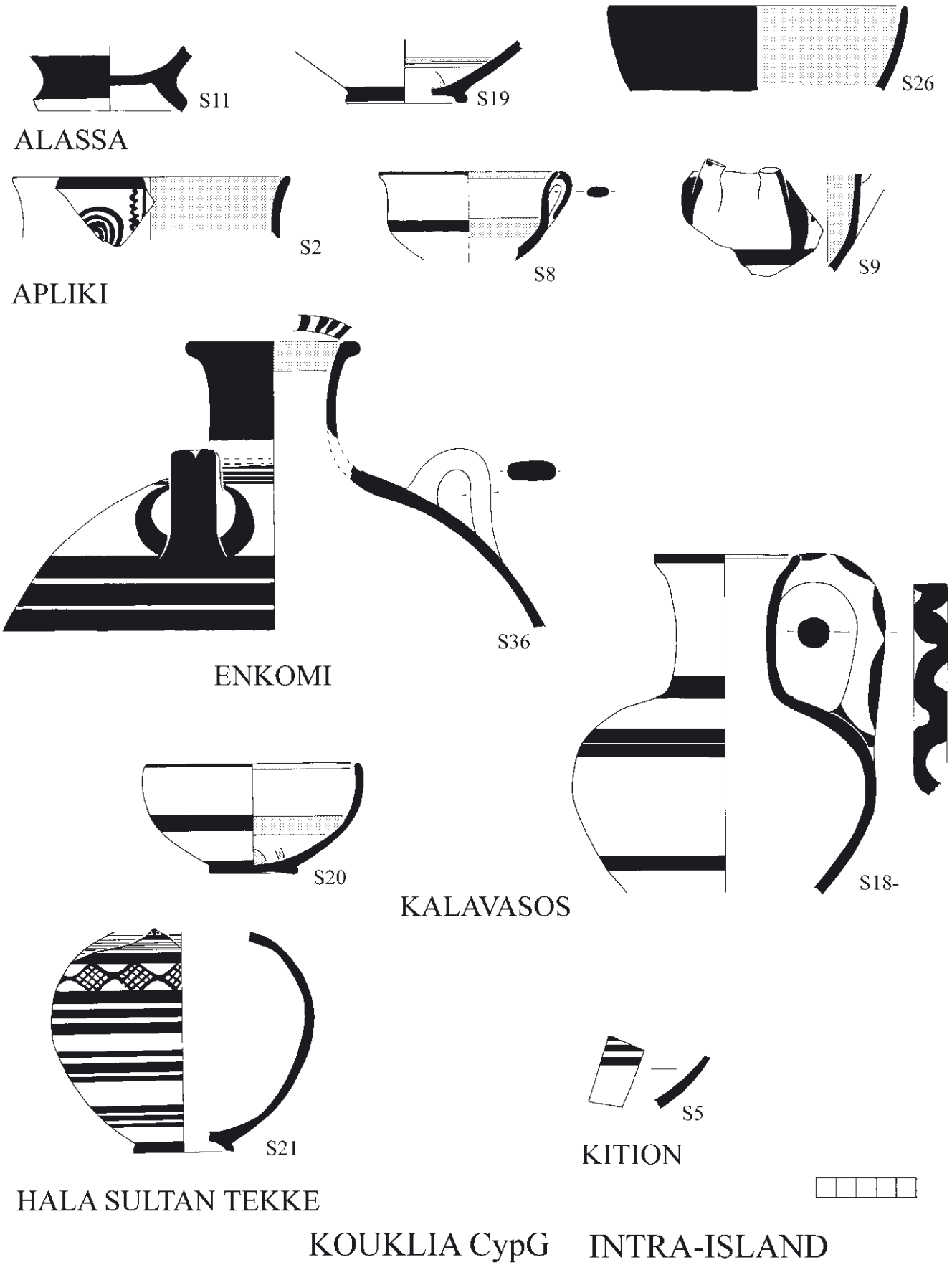


Fig.19 The CypG chemical profile. Exports from Kouklia. Scale 1:3.

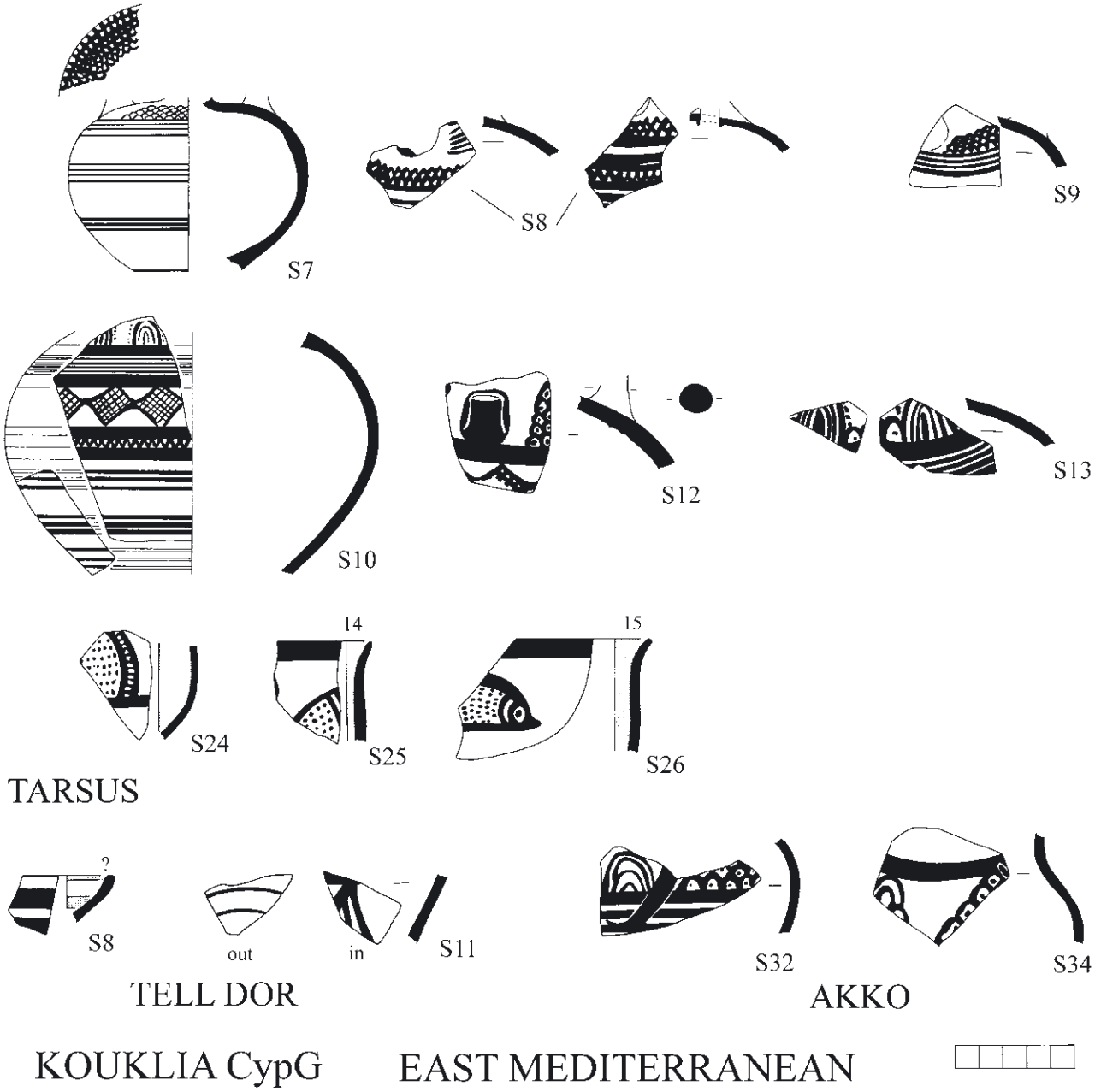


Fig.20 The CypG chemical profile. Exports from Kouklia. Tarsus, Mountjoy 2005b, 95 fig. 4.47 S7, 48 S8, 49 S9, 50 S10, 52 S12, 53 S13, 112 fig. 8.156 S24, 157 S25, 160 S26, Tell Dor and Akko, Zuckerman *et al*. in prep. Scale 1:3.

Group CypG (Figs. 18–20). A large number of pieces can be assigned to CypG, both at Kouklia and round the island, as well as abroad. The local pieces include kraters S11–12 and a number of deep bowl rims with antithetic spiral; there is also one with what seems to be a row of lozenge S7 and two with narrow triglyphs S6,9. The monochrome interiors of most of the deep bowls are a feature at Kouklia. Production of Rude/Pastoral Style kraters at the site is now certain S23–25. It has been possible to assign pieces analysed earlier by Perlman and Asaro[74] to this workshop (Fig. 18 bottom row). CypG vessels were exported to nearby Alassa and along the south coast to Kalavasos, Kition and Hala Sultan Tekke; they also reached Enkomi in the east of the island. It is of interest that both CypG and CypS vessels appear at Apliki in the north-west, whither they probably went by sea. At Alassa **Alassa S11** might be the base of a small amphoroid krater, **Alassa S19** is the bowl Types 6–9; **Alassa S26** is a bowl Type 5. Apliki has two deep bowls, **Apliki S2, 9** with the monochrome interior typical of Kouklia and a Levanto-Helladic cup, **Apliki S8**; **Kalavasos S20** is the Levanto-

[74] Karageorghis *et al*. 1972, 188–97.

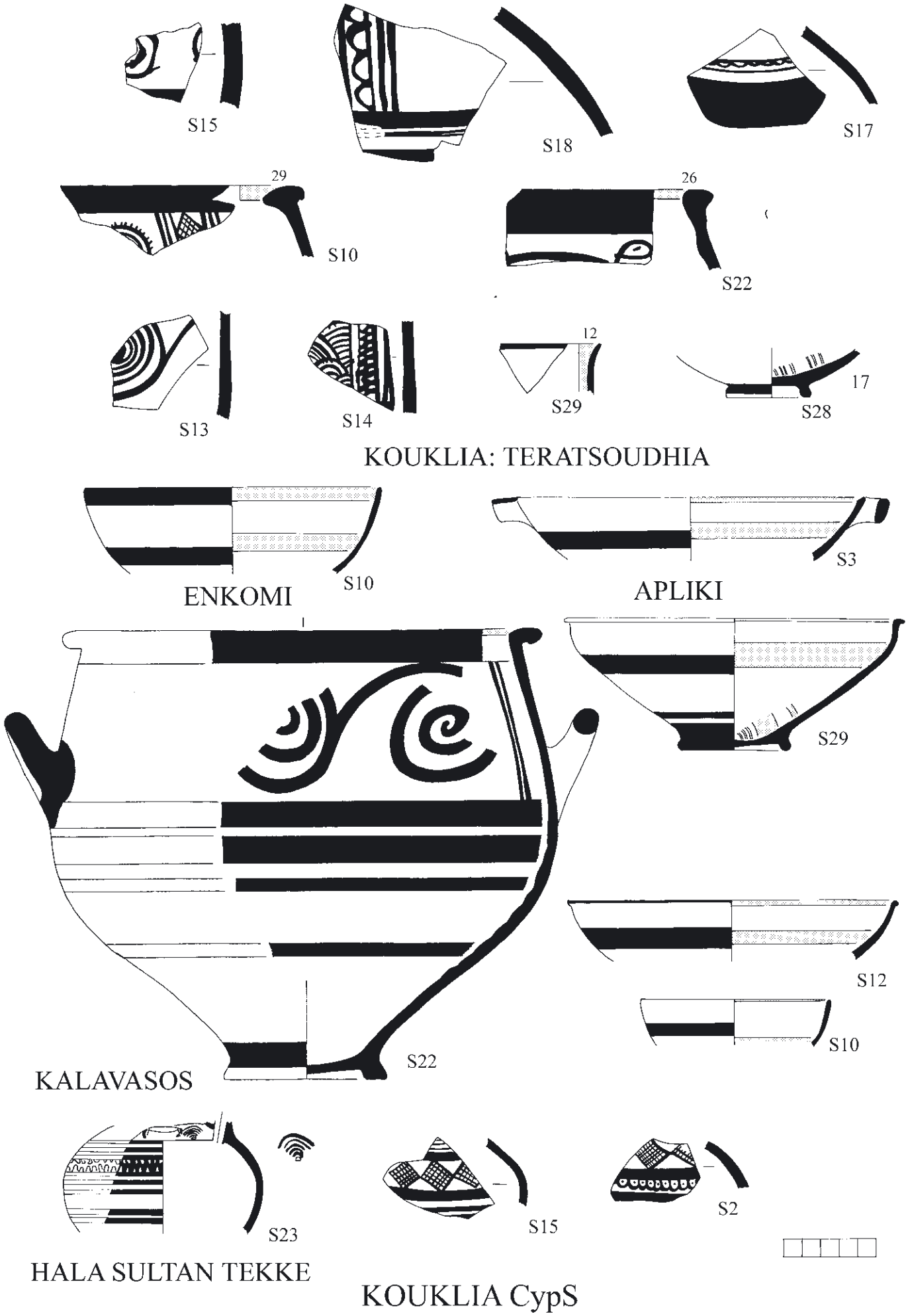
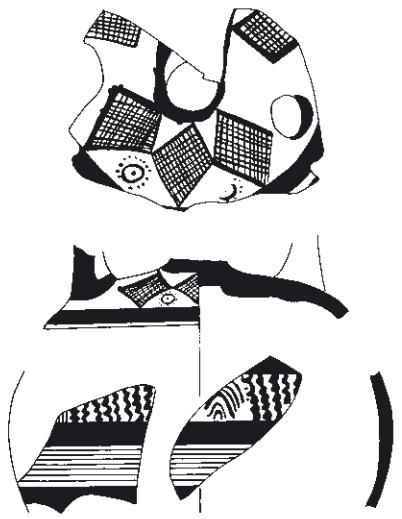
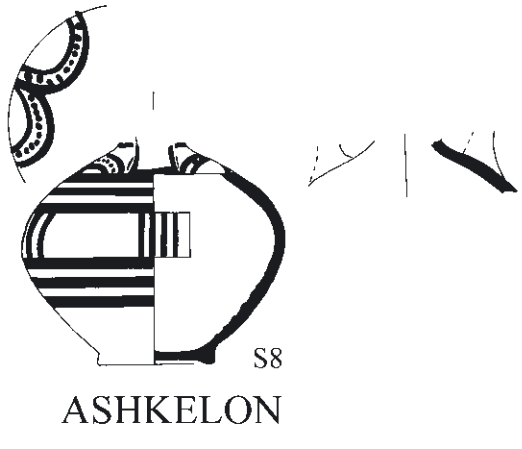


Fig.21 The CypS chemical profile, with exports to Enkomi, Apliki, Kalavasos and Hala Sultan Tekke. Scale 1:3.





KOUKLIA CypS EAST MEDITERRANEAN

Fig.22 The CypS chemical profile. Exports from Kouklia. Tarsus, Mountjoy 2005b, 95 fig. 4.51, Tell Kazel, after Badre *et al*. 2005, 33 fig. 8.6, Megiddo, Mountjoy 2008, 16 fig. 3a, Ashkelon, Master *et al*. 2015, 238 fig. 2 S8. Scale 1:3.

Helladic FS 210 and **Kalavasos S18** is FS 116, a shape which continued to be locally made in Cypriot IIIC Early. A large piriform jar FS 36 was exported to Enkomi, **Enkomi S36**. This large Levanto-Helladic type also continued to be manufactured locally in Cypriot IIIC Early; a complete vessel from Kouklia is a good parallel to Enkomi S36.[75] **Hala Sultan Tekke S21** belongs to the Near Eastern group of stirrup jars; it has the typical groups of bands down the body and the lozenge chain (see below). **Kition S5** belongs to the Levanto-Helladic bowl FS 296.

Exports abroad (Fig. 20) include a number of pieces at Tarsus belonging to the Near Eastern group of stirrup jars **Tarsus S7–10, 13**. The stirrup jar **Tarsus S12** has the dot-filled triangular patch so popular on the island in Cypriot IIIC Early. The same motif appears on **Akko S34**, and possibly on **Akko S32**. Pictorial deep bowls at Tarsus also came from Kouklia, **Tarsus S24–26**. Fish with dot-filled body is depicted S26 and the spotted humped duck S24, and possibly S25.[76] Exports to Tell Dor include a Levanto-Helladic bowl FS 296, **Dor S8**, and a kalathos, **Dor S11**, the latter with what may be a hatched triangle on the interior. This is a rare Cypriot IIIC shape.

Group CypS (Figs. 21–22). This chemical profile is less common and exports round the island are correspondingly fewer. At Kouklia (Fig. 21) three closed shapes S15, 17–18, four kraters S10, 13–14, 22 and two deep bowls S28–29 can be assigned to it. S29 has the monochrome interior typical at Kouklia; the krater S14 has an elaborately filled triglyph; S22 belongs to a Rude/Pastoral Style krater, demonstrating that both clay groups were used for this type. A bowl Type 2 was exported to Enkomi (S10), Type 6 to Apliki (S3) and two Levanto-Helladic bowls FS 296 to Kalavasos (S12, 29). Kalavasos also has a Rude/Pastoral Style krater **Kalavasos S22**. **Kalavasos S10** is a Levanto-Helladic bowl FS 210. Three examples of the Near Eastern group were exported to Hala Sultan Tekke (S2, 15, 23). Outside the island (Fig. 22) this chemical profile is also uncommon. A large stirrup jar was exported to Tarsus (S11) and another example of the Near Eastern group of stirrup jars to Tell Kazel (S71); it has a similar zone of zigzag on the belly to that of another member of the group **Hala Sultan Tekke S23**; **Megiddo S1** was published as a Single,[77] but as a result of the increased number of samples from our analyses, it can now be assigned to CypS. **Megiddo S1** is a good example of the use of the Cypriot dot-filled triangular patch; there is a parallel to the dot-filled spirals on a late Rude/Pastoral Style krater.[78] The birds are perched antithetically on a Levantine-type tree of life. The stirrup jar **Ashkelon S8** also has the Cypriot dots, this time in semi-circles.

Small Groups (Figs. 23–24)

Mycenae/Berbati (chemical profile MYBE) (Fig. 23). Most of the Mycenaean exports to Cyprus and the Near East came from workshops in the north-east Argolid. This has been well illustrated by recent NAA analysis of Mycenaean imports in north Israel.[79] Obvious imports were not sampled in the current NAA analysis, but one or two doubtful vessels did turn out to be imported. The ubiquitous Levanto-Helladic bowl FS 296 was exported to Apliki (S4), Athienou (S8), Idalion (S12), Kalavasos (S5) and Kition (S9). The cylindrical jug FS 139 **Athienou S7** was expected to be an import, but **Kouklia S16** with triangular patch might have been local. However, triangular patch, especially without dot fill, was popular on the Greek mainland in LHIIIB2 and LHIIIC Early 1.[80] **Kalavasos S2, 8** are examples of the imported linear Levanto-Helladic cup FS 220.

Boeotia. The carinated bowl FS 295, **Kalavasos S1**, is assigned to the Boeotian Theban group. KnoL and KnoK are central Cretan chemical profiles. None of the three sherds assigned to these groups is informative; nor is the Kition krater sherd **Kition S19**, which is assigned to KroP, a Greek mainland group from Attica. The most interesting pieces are **Hala Sultan Tekke S22**, a Grey Ware krater sherd probably belonging to Blegen Shape C82,[81] which turned out to be a Trojan import[82] and **Kition S7, 35**, which are assigned to Miletos. S35 is an East Aegean type amphoroid krater with the typical tails below the handle found on these vas-

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75 Maier and von Wartburg 1985, pl. 11.5.

76 For a complete example of this protome see Vermeule and Karageorghis 1982, XIII.10.

77 D'Agata *et al*. 2005, 375.

78 Mountjoy 2008, 18 fig. 5.1.

79 Zuckerman *et al*. 2010, 400–16.

80 Mountjoy 1999, LHIIIB2 Phocis nos. 141–42, 157–58, LHIIIC Early Korinthia no. 188 (with some dots in the scale).

81 Blegen *et al*. 1958, fig. 216.

82 See Mommsen *et al*. 2001, for the Troy groups.

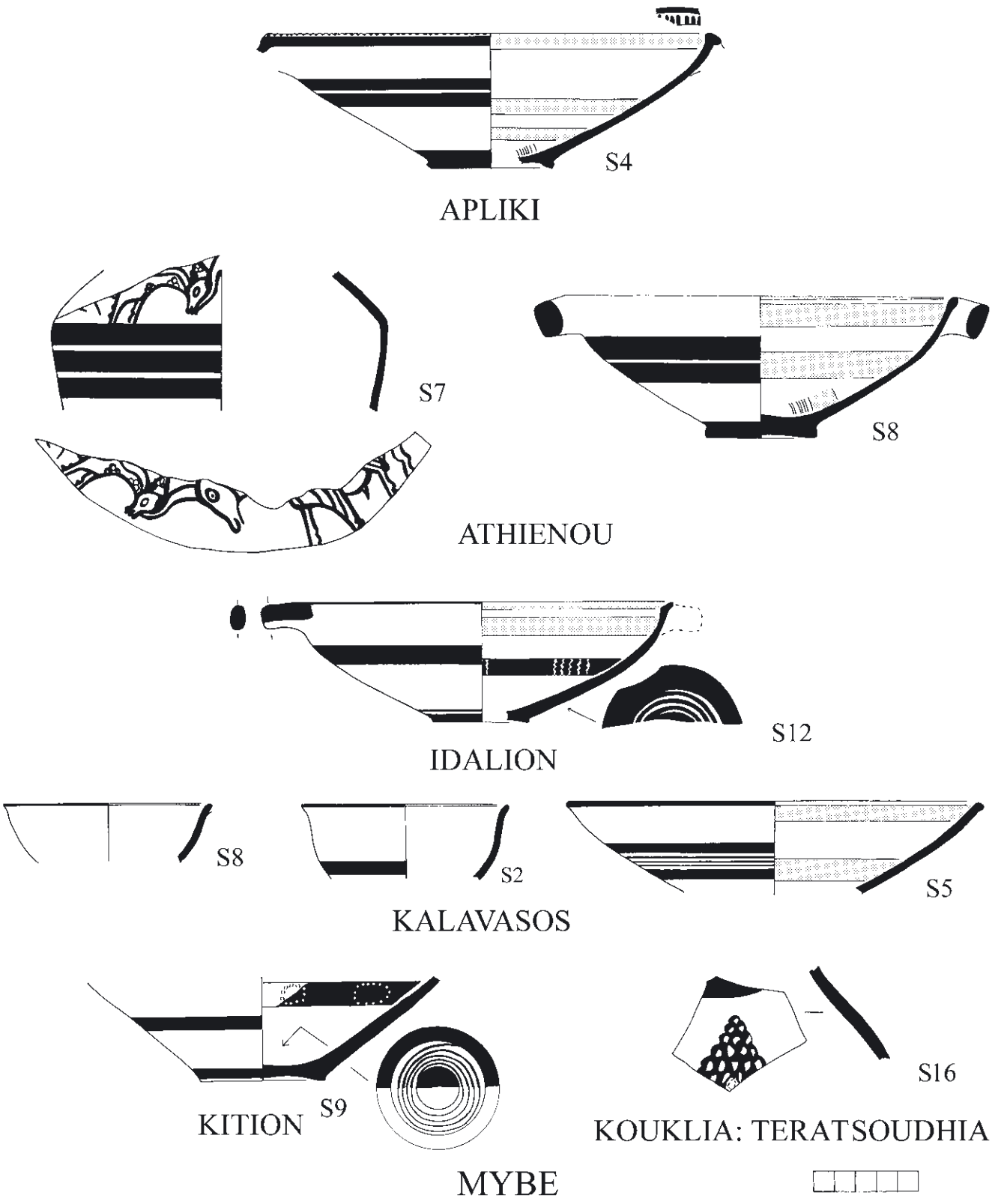

Fig.23 The Mycenae-Berbati chemical profile. Scale 1:3.

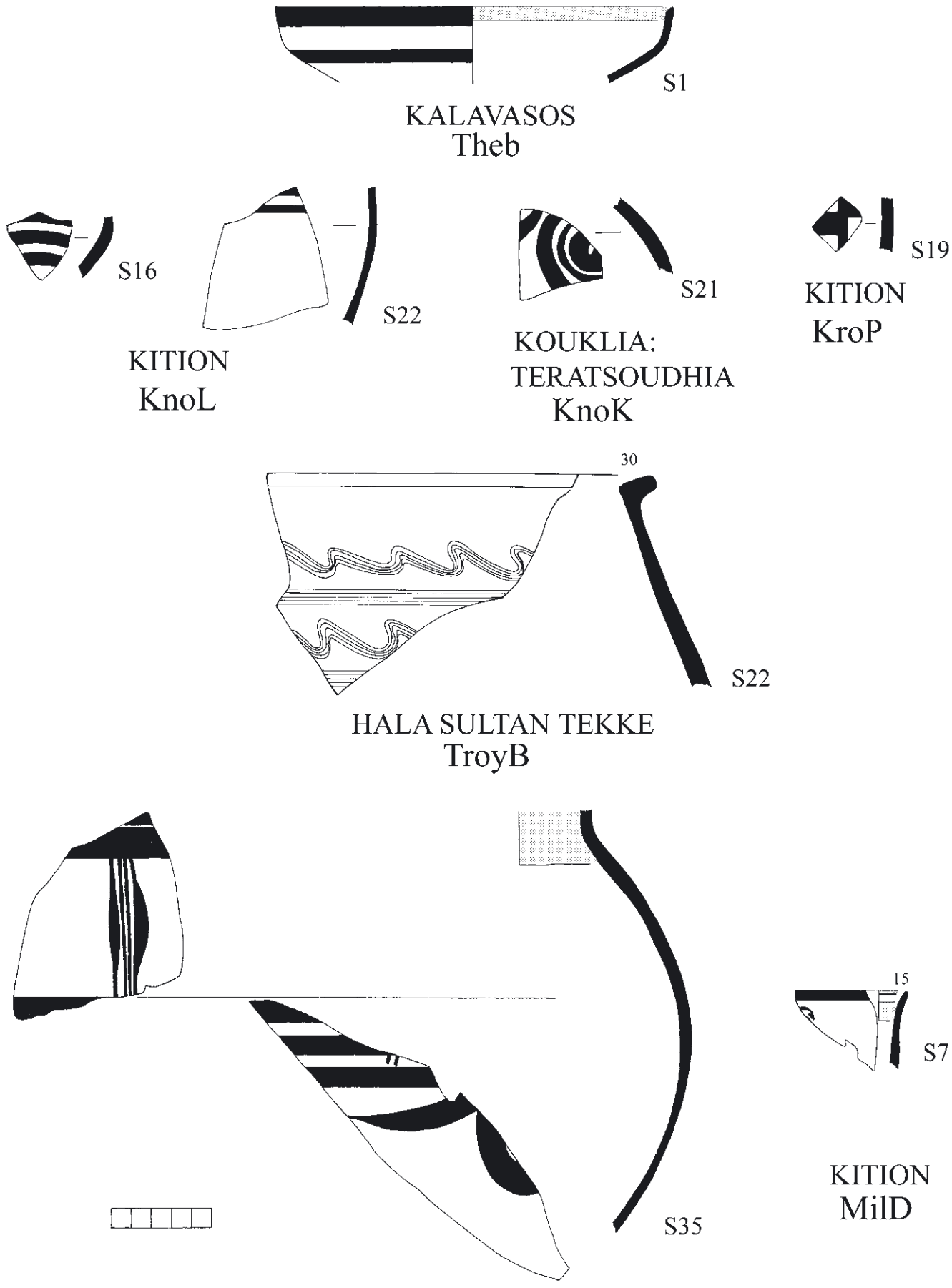

Fig.24 Small groups. Scale 1:3.

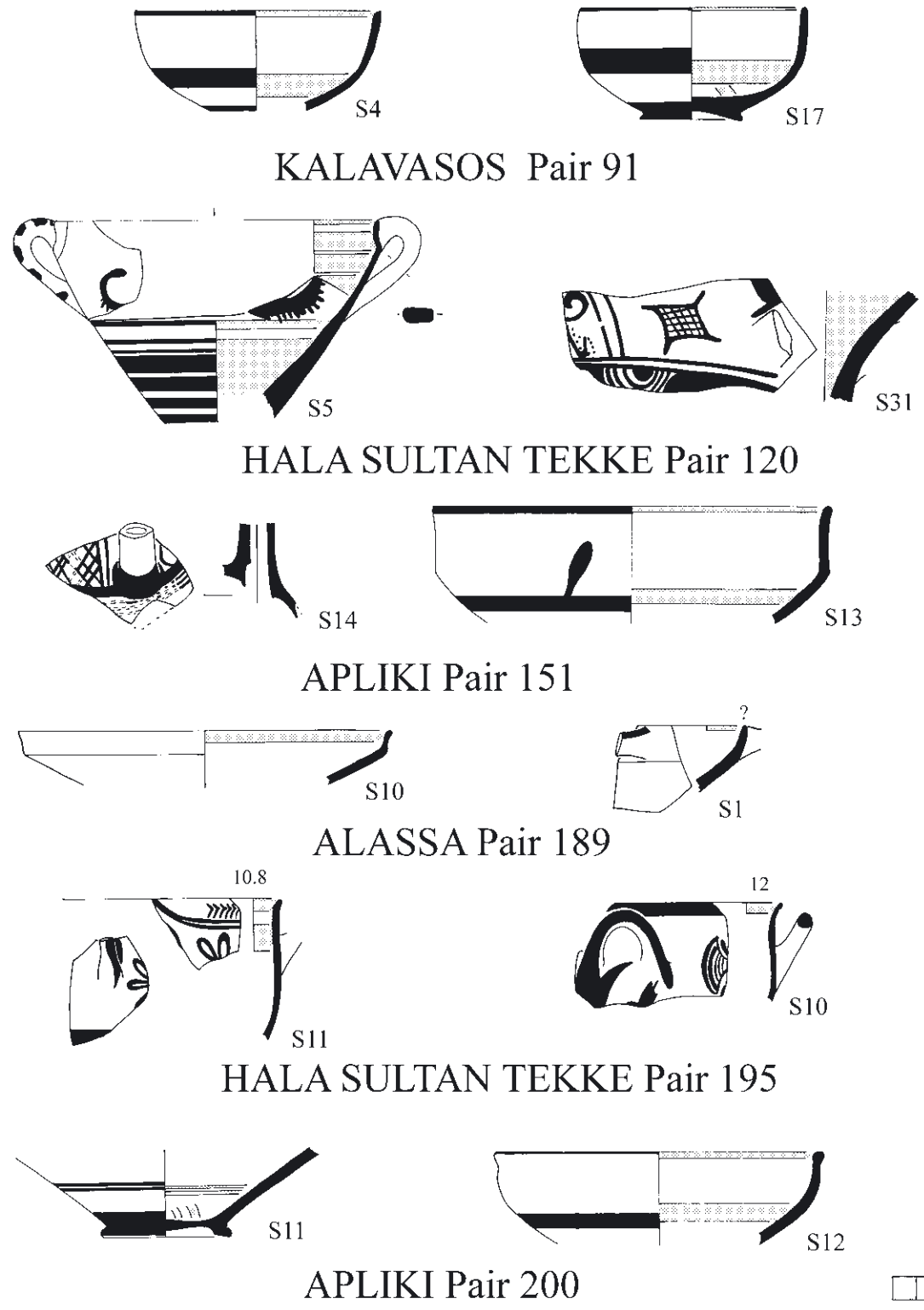

Fig.25 Pairs. Scale 1:3.

es;[83] S7 is a deep bowl, an example of the export of fine table ware as opposed to containers.

Pairs (Fig. 25)

Five sets of pairs, that is two sherds with the same unknown chemical profile have been isolated. Kalavasos Pair 91 comprises two Levanto-Helladic small locally made bowls FS 210. Hala Sultan Tekke Pair 120 has a Minoan-type carinated kylix S5 and a kalathos with pleonastic decoration S31, while Apliki Pair 151 comprises a stirrup jar S14 and a bowl Type 13 S13. The net decoration on S14 could be part of a triglyph or part of a triangle with double outline. The pair has unusually high scandium. Alassa S1 and S10, Pair 189, are bowl

[83] See Mountjoy 1998, 56, fig. 11, 57 fig. 12.1.

Type 7 and Type 9 respectively. This pair also has high scandium. The deep bowls Hala Sultan Tekke S10,11 Pair 195 both have derivative Minoan motifs. S11 has a petaloid flower[84] and S10 a Minoan papyrus.[85] Apliki S11 and S12, Pair 200, are both Levanto-Helladic types, the former a base of the bowl FS 296 and the latter the small bowl FS 210. This is another pair with high scandium.

Groups with unidentified origins (Figs. 26–27)

There are some groups of sherds for which the origin is unknown. Each group is generally from the same site and each group has its own chemical profile.

Group X075.

This group comprises four sherds from Alassa. The closed linear body sherd S8 is not informative; the jug S14 has an unusual thickened triangular rim; S18 is the bowl Type 6–9 and S6 a bowl Type 5. The group has unusually high scandium.

Group X076

This is a mixed group with samples from Enkomi and Hala Sultan Tekke. The Enkomi vessels are an interesting collection. They comprise **Enkomi S27**, the base of a feeding jug, a local shape almost always decorated with vertical bands from neck to base, **Enkomi S30, S5** and **S8**, bowl Types 3, 12 and 14 respectively, and **Enkomi S1**, a PWP sherd possibly from a belly-handled amphora. The bowl Type 14 is extremely rare at Enkomi; it is a south island product from workshops at Kourion and probably Kouklia. It is of interest that S8 comes from neither of these workshops. The presence of the PWP S1 is also unexpected, since the two main producers of PWP are Kition and Enkomi. However, **Kourion S9** shows local production at that site, suggesting that there was no monopoly of the style. The pleonastic **Hala Sultan Tekke S24** with paddle filler is also enigmatic, as only Enkomi, Sinda, Kition and Hala Sultan Tekke produced this pottery, the other sites with Cypriot IIIC pottery having been abandoned or destroyed; thus, one would expect it to match the chemical profile of one of these sites.

Group X077

Two sites at Idalion are involved here. The Levanto-Helladic bowl FS 244 S3 and pedestal bowl FS 310 S10 are from Idalion: Kafkallia, while the two Type 6 bowls S13-14 are from Idalion: Ambelleri. The sample from Idalion is very small, since the Cypriot IIIC material from the Swedish excavations has not been fully published and is all in Stockholm; thus no chemical profile could be achieved for Idalion. It is possible that X077 might be the chemical profile for the site, but the sample is too small to be certain. All these pieces have high scandium.

Group X078

This is a mixed group. **Idalion S11** is bowl Type FS 296/295 and **Athienou S3** is bowl Type 10. **Athienou S5** is a deep bowl with derivative Minoan decoration.

Group X079

Kition S21, possibly from a piriform jar FS 36, and **Kition S13**, a bowl FS 296, both have a greenish fabric, which might suggest that they are Mainland imports, but the chemical profile has characteristics of the other local groups.

Group X080

The group is assigned as probably from Kouklia. It comprises three deep bowls, which all have the monochrome interior found in the west of the island at Kouklia and Maa.

Three of the pairs, from Apliki and Alassa, and two of the groups, from Alassa and Idalion, all have very high scandium. Work by Artzy with NAA on Cypriot imports to Ras Shamra has shown that the composition of the clays of the White Slip wares was basaltic and also had high scandium.[86] Artzy has suggested the clays probably came from the Troodos.[87] This is certainly borne out by our groups here, which come from sites in the Troodos foothills in the north (Apliki), east (Idalion) and south (Alassa).

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84 See Khamalevri, Andreadaki-Vlazaki and Papadopoulou 2005, 367 fig.21 top right.

85 Khamalevri, Andreadaki-Vlazaki and Papadopoulou 2007, 46 fig.3.7.

86 Artzy *et al.* 1981, 44, 46 Table.

87 Artzy *et al.*1981, 45.

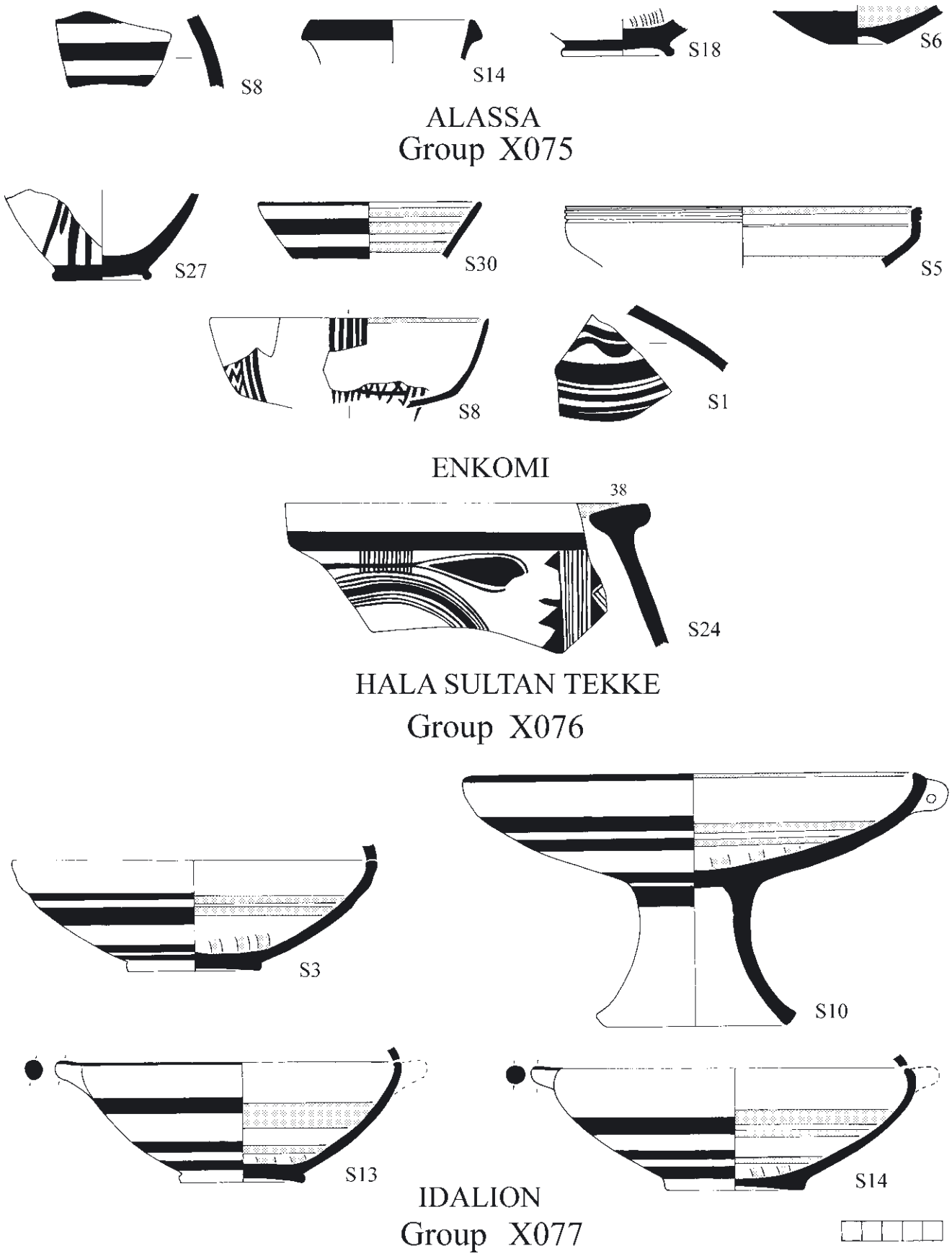

Fig.26 Local groups of unknown origin. Scale 1:3.

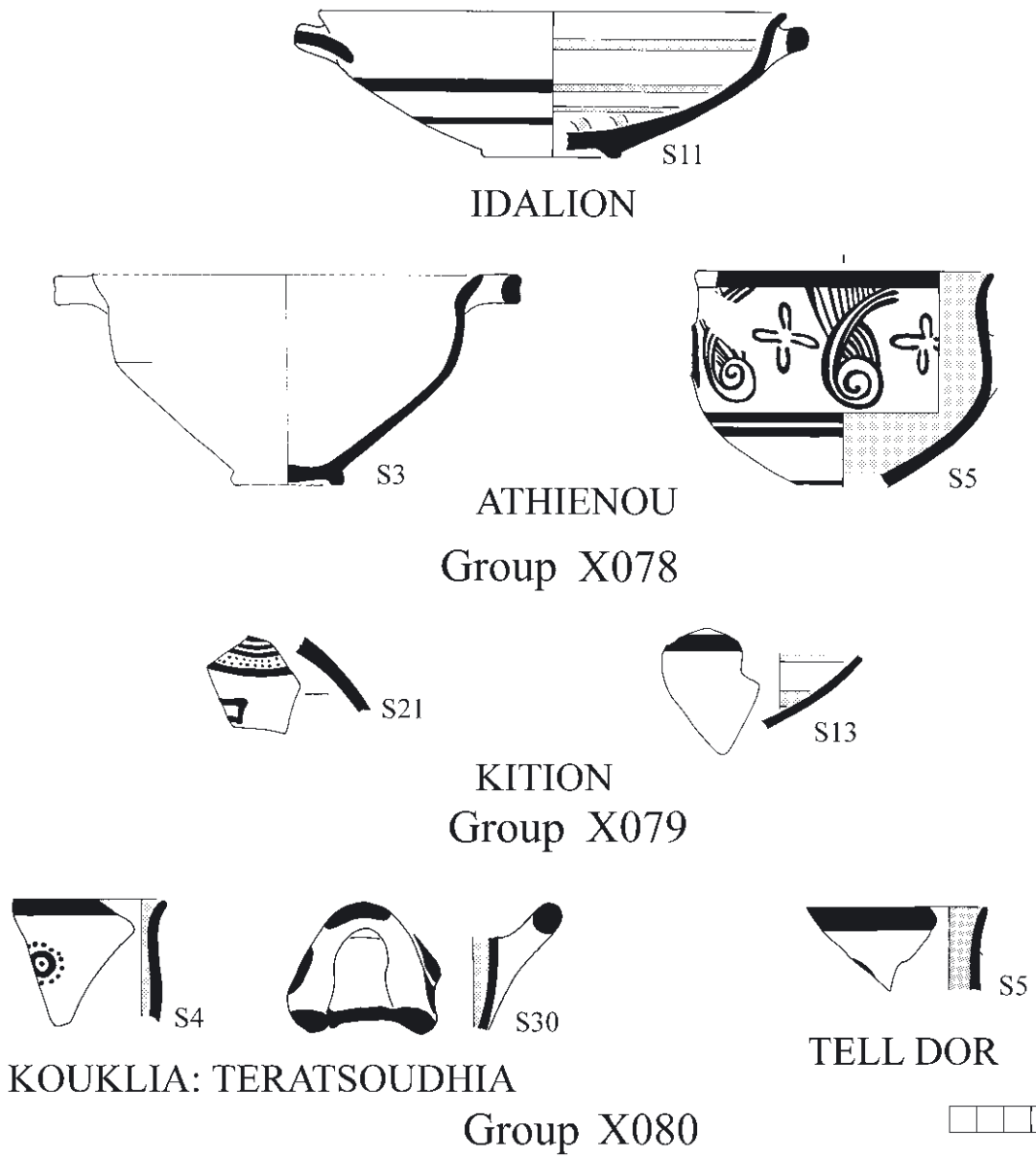

Fig.27 Local groups of unknown origin. Scale 1:3.

Singles (Figs. 28–30)

Sherds which did not match any known group are listed below by site.

Alassa

Apart from the deep bowl base S22, three of the bowl Types could not be assigned to any known chemical profile: Type 8 S29, Type 13 S3 and a possible example of Type 5, the unpainted S28. However, Type 5 is usually monochrome or linear, so it may be that S28 belongs to a different shape in the plain ware assemblage.

Apliki

The unusually large number of unassigned sherds from Apliki may reflect the nature of the site. As a mining site it seems not to have produced its own fine ware pottery, but to have imported it from elsewhere. This is demonstrated by the presence of pottery from the three main sites of Enkomi, Kition/Hala Sultan Tekke and Kouklia (Fig. 1). Apliki must also have used pottery from Toumba tou Skourou and other surrounding sites, both near and further away, such as Ankastina.

The Singles include the small Levanto-Helladic types FS 210 S19, FS 223 S16, FS 232 S17 and FS 310 S18. S6 is the linear jug FS 116. The stirrup jar S1 has no obvious parallels on the island; the goblet/kylix S21 belongs to a small group of vessels with the rim of the LHIIIB kylix and the deep body of the earlier LHIIIA1 goblet; it has the popular dot-filled triangular patch and should be local to the island. The strainer jug sherd S7 merits attention as it is decorated in the pictorial style

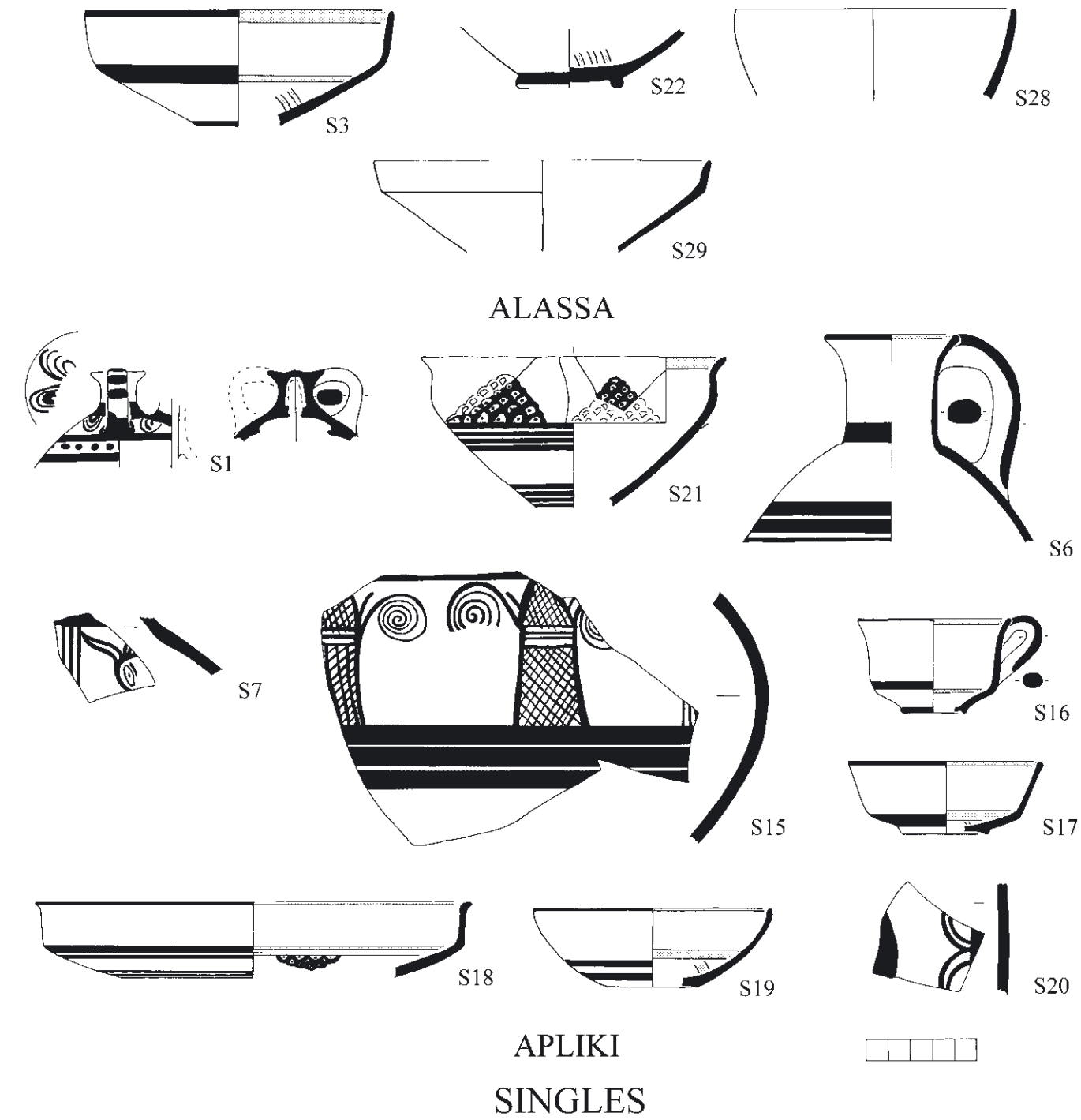

Fig.28 Singles of unknown local origin. Scale 1:3.

with bull. It would be of interest to know which centre it came from, as also the origin of the amphoroid and ring-based kraters S15 and S20, both of which have unusual decorative motifs.

Athienou

This is also a mining site for which no local chemical profile could be attained. The imported fine ware comes from Enkomi and Kition/Hala Sultan Tekke. The Rude/Pastoral Style krater S2 has three vertical lines between the handle stubs somewhat similar to the inverted V found in the same position on kraters from Bademgediği Tepe in the East Aegean/West Anatolian interface.[88] However, the main decoration suggests the vessel is a local product.

[88] Mountjoy 2009a, 68 fig. 4.1.

Fig.29 Singles of unknown local origin. Scale 1:3.

Hala Sultan Tekke

The two Minoan derived carinated kylikes S4,16 found no match. However, it is unlikely that they are Minoan imports as they deviate too much from the Minoan kylix.[89] The decoration of linked spirals on the deep bowl S8 is also Minoan derived.[90] The lack of a match for the Simple Style stirrup jar S33 and the pleonastic krater S1 raises questions, as it suggests that other unknown sites also produced these types.

[89] I thank B. Hallager for this information.

[90] See KARANTZALI 1986, 63 fig. 12 V.13.

Kalavasos

The fact that no match was found for a number of the Kalavasos samples is not surprising, as they are slightly earlier than most of the pottery sampled. All the pieces here are Levanto-Helladic types except the base S6, which is bowl Types 6–9, and S3, which is an early bowl Type 13. S7 and 14 are FS 210 and S21, 28 are the linear bowl FS 296. These types may have been produced using a different clay from that of the Cypriot IIIC types.

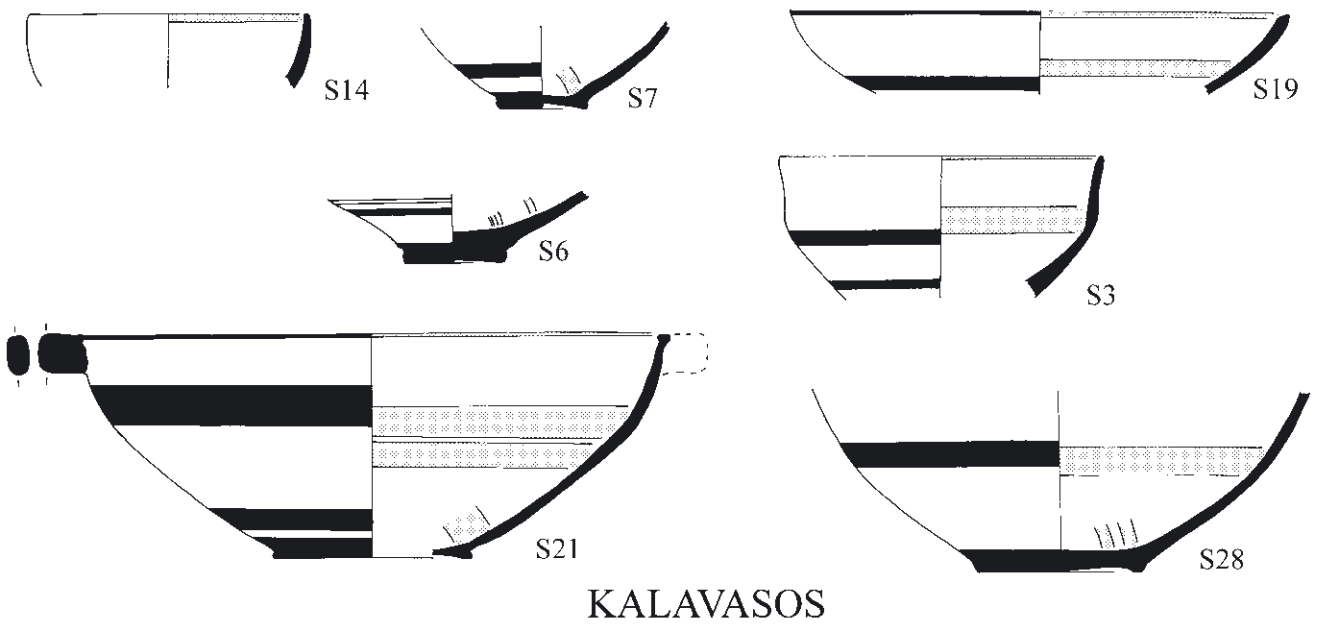

Fig.30 Singles of unknown local origin. Scale 1:3.

Kition

The four sherds from Kition are not informative. S2, 3, 29 are closed linear body sherds; S2 is probabaly from the large piriform jar FS 36, S14 and possibly S29 might belong to a jug or hydria.

Kouklia: Teratsoudhia

S20 belongs to a deep bowl. A possible source might be Maa: Palaiokastro, which was not included in the project for financial reasons.

Kourion: Bamboula

Three bowls Type 7 S7, Type 9 S4 and Type 14 S5 could not be assigned to any group.

PART II

This section briefly describes some of the pottery categories, which formed part of the 12th century Aegean-style assemblage. It outlines the considerable new amount of information provided by NAA as to their origins and their circulation on the island and abroad, highlighting workshops, items produced especially for trade, and hitherto unknown trade patterns of great interest for inter-regional trade.

The Levanto-Helladic Style

The term Levanto-Helladic was adopted by Sjöqvist to define a class of pottery in use in Cyprus in LCIIC.[91] The class was called Levanto-Mycenaean by Furumark as he used the term Mycenaean rather than Helladic to describe the pottery of the Aegean.[92] Furumark assigned a number of LHIIIB shapes which he thought typical of the east Mediterranean to his Levanto-Mycenaean style.[93] I have separated the style into two components, an Aegean group (Figs. 31–32) comprising shapes exported from Mainland Greece, some of which were then made locally, and a Cypriot group (Fig. 32) comprising types of local derivation.

As a rule the Aegean shapes with lustrous paint are generally Mainland imports and those with matt paint are local products. However, this criterion cannot always be applied, since lustrous paint can lose its lustre and appear matt. This is particularly highlighted by the linear version of the shallow bowl FS 296, which was both imported and locally made. Moreover, NAA has also demonstrated that matt painted pieces can be Argive imports, such as FS 296 **Kalavasos S5** (Fig. 23),[94] and that lustrous painted pieces can be locally made: examples of FS 296 **Kition S8** (Fig. 7) and **Kalavasos S27** (Fig. 12) are assigned to CypI Enkomi and CypJ Kition/Hala Sultan Tekke respectively. In addition NAA of pieces with lustrous paint exported to Megiddo (a piriform jar FS 36 (Fig. 13) S7 and two Simple Style stirrup jars (Fig. 34) S4–5) has also assigned them to the CypJ group. It seems that small amounts of lustrous painted pottery were produced in some Cypriot workshops (see below Near Eastern group).

The Mycenae/Berbati chemical profile (Fig. 23)

NAA has assigned a large number of LHIIIA2–IIIB Aegean exports to workshops in the north-east Argolid.[95] Our programme also included some imported Levanto-Helladic pieces. Imported pieces with lustrous paint assigned by NAA to the Mycenae/Berbati chemical profile include the cylindrical jug FS 139 **Athienou S7**, and the linear cup FS 220 **Kalavasos S2,8,** but the commonest shape is the bowl FS 296 **Apliki S4**, **Idalion S12**, **Athienou S8, Kalavasos S5, Kition S9**. The only non-Levanto-Helladic piece assigned to this profile is **Kouklia S16** (see below for a definition of the Levanto-Helladic style and vases).

The Levanto-Helladic types appear on the Greek Mainland in LHIIIB and continue on Cyprus into Cypriot IIIC Early 1, that is LCIIC equivalent to Enkomi Level IIB. One or two of the large imported shapes were locally manufactured in LCIIIA, but most of them disappeared, as also the small locally produced bowls; these gave way to a new set of bowls, Bowl Types 1–14, which started to appear in late LCIIC, became dominant in the first part of LCIIIA, corresponding to LHIIIC Early 1 and continued into later LCIIIA corresponding to LHIIIC Early 2 and LHIIIC Middle.

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91 Sjöqvist 1940, 65–73.

92 Furumark 1941a, 9–10.

93 Furumark 1941a, 590, 603, 606, 610, 622–24, 626, 632–33, 636, 638; see also Leonard 1994, 7 for a useful chart of the shapes.

94 See also Tell Kazel, Jung 2006, TK34 154 fig. 7.21.

95 For example, Zuckerman *et al*. 2010.

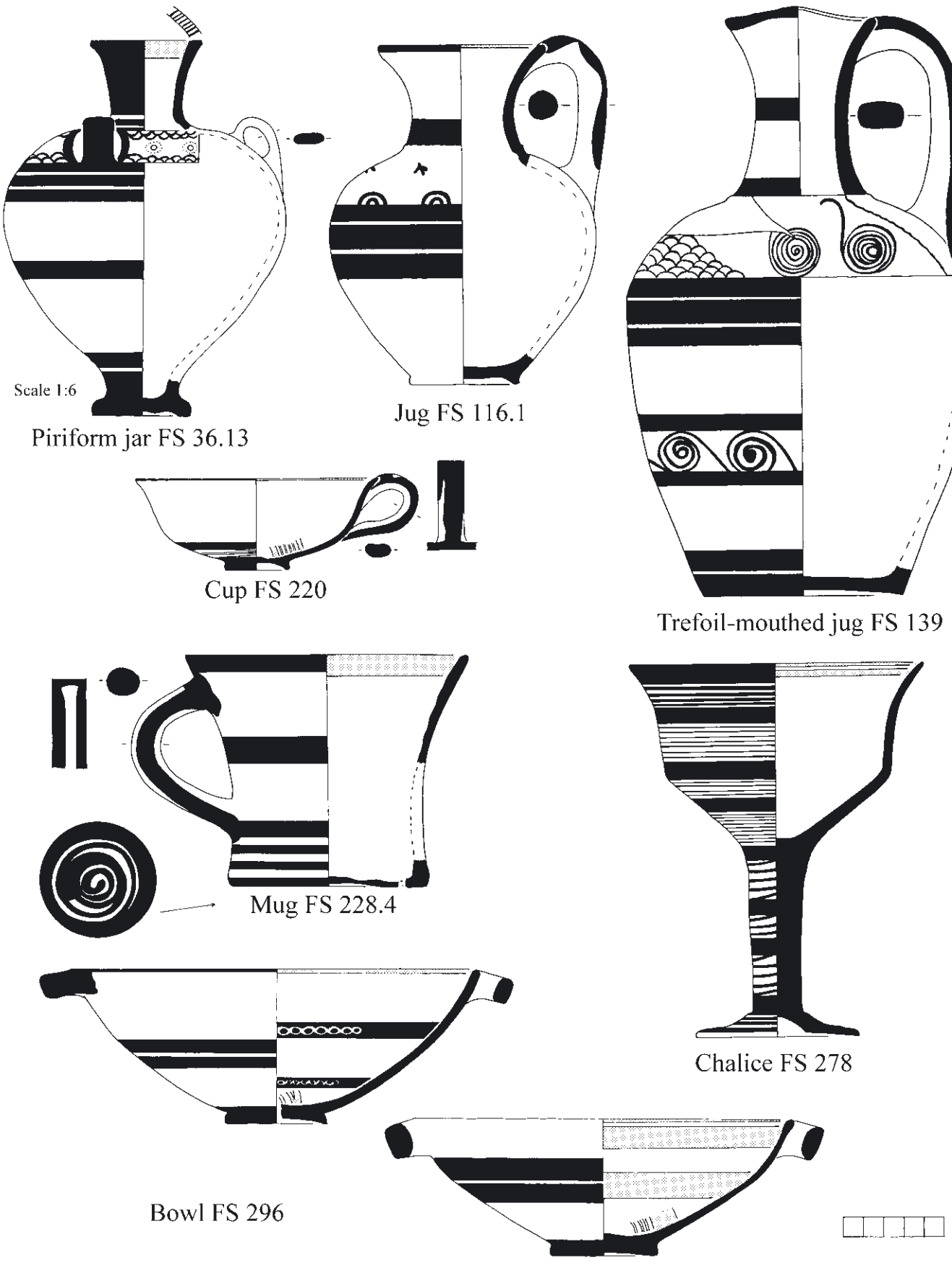

Fig.31 Levanto-Helladic types. Scale 1:3.

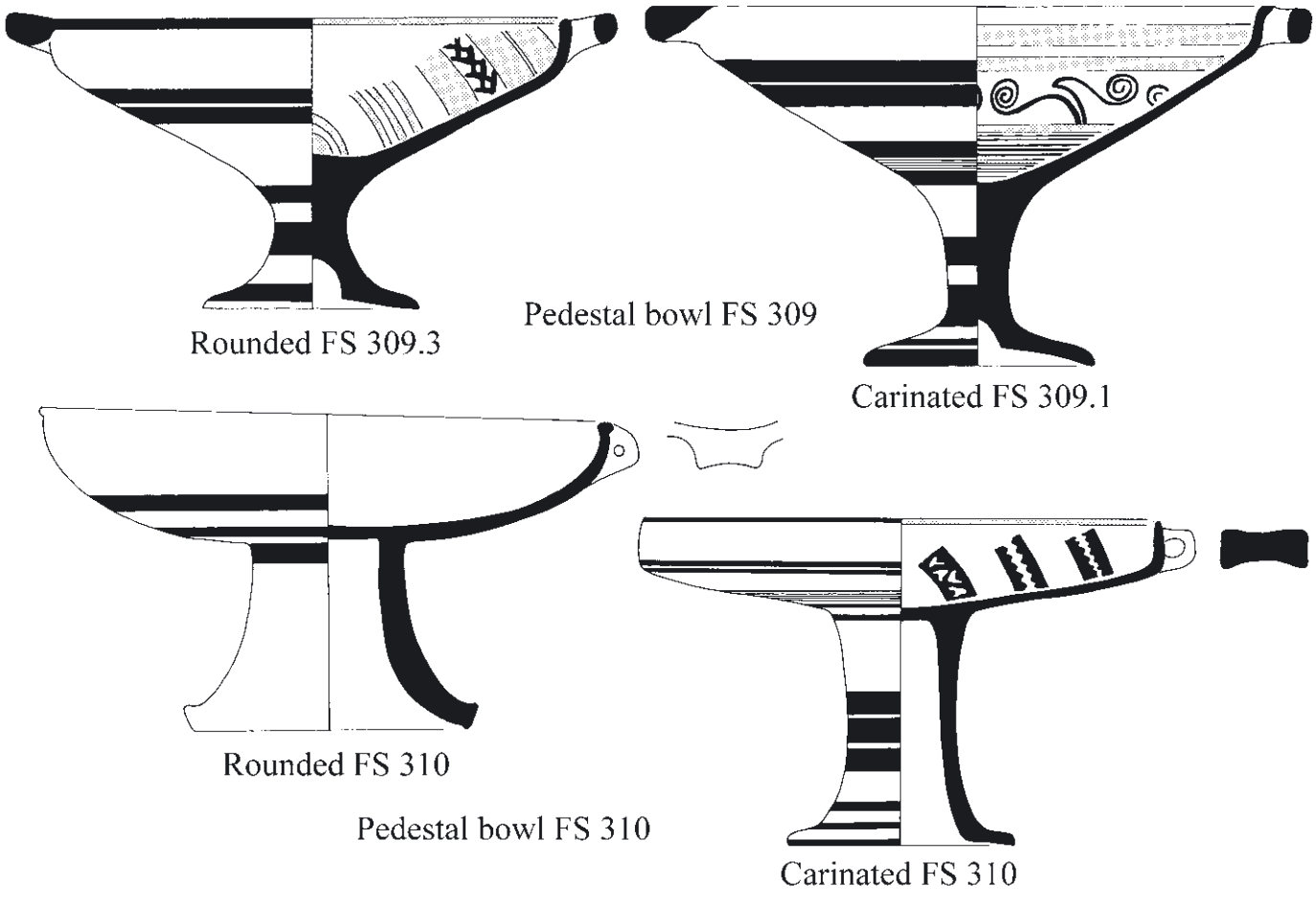

Fig.32 Levanto-Helladic types. Scale 1:3.

Levanto-Helladic pottery is not common in Syria-Palestine; only the large piriform jar FS 36 and the shallow bowl FS 296 are better attested.[96]

The imported Aegean Levanto-Helladic shapes (Figs. 31–32)

Imported shapes include the large piriform jar FS 36, the jug FS 116, the trefoil mouthed jug FS 139, the linear cup FS 220, the mug FS 228, the chalice FS 278, the shallow bowl FS 296 and the pedestal bowls FS 309, FS 310. These shapes are rare in Greece, if they appear there at all; they seem to have been made especially for export. They are generally large shapes and were perhaps imported as prestige objects to impress; subsequently FS 36, FS 116, FS 220 linear, FS 296 linear and FS 309, 310 were locally produced on Cyprus in LCIIC.

Since some of the imported Levanto-Helladic types were subsequently locally produced, we sampled some pieces to test for local production. The large piriform jar FS 36 was locally produced at Enkomi, **Enkomi S35**, Kition/Hala Sultan Tekke, **HST S3**, and Kouklia, **Enkomi S36**. FS 36 continued to be produced in LCIIIA; **Enkomi S36** is in fact the Cypriot IIIC type; it has a good parallel at Kouklia.[97] This shape was exported from Kition/Hala Sultan Tekke to Megiddo, **Megiddo S7**, and to Tell el-Fa'rah **Oren S24**. A jug FS 116, **Kalavasos S18**, is associated to Kouklia CypG. An example of the cylindrical jug FS 139, **Athienou 1**, was an import from the Mycenae/Berbati area, as also the linear cup **Kalavasos S8**. Two obviously locally produced examples of the pedestal bowl FS 310, **Idalion: Kafkallia S10** and **Apliki S18**, were assigned to the unknown Group X077 and as a Single respectively.

The commonest of the imported Levanto-Helladic shapes is the large bowl FS 296; the patterned examples are usually imports, but the linear type was a common local product. NAA has assigned the patterned **Apliki S4, Idalion S12** and **Kition S9** to MYBE; all have lustrous paint. The linear **Athienou 8** with lustrous paint is also MYBE; however, the linear **Kalavasos S5**, which is MYBE, has matt paint. Other linear examples with matt paint were produced at Enkomi, **Kalavasos S30, Kition S8, 12**, and at Kouklia, **Kalavasos S12, 29**. However, the linear **Kalavasos S27** with lustrous paint is assigned to Kition/Hala Sultan Tekke. This is another instance of the production of lustrous painted vessels of Aegean-type at these two sites. The remaining linear bowls analysed could not be assigned to a known chemical profile. All have matt paint: **Kition S13** is Group X079, **Apliki S11** is Pair 200 and **Kalavasos S21, 28** are Singles.

The local Cypriot Levanto-Helladic shapes (Fig. 32)

The local Cypriot Levanto-Helladic types are all small shapes comprising a large number of small cups and bowls: FS 210, 223, 229, 232, 235, 244, 247. These shapes are not found in Mycenaean Greece. They may be adaptations of Plain White Wheelmade shapes.[98]

The few examples we analysed were almost all Singles. These types were produced in late LCIIC, that is before and at the beginning of the production of the Cypriot IIIC Aegean-style vessels. The NAA results suggest that different clays were used for these local types than for the Aegean-style vessels. Only three of the vessels analysed could be assigned to production centres. **Kalavasos S20**, a bowl FS 210, was made at Kouklia, as also **Apliki S8**, a cup FS 223; **Idalion: Kafkallia S4**, a bowl FS 244, was made at Enkomi. Vessels which were assigned as Singles are FS 210 **Apliki S19, Kalavasos S14, 7**, FS 223 **Apliki S16**, and FS 232, **Apliki S17**. A bowl FS 210 **Apliki S12** is part of Pair 200, and a bowl FS 244 **Idalion: Kafkallia S3** belongs to Group X077, together with two examples of FS 310 from Kafkallia and Apliki listed above. These small open types were in use on the cusp of the change from the use of local types to that of Aegean-style wares. The NAA of these vessels highlights the gradual introduction of the change of clay from the total production of local wares to the manufacture of Aegean-style wares.

The earliest imitation of Mycenaean pottery on Cyprus (Fig. 33)

Furumark included some LH IIIA shapes in his definition of the Levanto-Helladic style. One of these is a small conical piriform jar FS 47, which

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96 Leonard 1994, 6.

97 Maier and von Wartburg 1985, pl. 11.5.

98 For example, Furumark 1941a, 32 fn. 5, 66 fn. 2.

99 See, for example, Mountjoy 1999, 115 LH IIIA2 early, Argolid nos.142–45, and LH IIIA2 late, Argolid no.146).

Fig.33 The earliest Cypriot imitation of Mycenaean pottery. Enkomi Murray *et al*. 1900, T.45 fig. 71.945, T.88 fig. 62.1253 (drawings PAM), Hala Sultan Tekke, after Öbrink 1983, Figs. 50i, 110. Scale 1:3.

usually depicts reversed curve-stemmed spirals running round the shoulder including under the handles. These vessels have a deep decorative zone in order to accommodate the spirals below the handles; such a deep zone is usually found on LH IIIA2 early piriform jars, suggesting a date in this phase for the group, since the LH IIIA2 late piriform jar has a narrower decorative zone.[99] This type is extremely common on Cyprus with about 70 vessels noted,[100] but rare in Syria-Palestine.[101] Åström suggested that they were produced on Cyprus, a suggestion based on the soft fabric, the flaking slip, the shape and the decoration.[102] He then had a piece from Hala Sultan Tekke (Fig.33) analysed by NAA in Bonn; it was assigned as a Single, but similarities to two Cypriot groups suggested a Cypriot provenance for the piece.[103] The increased number of analyses from Hala Sultan Tekke as a result of our programme have enabled this piece to be assigned to our Group CypT, thus confirming its local provenance. This result suggests that the other vessels, which all have the same characteristics, were also locally produced on Cyprus, at Hala Sultan Tekke and at other sites. The piriform jar with spiral decoration FS 47 is thus the earliest Mycenaean type to be produced on Cyprus.

The Simple Style (Figs. 34–35)

Furumark was the first to recognise the Simple Style as a separate class after study of examples from Syria, Palestine and Egypt.[104] He assigned three main shapes to the style: the large Levanto-Helladic piriform jar FS 36, the stirrup jar, especially FS 173, and the lentoid flask FS 186.[105] All these types had linear decoration consisting of broad bands, or in the case of the lentoid flask, vertical concentric circles. Furumark emphasised that his classification was provisional, as he had only had access to a limited range of vessels.[106] The banding of the Simple Style vases was then connected by Koehl and Yellin to that of LMIIIB vases,[107] particularly stirrup jars.[108]

Leonard subsequently reviewed the Simple Style and emphasised that it applied only to vessels with broad bands; he excluded vessels with fine line groups between the bands, such as are found on Mycenaean vases.[109] He noted that the commonest stirrup jar shape to carry the Simple Style was the globular FS 171–173; the squat FS 178–180 and the conical FS 182–83 were less popular,[110] as also the two-handled lentoid flask FS 186.[111]

The place of origin of the Simple Style was unknown until Koehl and Yellin associated it with

100 Åström 1972, 302–04.
101 Leonard 1994, 20 lists two examples.
102 Åström 1972, 302–04, 1973, 127.
103 Mommsen *et al.* 2003, 6–7.
104 Furumark 1941b, 116–18.
105 Furumark 1941b, 116 fn. 3–5.
106 Furumark 1941b, 117 fn. 3.
107 Koehl and Yellin 1982, 273.
108 For example Popham 1964, pl. 5c–f globular, pl. 6a–d squat.
109 Leonard 1994, 7–8, 51, 61.
110 Leonard 1994, 55–56, 60, 61, 64, 66, 77–78.
111 Leonard 1994, 82–83.

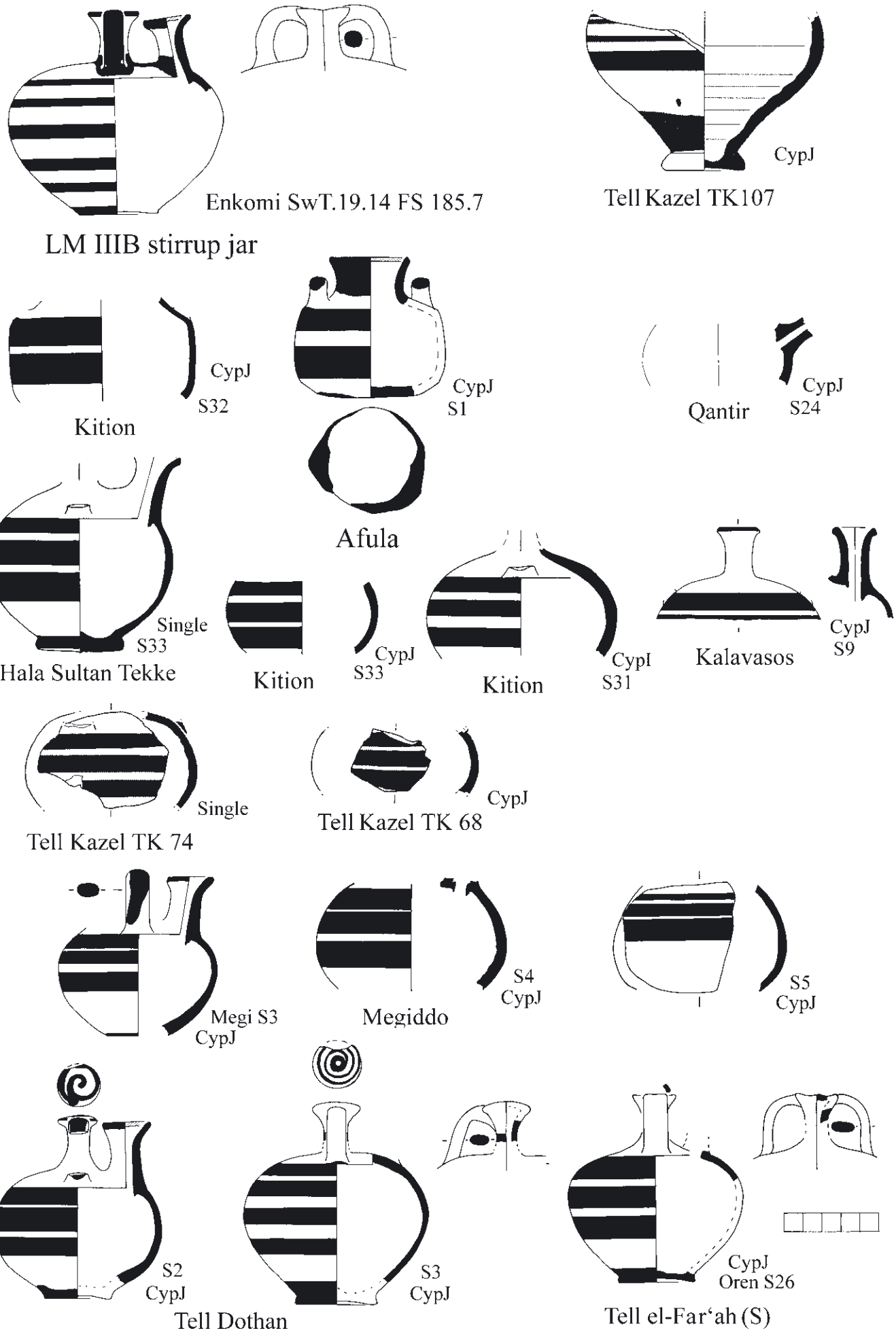

Fig.34 The Simple Style. Scale 1:3.

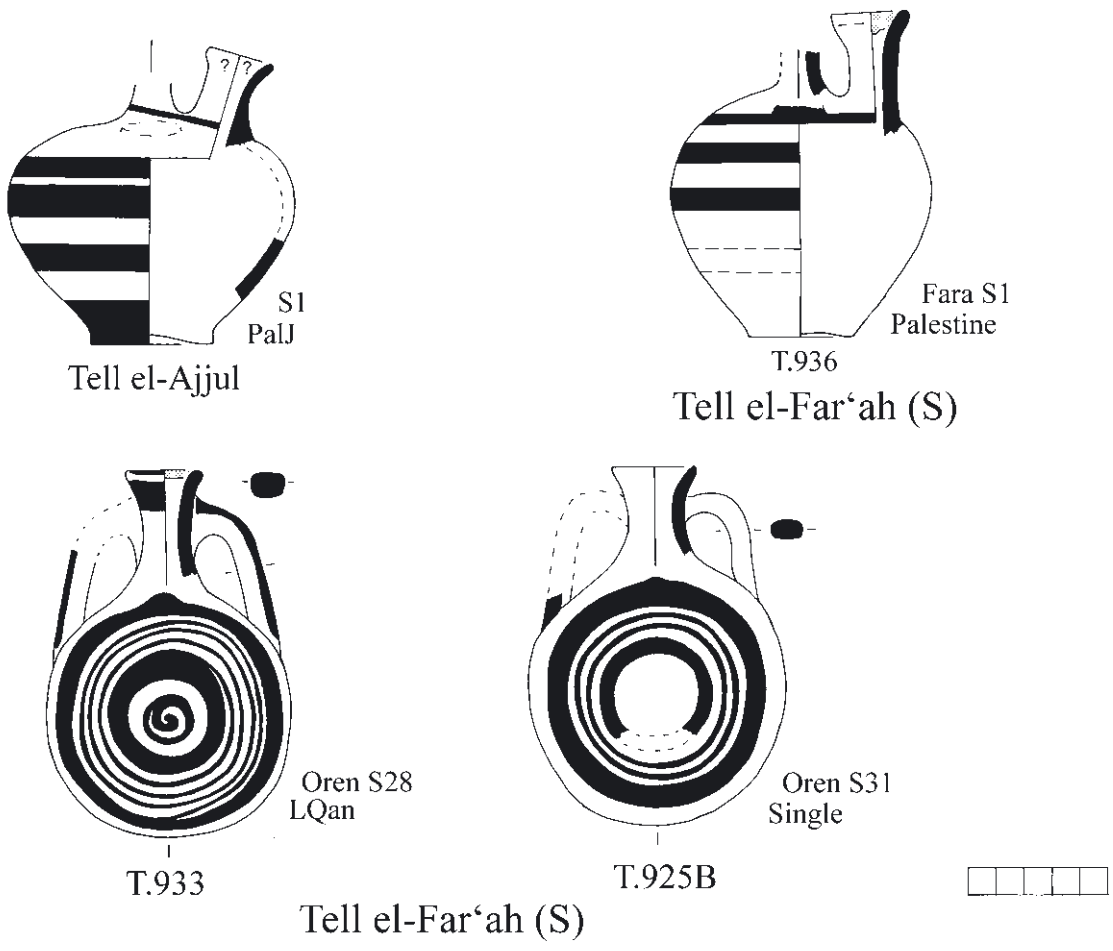

Fig.35 Vessels from unlocated Palestinian workshops. Scale 1:3.

Cyprus after chemical analysis by NAA of a vessel from Tell es Sa'idiyeh in Jordan.[112] Since then a number of chemical analyses have been able to assign Simple Style vessels to workshops in Cyprus and in the Levant. One of the problems with Cyprus as the source of the Simple Style was that it did not seem to be present on the island.[113] However, there are now pieces from Kalavasos and I have identified three sherds in the Kition Floor IV–-IIIA deposits; two vases from Hala Sultan Tekke T.1 can also be assigned to this style. The style is probably better represented on the island than it appears to be and has not been recognised in sherd material.

In the meantime analysis by NAA of Simple Style sherd material from Qantir in the Nile Delta had assigned some of it to Cyprus. There were two chemical groups, HCYP, with 10 pieces, (now CypH) and Kqan, with three pieces; however, the provenance of the latter group was less certain; it could be either Cypriot or Egyptian.[114] Subsequently Simple Style pieces from Israel, from the western Negev and north Sinai, were assigned by NAA to CypH (seven pieces) and to CypI (one piece).[115] Simple Style sherds from Tell Kazel in Syria have also been assigned by NAA to the CypH group.[116] Further analysis has been able to locate the CypH group to Sinda.[117] The analyses of Cypriot IIIC pottery from 10 of the Cypriot IIIC sites undertaken by the author and H.Mommsen for this study have enabled the large CypH group to be split into CypH and CypJ. The CypJ pottery production was centred at Kition and probably also at Hala Sultan Tekke. This refinement means that a large number of samples assigned to CypH have now moved to CypJ. These include all the CypH pieces analysed

[112] Koehl and Yellin 1982, 273.

[113] Koehl and Yellin 2007, 202–03.

[114] Mountjoy and Mommsen 2001, 125–33, 138, 146–48; Mountjoy 2011c, 179–80.

[115] Mommsen *et al*. 2005.

[116] Badre *et al*. 2005, 32–33.

[117] Mommsen and Sjöberg, 2007.

from the western Negev and north Sinai[118] and from Qantir.[119] Many of these samples are from Simple Style vessels.

Our analyses included some Simple Style vessels. The straight-sided alabastron FS 94, 96 can now be added to the corpus. NAA asigned both **Kition S32** and **Afula 1** to CypJ. Analysis of more stirrup jars assigned **Kition S33, Kalavasos S9,** Megiddo **Megi S3** and **Tell Dothan S2–3** to CypJ and **Kition S31** to the Enkomi CypI profile. **HST S33** proved to be a Single. Other CypJ stirrup jars have moved from CypH. They include **Megiddo S4–5, Tell el-Fa'rah Oren S26**, and **Tell Kazel S68**; **Tell Kazel S74** remains a Single. The piriform jar **Tell Kazel S107** and the feeding bottle **Qantir S24** have also moved to CypJ. NAA demonstrates that the Kition/Hala Sultan Tekke workshops had a thriving trade with the Levant for the contents of the Simple Style vases. They also exported other vessels. These include the large Levanto-Helladic piriform jar FS 36, **Tell el Fa'rah Oren S24** (Fig. 14) and **Megiddo S7** (Fig. 13). The latter is patterned and also has lustrous paint. The stirrup jar **Dothan S1** (Fig.13) is also patterned with the triangular patch so characteristic of the island, but most vessels are linear. Aegean-style vessels, particularly stirrup jars, were also imitated in local Palestinian workshops (Fig. 35). The Simple Style stirrup jar **Fara S1** has a chemical profile assigned as general Palestine, but the Simple Style **Ajjul S1** belongs to the PalJ chemical profile. This workshop, which includes material from Qantir,[120] is still unlocated, as also another workshop represented at Qantir, that with the LQan profile to which the lentoid flask FS 186 **Tel el-Fa'rah Oren S28** belongs. Another flask **Tel el-Fa'rah Oren 31** is a Single. The style was produced in late LCIIC, that is LHIIIB2 and Cypriot IIIC Early Phase 1.

The Rude/Pastoral Style (Fig. 36)

A.H.Smith coined the name Rude Style for a class of pottery which was produced in Cyprus in the second half of LHIIIB, that is late LCIIC.[121] The style was particularly used on the ring-based krater FS 281, but the amphoroid krater does appear. These vessels replaced the ring-based and amphoroid kraters decorated in the Pictorial Style, which had been imported from the Greek Mainland during LHIIIA2 and LHIIIB1. In mid-LHIIIB disturbances began on the Greek Mainland and import of these vases dried up. Karageorghis and Vermeule have analysed the style and divided it into three stylistic phases: Early, Middle and Late.[122] They suggested that it be called the Pastoral Style after the motifs adopted from the natural world.[123] However, since a large number of these kraters are decorated with spiraliform motifs, the term Rude Style is used here together with Pastoral Style. It is now recognised that the Rude/Pastoral Style did continue into LCIIIA.[124]

The Rude/Pastoral Style ring-based krater is generally a small shape with rim diameter around 26–30 cms, in contrast to the larger LHIIIB imported types, although there are exceptions. There is a limited range of motifs. It comprises both pictorial and abstract representations with both types sometimes appearing on the same vessel. The three most used pictorial motifs are the bull, the bird and the goat, with the bull by far the most popular; lions and sphinxes appear, but are rare. Spirals are usually running spirals, but there is also an agglutinative form in which stemmed spirals are elaborated with filling motifs (Fig. 36 bottom).

Some chemical analysis of Rude/Pastoral Style pottery has been carried out particularly by Anson.[125] Anson, using Optical Emission Spectroscopy (OES) was able to show that the style was produced by workshops at Enkomi, Kouklia and, possibly, Kition.[126] Subsequent analysis by NAA in Manchester, which included some Rude/Pastoral Style sherds from Enkomi, confirmed that the style was produced at Enkomi.[127]

A few Rude/Pastoral Style sherds were included in our project. They belonged only to the Enkomi CypI, the Kition/Hala Sultan Tekke CypJ and the Kouklia CypG and CypS chemical profiles, demonstrating that the style was produced in all

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118 Mommsen *et al*. 2005, Samples 2, 15–18, 24, 26.

119 Mountjoy and Mommsen 2001, Samples 9, 10, 24, 49, 51, 53, 56, 57, 61, 68, 70, 81, 98; 51 and 55 are CypJ assoc.

120 Mountjoy and Mommsen 2001, S7, 54, 59, 66, 69, 71–72.

121 Smith 1925, 7.

122 Karageorghis 1965, 231–59; Vermeule and Karageorghis 1982, 59–68.

123 Vermeule and Karageorghis 1982, 60.

124 Vermeule and Karageorghis 1982, 67, Kling 1989, 123–24.

125 See Jones 1986, 603–09 for an overview.

126 Anson 1980a, 1980b, 14–16.

127 Bryan *et al*. 1997.

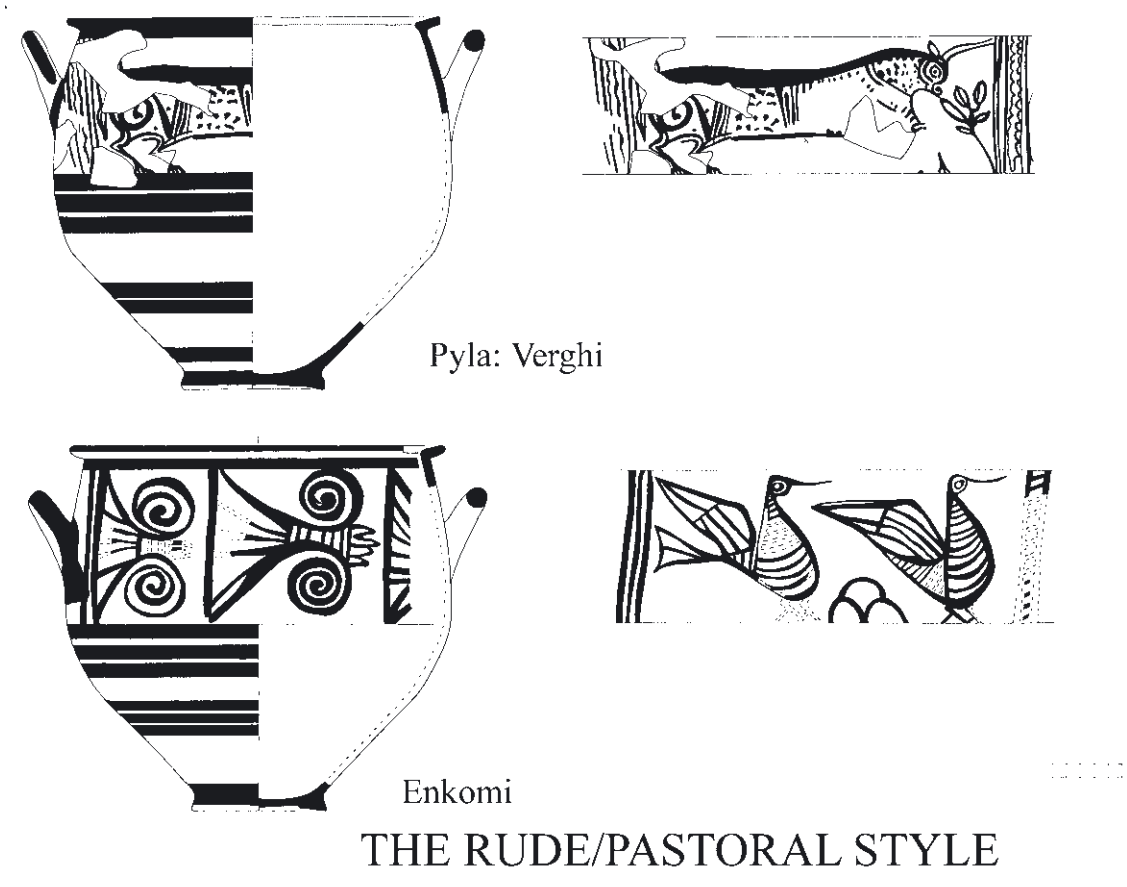

Fig.36 The Rude/Pastoral Style: bull, Dikaios 1969, pl. 233.3, agglutinative spiral, bird, Murray *et al*. 1900, fig. 71. Drawings PAM. Scale 1:6.

three centres. More analysis is needed to know if it was also produced at other centres; a Single, **Athienou S2**, might suggest at least one other workshop. The CypI vessel **Idalion: Kafkallia S1** has a T-rim instead of the usual long, everted rim found on this shape. The CypJ pieces include **Kition S11,28** with triglyphs and **Kalavasos S15, 23–24** with bull and triglyphs; there are also two exports to the Levant, **Tel Dor 12–13,** with spiraliform decoration. **Kouklia S23–25,** depicting bull and triglyph belong to the CypG profile. A large sherd depicting a bull analysed by Perlman and Asaro,[128] (Fig. 18 bottom right), can also be assigned to CypG, as, too, the sherd with the lady, (Fig. 18 bottom left). Another Rude/Pastoral Style krater **Kouklia S22** with bird is assigned to CypS, as also **Kalavasos S22** with running spiral.

The Bowl Typology

The following is an abbreviated account of the extended pan-island bowl typology in Mountjoy, in press c. It has seemed advisable to include it here as a number of the different bowl types have been included in our programme and the names of the types without further identification will be meaningless to the reader. The text is intentionally repeated almost verbatim, as the book will be some time in press.

One of the characteristics of late LCIIC and early LCIIIA, that is LHIIIC Early 1 in Greek mainland terms, is the appearance of very large numbers of linear bowls; they have different shapes, often with variants, and different pedigrees. Some bowl shapes appeared in the equivalent of Greek mainland LHIIIB2, but most appear in the equivalent of LHIIIC Early 1. Production of most of these bowl types continued throughout LCIIIA, but the acme was at the beginning of the phase. They appeared at a time when the import of Mycenaean pottery had almost totally ceased due to events in the Aegean area; thus locally made kraters painted in the Rude/Pastoral Style and locally produced Levanto-Helladic shapes formed

[128] Karageorghis *et al*. 1972.

the decorated component of the late LCIIC ceramic assemblage. The bowls appeared shortly after these two wares and ultimately replaced the Levanto-Helladic small bowls to become dominant in early LCIIIA. They functioned particularly as burial gifts, usually being the main vessel type put in the tombs. Although the number of samples in our project is not large, nevertheless NAA has illustrated considerable movement of these vessels round the island. They are not found outside the island, apart from a version of Type 10, which appears in the Near East, but which may not be Cypriot derived.[129]

Bowl typologies have been produced by several scholars with particular reference to assemblages they have excavated, such as Karageorghis 1965 for Kouklia: Mantissa, Benson 1972 for Kourion and Maier 1985 for Kouklia: Palaepaphos. Overviews have also been made, the most recent being Åström 1972 and Kling 1989. However, there is now a much larger corpus of material, which enables the typology of the bowls to be more narrowly defined. In an island-wide survey based on the sites with Cypriot IIIC pottery it has been possible to assign the bowls to 14 different types, some of which have subgroups. The types correspond broadly to the Karageorghis types, but there are numerous exceptions.[130]

Handleless bowls (Fig. 37)

Type 1

A wide shallow shape with rounded or conical sides, cut-off rim with deep central groove giving rise to a ledge, and a ring base. Decoration can be linear, monochrome or monochrome with reserved bands on exterior and interior. Karageorghis 1965, Type A1, Kling 1989, Type 4; Åström's WPWM III Type IIIA is a mixture of shapes.[131] No examples of Type 1 were analysed.

Type 2

The shape is a development of the Levanto-Helladic FS 210 (Fig. 32).[132] The lower body is semi-globular, with flaring upper body with lipless rim; the base is a ring base. Decoration is linear. There is no Karageorghis type for this shape, as it was not present in the Mantissa deposit. Kling 1989, Type 5b comprises three different shapes, but 1989, fig. 6d is Type 2; Åström's WPWM III Types 1C, 1E are also a mixture of types, but include some examples of Type 2.[133]

Both the Type 2 vessels we analyed were imports: **Enkomi S10** (Fig. 21) is assigned to CypS and **Kition S4** (Fig. 7) to CypI.

Type 3

This is a mixture of FS 209 and a handleless version of the Levanto-Helladic cup FS 232 (Fig. 32). It is a shallow shape with flaring conical sides above a carination on the lower body, a lipless rim and a raised concave or ring base. There is much variation in the shape, which includes a variant with a flat base. Decoration consists of multiple bands on the interior and exterior, often with a spiral on the interior base, which may continue up the sides of the vessel. Some vessels are bichrome. There is no Karageorghis type for this shape, as it is not present in the Mantissa deposit. Kling 1989, Type 8 figs. 8a–b, Benson 1972, 85 Type 7 and Åström 1972, 280 WPW III Type IGa also correspond to Type 3.

Kition S38 (Fig. 11) is assigned to CypJ, **Kourion S8** (Fig. 16) to CypF and **Enkomi S30** (Fig. 26) to Group X076. X076 is a small group which also contains a Type 12 and a Type 14 bowl. **Kition S34** (Fig. 11), the variant with flat base, is also assigned to CypJ; it is bichrome. Both the Kition vessels are assigned to the local chemical profile, but the Kourion vessel, which has a convex base, was imported from nearby Alassa.

Type 4

A carinated deep bowl with conical lower body and straight upper body with lipless flaring rim and a high ring base. Decoration is linear with a monochrome interior with reserved circle on the base. This type has only been found at Kition. Kling 1989, Type 9. No example of Type 4 was analysed.

Type 5

The shape is generally hemispherical, but there are shallow examples; the rim is lipless and the base flat raised, the latter with pointed edge and counter-sunk. The shape is linear, often with a spiral on interior base, or monochrome with reserved bands

[129] See Mountjoy, in press d.
[130] Karageorghis 1965.
[131] Åström 1972, 281.
[132] Furumark 1941a, 66 fig. 19, 620.
[133] Åström 1972, 278–80.

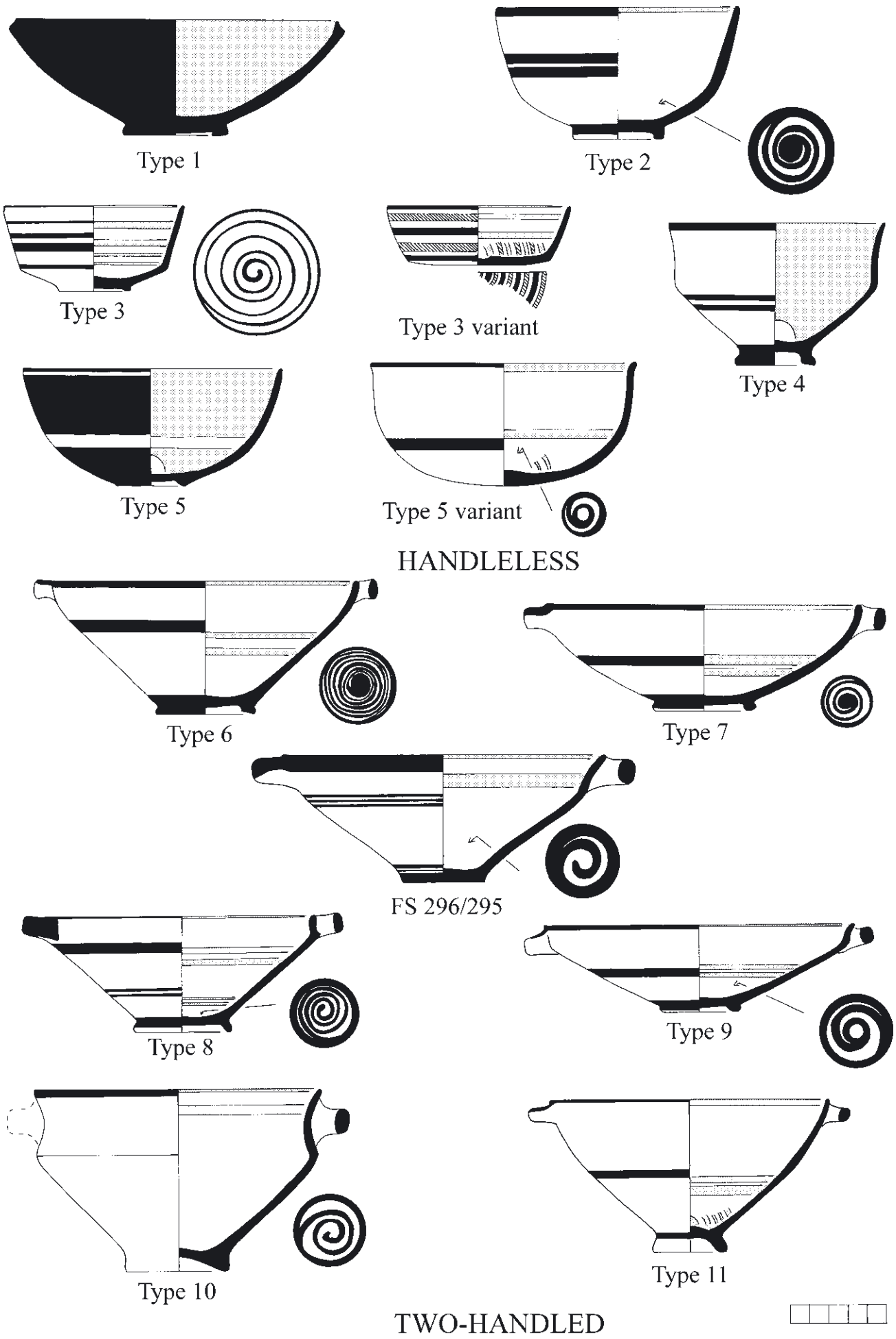

Fig.37 The Pan-island Bowl Typology. Scale 1:3.

and reserved circle on the interior base. There is a variant with a flat base. Karageorghis 1965, Types A2, A3, Kling 1989, Type 5a fig. 6a, Benson 1972, 84 Type 6, Åström 1972, 277–79, WPW III Types IB flat-based, ID counter-sunk.

This type was widely produced. **Enkomi S6** (Fig. 5) is assigned to the local CypI profile and **Kourion S6** (Fig. 17) to the local CypN. **Alassa S26** (Fig. 19) is assigned to the Kouklia CypG profile and **Alassa S6** (Fig. 26) to Group XO75.

Two-handled bowls (Fig. 37)

Type 6

Vessels assigned to this type have a height of more than 5.5 cm. This is a deep rounded or conical shape with lipless rim, sometimes slightly incurving, strap handles, usually straight or down-sloping, and a ring base. Decoration is linear; the interior base usually has a spiral, but concentric circles are still used on the earlier examples. Karageorghis 1965, Type A8, Kling 1989, Type 1a fig. 5a, Benson 1972, 80 Type 1, Maier 1985, Type I, IV (round handles), Åström 1972, 281–82 WPW III, Type IIId. Kling's Type 1a does not differentiate the depth of the body, so it includes both Type 6 and Type 7.

Several pieces were sampled. **Enkomi S13** (Fig. 5) and **Idalion: Kafkallia S7** (Fig. 6) are assigned to the Enkomi chemical profile CypI, **Enkomi S14** (Fig. 12) to the Kition/Hala Sultan Tekke profile CypJ and **Apliki S3** (Fig. 21) to the Kouklia profile CypS. **Idalion: Kafkallia S13–14** (Fig. 26), a variant with incurving rim, are assigned to Group X077. **Kourion S3, 10, 11** (Fig. 17), assigned to the local CypN profile, cannot be more closely identified than Bowl Types 6–9, as also **Kalavasos S6** (Fig. 30), assigned as a Single. NAA demonstrates that this type was widely produced round the island.

Type 7

Vessels assigned to this type have a height up to 5.5 cm. Type 7 is a shallow version of Type 6 with a shallow rounded-conical body. Decoration is also similar to Type 6. Karageorghis 1965, Type A7, Kling 1989, Type 1a fig. 5a, Benson 1972, 80 Type 1, Maier 1985, Type I, IV. **Alassa S1** (Fig. 25) belongs to Pair 189 and **Kourion S7** (Fig. 30) is a Single.

FS 296/295

A hybrid type develops in LCIIC from the Levanto-Helladic FS 296, which aquires a slight carination, but not enough for the shape to be classed as the carinated FS 295. The FS 296/295 varies from a deep to shallow rounded shape with a slight carination on the upper body, lipped or lipless rim with large or small rim diameter, and strap handles, generally straight or down-sloping; the upper body is usually flaring, but it can be straight; the base is raised concave or ring; some vessels can have a flat concave base or a flat base. The splaying flaring rim can be a criterion of this shape. Decoration is linear with spiral or concentric circles on the interior base. Maier 1985, Type IA; Kling's Type 1c fig. 5d seems to be the patterned or linear FS 296. **Idalion S11** (Fig. 27) is assigned to Group X078.

Type 8

Vessels assigned to this type have a height of more than 5.5 cm. This shallow angular bowl type comprises a deep, conical lower body below a short, carinated upper body with a lipless rim, strap handles rising or down-sloping, and a base which is generally ring, but may sometimes be raised concave. Decoration is linear; the interior base has spiral or concentric circles. Karageorghis 1965, Type A9 (some examples), Type A10, Benson 1972, Type 3, Maier 1985, Type II, Åström 1972, 282, WPW III Type IIIe. **Enkomi S7** (Fig. 5) and **Idalion: Kafkallia S5–6** (Fig. 6) are assigned to Cyp I and **Kourion S2** (Fig. 17) to the local CypN. Idalion is well situated to receive imports from Enkomi and also from Kition/Hala Sultan Tekke. **Alassa S29** (Fig. 28) is a Single.

Type 9

Vessels assigned to this type have a height up to 5.5 cm. The shape is a shallow version of Type 8. Decoration is linear; the interior base usually has a spiral on it; concentric circles are rare, but may appear on the earlier LCIIC/IIIA vessels. Karageorghis 1965, Type A9 (some examples), Kling 1989, Type 1b fig.5b, Benson 1972, Type 3, Maier 1985, Type II. **Alassa S10** (Fig. 25) is the other half of Pair 189 with the Type 7 **Alassa S1**. **Kourion S4** (Fig. 30) is a Single.

Type 10

The shape has a deep, concave upper body with flaring lipless rim above a carination, which is usually quite sharp; the lower body is deep conical, the strap handles generally rising or horizontal; the base is usually ring, but there are one or two raised concave examples. There is an

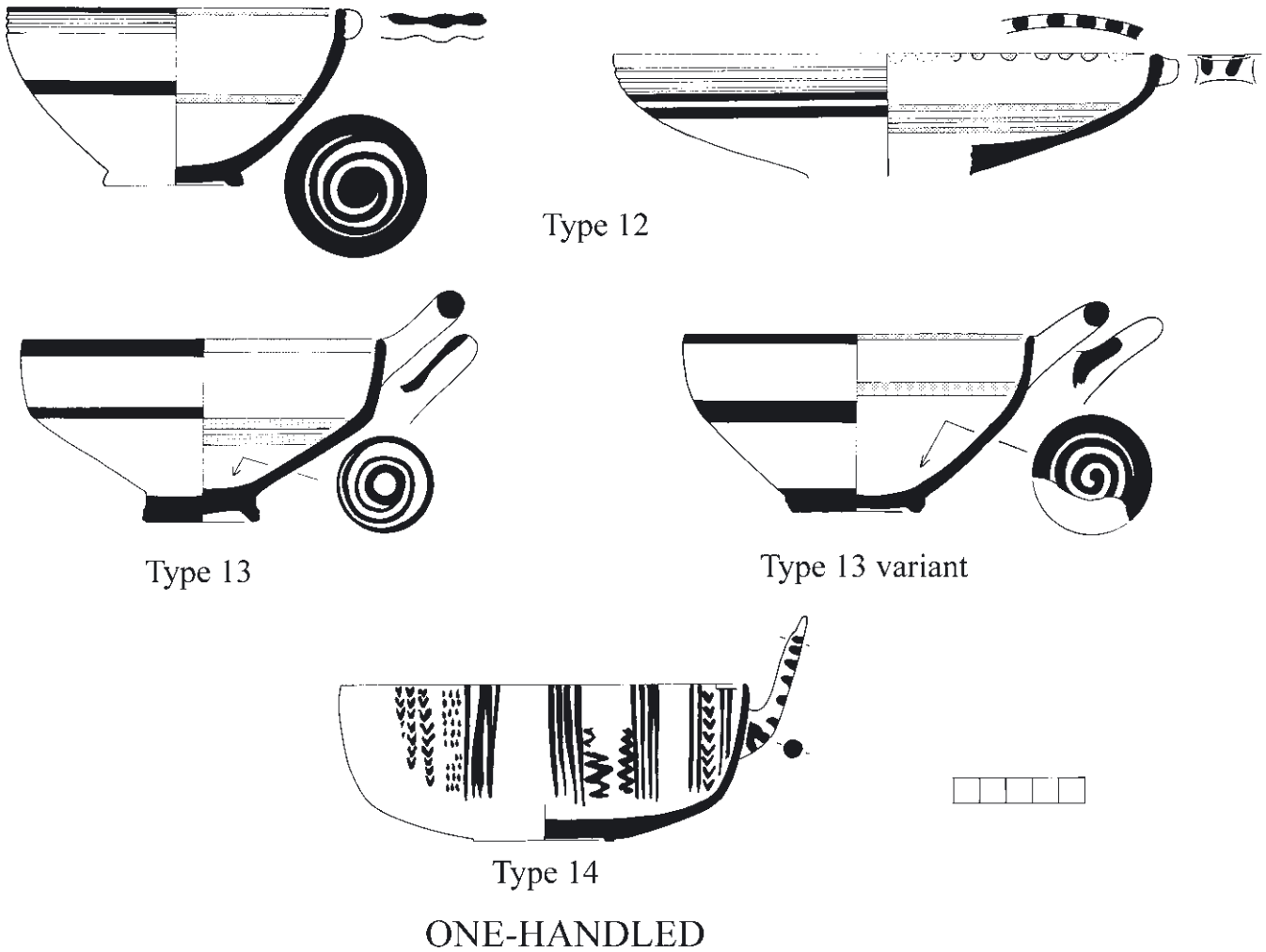

Fig.38 The Pan-island Bowl Typology. Scale 1:3.

immense variety in the shape. Decoration is linear with the exterior usually unpainted apart from a stripe along the handle; the interior base almost always has a spiral on it; concentric circles are very rare. Karageorghis 1965, Type A9 no. 8, Kling 1989, Type 2 fig. 5c. **Enkomi S9,15** (Fig. 9) are CypH, **Kition S30** (Fig. 11) and **Athienou S9** (Fig. 12) are CypJ. Sinda has a good range of well-made Type 10 bowls, so it is not surprising that nearby Enkomi imported them. Similarly to Idalion, Athienou was also well positioned to import from Kition/Hala Sultan Tekke and from Enkomi.

Type 11
The shape has a deep conical body with lipless rim, two strap handles, and a ring base. Decoration is linear; the interior base has a spiral or concentric circles. This shape is a possible prototype for Furumark's FS 242, the one-handled conical cup. The body is an exact parallel to that shape, but there are two strap handles instead of one round handle. It is found at Kition.[134] No example of Type 11 was analysed.

One-handled bowls (Fig. 38)

Type 12
The shape is a mixture of the wide, shallow FS 208 with grooved rim,[135] which may have a metallic origin,[136] and the narrow, shallow Levanto-Helladic FS 247 (see above Levanto-Helladic) with a horizontal pierced lug handle. The shape thus appears in two versions: it has either a wide shallow rounded body (Fig. 38 top right) or a narrower deep semi-globular body (Fig. 38 top left). Both versions are sometimes incurving at the rim, and often have a vertical shallow upper body above a soft carination; the rim is flat with grooves below

[134] See discussion Mountjoy 2009b, 292; Mountjoy, in press b.
[135] See Furumark 1992, pl. 120 FS 208.1 for an illustration.
[136] Furumark 1941a, 103.

on the exterior and one long unperforated bipartite or tripartite lug handle at the lip; the base is ring or flat raised. Decoration is minimal and linear; there is sometimes a spiral on the interior base; the rim may be blobbed. Some examples are completely unpainted. This shape is usually made of semi-coarse clay with many grits; at Enkomi it can be orange or greenish. Kling 1989, Type 5b fig. 6c, Åström 1972, 278–80, Type IC group f. **Idalion S15–16** (Fig. 15) are assigned to CypT, **Alassa S25** (Fig. 16) to the local CypF and **Enkomi S5** (Fig. 26) to Group X076. The very small **Alassa S25** has no handle. The Idalion and Alassa vessels are the narrow deep type, but the Enkomi vase is the broad shallow type. The Idalion vessels are rare examples of the Hala Sultan Tekke CypT group.

Type 13

A carinated shape with a conical lower body and a straight or flaring or slightly inturning upper body with lipless rim, a single round horizontal handle set at the carination and rising generally, but not always, above the rim, and a ring or raised concave base. There is also a rounded variant, which is less common. Decoration is linear, there is usually a spiral on the interior base, but there can be concentric circles. Karageorghis 1965, Type A4, Kling 1989, Type 6 fig. 7c, Benson 1972, Type 2, Maier 1985 Type V, Åström 1972, 285 WPWIII Type VIIIf. Åström WPWIII Type 1Cd is mixed; it includes the carinated type. **Enkomi S12** (Fig. 5) and **Idalion: Kafkallia S8–9** (Fig. 6) are CypI, **S9** being the rounded variant. **Kalavasos S26** (Fig. 7) is also CypI, **Apliki S13** (Fig. 25) is part of Pair 151 and **Alassa S3** (Fig. 28) and **Kalavasos S3** (Fig. 30) are Singles. It is of interest that Enkomi bowls reached round to Kalavasos.

Type 14

A wide shallow shape with a rounded lower body and a straight upper body with lipless rim, a single wishbone handle rising above the rim, and a tiny ring base. There is much variety in the shape of the body. The shape is usually decorated with panelled patterns of triglyphs and metopes; there is often a spiral on the underside of the base. Kling 1989, 137–39 Type 7 fig. 7a,b, Benson 1972, Type 4, Åström 1972, WPWIII Type 1Ce. **Kourion S12** (Fig. 17) belongs to the local CypN group; it is a rare unpainted example of the shape. **Enkomi S8** (Fig. 26) is Group X076.

The Faience Vessel Imitation Group (Fig. 39)

A small number of the bowls at Kition, especially those of Type 3, very unusually have rows of blobs either floating in the field (Fig. 39.3, 7) or set between the bands (Fig. 39.4–6). They imitate the blobs used as filling motifs on bichrome and polychrome faience stirrup jars, a shape itself borrowed from the ceramic repertoire. These stirrup jars are found amongst other places at Kition (Fig. 39), Hala Sultan Tekke, Enkomi (Fig. 39) and Ugarit.[137] It is striking that two of the Type 3 bowls with blobs are also in bichrome technique (Fig. 39.5–6). The bowl types are not usually painted in bichrome, but there are a large number of bichrome bowls of several types from the Kition T.9 Upper Burial deposit,[138] including one Type 3 variant with a flat base (Fig. 37). The bowls with blobs have not been analysed; the Fosse examples have been missing since 1974 and I found the Area II examples in the Kition sherd material after our sampling programme was finished. However, another bichrome flat-based Bowl Type 3 from Kition has been analysed; NAA assigned it to the local Kition/Hala Sultan Tekke CypJ profile (Fig. 11 Kition S34). There seems to have been one or more workshops at Kition producing all these bichrome bowls and also copying the blob motif characteristic of a number of faience vessels, particularly onto Type 3 bowls.

The miniature cylindrical jug with blobs, FS 139, from Hala Sultan Tekke (Fig. 39.9) is so close in fabric and paint to the Kition Type 3 bowl (Fig. 39.5), it seems they must be from the same workshop. It is possible that vessels, such as the small cylindrical jug from Tell el-Fa'rah (Fig. 39.8), which is a Levanto-Helladic import from the Mycenae/Berbati area, gave rise to the miniature Hala Sultan Tekke vessel. It is also possible that a motif such as that on the Tell el-Fa'rah vase may be the motif from which the blobs on the faience vessels evolved. The motif is of Minoan derivation; it was especially popular in LMIB, when it was rendered as a type of ivy leaf.[139] It appears on a Minoan beaked jug at Kition: Bamboula in a more curtailed version, closer to that of

[137] Peltenberg 1976, pl.LXIII; Schaeffer 1929, pl. LII.4.

[138] Karageorghis 1974, 87.

[139] For example Mountjoy 2003, 85 fig. 4.15.199, 98 fig.4. 21.295–304.

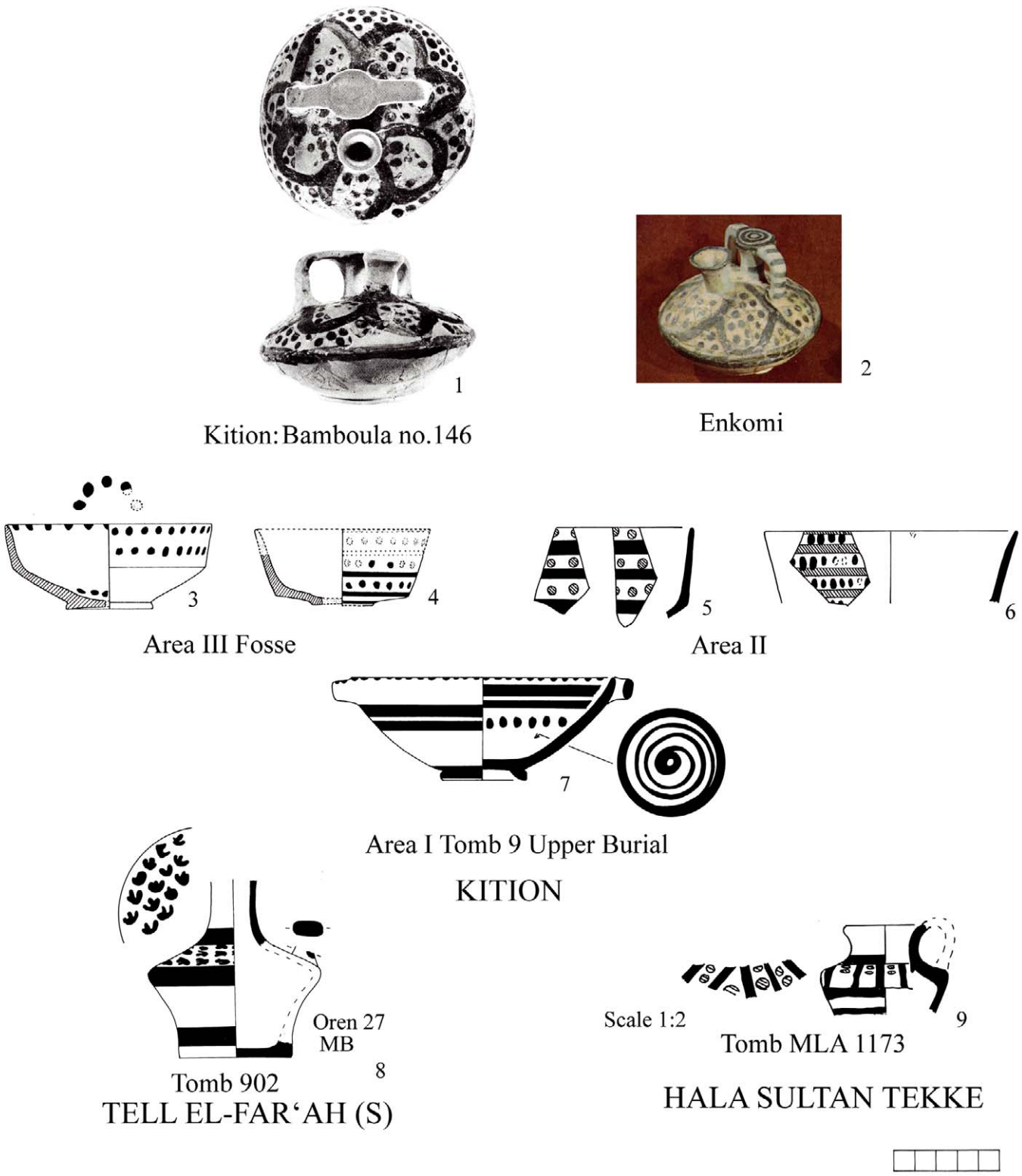

Fig.39 The faience vessel imitation group. 1) Kition: Bamboula, after Yon and Caubet 1985, fig.37. 146; 2) Enkomi, after Schaeffer 1952, Supplementary Fig.B; 3)–4) Kition Fosse, after Karageorghis 1960, 566 fig.115, 566, fig.116; 5)–6) Kition Area II Mountjoy, in press c, Kition nos.523,594; 7) Kition T.9 Upper Burial, Karageorghis 1974, pl.CLXII.247 (drawing PAM); 8) Mommsen *et al*.2005, 153 Table 1, Sample 27 (drawing PAM), 9) Hala Sultan Tekke, Samaes and Nys 2010, 225 fig.4.1 T.1 (drawing PAM). Drawings at scale 1:3.

the Fa'rah vase.[140] There is no exact Furumark motif which corresponds to it, but FM 10A, the iris, is the closest.

The Near Eastern Group of Stirrup Jars (Fig. 40)

In earlier articles[141] I isolated a Near Eastern group of Mycenaean IIIC stirrup jars for which I suggested a Cypriot origin.[142] The group comprises stirrup jars found in Cyprus, Turkey and Israel. A lozenge chain in the belly zone is usual for these vases, but the most characteristic feature is the body banding, which consists of groups of 3–4 bands all down the body. This banding is not found on stirrup jars on the Greek Mainland[143] or on Crete.[144] However, it appears earlier in a LH IIIA2 south Rhodian style;[145] it may have originated from the Dodecanese.

Pieces from several of these Cypriot stirrup jars have been analysed as part of our programme. They add to information obtained from analyses of other vessels of this group exported to the Near East. Apart from one piece assigned to Hala Sultan Tekke Cyp T (Fig. 15 **HST S14**), all our samples are assigned to Kouklia, **HST S21** to CypG (Fig. 19) and **HST S2, 15, 23** to CypS (Fig. 21). They join **Tarsus S7–10** (Fig. 20), which have already been assigned to CypG[146] and **Tell Kazel S71** (Fig. 22) now assigned to CypS.[147] Kouklia is also suggested as a source for the Tell Keisan vase (Fig. 40 top left) as a result of NAA.[148]

One of the striking features of these vessels is that some of them have lustrous or semi-lustrous paint instead of the matt paint usually found in the eastern Mediterranean in the LHIIIC phase. They include (Fig. 40) **Tarsus S10**, **Bethshean S17** and a Single **Bethshean S9–10**,[149] as well as the Tell Keisan vase. A piece from Kouklia, TE 119, not analysed also has lustrous paint.[150] However, the sherds assigned to Kouklia **HST S21** CypG and **HST S2, 15, 23** CypS all have matt paint, as also a Single **Bethshean S3.** Other Cypriot exports to Bethshean from Sinda, which do not belong to this Near Eastern group, also have lustrous paint,[151] as also vessels at Megiddo exported from Kition/Hala Sultan Tekke. It is clear that in spite of the overwhelming amount of matt painted pottery they produced in early Cypriot IIIC the Cypriot work shops could manufacture Aegean-style vessels in lustrous painted ware, even though there is no precedent for it on the island; these vases may well have been made especially for the export market.

The workshops did not always paint a lozenge chain on the belly. Another imported stirrup jar **Tarsus S7** (Fig. 20) has the same banding but no lozenge. This vase also has lustrous paint. A vase from Alassa, which has not been analysed (Fig. 40 bottom right), has almost the same shape, shoulder decoration and belly banding to **Tarsus S7**. It too has semi-lustrous paint. It should be a local Cypriote product.

The Bethshean stirrup jar (Fig. 40 S17) has been dated to LH IIIC Middle in Greek Mainland terms by Warren and Hankey,[152] but the stylistic parallels and the recently excavated stratigraphy in Area S at Bethshean suggest a Cypriot IIIC Early date for these stirrup jars.[153] The sherds from Area S come from Strata S4 and S3, which equate to Level VI of the Pennsylvania University excavations. There was a partial destruction at the end of S4, possibly due to an earthquake. S3 was rebuilt on a different alignment and ended with a burnt destruction which terminated the Egyptian presence at the site.[154] The sherds from both strata form a stylistic group showing no development. Most come from the earlier S4. Sherratt suggests that most of them are secondary deposition and that all could have belonged originally to S4.[155] This level equates mostly to LH IIIC Early Phase 1, but on the low chronology,[156] it ends in LH IIIC Early Phase 2. The Bethshean stirrup jars, and, therefore, the other stirrup jars belonging to the group, could date to the equivalent of LH IIIC Ear-

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140 Yon and Caubet 1985, 150 fig. 68.308.

141 Mountjoy 2005c, 2007.

142 Mountjoy 2007.

143 Mountjoy 1986, figs. 180–81, 215.2.

144 For example Seiradaki 1960, pl. 6a right; Day 2011, 291 fig. 9.17.

145 Mountjoy 1995, 21–35.

146 Mommsen *et al*.2011, 903 Table 1.

147 Badre *et al*. 2005, 40 Table TK 71, published as CypH.

148 Gunneweg and Perlman 1994, 559–61.

149 Mommsen *et al*. 2009, 510–11 Table 7.4, BS 17 published as a Single, BS 9–10, published as CypK.

150 Mountjoy 2005c, 330 fig. 1F.

151 Mommsen *et al*. 2009, 510–11 Table 7.4 BS6.

152 Warren and Hankey 1989, 164–65.

153 Mountjoy 2007, 590.

154 Panitz-Cohen and Mazar 2009, 94–194.

155 Sherratt 2009, 491–92.

156 Kitchen 2000, 49.

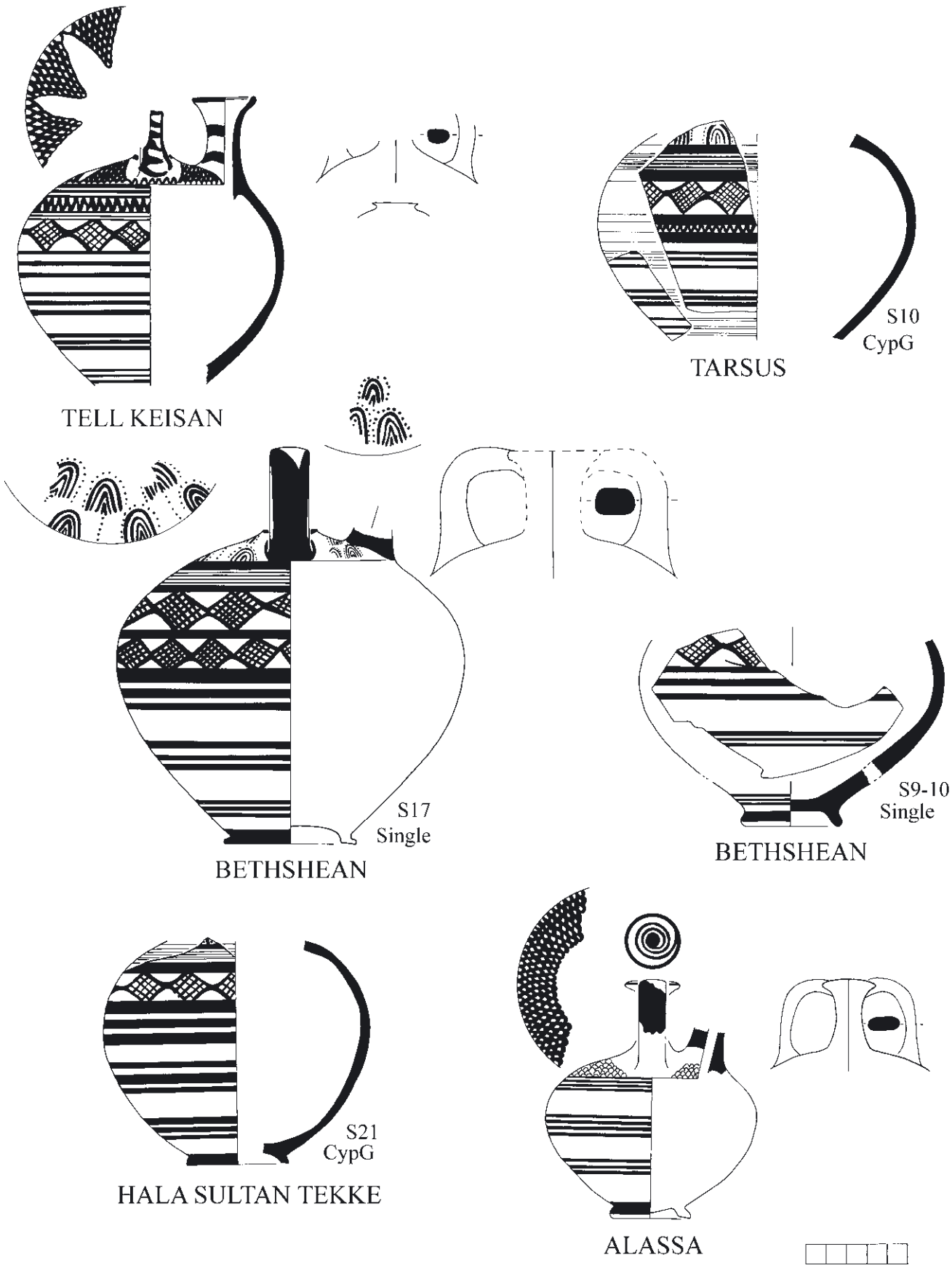

Fig.40 The Near Eastern group of stirrup jars. Mountjoy 2005c, Tell Keisan 330 fig. 1E, Bethshean S17 330 fig. 1B, Alassa 332 fig. 3B, Tarsus, Mountjoy 2005b, 95 fig. 4.50, Bethshean S9-10, Mommsen *et al*. 2009, 510–11 Table 7.4, BS 9, 10. Scale 1:3.

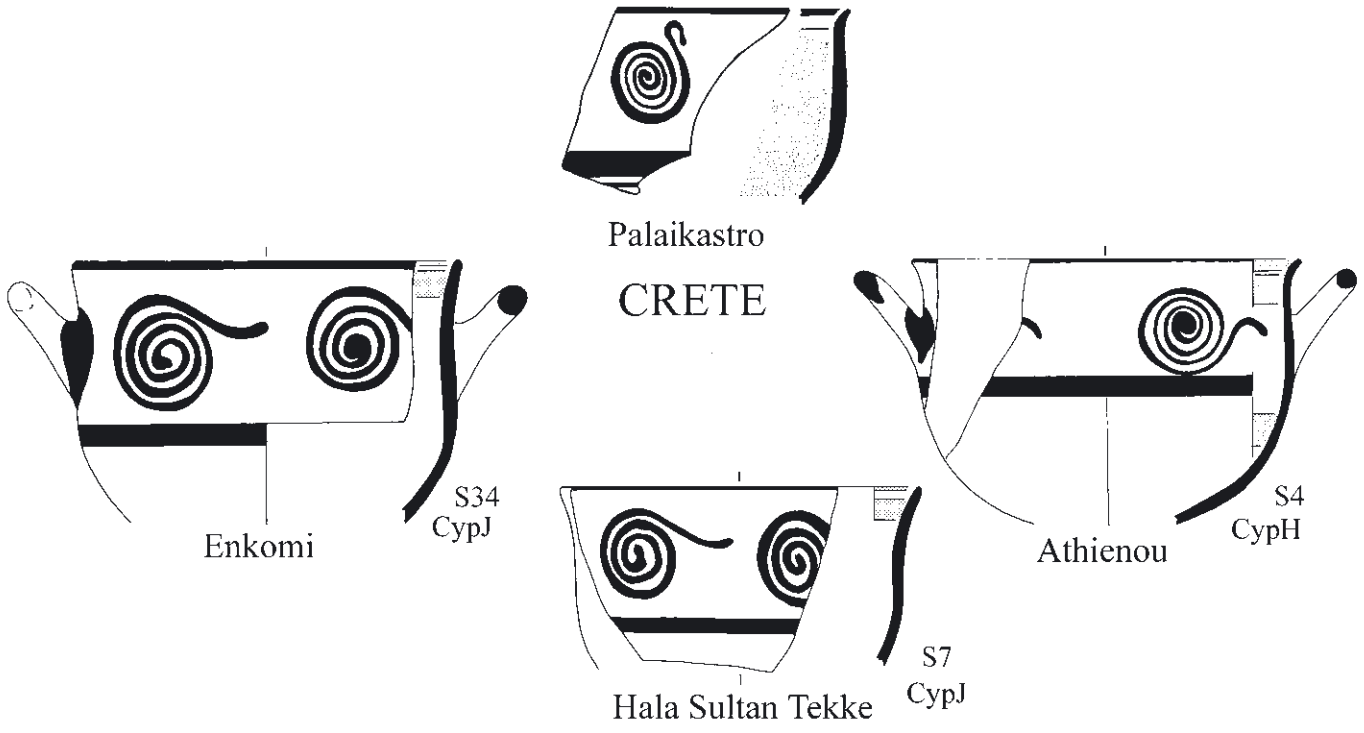

Fig.41 Minoan influence on Cypriot IIIC pottery. Palaikastro, after Popham 1965, 326 fig.6.28, Kavousi: Vronda, after Day *et al.* 2009, fig.22 B3 P6, B3 P4. Scale 1:3.

ly Phase 1 or Phase 2. The vases of this group are thus useful chronological markers. These well-made, finely painted vessels would have been luxury items in their own right, as well as for their contents.

Minoan Influence on the Pottery

Cypriot IIIC pottery exhibits some Minoan influence on the shapes and much more on some of the motifs, which are in fact adaptations of Minoan motifs.[157]

The Minoan-type button hook spirals (Fig. 41)

A derivative form of the Minoan button-hook spiral appears as an isolated spiral, FM 52, with a short tail, **Athienou S4, Enkomi S34, Hala Sultan Tekke S7**, imitating the hook of the Minoan type (Fig. 41 top). NAA has assigned **Athienou S4** to CypH, that is Sinda, while **HST S7** belongs to CypJ, the local Kition/Hala Sultan Tekke chemical profile, as also **Enkomi S34**. The differing NAA assignations are borne out by the motifs themselves, which suggest the vessels come from two different workshops: the CypH **Athienou 4** has the tail rising from the bottom right, but the CypJ Hala Sultan Tekke and Enkomi vessels have the tail springing out from the top right.

The Minoan-type carinated kylix (Fig. 41)

The Minoan IIIC carinated kylix is present in the sherd material at Hala Sultan Tekke. Six pieces have been published, but one cannot now be found.[158] The Hala Sultan Tekke vessels are good imitations of the Cretan type (Fig. 41 bottom right), with the usual very short upper body above the carination. NAA has assigned **HST S26,29** to the local CypT chemical profile, and **HST S5** as Pair 120 with a kalathos **HST 31**; **HST S4, 16** are Singles. The two CypT vessels have pictorial decoration, **HST 26**, and pleonastic decoration, **HST S29**, the latter with monochrome interior with reserved band below the rim. **HST S26** depicts a bird pecking at a bunch of grapes, which is actually dot-filled triangular patch, a popular Cypriot IIIC Early motif.[159] The Single **HST S16** has antithetic spirals with elaborated loop flanking a triglyph, while the other two piecss **HST S4–5** depict the Minoan tricurved streamer, a favourite motif on the Minoan kylix.[160]

Wavy Line and Proto-White Painted (PWP) (Fig. 42)

Fig. 42 depicts the sherds sampled by NAA on the right; since some are very small, a complete vessel is illustrated on the left to give an idea of the shape.

The Wavy Line Style consists of single or reduplicated flowing wavy lines, generally of medium width (Fig.42 bottom left). It is used on open and closed shapes. The pottery in this style in Dikaios' excavations at Enkomi in Areas I and III is not well fired, but is soft and often has impurities; the surface is often greenish or white and the paint matt black or orange. The term Proto-White Painted ware (PWP) was introduced by Gjerstad for a class of pottery often depicting wavy lines, which was made of hard fired well levigated clay with matt or slightly lustrous paint and which was related both to the end of the Aegean-style pottery and to CG I pottery.[161] Although he had the Wavy Line Style, Dikaios thought that he did not have PWP in Areas I and III and, therefore, that it began after his Level IIIC.[162] He assigned this level and Level IIIB Late to LCIIIB1 and suggested a gap between this and the CG occupation of the site.[163]

Iacovou has classed Sols III–I in the Sanctuary of the Ingot God at Enkomi as PWP and suggested that they continued in use after the rest of the site was abandoned, since this pottery was not present in Dikaios' excavations.[164] She also suggested that the pottery of Sols III–I covered a single short phase, since there is no evolution in it.[165] In fact this criterion does apply to Sols III–II, but Sol I has later pottery. Kling disagreed with the conclusion that Sols III–I lasted later than the rest of the site, on the grounds that there was no stratigraphic confirmation that PWP was later than the Aegean-style IIIC Wavy Line Style, since PWP mostly came from tombs and the Wavy Line Style from settlements, and also that the pottery from the rest of the

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157 For further examples see Mountjoy, in press c, d.

158 Åström 1998, 13 fig. 17 centre.

159 Mountjoy 2008, 13–24.

160 Hallager and Hallager 2000, 144.

161 See full discussion with references Mountjoy 2005a, 163.

162 Dikaios 1969, 298.

163 Dikaios 1971, 494.

164 Iacovou 1988, 8.

165 Iacovou 1988, 9.

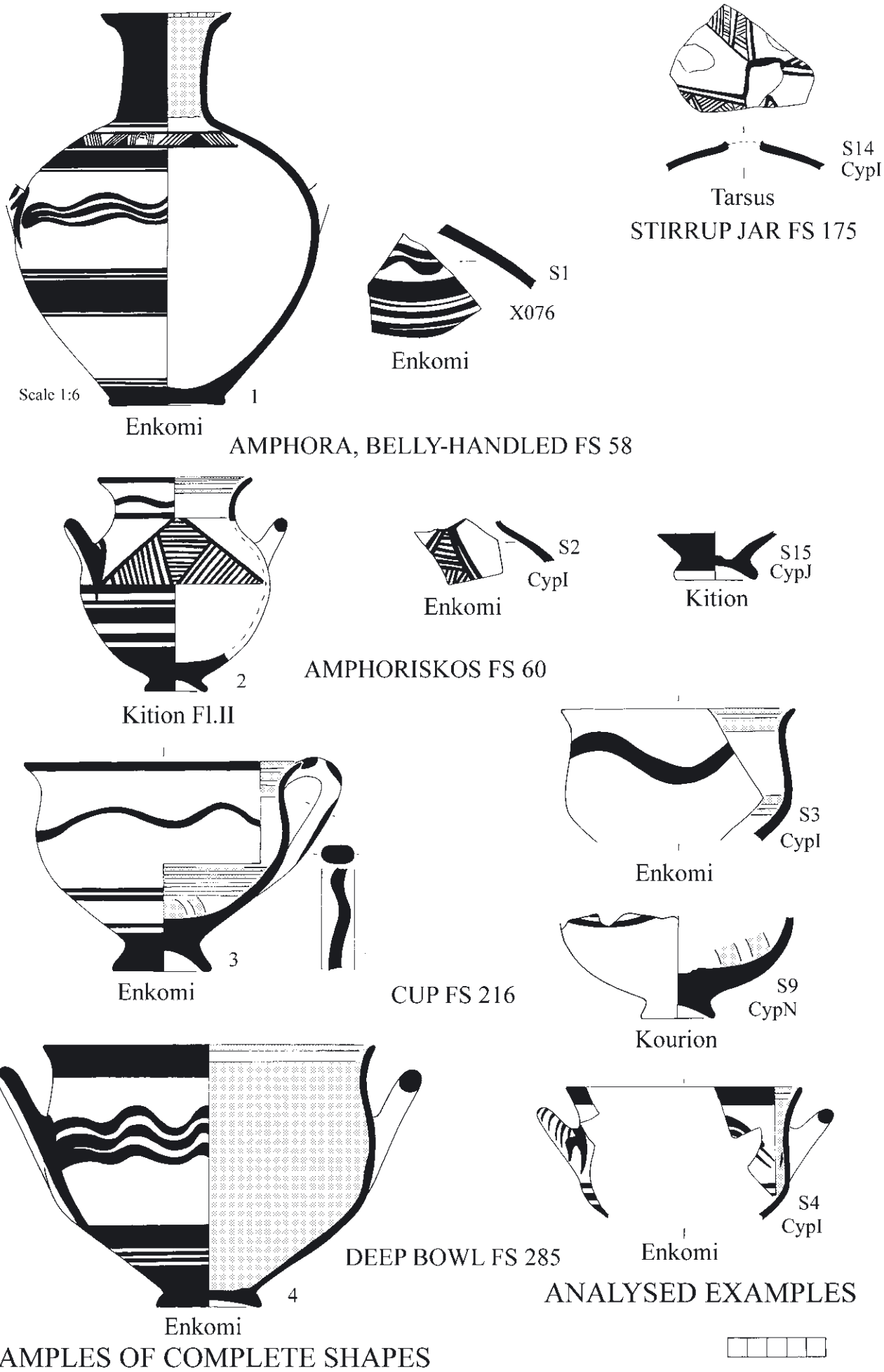

Fig.42 Wavy Line Style and Proto-White Painted pottery. 1) Enkomi Courtois 1971, 323 fig. 140.826, 2) Kition, Karageorghis and Demas 1985, pl.CXLIV, 3)–4) Enkomi, Dikaios 1969, pl. 79.24, 104.3, Tarsus, Mountjoy 2005b, 95 fig. 4.56. Scale 1:3.

settlement had parallels to that from the Ingot God Sanctuary and to PWP from other sites.[166]

The Level IIIB Late destruction in Enkomi Area I Room 12, the Sanctuary of the Double Goddess, caught a number of vessels *in situ* on Floor II by the hearth. The recovered vessels make up a good Wavy Line Style assemblage, while the sherd material shows other shapes and motifs current in this phase. Amongst the pottery on Floor II are three pieces of Proto-White Painted Ware. They differ from the mass of pottery in not having soft green fabric with fugitive paint and in being hard fired. Two of these sherds have been seen by M. Iacovou, who agreed with their classification as PWP.

A number of complete vessels and fragments were found *in situ* on Sol III in the Sanctuary of the Ingot God.[167] They have been assigned to PWP.[168] It has recently been possible to locate two of these vases in the depot of the Cyprus Museum, the belly-handled amphora (Fig. 44 top left) and the ring vase.[169] The amphora is made of the hard fired pottery usually associated with PWP, but the ring vase is made of the usual low quality soft greenish fabric with fugitive matt light brown paint prevalent in the pottery in Areas I and III. Thus, as with the Dikaios Room 12 assemblage, both wares are present together. These two mixed ware assemblages show that the pottery in soft greenish fabric and PWP were synchronous. This is borne out by the corpus of pottery; the same shapes and motifs are found in both assemblages.[170]

Support for this conclusion comes from NAA. It demonstrates that both wares were locally produced at Enkomi (**Enkomi S3** Wavy Line Style and **Enkomi S1–2,4** PWP) and in use together in Area I, which could not, therefore, have been abandoned before the appearance of PWP. A stirrup jar found at Tarsus was also made at Enkomi (Fig. 42 top right). PWP was also manufactured at Kition and at Kourion; the PWP **Kition S15** and the PWP/CGI **Kourion S9** both have a local provenance.

Trade Connections

NAA allows trade connections to be mapped **(**Fig. 43). The coloured lines (Fig. 43) show trade links; they are not shipping routes. The map is skewed, as there is a lack of large groups of samples available from Syria-Lebanon, except Tell Kazel. The huge majority of exports is from CypJ, Kition/Hala Sultan Tekke, red on the map. After Kition/Hala Sultan Tekke the next biggest exporter was Kouklia, blue on the map. There are a number of exports from Kouklia at Tarsus, in contrast to single pieces from Enkomi and Hala Sultan Tekke. Indeed, surprisingly, NAA has identified almost no exports from Enkomi. It may be that it exported to Syria-Lebanon, while Kition/HST had the southern market. However, a group of stirrup jars allied to Simple Style stirrup jars, but with triangular patch on the shoulder, has parallels at Ugarit.[171] A similar stirrup jar from Kalavasos could not be analysed, as it is fragile,[172] but a piriform jar from Kalavasos also with this decoration (Fig. 12 S25) and the Tell Dothan stirrup jar (Fig. 13 S1) both analysed as CypJ. The Dothan vase is so close to the Ugarit vases, it suggests the same workshop and thus that Kition/Hala Sultan Tekke also exported to the north Levant. The route to the south probably went from Kition/Hala Sultan Tekke to Akko and Dor and then on down to Ashkelon. There was no protected harbour there, but boats could be dragged up onto the beach.[173]

The number of Cypriot exports identified by NAA is too small to give much information as to the nature of the trade; it could have been casual trade or organised trade. The high quality pictorial or pleonastic decorated bowls and kraters at Tarsus imported from Kouklia for use as fine table ware may have been the result of a special arrangement rather than casual trade. Mazar has suggested the elaborately decorated stirrup jars from Sinda found at Bethshean were brought by Cypriot mercenaries in the Egyptian garrison.[174] Stockhammer further suggests that other imported stirrup jars at Bethshean were used by high-ranking Egyptians in the garrison.[175] At Megiddo the number of Simple Style stirrup jars imported from Kition/Hala Sultan Tekke suggests a possible special trade link for whatever oil the pots contained. However, the trade link may have been with the port of entry, such as Akko, Tel Nami or Dor, rather than directly with Cyprus.

166 Kling 1989, 174.
167 Courtois 1971.
168 Webb and Courtois 1980, 101.
169 Courtois 1971, 234 fig. 77 no.1030.
170 See Mountjoy, in press a.
171 Courtois and Courtois 1978, fig. 35.16, 17, 18.
172 Russell 1989, fig.13.
173 I thank D. Master for this information.
174 Mazar 2007, 573.
175 Stockhammer 2014, 214.

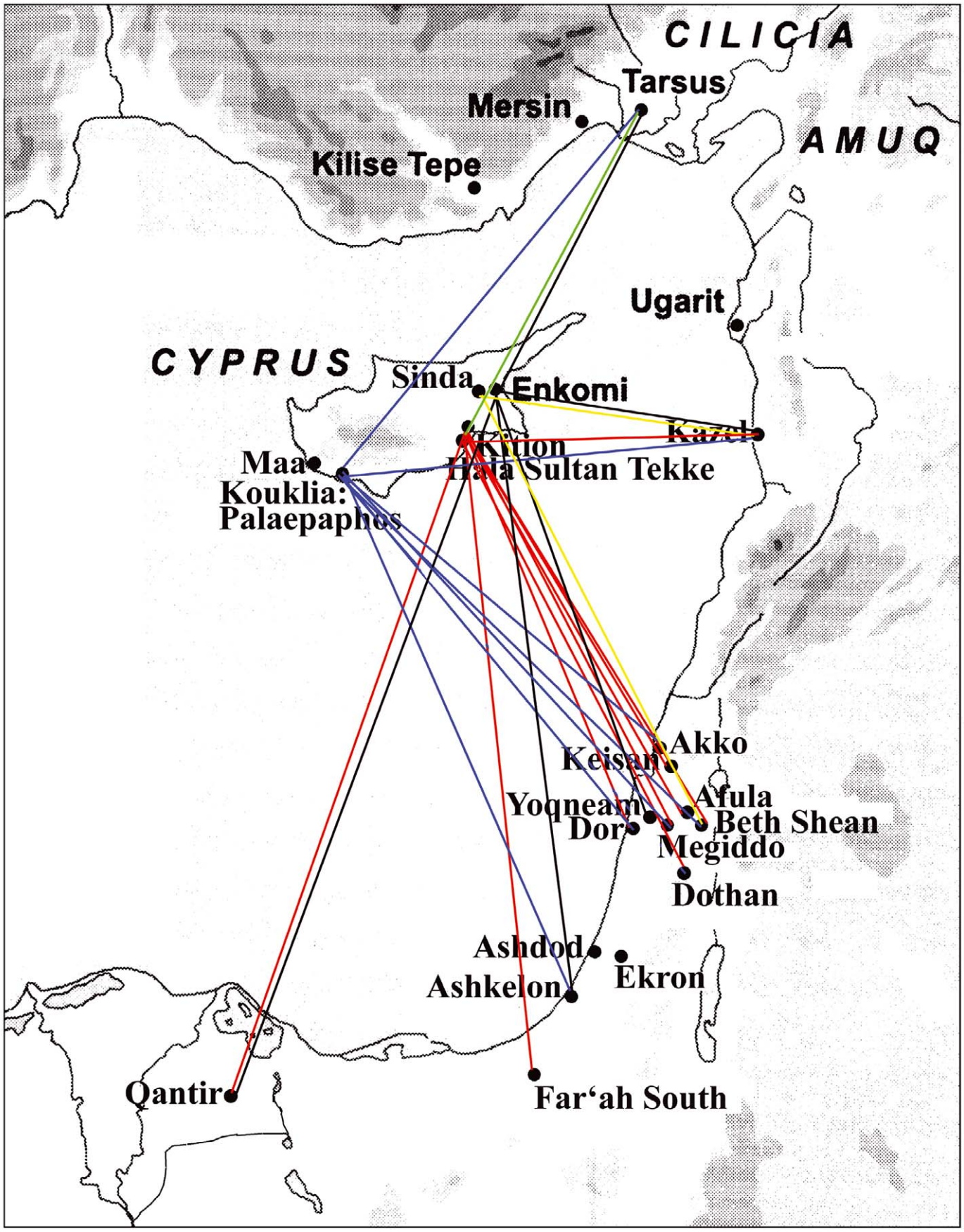

Fig.43 Trade Connections identified by NAA.

The imports at Qantir include a number of oil containers, such as stirrup jars and flasks, mostly Simple Style. They were found in the royal stables and in the chariot garrison. I have suggested the oil might have been used for the royal horses, either on the tack, or on the horses themselves, on their manes and tails.[176] A list of oils from different countries in the 19th Dynasty Papyrus Anastasi IV, 15.1–5 mentions two oils from Alashiya used to annoint the army and chariotry of Seti II; the oil may have travelled in the stirrup jars and flasks.[177] The import of the oil for such a use was surely a special order.[178]

Within the island a number of exports went from Enkomi to nearby Sinda and from Kition/Hala Sultan Tekke to nearby Kalavasos. Although the sample from Idalion was small, many of the vessels sampled from Kafkallia came from Enkomi. Some pottery was also exported from Enkomi to Kition and Hala Sultan Tekke, particularly open shapes. Pottery from Enkomi is mostly found in the east of the island, apart from exports to Apliki, whereas, in contrast to Enkomi, the Kouklia workshops exported all round the island. The presence of exports from them at Apliki hints at a possbile maritime trade network between Kouklia and sites close to the Bay of Morphou, particularly Toumba tou Skourou. The exports between all sites may have largely been based on the copper routes.

The identification by NAA of Minoan-style pottery on the island as locally produced suggests that the intense Minoan interaction with Cyprus in LMIIIB, as witnessed particularly by large numbers of Minoan imported stirrup jars,[179] continued into LMIIIC. Numerous Minoan-style pieces at Hala Sultan Tekke suggest a particular trading connection with this port.[180]

The production of vessels decorated with semi-lustrous or lustrous paint instead of the usual matt paint seems to have been aimed at the export market; it was surely influenced by the fact that the Levantine consumers were used to the imported lustrous decorated Mycenaean pottery; the Cypriots were trying to replicate it.

PART III

Catalogue of samples analysed

The catalogue is arranged geographically starting with Enkomi and continuing southwards and then westwards round the island. Some topographical details are given to highlight the connections of each site overland or by sea, many routes being relevant to copperworking. The pottery is catalogued by sample number.

Enkomi

The settlement lies close to the east coast of the island on the edge of the Mesaoria plain. Originally the site was a coastal one with an inlet from the sea to the south into which the Pedhieos river flowed. The inlet is now silted up.[181] There is evidence of copper smelting at the site from MCIII onwards. 36 sherds were sampled from the stratified excavations of P.Dikaios in Areas I and III.[182]

Area I

1 Amphora, belly-handled FS 58. PWP. Grey[183] with one or two white grits fired buff; white slip, matt dark brown paint. FM 53, double wavy line. Room 12 246/4. Group X076. (Fig. 26).

2 Amphoriskos FS 60. PWP. White; matt black paint. FM 71, elaborate triangle. Room 12 460/5. CypI. (Fig. 5).

3 Cup FS 216. Buff; matt shaded-brown paint. Gold and silver mica. D.rim 12. FM 53, wavy line. Room 12 460/1, 2. CypI. (Fig. 5).

4 Deep bowl FS 286. PWP. Rust with small white grits; buff slip, black to brown paint, red on interior. D.rim 12. FM 53, double wavy line, multi-splashed handle, monochrome inte-

176 Mountjoy and Mommsen 2001, 124.

177 I thank S.Bunimovitz for this reference and for the suggestion; see also Leonard 1981, 96–97.

178 E.Oren has also informed me that many Simple Style stirrup jars have been found in the Sinai area and has suggested that the large numbers are to do with an extensive trade in oils involving the Egyptians.

179 See Graziadio 2011 for discusssion. The suggestion that Enkomi was the main centre of the development of the Simple Style, 2011, 94, must be reconsidered in the light of the NAA results from Kition/Hala Sultan Tekke.

180 Mountjoy 2011b.

181 Catling 1964, 18, 32.

182 Dikaios 1969–71.

183 The first colour always refers to clay; if no colour is given for the slip, then it is the same colour as the clay.

rior with reserved band below rim. Room 12 107/1, 2. CypI. (Fig. 5).

5 Bowl Type 12. Orange; greenish-cream slip on exterior, orange on interior, matt brown and orange paint. D.rim 18. Linear. Room 58 6176/4. Group X076. (Fig. 26).

6 Bowl Type 5. Buff; matt brown paint. D.rim est.13. Monochrome with reserved bands on exterior and interior. Room 29 5625/1. DIKAIOS 1969, pl. 71.4. CypI. (Fig. 5).

7 Bowl Type 8. Pale orange; matt orange paint. D.rim 17.4, D.base 4.5, H.est. 5. Linear, spiral on interior base. Room 24 1907/9, 10. DIKAIOS 1969, pl. 69.27, 35. CypI. (Fig. 5).

8 Bowl Type 14. Buff with small white grits broken through; matt orange-brown paint. D.rim 14, H.ex. 4.5. FM 75, panelled. Room 2 4932/2. DIKAIOS 1969, pl. 79.1. Group X076. (Fig. 26).

Area III

9 Bowl Type 10. Orange; cream slip, matt brown-orange paint. D.rim 14.8, D.base 4, H. 7.9. Linear, edge of spiral or concentric circles on interior base. Ex-Room 33 1137/1. Burial 1 Shaft Grave 23. CypH. (Fig. 9).

10 Bowl Type 2. Deep buff; matt dark brown paint. D.rim 16. Linear. Room 7 4632/1. CypS. (Fig. 21).

11 Deep bowl FS 285. Pale orange; buff-white slip, matt brown-orange paint. D.rim 13. FM 42, joining semi-circles. Room 7 4632/4. CypI. (Fig. 4).

12 Bowl Type 13. Buff; matt red-brown paint. D.rim 17, D.base 6, H. 7–7.8. Linear, interior base worn. Room 35 3845/1. CypI assoc. (Fig. 5).

13 Bowl Type 6. Buff; matt brown-orange paint. D.rim 16. Linear. Room 35. 3842/4. CypI. (Fig. 5).

14 Bowl Type 6. Semi-coarse orange; fugitive cream slip, fugitive matt brown paint. Linear. Ex-Room 5 1082. CypJ. (Fig. 12).

15 Bowl Type 10. Buff; matt dark brown paint. D.rim 16. Linear. Room 2 4591/4. CypH. (Fig. 9).

16 Deep bowl FS 285. Whitish; matt dark brown paint. D.rim 16. FM 46, running spiral. Room 16 4651/6. DIKAIOS 1969, pl. 74.21. CypT. (Fig. 15).

17 Strainer jug FS 155. Greenish; fugitive matt brown paint. FM 50, antithetic spiral flanking lozenge. Room 2 2542/15. CypH. (Fig. 9).

18 Krater FS 282. Grey fired orange; cream slip, matt dark brown to black. D.rim 26. ?FM 51, stemmed spiral. Room 2 4591/19. CypI. (Fig. 4).

Area I

19 Kalathos FS 291. Buff fired orange; buff slip, matt orange paint. D.base 12. FM 75, panelled on interior and exterior. Room 37 6146/1. CypI. (Fig. 4).

Area III

20 Krater FS 282. Orange; cream slip, matt brown orange paint. D.rim 28. Spiral. Room 2 4591/20. CypI. (Fig. 4).

21 Basin, carinated. Orange fired greenish; matt dark brown paint. D.rim 28, H.ex. 7.3. Linear. Room 2 4591/22. CypI. (Fig. 5).

22 Krater, carinated FS 282. Rust; buff slip, matt orange paint. FM 46, running spiral. Room 2 4591/23. CypI. (Fig. 4).

23 Basin, carinated. Grey fired orange; matt red paint worn on exterior. D.rim 29. Linear. Room 2 4591/18. CypI assoc. (Fig. 5).

24 Krater FS 282 or large deep bowl. Buff fired orange; buff slip, matt dark brown paint. FM 75, panelled. Room 2 4591/13. CypH. (Fig. 9).

25 ?Strainer jug FS 155. Orange; cream slip, matt orange paint. D.base 4.2. Linear. Room 2 4591. CypJ. (Fig. 12).

26 Krater FS 282. Buff; whitish slip, matt black paint. D.rim 34. FM 50, antithetic spiral. Room 2 4586/13. CypI. (Fig. 4).

27 Feeding bottle FS 162/jug. Semi-coarse yellow-buff; greenish slip, matt fugitive black paint. D.base 4.9. Groups of vertical stripes down body. Room 69/71 3017/6. Group X076. (Fig. 26).

28 Deep bowl FS 285. Buff; matt shaded-brown paint. FM 42, joining semi-circles. Court 94 3341/1. CypI. (Fig. 4).

29 Collar-necked jar FS 64. Buff; matt brown-orange to dark brown paint. FM 50, antithetic spiral with fill of panelled pattern and urchin on belly, FM 51, stemmed spiral with lozenge fill on shoulder, stemmed spiral/tongue on belly. Court 94 3378/5, 6, 3379/6, 3341/4. DIKAIOS 1969, pl. 81.2, 11. CypI. (Fig. 4).

30 Bowl Type 3. Semi-coarse rust; white slip, matt black to brown paint. D.rim 11. Linear. Room 69 4432/5. Group X076. (Fig. 26).

31 Krater, carinated FS 282. Greenish; fugitive matt black to brown paint. D.rim 23.2, D.base 10, H.restored 22.8. FM 73, linked lozenges, bars and semi-circles across rim, monochrome interior. Room 70 3094/1. Dikaios 1969, pl. 81.19 (3094/1). CypH. (Fig. 9).
32 Krater, carinated FS 282. Coarse buff; matt dark brown paint. D.rim 28, H.ex. 17.3. FM 51 stemmed spiral ending in hour-glass rosette. Corridor 92 3419/8, 10. CypI. (Fig. 4).
33 Deep bowl FS 285. Greenish; fugitive matt brown paint. D.rim 16. FM 46, running spiral. Room 70 3112/1, 2. Dikaios 1969, pl. 81.4. CypI assoc. (Fig. 4).

Area I

34 Deep bowl FS 285. Soft buff; matt brown paint. D.rim 14. FM 52, isolated spiral. Well 32 4539 15.50–16.50 m. CypJ. (Fig. 12).
35 Piriform jar FS 36. Levanto-Helladic. Buff; matt brown-orange paint. D.max.ext. 25.8. FM 70, scale pattern. Room 61 692/1. Nicosia. Dikaios 1969, pl. 70.37. CypI. (Fig. 4).
36 Piriform jar FS 36. Levanto-Helladic. Greenish-white; matt black paint. D.rim 8.8, H.ex. 14.6. Linear, bars all round rim. Room 61 692/2, 3. Nicosia. Dikaios 1969, pl. 70.86, 71.7. CypG. (Fig. 19).

Athienou

The site is located on a low hill in the plain between Larnaka and Nicosia. Large amounts of metallurgical waste suggest the site was used as a secondary processing station between the mines, such as Troulli or Sha, and the coastal centres of Enkomi, Kition and Hala Sultan Tekke.[184] Some NAA was carried out by J.Yellin.[185] We could only sample 10 sherds for our project, as other pieces could not be located.

1 Bowl Type 6–9. Buff; matt brown orange paint. D.base 4.4. Unpainted exterior, spiral on interior base. L665. Stratum I. 5991 on sherd. A3365. CypT. (Fig. 15).
2 Krater FS 281. Rude/Pastoral Style. Orange fired buff; matt shaded-brown paint. D.rim 28, H.ex. 14.4. FM 46, running spiral, stripe across handle, splash across interior attachment flanking central vertical splash. L551,637. Dothan and Ben-Tor 1983, fig. 13.1. 2130, 2185, 3130. Single. (Fig. 29).
3 Bowl Type 10. Tan, rough. Some silver mica. D.rim 14.5, D.base 4.1, H. 7.8. L543. Dothan and Ben-Tor 1983, fig. 50.2. 2200. Group X078. (Fig. 27).
4 Deep bowl FS 285. Buff; matt black to brown paint. D.rim 14. Button hook spirals. L543. AT 71, 2160, 2161. CypH. (Fig. 9).
5 Deep bowl FS 285. Handle now missing. Sandy-buff; matt dark brown paint. D.rim 11, H.ex. 8. Double-stemmed spirals with fill of concentric arcs alternating with quadruple U motif, monochrome interior. L618. Dothan and Ben-Tor 1983, fig. 53.4, pl. 37.2. 7084/1. Group X078. (Fig. 27).
6 Deep bowl FS 285. Buff; matt brown-orange paint. D.rim 13.2–5, D.base 4.5, H. 9.4–6. FM 51, stemmed spiral, spiral on interior base. L543. Dothan and Ben-Tor 1983, fig. 53.3, pl. 36.2. AT 71, 2110, 2112, 2160, 2001. CypJ assoc. (Fig. 12).
7 Cylindrical jug FS 139. Levanto-Helladic. Deep buff; buff slip, lustrous orange paint. FM 3, bull. L551, 637. Dothan and Ben-Tor 1983, fig. 14.14, pl. 16.3. MYBE. (Fig. 23).
8 Bowl FS 296. Levanto-Helladic. Buff; lustrous orange paint. Silver mica. D.rim 19, D.base 5.4, H. 6.8. Linear. L551. Dothan and Ben-Tor 1983, fig. 13.3. 2134 (on pot, 2135 in publication); Yellin 2007, no.6. MYBE. (Fig. 23).
9 Bowl Type 10. Deep buff; matt dark brown paint. Fine silver mica. D.rim 16, H.ex. 6.7. Linear. L543. Dothan and Ben-Tor 1983, fig. 50.3. 2074, 2110, 2160. CypJ. (Fig. 12).
10 Deep bowl FS 285. Orange-buff; matt brown-orange paint. FM 61, zigzag. L543. CypI. (Fig. 6).

Idalion

Idalion is situated in the valley of the Yalias river south of the modern village of Dhali; the Troodos mountain range with its metal sources rises to the west and south. The site had easy access to the ports of Enkomi and Kition. The 16 pieces of LCIIC pottery analysed here come from two tombs, Tomb 1.76 below the Western Acropolis south of Dhali villlage, and Tomb G on the hill of

[184] Keswani 1993, 77.

[185] Yellin 2007.

Kafkallia, north of Dhali village. The range of vessels is limited.

1 Krater FS 281. Rude/Pastoral Style. Sand; buff slip, matt red to orange paint. D.rim 26, D.base 8.4, H.21.8. FM 46, running spiral, handle decoration not extant. T.G.101. Overbeck and Swiny 1972, 18. CypI. (Fig. 6).
2 Krater FS 9. Coarse buff with white grits; matt red paint. D.rim 20.6, D.base 9–9.3, D.max. 22.3, H. 18.2–19. Wavy lines with 'tassel', bars across handle. T.G.39. Overbeck and Swiny 1972, fig. 20. CypF. (Fig. 16).
3 Bowl, rounded FS 244. Levanto-Helladic. Sand; buff slip, matt red paint. D.rim 18.2, D. base 6.6, H. 5.2–5. Linear. T.G.103. Overbeck and Swiny 1972, 18. Group X077. (Fig. 26).
4 Bowl, carinated FS 244. Levanto-Helladic. Buff; matt light brown paint. D.rim 16.6–8, D. base 6.2, H. 5.3–4. Linear. T.G.30. Overbeck and Swiny 1972, 11. CypI. (Fig. 6).
5 Bowl Type 8. Buff; matt red-brown paint. D.rim 16, D.base 5.2, H. 5.7–6.4. Linear, edge of spiral on interior base. T.G.27. Overbeck and Swiny 1972, fig. 14 bottom left. CypI. (Fig. 6).
6 Bowl Type 8. Greenish; matt dark brown paint. D.rim 18, D.base 4.8, H. 5.9. Linear, spiral on interior base. T.G.23. Overbeck and Swiny 1972, fig. 14 bottom right. CypI. (Fig. 6).
7 Bowl Type 6. Buff; matt dark brown paint. D.rim 18, D.base 5.4, H. 6.9–7.4. Linear. T.G.25. Overbeck and Swiny 1972, figs. 14 top left, 16 left. CypI. (Fig. 6).
8 Bowl Type 13. Orange; matt orange to brown paint. D.rim 14, D.base 4.6, H. 6.8–7.7. Linear. T.G.29. Overbeck and Swiny 1972, fig. 17 right. CypI. (Fig. 6).
9 Bowl Type 13. Buff; matt brown paint. D.rim 16, D.base 4.8, H. 4.1–5. Linear, traces of paint on handle. T.G.26. Overbeck and Swiny 1972, fig. 17 left. CypI. (Fig. 6).
10 Pedestal bowl FS 310. Levanto-Helladic. One pierced lug handle. Coarse buff; yellow-buff slip, matt red paint. D.rim 23.2, D.base 10, H. 12.6–13. Linear. T.G.38. Overbeck and Swiny 1972, fig. 18. Group X077. (Fig. 26).
11 Bowl FS 296/295. Orange; white slip, matt pale brown paint. D.rim 17.3, D.base 5, H. 5.4. Linear. T146/863. Adelman 1989, Pl. 10. Cat. 36. Listed as 168/886. Group X078. (Fig. 27).
12 Bowl FS 296. Levanto-Helladic. Buff with a few small brown grits fired pale orange; buff slip, lustrous brown-orange to brown paint with added white. Silver mica. D.rim 18.4, D. base 4.6, H. 5.8. Linear exterior, groups of vertical wavy lines on interior, spiral on interior base. T175/893. Adelman 1989, Pl. 11, Cat. 38. Listed as 170/888. MYBE. (Fig. 23).
13 Bowl Type 6, incurving. White; matt dark brown paint. D.rim 16, D.base 6.3, H. 6. Linear. T152/869. Adelman 1989, Pl. 9 Cat. 33. Listed as 166/884. Group X077. (Fig. 26).
14 Bowl Type 6, incurving. Orange; white slip, matt red paint. D.rim 17.6, D.base 6.9, H. 6.1. Linear. T153/870. Adelman 1989, Pl. 10. Cat. 34. Listed as 167/885. Group X077. (Fig. 26).
15 Bowl Type 12. Orange; white slip, matt orange paint. D.rim 12.9, D.base 5.3, H. 6.6–8. Linear, spiral on interior base. T147/864. Adelman 1989, Pl. 9 Cat. 31. Listed as 165/883. CypT. (Fig. 15).
16 Bowl Type 12. White; matt brown to orange paint. D.rim 14.6, D.base 5.4, H. 7.2. Linear, spiral on interior base. T150/867. Adelman 1989, Pl. 9. Cat. 30. Listed as 164/882. CypT. (Fig. 15).

Kition

Kition on the south coast had a good harbour before it silted up. The harbour lay about 500 m in from the present coast line.[186] There is much evidence of copper working in the two main excavated areas, Area I and Area II. We analysed 38 sherds from these areas.

Area I

Room 27A Floor II Lot 55. Karageorghis and Demas 1985, 49.

1 Basin. Buff with white grits; matt brown paint. D.base 6.6. Unpainted exterior, spiral on interior base. CypJ. (Fig. 11).
2 Piriform jar FS 36. Levanto-Helladic. Buff; semi-lustrous red-brown paint. Linear. Single. (Fig. 30).
3 Closed shape. Slightly burnt; matt black paint. Linear. Single. (Fig. 30).

[186] See Gifford 1985, 377 fig. 1, 385 fig. 4 for the topgraphy.

4 Bowl Type 2. Buff with white grits; matt brown-orange paint. D.rim 13. Linear. CypI. (Fig. 7).
5 Bowl FS 296. Levanto-Helladic. Buff; matt orange-brown paint. Linear. CypG. (Fig. 19).
6 Bowl. Buff with white grits. Linear. CypI assoc. (Fig. 7).

Room 42 Floor IV–III Lot 78. Karageorghis and Demas 1985, 15.

7 Deep bowl FS 285. Buff; cream slip, lustrous red-brown paint. D.rim 15. Edge of decoration. Karageorghis and Demas 1985, pl. 14. MilD. (Fig. 24).
8 Bowl FS 296. Levanto-Helladic. Buff; buff slip on exterior, buff-pink on interior, matt dark brown paint. D.rim 21. Linear. Karageorghis and Demas 1985, pl. 14. CypI. (Fig. 7).
9 Bowl FS 296. Levanto-Helladic. Greenish fired buff; lustrous orange paint with added white. D.base 6. Linear, FM 27, rosette in added white on interior. Karageorghis and Demas 1985, pl. 14. MYBE. (Fig. 23).

Room 37 Floor IIIA–III Lot 128. Karageorghis and Demas 1985, 25.

10 Deep bowl FS 285. Buff; matt brown-orange paint. D rim 12 (oval). Edge of splashes above handle. CypJ assoc. (Fig. 11).

Room 35A,B,C Floor IIIA-III Lot 58/2. Karageorghis and Demas 1985, 23.

11 Krater FS 281. Rude/Pastoral Style. Orange-buff; white-cream slip, matt orange paint. FM 75, panelled with edge of FM 51, isolated spirals. Karageorghis and Demas 1985, pl. 18. CypJ. (Fig. 11).

Room 43 Floor IV–III Lot 129. Karageorghis and Demas 1985, 15.

12 Bowl FS 296. Levanto-Helladic. White-green; greenish slip, matt brown-orange paint. Linear. CypI. (Fig. 7).
13 Bowl FS 296. Levanto-Helladic. Greenish; fugitive greenish paint. Linear. Group X079. (Fig. 27).
14 Jug/hydria. Greenish; fugitive matt black paint. Linear. Single. (Fig. 30).

Room 9 Floor I Lot 313. Karageorghis and Demas 1985, 70.

15 ?Amphoriskos FS 59. PWP. White-buff; matt black to brown paint. D.base 4.1. Monochrome. CypJ. (Fig. 11).

Room 33 Floor III–II Lot 495. Karageorghis and Demas 1985, 33.

16 Closed shape. Buff; matt dark brown paint. Linear. KnoL. (Fig. 24).
17 Deep bowl FS 285. Greenish; matt brown paint. Edge of spiral. Single. (Fig. 30).

Room 40 Furnace B Floor IV–IIIA Lot 570A. Karageorghis and Demas 1985, 13.

18 Closed shape. Buff; matt brown paint. Linear. CypI. (Fig. 7).
19 Krater FS 282. Buff; matt brown paint; interior left rough. Silver mica. FM 56, chequer pattern. KroP. (Fig. 24).
20 Deep bowl FS 285. Pink-buff; buff slip, matt dark brown paint. D.rim 14. Linear. CypJ. (Fig. 11).

Room 32A Floor III–II Lot 581. Karageorghis and Demas 1985, 40.

21 Piriform jar FS 36. Greenish; matt shaded-brown paint ?once lustrous. FM 73, lozenge, band of dots at base of neck. Group X079. (Fig. 27).
22 Jug. Buff; greenish slip, fugitive matt brown paint. Linear. KnoL. (Fig. 24).

Room 28 Floor III Lot 747. Karageorghis and Demas 1985, 29.

23 Closed shape. Buff; matt brown-orange paint. Spiral. CypH. (Fig. 9).
24 Deep bowl FS 285. Buff; matt black paint. D.rim 16. FM 50, antithetic spiral, with edge of handle splash on left side of sherd. CypJ. (Fig. 11).

Room 28 Floor III Lot 751. Karageorghis and Demas 1985, 29.

25 Deep bowl FS 285. Buff; fugitive matt brown paint. Linear. CypJ. (Fig. 11).
26 ?Piriform jar FS 36. Buff; fugitive brown paint. Linear. CypJ. (Fig. 11).

Room 28 Floor III Lot 752. Karageorghis and Demas 1985, 29.

27 Closed shape. Cream-buff; matt orange paint. Linear. CypJ assoc. (Fig. 11).

28 Krater FS 281. Rude/Pastoral Style. Orange; buff slip, matt orange-brown paint. FM 75, panelled. CypJ. (Fig. 11).

Room 28 Material of Fl. III Lot 754. Karageorghis and Demas 1985, 29.

29 Closed shape. Buff; whitish slip, matt brown paint. Linear. Single. (Fig. 30).

30 Bowl Type 10. Buff; matt red-brown paint. D.rim 14. Linear. CypJ. (Fig. 11).

Other contexts

31 Area I. Stirrup jar, Simple Style. FS 171/173. Orange; white-buff slip, fugitive matt brown-orange paint. D.max.10.1, H.ex. 9. Linear. Room 41 Floor IV–III Lot 361. CypI. (Fig. 7).

32 Area I. labastron, straight-sided, Simple Style. FS 94. Buff; matt red paint. D.max.10. Linear. Room 30F Floor IV–III Lot 982. CypJ. (Fig. 11).

33 Area II. Stirrup jar, Simple Style. FS 171. Orange with small black grits; buff slip, matt red paint. D.max. 8. Linear. Temple 5/10. From Pit in Floor IIIA–III. CypJ. (Fig. 11).

34 Area II. Bowl Type 3, variant. Bichrome. Buff; matt black and red-brown paint. D.base 11. Linear exterior, spiral on interior base continuing up wall. Temple 5/4. Pit of Floor II in Floor IIIA–III. CypJ. (Fig. 11).

35 Area I. Amphoroid krater. Deep buff; white slip, matt dark brown paint. FM 75, panelled, edge of handle loop and tail framing decorative zone. Room 30E. Well 18 Lot 1148/2. Karageorghis and Demas 1985, pl. 37, Mountjoy 2009a, 67 fig. 3.2. MilD. (Fig. 24).

36 Area I. Krater FS 282. Buff fired pale orange; orange-buff slip, matt orange paint. Silver mica. FM 75, panelled with FM 56, chequers and FM 7, bird and flowers. Floor IV–III. Room 30D. Lot 899/1, 2+ Room 40A Lot 792A/1, 2. Karageorghis *et al*. 1981, pl. IX.19, 20, 23. CypI. (Fig. 7).

37 Area I. Krater, carinated FS 282. White; matt brown paint. D.rim 30. FM 46 running spiral with FM 51, stemmed spiral attachments, monochrome interior, joining semi-circles on rim. Room 30 Floor III. Lot 914/1. Karageorghis and Demas 1985, pl. XLIV. CypJ assoc. (Fig. 11).

38 Area I. Bowl Type 3. White; matt black paint. D.base 4.1, H.ex. 2.5. Linear. Room 30 Floor III–II. Lot 895A/1. Karageorghis and Demas 1985, pl. XLVI. CypJ. (Fig. 11).

Hala Sultan Tekke

This south coastal site lies on the west of the Larnaka Salt Lake, which was originally connected to the sea and offered a very large, sheltered harbour. The settlement became an important trading centre. Widespread finds of slag suggest extensive copper working took place in the town. 33 sherds were analysed for our project.

1 Krater FS 282. Greenish; matt black paint. FM 7, bird with FM 51, double-stemmed spiral and FM 27, rosette. Area 8 Building D. FIh-FKa 480–83. Room 55. Layer 4. F5071. Single. (Fig. 29).

2 Stirrup jar FS 174/175. Buff; pale yellow slip, matt orange-brown paint. FM 73, lozenge chain above FM 42, joining semi-circles with dot fill. Area 8 Building F. FHa-FIb 490–99. F1360. CypS. (Fig. 21).

3 Piriform jar FS 36. Levanto-Helladic. Buff; matt orange-brown paint. Edge of main motif with FM 42, triangular patch with dot fill. Area 8 Building F. FHb-FIa 490–99. F1507. CypJ. (Fig. 11).

4 Kylix, carinated. Buff; matt dark brown paint. D.rim 13. FM 62, streamer with fringe. Area 8 Building A, Well. F1241. Åström 1998, fig.17; Mountjoy 2011b, 340 fig. 1.1. Single. (Fig. 29).

5 Kylix, carinated. White; matt dark brown paint. D.rim 13.8. FM 62, streamers with fringe. Area 8 Building A, Well. F1221+1241+1244. Åström 1998, fig. 36; Mountjoy 2011b, 340 fig. 1.2. Pair 120. (Fig. 25).

6 Deep bowl FS 285. Buff; matt orange paint. Minoan flower with zigzag in centre. Area 8 Building A, Well. F1244. Åström 1998, fig. 36. CypJ. (Fig. 11).

7 Deep bowl FS 285. Buff; matt brown paint. D.rim 15. FM 52, isolated spiral. Area 8 Building A, Well. F1244. Åström 1998, fig. 36 top centre. CypJ. (Fig. 11).

8 Deep bowl FS 285. Buff; matt brown paint on exterior, red on interior. D.rim 13. FM 51, stemmed spiral linked by cross bars, groups of blobs on top of rim, blobs round handles, handle splash reaching to top of decorative zone. Building A, Well. F1244+F1247. Åström 1998, figs. 36, 43. Single. (Fig. 29).

9 Deep bowl FS 285. White; self slip, matt black paint. D.rim 13, H.ex. 6.6. FM 75, panelled with FM 50, antithetic spiral with hatched almond fill. Building A, Well. F1241+1244+1247. Åström 1998, figs. 19, 29. CypI. (Fig. 6).

10 Deep bowl FS 285. Pale orange fired buff; matt red-brown paint. D.rim 10.8. Minoan papyrus, stripe along handle. Area 23 Well F7010. Åström 1998, fig. 208. Pair 195. (Fig. 25).

11 Deep bowl FS 285. Pale orange; yellow-buff slip, matt brown-orange paint. D.rim 12. FM 62, streamers with fill of Minoan flower and chevrons. Area 23 Well F7010. Åström 1998, fig. 208. Pair 195. (Fig. 25).

12 Carinated krater FS 282. Orange; white slip, matt black paint. Small silver mica. FM 50, antithetic spiral. Area 23 Well F7012. Åström 1998, fig. 270 top left. CypT. (Fig. 15).

13 Jug FS 118. Buff fired orange; buff slip, matt brown to red-brown paint. FM 75, panelled with fill of bivalves. Area 6 ECd-e F2001. Åström, E.1983, fig. 218. CypJ. (Fig. 11).

14 Stirrup jar FS 174/175. Buff; fugitive matt brown paint. FM 20, fish with FM 73, lozenge chain. Area 8 Building A, Well. F1190. Åström 1998, fig. 3. CypT. (Fig. 15).

15 Stirrup jar FS 174/175. White; matt brown-orange paint. FM 73, lozenge chain on belly. Area 8 NW of Building A, F1307. Hult 1981, fig. 85. CypS. (Fig. 23).

16 Kylix, carinated. Buff-white; white slip, matt black paint. D.rim 21. FM 75, panelled with FM 50, antithetic spiral with fill in loop. Area 8 Building A, F1026. Olofsson and Hult 1977, fig. 130; Mountjoy 2011b, 340 fig. 1.4. Single. (Fig. 29).

17 Krater FS 282. Buff; matt brown-orange paint. D.rim c60. FM 7, bird with basin and racquet. Area 8 Building A. F1141+Area 8 East F1344, F1358. Hult 1978, fig. 112a; Mountjoy 2011b, 348 fig. 10.1. CypJ. (Fig. 11).

18 Deep bowl FS 285. White; matt brown-orange paint. D.rim 24. FM 75, panelled pattern with FM 50, antithetic spiral with fill of FM 43, antithetic semi-circles in loops, interior worn. Area 8 Building A Room 2. F1103E+1121 Layer 5. Hult 1978, figs.106 m, n, 127, 128, 132i. CypJ. (Fig. 11).

19 ?Strainer jug. White-buff; white slip, matt dark brown paint. FM 75, panelled pattern fringed with dot-filled joining semi-circles with FM 43, rows of semi-circles. Building F. F1348A. FGd 495–96. Room 13. CypJ. (Fig. 11).

20 Krater FS 282. Orange (rust); cream slip, matt black paint. D.rim 30. FM 75, panelled with FM 50, antithetic spiral. Building F Room 41 or 42. F1376 FGf–g 490–1. CypT. (Fig. 15).

21 Stirrup jar FS 174. White; green-white slip, matt brown paint. D.base 5, D.max. 13.2, H.ex. 11. FM 42, triangular patch with dot fill on shoulder, FM 73, lozenge on belly. Building F. FGh–k 490–93. F1351. Niklasson 1983, fig. 487. CypG. (Fig. 19).

22 Krater, Grey Ware. Pale grey. No mica. D.rim 30. Groups of incised wavy lines. Area 8 Building D Layer 4 F5090. TroB. (Fig. 24).

23 Stirrup jar FS 174/175. Soft buff; cream-buff slip, matt dark brown paint. D.max.11. FM 25, bivalve on shoulder flanking spout, main shoulder decoration not preserved, zone of FM 61, zigzag on belly. Area 8 South Room 95. CypS. (Fig. 21).

24 Krater FS 282. Greenish-white; matt black paint. D.rim 38. FM 75, panelled pattern with FM 62, streamer attached to rim band by vertical bars, fill of outlined solid almond. Area 22 Room 6. F6122. Öbrink 1979, 33 fig. 175. Group X076. (Fig. 26).

25 Krater FS 282. Orange; matt black paint. FM 75, panelled pattern. Area 22. F6217. Öbrink 1979, 34 fig. 180i. CypT. (Fig. 15).

26 Kylix, carinated. Buff; matt red paint. FM 7, bird with fill of FM 42, dot-filled triangular patch. Area 22 Square 1 Layer 2b. F6510C. Niklasson-Sönnerby 1989, fig. 139a. CypT. (Fig. 15).

27 Deep bowl FS 285. Buff; matt red-orange paint. D.rim c16. FM 62, streamer with chevron fill. Area 22 Square 1 Layer 2. F6515. CypJ. (Fig. 11).

28 Krater FS 282. Yellow-buff fired orange; yellow-buff slip, matt brown-orange paint. Minoan flower, bars across rim. Area 22 Square 1 Layer 3. F6521. Niklasson-Sönnerby 1989, fig. 149a. CypI. (Fig. 6).

29 Kylix, carinated. Buff; matt chocolate paint. D.rim 22. FM 75, panelled pattern with edge of ?spiral on left, monochrome interior with reserved band below rim. Area 6 South Sector F2020. Hatziantoniou 1983, fig. 345a. CypT. (Fig. 15).

30 Deep bowl FS 285. Greenish; fugitive black to brown paint. D.rim 17. Minoan palm. Area 6 South Sector F2200. Hatziantoniou 1983, fig. 349a. CypI. (Fig. 6).

31 Kalathos FS 291. Buff; matt orange-brown paint. FM 73, lozenge with ?stemmed spiral above FM 43, reserved semi-circles, monochrome interior. Area 6 South Sector

F2078+2079. Hatziantoniou 1983, fig. 359. Pair 120. (Fig. 25).

32 Deep bowl FS 285. Buff; greenish slip, fugitive sepia paint. D.rim 18. FM 62, streamer. Area 6 South Sector F2406. Hatziantoniou 1983, fig. 339a. CypH. (Fig. 9).

33 Stirrup jar FS 173. Simple Style. Orange; buff slip, matt orange paint. D.base 4.4, D.max. 9.9, D.spout 2.7, H.ex.(body) 9.1. Linear, spout and shoulder worn. T.1.27. Karageorghis 1976, pl. LXIX.27. Single. (Fig. 29).

Kalavasos

This very large LBA settlement is situated a few kilometers in from the coast just west of the Vasilikos river at a nexus of inland routes; it is 8 km south of the Kalavasos copper mines. The river was not navigable, but there may have been an anchorage at its mouth. Metallurgical activity took place in the settlement. The site is thought to have been abandoned shortly before the end of LCIIC,[187] after Cypriot IIIC Early 1 pottery started to appear, but before the end of the phase. For this reason the site is particularly interesting, as it demonstrates which of the LCIIIA types were already in circulation at that time. 30 sherds were analysed for our project.

1 Shallow angular bowl FS 295. Buff; matt red paint. D.rim 20. Linear. Building X; A173. 3.9. Theb. (Fig. 24).

2 Cup FS 220. Levanto-Helladic. Buff; matt red paint. D.rim 10. Linear. Building X; A173. 3.10. MYBE. (Fig. 23).

3 Bowl Type 13. Buff; matt brown paint. D.rim 11.6. Linear. Building X; A173. 3.7 F.N.45. Single. (Fig. 30).

4 Bowl FS 210. Levanto-Helladic. Buff; matt brown-orange paint.. D.rim 10.4. Linear. Building X; A173. 3.7 F.N.44. Pair 91. (Fig. 25).

5 Bowl FS 296. Levanto-Helladic. Buff; matt dark brown to orange paint. D.rim 20. Linear. Building X; A173. 3.7 F.N.61. MYBE. (Fig. 23).

6 Bowl Types 6–9. Buff; matt orange-brown paint. D.base 3.6. Linear, spiral/concentric circles on interior base. Building X; A173. 3.8 F.N.99/97. Single. (Fig. 30).

7 Bowl FS 210. Levanto-Helladic. Buff; matt orange paint on exterior, dark brown on interior. D.base 3.8. Linear. Building X; A173. 3.8 F.N.99/97. Single. (Fig. 30).

8 Cup FS 220. Levanto-Helladic. Buff; semi-lustrous orange paint. D.rim 10. Linear. Building X; A173 3.8 F.N.99/97. MYBE. (Fig. 23).

9 Stirrup jar, Simple Style. FS 171/173. Buff; matt black to red-brown paint. D.spout 2.3. Linear. Building X; adjacent P1D 4.1. CypJ. (Fig. 12).

10 Bowl FS 210. Levanto-Helladic. Buff; matt brown paint. D.rim 10.2. Linear. Building X; adjacent P 1 D 4.1. CypS. (Fig. 21).

11 Feeding jug. Buff; matt orange paint. D.base 3.4. Vertical stripes down body. Building X; adjacent P1D 3.4. CypJ. (Fig. 12).

12 Bowl FS 296. Levanto-Helladic. Buff; matt brown-orange paint. D.rim 19. Linear. Building X; adjacent P1D 4.1. CypS. (Fig. 21).

13 Bowl Type 6. Buff; matt brown-orange paint. D.rim 18 (oval). Linear. Building X; adjacent P1D 3.3. CypJ. (Fig. 12).

14 Bowl FS 210. Levanto-Helladic. Buff; matt brown-orange paint. D.rim 10. Unpainted exterior, linear interior. Building X; adjacent P1D 4.2. Single. (Fig. 30).

15 Krater FS 281. Rude/Pastoral Style. Orange; matt orange paint. FM 3, bull. Building X; adjacent. R1A 7.1. CypJ. Rude Style. (Fig. 12).

16 Bowl FS 296. Levanto-Helladic. Buff; matt red-brown paint. D.base 5.8. Linear, spiral on interior base. Building X; adjacent. R1A 7.1. CypJ. (Fig. 12).

17 Bowl FS 210. Levanto-Helladic. Buff; matt brown-orange paint. D.rim 9.6, D.base 4.3, H. 4.7. Linear. 1269. Building X; Area 173. Pair 91. (Fig. 25).

18 Jug FS 116. Levanto-Helladic. Buff with some large white inclusions fired orange; matt brown paint. D.rim 7.7, H.ex. 17. Linear, wavy line down handle. 1253. Building X; Area 173 Pit. South 1988, 226 fig. 2. CypG assoc. (Fig. 19).

19 Bowl Type 7. Greenish-buff; matt shaded brown paint. D.rim 18. Linear. 1051. Building III; Central Area. Russell 1989, 145, Pl. V. Single. (Fig. 30).

20 Bowl FS 210. Levanto-Helladic. Deep orange; pink-orange slip, matt red paint. D.rim 11, D.

[187] South 2002, 65.

base 4.4, H. 5.3–6. Linear. 1048. Building II; East Area, M 10.B, 4.1 A27/28. Russell 1989, fig. 12. CypG. (Fig. 19).

21 Bowl FS 296. Levanto-Helladic. Buff; matt black paint. D.rim 21.4, D.base 7, H. 8.1. Linear. 1037. Building VIII; SE Area. Russell 1989, fig. 12. Single. (Fig. 30).

22 Krater FS 281. Rude/Pastoral Style. Grey fired dark buff; matt red paint. D.rim 26.3, D.base 9, H. 24.7. FM 46, running spiral with FM 75, triglyph of vertical stripes by handle. 536. Building III; Central Area, A.212, 3.1. Russell 1989, fig. 13. CypS. (Drawing courtesy of A.South). (Fig. 21).

23 Krater FS 281. Rude/Pastoral Style. Salmon fired buff; fugitive cream slip, matt shaded brown paint. FM 75, triglyph with edge of decoration, circle round handle stub. 1042. Building IX; SE Area. Russell 1989, fig. 13. CypJ. (Fig. 12).

24 Krater. FS 281. Rude/Pastoral Style. Buff; matt red paint. D.rim 26. FM 75, triglyph with edge of ?FM 6, goat. 1041. Building IX, SE Area. Russell 1989, fig. 13. CypJ. (Fig. 12).

25 Piriform jar FS 36. Levanto-Helladic. Buff; matt orange paint. FM 42, triangular patch with ?FM 51, stemmed spiral. 1043. Building IX; SE Area, A.51, 3.1, 5.1. Russell 1989, fig. 13. CypJ. (Fig. 12).

26 Bowl Type 13. Deep buff; lustrous red paint. Silver mica. D.rim 12. Linear, stripe along handle. 1038. Building II; East Area, M 10.B, 4.1 A27/28. Russell 1989, fig. 12. CypI. (Fig. 7).

27 Bowl FS 296. Levanto-Helladic. Deep buff; lustrous red paint. Silver mica. D.rim 17, D. base 5, H. 6. Linear, spiral on interior base. 1036. Building IX; SE Area, A. 4 5, 3.2. Russell 1989, fig. 12. CypJ. (Fig. 12).

28 Bowl FS 296. Levanto-Helladic. Buff; matt red-brown paint. D.base 6. Linear. K-AD 1039. Russell 1989, 144. Single. (Fig. 30).

29 Bowl FS 296/295. Burnt. D.rim 18.6, D.base 6.1, H. 7.2. Linear, traces of spiral on interior base. 1035. Building II; East Area, M 10.B, 4.1 A27/28. Russell 1989, fig. 12. CypS. (Fig. 21).

30 Bowl FS 296. Levanto-Helladic. Deep buff; white slip, matt brown paint. D.rim 21, D.base 6.6, H. 7. Linear. 1034. Building II; East Area, M 10.B, 4.1 A27/28. Russell 1989, fig. 12. CypI. (Fig. 7).

Alassa: Pano Mandilaris

Alassa is situated about 10 km. north of Kourion: Bamboula in the Kouris river valley on the foothills of the Troodos.[188] Alassa was on a copper route leading from the mines in the foothills of the Troodos to the south coast via Kourion: Bamboula; the copper alloys would have been taken to Alassa after primary smelting and been resmelted.[189] 30 sherds were analysed from the excavations at Pano Mandilaris.

1 Bowl Type 7. Very slight carination. Deep sand with white grits; no slip, matt dark brown paint. Linear. 103. Pair 189. (Fig. 25).

2 Closed/open body sherd. Whitish; matt brown paint. Monochrome exterior, abraided interior. 104. CypF. (Fig. 16).

3 Bowl Type 13. Whitish; matt black to dark brown paint. D.rim 14. Linear. 104. Single. (Fig. 28).

4 Bowl Types 6–9. Deep sand with white grits; matt dark brown paint. D.base 5.7. Linear, spiral/concentric circles on interior base. 110. CypF. (Fig. 16).

5 Deep bowl. Buff; matt orange paint. D.base 5. Linear, interior concreted. 112. CypF. (Fig. 16).

6 Bowl Type 5. Buff; matt brown paint. D.base 3. Monochrome. 112. Group X075. (Fig. 26).

7 Jug base. Orange-buff; white-green slip on exterior. D.base 4.9. Unpainted. 112. CypF. (Fig. 16).

8 Closed body sherd, Orange; cream slip, matt pale orange paint. Linear. 125. Group X075. (Fig. 26).

9 Jug base. Buff; matt dark brown paint. D.base 6. Linear. 125. CypF. (Fig. 16).

10 Bowl Type 9. Buff; white slip, matt dark brown paint. Linear. 125. Pair 189. (Fig. 25).

11 ?Amphoroid krater, small size. Buff; matt brown paint. D.base 7.4. Monochrome exterior, abraided interior. 126. CypG. (Fig. 19).

12 Bowl Types 6–9. Burnt. D.base 5.4. Unpainted exterior, spiral/concentric circles on interior base. 130. CypF. (Fig. 16).

13 Bowl Types 6–9. Buff; matt brown-orange paint. D.base 6. Linear, spiral/concentric circles on interior base. 130. CypF. (Fig. 16).

188 See Hadjisavvas 1991, 2003, 31–34 for an overview.

189 Hadjisavvas 1989, 40–41.

14 Jug. Buff with brown grits; traces of matt brown paint. D.rim 9. Linear. 130. Group X075. (Fig. 26).
15 Bowl Types 6–9. Deep sand with brown grits; matt brown-orange paint. D.base 6.1. Linear, spiral on interior base. 134. CypF. (Fig. 16).
16 Closed body sherd. Orange; white slip, matt pale brown paint. Linear. 148. CypF. (Fig. 16).
17 Closed body sherd. Orange; white slip, matt orange paint. Linear. 148. CypF. (Fig. 16).
18 Bowl Types 6–9. Sand; white slip, matt brown paint. D.base 6. Linear, spiral/concentric circles on interior base. 148. Group X075. (Fig. 26).
19 Bowl Types 6–9. White; matt brown paint. D.base 6. Linear, spiral/concentric circles on interior base. 148. CypG. (Fig. 19).
20 Strainer jug FS 155, with non-joining spout (not drawn). Deep orange-buff; matt brown-orange paint. D.rim 8. Paint not preserved on rim, wavy line down handle. 177. CypF. (Fig. 16).
21 Krater. Orange; white slip, matt brown-orange paint. Edge of decoration, interior worn. 177. CypF. (Fig. 16).
22 Deep bowl. Buff; matt orange paint. D.rim 5. Linear, spiral/concentric circles on interior base. 177. Single. (Fig. 28).
23 Jug. D.base 4.4. Buff; matt black slip/paint. Monochrome. 225. CypF. (Fig. 16).
24 Jug/bowl. Buff; matt orange paint. D.base 6. Linear, interior worn. 225. CypF. (Fig. 16).
25 Bowl Type 12. Grey with many white grits; buff surface abraided. D.rim 10, D.base 4.6, H. 4.2. Unpainted. 70. CypF. (Fig. 16).
26 Bowl Type 5. Orange-buff; matt black to orange-brown paint. D.rim 15. Monochrome. 64. CypG. (Fig. 19).
27 Hydria/krater, with handle. White-buff; matt black paint. Multiple splashes across handle, rough interior. 64. CypF. (Fig. 16).
28 ?Bowl Type 5. Deep buff with many brown and white grits. Unpainted. 93. Single. (Fig. 28).
29 Bowl Type 8. Orange; paint abraided. D.rim 16. Abraided. 93. Single. (Fig. 28).
30 Deep bowl. Buff; paint abraided. D.base 4.4. Abraided. 96. CypF. (Fig. 16).

Kourion: Bamboula

The tombs and settlement of Bamboula are located on the north part of a low ridge separating Episkopi village from the Kouris river. Material from the tombs and the settlement was sampled, but we were not allowed to sample sherds from vessels broken since restoration in case they were restored again, so we could only sample 12 sherds from this site.

1 Amphoroid krater body sherd. Stubs of vertical strap handle and oval horizontal handle. Buff with depressions from matter fallen out; matt dark brown paint. Zigzag, dotted scale pattern, dot filled panel and the stems of tectonic spiral linked by bars. A-D:2 House VII Room 2. P787. B569. Benson 1972, pl. 23 top row. CypN. (Fig. 17).
2 Bowl Type 8. Non-joining fragments restored on paper. Deep buff with brown grits; fugitive matt black to brown paint. D.rim 15, D.base 5, H. 5.6. Exterior worn, interior linear. E-D:1d. P893. B434. CypN. (Fig. 17).
3 Bowl Types 6–9. White-buff; matt brown paint. D.base 5.8, H.ex. 4. Exterior worn, linear interior with ?spiral on interior base. A-D:2 House VI. P795. B408. Benson 1972, 80. CypN. (Fig. 17).
4 Bowl Type 9. White-buff; white slip, matt dark brown paint. D.rim 15. Linear. A-D:2 House V. P792. B440. Benson 1972, pl. 53. Single. (Fig. 30).
5 Bowl Type 14. Greenish; matt black paint. D.base 5.6. Linear. A-E:2. Street 2a. P788. B498. Benson 1972, pl. 53. Single. (Fig. 30).
6 Bowl Type 5. About 1/3 extant. Greenish-white, rough. D.rim 19.8, D.base 4.8, H. 7.9. Unpainted. D-B:1b P960. B897. Benson 1972, pls. 48,86. CypN. (Fig. 17).
7 Bowl Type 7 Buff; matt dark brown paint. D.rim 15. Linear. A-D:2 House VI. P785. B439. Benson 1972, Pl. 53. Single. (Fig. 30).
8 Bowl Type 3. Half burnt. Buff with brown grits; matt dark brown paint. D.base 6.6. Linear, eye spiral on interior base. A-E:2 House V. P757. B552. Benson 1972, 85. CypF. Alassa. (Fig. 16).
9 Cup FS 217. Buff; matt brown paint. D.base 3.8, H.ex. 4.8. FM 53, double wavy line. A-E:2 House VI. P790. B622. Benson 1972, pl. 46. CypN. (Fig. 17).
10 Bowl Type 6/7. White; matt black to brown paint. D.base 5, H.ex.5.2. Linear. A-Unstratified. P791. B407. CypN. (Fig. 17).
11 Bowl Types 6–9. Orange-buff; matt black to brown paint. D.base 5.1. Linear, spiral on inte-

rior base. T.16.33. P1348. B466. Benson 1972, 82. CypN. (Fig. 17).

12 Bowl Type 14. Half extant. Buff, rough. D.rim 14, D.base 5, H. 6. Unpainted. A-D:2 House V. P794. B913. Benson 1972, 101. CypN. (Fig. 17).

Kouklia: Palaepaphos

The site is situated in a coastal plain on the south-west coast where the Dhiarizos river enters the sea; it extends back over a series of plateaux. The mountainous terrain behind the site meant that communication with the rest of the island would have taken place most easily along the coast. The harbour of Kouklia silted up and has now disappeared, but Iakovou suggests it was close to the area of the Bronze Age sanctuary.[190] A chamber tomb complex at Teratsoudhia comprising Tombs 104 and 105 was uncovered during ploughing and was subsequently excavated by the Department of Antiquities.[191] The pottery in T.105 included Cypriot IIIC Early sherds from Chamber B. Other sherds came from Pit C. 30 sherds from these two deposits have been analysed as part of our NAA project.

Teratsoudhia Tomb 105 Chamber B

1 Deep bowl FS 285. Orange fired buff; yellow-buff slip, matt shaded-brown paint on exterior, red-brown to black on interior. D.rim 14. FM 50, antithetic spiral, monochrome interior. Karageorghis 1990, Pl. A.1. CypG. (Fig. 18).

2 Deep bowl FS 285. White-buff; matt dark brown to black paint. D.rim 15. FM 50, antithetic spiral, monochrome interior. Karageorghis 1990, Pl. A.2. CypG. (Fig. 18).

3 Deep bowl FS 285. Orange-buff; deep buff slip, matt red-brown paint. D.rim 16. FM 50, antithetic spiral flanking dot rosette. Karageorghis 1990, Pl. A.3. CypG. (Fig. 18).

4 Deep bowl FS 285. Buff; matt dark brown to black paint. D.rim 16. FM 27, rosette, monochrome interior. Karageorghis 1990, Pl. A.4. Group X080. (Fig. 27).

5 Deep bowl FS 285. Orange-buff; cream slip, matt red-orange paint. D.rim 19. FM 75, panelled with FM 50, antithetic spiral. Karageorghis 1990, Pl. A.5. CypG. (Fig. 18).

6 Deep bowl FS 285. Buff; matt orange paint. FM 75, panelled, monochrome interior. Karageorghis 1990, Pl. A.6. CypG. (Fig. 18).

7 Deep bowl FS 285. Buff with large brown and white inclusions; greenish slip, matt black to brown paint. FM 73, lozenge, monochrome interior. Karageorghis 1990, Pl. A.7. CypG. (Fig. 18).

8 Deep bowl FS 285. Same as Sample 2? FM 50, antithetic spiral, monochrome interior. Karageorghis 1990, Pl. A.8. CypG. (Fig. 18).

9 Deep bowl FS 285. Buff fired orange; buff slip, matt orange paint. FM 75, panelled, monochrome interior. Karageorghis 1990, Pl. A.9. CypG. (Fig. 18).

10 Krater FS 282. Orange; matt orange paint. D.rim 29. FM 75, panelled with edge of ? fringed stems/palm tree. Karageorghis 1990, Pl. A.10. CypS. (Fig. 21).

11 Krater FS 282. White; matt shaded-brown paint. FM 51, stemmed spiral, monochrome interior. Karageorghis 1990, Pl. A.11. CypG. (Inverted in publication). (Fig. 18).

12 Krater FS 282. Buff; matt shaded-brown paint. Spiral, monochrome interior. Karageorghis 1990, Pl. A.12. CypG. (Fig. 18).

13 Krater FS 282. Buff; matt shaded-brown paint; interior left rough. FM 46, running spiral. Karageorghis 1990, Pl. A.13. CypS. (Inverted in publication). (Fig. 21).

14 Krater FS 282. Buff with many small white grits fired orange; pale cream slip, matt shaded-brown paint; interior left rough. FM 75, panelled. Karageorghis 1990, Pl. A.14. CypS. (Fig. 21).

15 Collar-necked jar/krater. Semi-coarse buff; matt orange-brown paint. Spiral. Karageorghis 1990, Pl. A.15. CypS. (Fig. 21).

16 ?Jug, narrow-necked FS 121. Buff; fugitive brown paint. FM 42, triangular patch. Karageorghis 1990, Pl. A.16. MYBE. (Fig. 23).

17 Closed shape. Buff; white slip, matt brown-orange paint. FM 42, joining semi-circles. Karageorghis 1990, Pl. A.17. CypS. (Fig. 21).

18 ?Collar-necked jar FS 63. Semi-coarse greenish-buff; white slip, matt brown-orange paint. FM 75, panelled. Karageorghis 1990, Pl. A,18. CypS. (Fig. 21).

19 ?Jug, narrow necked FS 121. Ridge at base of neck. Semi-coarse buff; matt brown-orange

[190] Iakovou 2012, 62–63.

[191] Karageorghis 1990.

paint. Spiral. Karageorghis 1990, Pl. A.19. CypT. (Fig. 15).

20 Deep bowl FS 285. Grey with small white grits fired deep buff; buff slip, matt shaded-brown paint; interior left rough. Spiral. Karageorghis 1990, Pl. A.20. Single. (Fig. 30).

21 Closed shape. Orange-pink with grey and white grits; matt brown-orange paint. Spiral. Karageorghis 1990, Pl. A21. Knok. (Fig. 24).

Tomb 105 Pit C

22 Krater FS 281. Rude/Pastoral Style. Buff; white slip, matt black to brown paint. D.rim 26. FM 7, bird. Karageorghis 1990, Pl. IV.Pit C (v). CypS. (Fig. 21).

23 Krater FS 281. Rude/Pastoral Style. Buff fired pale orange; white slip, matt black to brown paint. D.rim 31. FM 75, panelled with edge of handle splash. Karageorghis 1990, Pl. IV Pit C (vi). CypG. (Fig. 18).

24 Krater FS 281. Rude/Pastoral Style. Buff; matt dark brown paint. D.rim 28. FM 3, bull. Karageorghis 1990, Pl. IV Pit C (iii). CypG. (Fig. 18).

25 Krater FS 281. Rude/Pastoral Style. Salmon fired buff; white slip, matt black paint. Tree with muzzle of quadruped to left of it. Karageorghis 1990, Pl. IV Pit C (iv). CypG. (Fig. 18).

Tomb 105 Unstratified Sherds

26 Piriform jar FS 36. Buff fired salmon; yellow-buff slip, matt to lustrous black paint. FM 42, joining semi-circles with dot fill. CypG. (Fig. 18).

27 Deep bowl FS 285. Orange; matt orange paint. D.base 5. Linear. CypF assoc. (Fig. 16).

28 Bowl Type 6–9. Greenish with many brown grits; matt yellow-green paint. D.base 5. Linear, spiral/concentric circles on interior base. CypS. (Fig. 21).

29 Deep bowl FS 285. Buff; matt black paint. D.rim 12. Linear, monochrome interior. CypS. (Fig. 21).

30 Deep bowl FS 285. White; matt black to brown paint. Linear, monochrome interior. X080. (Fig. 27).

Apliki: Karamallos

This mining site is situated in the north-west of the island on the foothills of the Troodos mountains on the east bank of the river Marathasa. Primary processing of copper was carried out here. We were allowed to sample 21 sherds from the site.

House A Room 1

1 Stirrup jar FS 174. Buff; matt dark brown paint. D.false mouth 2.6, H.ex. 4.4. FM 43, semi-circles on shoulder, zone of blobs below shoulder, loop joining false neck and spout, ring round handle base, decoration on false mouth not extant. From packing of large jars. IV 4. Taylor 1952, pl. 28b.7, Taylor and Kling 2007, no. 570. Single. (Fig. 28).

2 Deep bowl FS 285. Orange-buff; buff slip, semi-lustrous brown-orange paint. D.rim 14. FM 75, panelled with spiral or multiple stem, monochrome interior. From packing of large jars. IV 5. Taylor 1952, pl. 28a.4, Taylor and Kling 2007, no. 529. CypG. (Fig. 19).

3 Bowl Type 6. Buff; white slip, matt black to brown paint. D.rim 19. Linear. From packing of large jars. IV 3. Taylor 1952, pl. 28b.3, Taylor and Kling 2007, no. 521. CypS. (Fig. 21).

4 Bowl FS 296. Levanto-Helladic. Buff fired orange; buff slip, lustrous brown-orange paint. Linear, bars across rim. From packing of large jars. IV 3. Taylor 1952, pl. 28a.3, Taylor and Kling 2007, no. 525. MYBE. (Fig. 23).

5 Jug FS 110/116. Edge of handle stub on right edge of sherd. Orange-buff; buff slip, worn matt shaded-brown paint. FM 51, stemmed spiral. From packing of large jars. IV 3. Taylor 1952, pl. 28b.6, Taylor and Kling 2007, no. 558. CypJ. (Fig. 12).

House A Room 2

6 Jug FS 116. Levanto-Helladic. Buff fired orange; matt red-orange paint. D.rim 6.1. Linear. AK IV 2 + AK Rm 2 VII 9a. Room Inv. 27. Taylor 1952, fig. 5.3, Taylor and Kling 2007, no. 564. Single. (Fig. 28).

7 Strainer jug FS 155. Greenish-white with brown grits and some white grits; matt dark brown paint. FM 75, panelled with FM 3, bull. VII 9. Room Inv. 33. Taylor 1952, 157 no. 33, Taylor and Kling 2007, no. 577. Single. (Fig. 28).

8 Cup, carinated FS 223. Levanto-Helladic. Burnt. D.rim 9. Linear. VII 6. Room Inv. 43.

Taylor 1952, fig. 5.5, Taylor and Kling 2007, no. 508. CypG. (Fig. 19).

9 Deep bowl FS 285. Buff fired orange-buff; lustrous orange-brown paint on exterior, maroon on interior. Linear, monochrome interior. VII 8. Room Inv. 35. Taylor 1952, pl. 28a.5, Taylor and Kling 2007, no. 531. CypG. (Fig. 19).

10 Bowl Type 5 variant. Buff fired orange; matt orange paint. Monochrome. VII 9a. Room Inv.28. Taylor and Kling 2007, no. 519. CypI. (Fig. 6).

House A Room 3

11 Bowl FS 296. Levanto-Helladic. Rust; buff slip, matt orange paint. D.base 5.4. Linear. Room Inv. 31. Taylor 1952, fig. 5.18, Taylor and Kling 2007, no. 538. Pair 200. (Fig. 25).

12 Bowl FS 210. Levanto-Helladic. Burnt; matt red-brown paint. D.rim 14. Linear. VII 2. Room Inv. 11. Taylor 1952, fig. 5.13, Taylor and Kling 2007, no. 522. Pair 200. (Fig. 25).

House A Room 4

13 Bowl Type 13. Buff fired rust; orange-buff slip, matt brown-orange paint. D.rim 17. Linear. 2 Room Inv. 20. Taylor 1952, fig. 5.19, Taylor and Kling 2007, no. 537. Pair 151. (Fig. 25).

House A Room 7

14 Stirrup jar FS 174. Orange; buff slip, matt red paint. FM 57, net pattern. Rm7 4. Taylor and Kling 2007, no. 581. Pair 151. (Fig. 25).

15 Krater, amphoroid. Orange; orange-buff slip, matt red-orange paint. D.max.c. 36. FM 51, stemmed spirals attached to net triglyph. 2 4a. Taylor 1952, fig. 7.6, Taylor and Kling 2007, nos. 578–80. Single. (Fig. 28).

House BI Room 3

16 Cup FS 223. Levanto-Helladic. Orange-buff; matt black to brown paint. D.rim 7, D.base 3, H. 4.3. Linear. T.T. Ex Pit (2) 4. Taylor 1952, fig. 10.2, Taylor and Kling 2007, no. 509. Single. (Fig. 28).

17 Cup FS 232. Levanto-Helladic. Buff; matt orange-brown paint. D.rim 9, D.base 3.8, H. 3.3. Linear. T.T.A. Ex Pit (2) 3. Taylor 1952, fig. 10.3, Taylor and Kling 2007, no. 510. Single. (Fig. 28).

18 Pedestal bowl FS 310. Levanto-Helladic. Buff fired pale orange; buff slip, matt brown paint. D.rim 20. FM 42, triangular patch with dot fill. T.T.A. Ex Pit 4. Taylor 1952, fig. 10.8, Taylor and Kling 2007, no. 555. Single. (Fig. 28).

House BIII Pit West of House

19 Bowl FS 210. Levanto-Helladic. White; buff slip, fugitive matt orange paint. D.rim 11, D. base 4, H. 3.6. Linear. T.T.C. Ex Pit Layer 4. Taylor 1952, fig. 11.10, Taylor and Kling 2007, no. 515. Single. (Fig. 28).

Area C

20 Krater FS 281. Rust; buff slip, matt brown paint. FM 75, panelled with semi-circles. Lower shaft +. Single. Part of Taylor 1952, pl. 28b.5 (Fig. 28).

House A Room 1

21 Goblet/ kylix. Orange; white slip on exterior, orange slip on interior fading into buff as a result of firing, matt dark brown paint. D.rim 14, H.ex. 6.9. FM 42, triangular patch with dot fill. From packing of large jars. IV 2, 3, 4, 5. Taylor 1952, pl. 28a.6, Taylor and Kling 2007, nos. 552, 554. Single. (Fig. 28).

Cypriot Exports in the Near East

Exports from Cyprus (CypJ) found in the Near East and local copies made in unlocated Palestinian workshops, which have not been published in detail elsewhere, are catalogued below.

Tell Afula

1 Alabastron straight-sided, Simple Style. FS 94. Buff; matt to semi-lustrous red-orange paint. D.rim 4, D.base 5.4, D.max. 7.9, H. 7.1–4. Linear. Rockefeller 37.668. Sukenik 1948, pl. XVII.9. CypJ. (Figs. 13, 34).

Megiddo

Megi 3 Stirrup jar, Simple Style. FS 173. Buff with very large brown grits; deep buff slip, matt bright red paint. D.max. 8.4, D.spout 2.3, H.ex. 8.4. Linear. Base now missing. T.912B. Rockefeller P3568. Guy and Eng-

BERG 1938, Pl. 124.13. Inv. 34–1864. CypJ. (Figs. 13, 34).

Tell Dothan

Stirrup jar. FS 173

1 Buff; cream slip, semi-lustrous orange paint. D.base 4, D.max. 10.2, D.false mouth 2.4, D. spout 2.4, H. 11.3 at handle, 11.1 at spout. FM 42, triangular patch on shoulder, spiral on false mouth. Base of necks unpainted, but band across between spout and false neck linking the triangular patch each side of the spout. P2044. CypJ. (Fig. 13).

2 Simple Style. Buff with traces of burnish on surface; matt to lustrous orange paint. D.base 3.5, D.max. 8.9, D.false mouth 2.2, D.spout 2.5, H. 9.7. Linear, spiral on false mouth. Hollow false neck. Handles missing. P2218. CypJ. (Fig. 13).

3 Simple Style. Buff; matt orange paint. D.base 4.3, D.max. 9.8, D.false mouth 2.4, H. 10.8. Linear, spiral on false mouth. Hollow false neck. Paint splashed from top edge of neck band up neck almost to false mouth on one side. One handle and spout missing. P2522. CypJ. (Fig. 13).

Tell el-Fa'rah (s)

Tomb 936 (Rockefeller)

Fara S1 Stirrup jar, Simple Style. Semi-coarse buff with some white grits, deep buff slip, worn matt red paint. D.base 3.8, D.max. 9.4, D. spout 2.9, H. ex. 11.8. Linear, base of false mouth and spout unpainted, beginning of ? stripe up handle. F 936 64M. Rockefeller 1.6972. NAA Palestine. (Fig. 35).

Tomb 902 (London)

24 Piriform jar FS 36. Levanto-Helladic. Buff; matt red to brown paint. D.rim 6.5, D.base 7, D.max. 18.1, H. 24–24.3. Linear. London E. VI.24/8. MOMMSEN *et al*. 2005, Table 1 Sample 24. CypH now CypJ. (Fig. 14).

26 Stirrup jar, Simple Style. FS173. Buff; matt brown-orange paint. D.base 4, D.max. 9.3, D.false mouth 2.3, H.ex. 7.7. Linear, base of false mouth and spout unpainted, traces of stripe down handle. Hollow false mouth. London E.VI.24/41. MOMMSEN *et al*. 2005, Table 1 Sample 26. CypH, now CypJ. (Figs. 14, 34).

Mycenae/Berbati import

27 Cylindrical jug FS 139, miniature. Levanto-Helladic. Very soft buff; deep buff slip, lustrous streaky brown to orange paint. D.base 5.3, D.max. 8.2, H.ex. 8.4. FM 10A, iris derivative. London E.VI.24/11. MOMMSEN *et al*. 2005, Table 1 Sample 27. MYBE. (Fig. 39).

T.933 (London)

28 Flask FS 186. Buff; matt orange-brown paint. D.rim 2.8, D.max. 8.8 × 5.1, H. 13.3. Concentric circles on body. London E.VI.18/2. MOMMSEN *et al*. 2005, Table 1 Sample 28. Lqan. (Fig. 35).

T.925B (London)

31 Flask FS 186. Buff; matt orange-brown paint, very worn. D.rim 3, D.max. 9.1 × 5.4, H. 13. Concentric circles on body (decoration largely restored on paper). London E.VI.19/1. MOMMSEN *et al*. 2005, Table 1 Sample 31. Single. (Fig. 35).

Tell el-Ajjul (Gaza)

Governors Tomb T.419

1 Stirrup jar, Simple Style. Semi-coarse buff, buff slip, matt red to brown paint (mauve). D.base 4.4, D.max. 10.3, D.spout 2.4, H.ex. 10.6. Linear, thin loop connecting base of false mouth and of spout. Rockefeller 33–1521. PETRIE 1933, pl. XI.44. No.G. NAA PalJ. (Fig. 35).

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