Considering Ceramic Variability on Late Bronze Age Cyprus. A Case-study: The Plain Vessels of Alassa *Pano-Mandilaris*

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Abstract

This paper aims to highlight ceramic variability observed at the LC IIC–LC IIIA site of Alassa *Pano-Mandilaris*. A special focus is on the plain ware vessels as they are the largest group of ceramics recovered at the site. Given that the subject of the paper is based on an ongoing project it was not possible to fit this evidence in a broader framework of regionalism, for example by examining material from contemporaneous sites in the Kouris Valley such as Kourion-Bamboula and the new excavated sites at Erimi. For present time a detailed description of the variations recorded in the plain ware repertory from Alassa *Pano-Mandilaris* will be presented. Categorising this variability is a crucial step towards understanding the Alassa assemblage within a broader Cypriot framework, which will form the later stages of my research. Characterising the fabric variations of the assemblage it becomes apparent that there are organised patterns in the technological choices made by the ancient potter.

I. Introduction

It is generally accepted that a typical feature of Late Bronze age Cyprus was 'regionalism and particularly as manifested in pottery'[1] whereas for LC IIC–LC IIIA it is usually assumed to have a more overall or standardized style with a certain degree of centralized control.[2] However, the evidence coming from the plain ware assemblage from Alassa *Pano-Mandilaris* indicates a wide variation in the fabrics and shapes used for the production of plain wares. Are they the consequence of regional differences caused by local or regional production? Variations in pottery groups are often regarded as a sign of regionalism[3] but how can we understand these variations in an island wide framework of pottery production? Are regional variations the result of potters' individual choices or are they part of organised patterns in the production?

The plain fabric is very common and has a wide distribution in time and space as demonstrated in a quantative table from Hala Sultan Tekke where the average occurrences of plain wares for all layers are between 72 % and 82 %.[4] This material comes from a settlement, but plain wares are also present in tombs, cult areas and other contexts such as the manufacture site of Sanidha.[5]

The importance of plain wares is not merely in their enormous increase during the LC period but also in their large repertory of shapes.[6] Most common are bowls, jugs, craters and pithoi. Dippers, miniature juglets, flasks and other more unique items such as an incense burner and a special cylindrical vessel with signs of Cypro-Minoan from Kition[7] are also produced in a plain fabric. In addition, the plain fabric is not only confined to pottery types, but also was used for the production of wall brackets, lamps, stands, basins and crucibles.

Examining the published material from major LC sites[8] it becomes apparent that there is a wide variety in the fabrics used to produce these plain vessels but this has never been the subject of thorough study. Consequently we do not know what these differences mean and how they fit in the discourse of centralised pottery production versus local and regional production. Keswani[9] demonstrated that there is a degree of standardization in the production of the plain ware vessels from Enkomi (mortuary contexts) with a possible location of different workshops. Her study was based on shape variability.

Crewe[10] on the other hand, was able to explain how technological transfer of forming techniques

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1 Merrillees 1971, 70; 1983, 25.
2 Knapp and Cherry 1994, 159, 160.
3 E.g. Vaughan 1991, 122, 123.
4 Hult 1981, 21.
5 Todd and Pilides 1993, 112; Todd 2000, 305, 323.
6 Åström 1972, 225–266.
7 Karageorghis 1985, 185.
8 E.g. Apliki-*Karamallos* (Kling and Muhly 2007), Kition (Karageorghis 1985), Pyla-Kokkinokremos (Karageorghis and Demas 1984).
9 Keswani 1991, 97–118.
10 Crewe 2007b, 209–210.

had an impact on the changing complexity of society. In Cyprus both traditional hand made vessels and the newly introduced wheel made vessels occur parallel without any decrease of the hand made vessels (e.g. plain white, bichrome), whereas the other Bronze Age Eastern Mediterranean respond to wheel technology at the expense of hand made vessels.[11]

These studies[12] thus reveal that plain wares are an important source for our knowledge of Late Cypriot society but unfortunately no attempt has been made for an overall typological study since the 1972 publication[13] which still serves as a standard. The detailed descriptions from 1972 are based on criteria of technique, form and decoration with special attention to frequency and distribution of the wares. A subdivision is made in a Plain White Handmade (PH), Plain White Wheelmade I and II ware (PWWM I and II), Pithos ware and a Red Wheelmade ware.[14] Most of the material comes from sites excavated by the Swedish Cyprus Expedition before 1972 and it presents a good framework for comparisons but it does not offer guidelines for an in depth study by site. Accordingly, the published LC catalogues with references to plain vessels sometimes fit in the parameters of the SCE typology, but mostly these catalogues and inventories designate plain wares as a group characterised by an enormous degree of diversity in fabric, technology and shapes. Unfortunately, these variations did not receive the attention they needed to solve questions on the organisation of pottery production, local traditions and the transfer of knowledge on an island-wide scale. Hence, the Alassa material will function as starting point to establish the characteristics of the plain ceramics. The plain assemblage is very abundant and comes from different areas of the settlement such as pits, courtyards, rooms and three 'cultic' places identified based on the presence of ritual artefacts like bull figurines and miniature oxhide ingotes.[15] While the material is very fragmentary it offers the possibility to study fabrics in more detail instead of a more traditional morphological approach that concentrates on shape, size, volume and capacity. Selection of clay pastes and fabric preparation can provide insight on the organisation of production and the technology employed. This will allow to look at the relationship between technological and functional variations. Once the characteristics of the Alassa assemblage established, it will become possible to compare with the material from other contemporaneous sites and examine interaction patterns, observe if local traditions where in use and how some knowledge were shared.

II. The plain vessels from Alassa *Pano-Mandilaris*

Macroscopic study distinguished six fabrics based on fabric attributes: technique, texture, inclusions, firing and fabric colour. The fabrics are further subdivided in types[16] according to the presence of a specific firing core, surface treatment and the specific use of inclusions.[17] Most fabrics show similar patterns in the use of inclusions but there may be a difference in size, density, sorting and type of inclusions. This could point to a deliberate choice, for example through preparing the fabric by adding temper or mixing different clays. Of course, firing conditions (firing atmosphere, temperature and duration) are also responsible for many variations. In view of that, a new project with petrographic analyses is pendant.

The six fabrics will be discussed below but they need to be considered in conjunction with the fabric information in the appendix (Appendix I–V), where the reader will find information on inclusions, firing, wall thickness, presence or absence of slips. This appendix is supported with drawings of the most important shapes.

A first fabric (I) with gritty – granular texture comes in two variants

The first variant, fabric I.A (Appendix I) comes in a variety of yellowish, brown and grey colours and the vessels are handmade. Many bases have a gritty underground caused by a more dense distribution of inclusions, but there are also bases without gritty underground. Numerous fragments come from large vessels with an everted rim, rounded rim end and thickening or constant rim profile (Fig. 1). The rim

[11] Crewe 2007b, 209–210.

[12] It is not my intention to discuss all previous studies published on plain wares as this will partly be the subject of another paper (forthcoming).

[13] Åström 1972.

[14] Åström 1972, 225–266.

[15] Hadjisavvas 1989, 36.

[16] The terminology used to describe these fabric attributes is based on various publications to make an appropriate pottery recording card for the Alassa material (Frankel and Webb 1996, 231–233; Orton et al. 2004, 132–151, 233–242; Prehistoric Ceramics Research Group 1992, Appendices 3–9; Rye 1981, 115–118; Todd 2004, 124–179).

[17] The term 'inclusion' is used instead of temper because temper points to a deliberate action by the potter and from primary observation this can not be argued.

diam. of those vessels can vary between 30–60 cm. There is a high degree of variability in the rim shapes in terms of rim height, rim thickness, rim angle, lip angle, neck thickness below rim and at inflection point.[18] The base fragments are mostly flat with a base diam. varying from 10–20 cm, but there are also round bases. Some of these fragments belong to large jars or basins, other to the pithoi class and they will be further described by Keswani (this volume).

A variant of this fabric, fabric I.B (Appendix I) has an orange, pinkish to reddish colour. This fabric is very similar to fabric I.A except for a less granular texture. Again gritty and no gritty bases are found. This class is represented by far fewer examples than the brown fabric but it has a similar range of shapes. Most diagnostic sherds are everted rims with rounded rim end and thickening or constant rim profile with a diam. 20–30 cm, sometimes 40–60 cm. There are a few flat bases with diam. ca. 13–20 cm. The shapes refer to large jars, basins with hook rim[19] and small pithoi.

A second fabric (II) with sandy texture

This fabric comes also in a brown and orange variant. The difference with the previous fabrics consists in the wall thickness, the size of the vessels, the inclusions and the texture. The inclusions are better sorted and smaller in size resulting in a sandy-soapy texture.

The first variant, fabric II.A (Appendix II) comes in a variety of brown colours with a lot of white inclusions (limestone), characterising this fabric as a calcareous clay (Fig. 2). Hand made fragments and fragments of uncertain technique[20] are represented in this category. There are many rim fragments with vertical handles coming from closed vessels. These handles start from the rim and level with the top of the vessel and sometimes they come higher than the horizontal height of the rim. So far only two examples are recorded with a handle starting below the rim. The handles have an oval section and there is a great variety in rim and handle shape. These fragments come from jugs with a rim diam. less than 10 cm. But there are also rims coming from open shapes, such as everted rims from bowls with diam. between 40–60 cm and T-shaped rims from craters with a diam. between 25–30 cm.

There is much variation in the shape of bases: flat (diam. 12–15cm), pointed (diam. <10cm), ring base (diam. 4cm) and other bases with ring (diam. <10cm). In this group there are gritty and no gritty bases.

Variant II.B (Appendix II) is the orange counterpart with similar characteristics: sherds with a sandy texture, small sized and well sorted inclusions. The closed shapes are represented by rim fragments with vertical handles coming from jugs with diam between 8–11cm. These handles start at the rim and have oval sections. Distinct variation is recorded in the rim and handle shapes. The open shapes are represented by small bowls and T-shaped rims coming from craters (Fig. 3). Again there is a great variability in the base shapes: bases with a ring (diam. 15 cm) or flat (diam. 11–16 cm).

A third fabric (III) with medium soapy texture

It comes in two variants: a brown and orange fabric with distinctive characteristics. Both fabrics have a very dense use of small voids or pores, which probably comes from firing of plant remains,[21] an observation also valid for White Painted Wheelmade (WPWM) fragments. The fragments from both fabrics can be assigned to the PWWM II based on the strong wheel traces and the typical decoration such as parallel grooves above the base or at neck height.[22]

A first variant, Fabric III.A (Appendix III) is a yellowish-brown fabric with a very fine texture: medium soapy with small sized inclusions which are very well integrated in the fabric providing a uniform aspect. Most fragments come from flat bases or with a ring with a diam. between 9–11 cm and they have three or four parallel grooves/incisions above the base (Fig. 4).

A second variant, Fabric III.B (Appendix III) is an orange-reddish fabric with a fine texture. Again the inclusions are of a very small size, well sorted and there is an abundant use of small voids. In this group there seem to be vessels with different wheel traces: one category has very thin walls (ca. 0, 5 cm) with spacious wheel traces, whereas a second group is marked by thicker walls (ca. 1 cm) and less visible wheel traces. In the latter however, the wheel traces are more tangible. Both groups refer to fragments from jugs and craters (Fig. 5).

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[18] See Shuster 1984, fig. 6.1.

[19] Cf. Keswani 1989, fig. 20, nos. 10–15.

[20] In many cases the fragments are too small to assess whether they come from a wheel made vessel or not.

[21] Rye 1981, 33.

[22] Åström 1972, 252–259.

Fig. 1 Fabric I.A

Fig. 2 Fabric II.A

Fig. 3 Fabric II.B

Fig. 4 Fabric III.A

Fig. 5 Fabric III.B

Fig. 6 Fabric IV.B

Fig. 7 Fabric V.C

A fourth fabric (IV) has three subtypes: a brown, a red and a buff variant

A first group, Fabric IV.A (Appendix IV) is a brown fabric characterised by the presence of a strong grey core and the particular use of inclusions. Many rims show the use of elongated voids aligned horizontally. All sherds exhibit a few to many cracks on the exterior and interior walls (porous), revealing a similar drying or firing of the clay. The fragments never have a slip or wash and no gritty bases have been recorded. This points to a different manufacture process for these plain wares. Most common are everted rims with rounded rim end and constant rim profile coming from open shapes with diam. between 30–60 cm. A large number of rims look identical with only minor variations which leads to the preliminary supposition that these vessels are more standardized. A few fragments have oval handles starting halfway the rim, where the rim is thickest in profile. Flat bases go along with these shapes. Occasionally there are fragments from smaller shaped vessels with a little ring base, but their number is minimal.

A second variant Fabric IV.B (Appendix IV) comes in a range of red colours and contains different inclusions[23] and the sherds have less cracks than their brown counterparts. The other attributes such as texture, the absence of a slip and the non gritty bases recall the brown variant. The same large open vessels are recorded: everted or flaring rims with average diam of 30–60 cm (Fig. 6). There are also fragments from bowls/basins with incurved rims and this fabric was also used for the production of pithoi.

Altogether, the red variant contains more large shaped vessels.

The third variant Fabric IV.C (Appendix IV) has a buff colour. This fabric contains many white grit particles compared to the other two variants and the texture is of a different quality: medium soapy to fine. The fabric can be thoroughly fired which results in thin and hard walls and none of the cracks which characterise the other two variants. The inclusions are well sorted and mixed within the fabric. No fragments with slip are known and this clear buff variant is only represented by a few examples. The same large open vessels as in the previous types appear, but, in addition, a crater with a T-shaped rim was also produced in Fabric IV.C.

A fifth fabric (V)

It has three subtypes based on the specific presence of inclusions. Due to the lack of examples, the descriptions will be very briefly.

A first variant, Fabric V.A (Appendix V) is characterised by a clear coloured fabric, almost white. There is an abundant presence of brown inclusions of different size. The suggestion is made that they are grog particles (crushed pottery), since these brown particles incorporate other inclusions but we must await petrographic analysis to have the geological identification. A few diagnostic sherds refer to both coarse large vessels as well as smaller sized vessels.

A second variant, Fabric V.B (Appendix V) is a pale yellow, white fabric marked by the dense presence of red inclusions. For the same reasons as the above mentioned brown particles, it is possible that red grog was used. A few examples also refer to large and small sized vessels.

The third variant, Fabric V.C (Appendix V) is a very pale fabric with an abundant presence of black grit particles. All diagnostic sherds are incurved rims (Fig. 7) with a wall thickness of ca.1–2 cm and a diam. between 20–60 cm referring to smaller and larger sized basins.

The sixth fabric (VI) labels all the other plain fabrics such as the fabrics used for the production of Canaanite wares and pithoi but both are subject of another study.[24]

III. Regional patterns

The description of fabrics is of course a subjective matter but an effort was made to record all technical data based on the current methodological directives (*cf.* footnote 2). A good macroscopic description is indispensable not only for more advanced pottery studies but also to answer broader archaeological questions. Decoding ceramics is essential in our understanding of archaeology as they belong to one of the most uncovered finds on all excavations and archaeological contexts. However, most studies aim to group sherds into wares and to name these wares with a label which covers all variations within this group.[25] For this study, every sherd was described in detail and based on these descriptions fragments

[23] It was not possible to identify the nature of these inclusions macroscopically.

[24] The Alassa pithoi are examined by Priscilla Keswani, and the Canaanite fragments are not part of the study collection assigned to me.

[25] Orton *et al.* 1993, 135.

were grouped[26] instead of working the other way around and laying out all sherds and then making groups based on visible resemblances.

The six fabrics and variants recorded in the plain ware assemblage from Alassa *Pano-Mandilaris* require scientific analyses such as petrography to provide the mineralogy of the fabrics. These results will enable us to see how some fabrics are related to each other by providing geological clusters. While scientific analyses can indeed provide answers, it is not always possible to have the material tested as the costs, the time and the required experts are not always available. Furthermore, instead of selecting a few sherds from one site for analysis it is more interesting to have a full range of variations in one pottery ware from one site and then analyse other pottery wares.

Meanwhile, one must work with the tools and material forehand. So, what do the descriptions of the Alassa plain wares tell us?

The variants in the fabric groups probably refer to fabrics which can be seen as a continuum of what is one paste, rather than being sharply defined fabrics. As already mentioned (cf. *supra*) fabric preparation and firing conditions are responsible for some of the recorded variants. This is most probably the case for the variants in fabric I and IV. In Fabric II and III, the differences between the brown and orange are too strong to merely assign them to firing conditions or preparation. The fragments of Fabric III which may be categorised as canonical PWWM II as defined by Åström[27] really stand apart from the other fabrics: it is a very well prepared fabric with almost no visible inclusions, thin walls, nearly metallic sound, distinct pale yellow slip and typical shapes such as jugs and craters. Jugs and craters are also produced in Fabric II.A and B, a much coarser paste in comparison to the fine paste of Fabric III. We might suggest a different use and function for these fine vessels, as they are fewer in number and seem to be part of a widespread tradition with typical shapes produced according to certain principles of manufacture. These vessels are indeed very comparable with PWWM II vessels from other contemporaneous sites, such as Hala Sultan Tekke.[28] As these vessels really stand apart from the other groups, we might consider a specialized production or import. This is where petrographic analysis can offer answers as plain wares from other sites have already been analysed and provide comparison material.[29] In addition, the material will be analysed by lead isotopic analysis, a new approach in ceramic provenance studies, which seems to overcome the drawbacks of neutron activation analyses.[30]

One of the keys to unravelling the plain fabrics are the inclusions (type, density, sorting and size), whether they are naturally included or added as temper. According to Jones[31] coarse textured clays full of rock fragments and minerals coming from the Troodos range, were employed for the preparation of plain wares at most of the LC sites (e.g. Enkomi, Kouklia) which indicates that this was common knowledge in LC Cyprus. Most fabrics used at Alassa seem to derive from such clays, yet there seems to be a more thorough selection or preparation in some of the fabrics related to specific shapes.

Fabric I and II contain a lot of limestone indicating a calcareous clay, whereas fabric III and IV only have a few limestone inclusions. In fabric III limestone particles are sometimes present and occasionally there are fragments with lime spalling, caused by too rapid heating.[32] It is possible that the same clay paste was used but received a more thorough sorting and preparation. Fabric IV on the other hand, contains a lot of organic matter both on interior and exterior walls: elongated voids are sorted on the rim and probably come from deliberately included chaff. The interior of the fabric is characterised by a strong grey core deriving from incomplete oxidation of the carbon from organic material.[33]

Two variants of fabric V could contain grog particles and the importance to have their identification has been stated above. Petrographic analyses will provide an identification for the 18 preliminary types of inclusions identified based on their colour, roundness and sphericity.[34] Further mineralogy will also inform on firing technology,[35] an essential partner to be considered in view of understanding variability.

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[26] This method has the advantage that every sherd can be assigned to a group with well-defined properties, whereas grouping sherds based on momentary evaluation is likely to lead to a less precise record.

[27] Åström 1972, 252–259.

[28] Hult 1978, 90, fig. 158.

[29] See Jones 1986; Knapp and Cherry 1994.

[30] Renson *et al.* 2007.

[31] Jones 1986, 343.

[32] Rye 1981, 107.

[33] Rice 1987, 345.

[34] Orton *et al.* 1993, 236–239, Table A.2, fig. A.5.

[35] Clay minerals decompose during firing. If these minerals remain the same, this provides an indication of the maximum firing temperature (Rye 1981, 118).

Only after obtaining these results fabric counts and weights will be undertaken in order to have an idea of the distribution and number of each ware, particularly within different types of use context.

Another important observation consists in the correlation between certain fabric groups and the size and shape of vessels (cf. *infra*).

IV. Social organisation: some techniques of the Alassa potters

In this section it will be demonstrated that the variations in the plain fabrics discussed above are not the consequence of random or accidental factors. They result from deliberate technological choices, which point to organised patterns in the production of plain wares. Although there seems to be little standardization in the vessels, which is often explained in terms of the product of non-attached specialists,[36] the plain wares do show evidence of a degree of organisation in the production. Throughout the whole chaîne opératoire there is evidence for these well considered choices made by the potter: from the preparation of the fabric or selection of a clay, the making of a certain shape, the technique in which it was produced, the preferred way of firing and finishing the vessel.

Preparation: management of inclusions

Inclusions provide answers on the preparation of fabrics and patterns of use were observed (cf. *supra*) revealing that the potter was to a certain degree in control of the inclusions added to or extracted from the clay matrix. Furthermore, some of the fabrics with typical inclusions (limestone, organic, mica, grog?) correspond more or less to vessel size and shape, suggesting that the fabric was prepared in function of a particular kind of a vessel with certain properties. For the vessels with a lot of mica it is possible that particular clays were selected.[37] Petrographic analysis will enlighten on the different clays used by the Alassa potters and clarify which clays have similar mineralogical composition.

Technique

Both hand and wheel made vessels occur with a majority of hand made vessels.[38] The wheel made vessels with strong wheel traces are jugs and craters typical of PWWM II. These examples are very comparable with vessels from other contemporaneous sites indicating a widespread tradition whereas the hand made vessels seem to be less standardized and show a great deal more diversity. Their variability consists in a difference in fabric and other variations related to shape details (e.g. jugs with handles starting at the rim and not below the rim).[39] In how far these variations correlate with the technique, is still a subject under study. For the vessels belonging to PWWM II we might suggest they are part of another production (cf. *supra*)

Another observation is that both hand and wheel made examples are found of the same vessel forms and deriving from similar contexts, for example jugs and craters. This is also observed at other sites, for example at Apliki-*Karamallos*[40] and it might be connected with the level of organization for some of the products. This occurrence of both hand and wheel made shapes/fabrics is already known from LCI in Enkomi[41] which points to a tradition which was still in use in LCIIC–LCIIIA.

Firing

There are different firing traditions at the site of Alassa *Pano-Mandilaris*: in some groups most sherds are evenly fired to a uniform colour (Fabric II.B), whereas other groups have strong grey cores (Fabric IV). Firing cores can be red, grey and brown both sharply defined and diffuse. Many handles with rim show a regularly fired rim whereas the handle has a red or grey core. Sometimes vessel walls turn into a greenish colour, which can also be related to irregular firing or over firing.

How can we explain these different firing traditions? If the potter was in control of the firing conditions and he was able to achieve stable circumstances, this might suggest that he created an effect he desired.[42] If fabric I and II reveal to have the same min-

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[36] Crewe 2007a, 20.

[37] According to Rye (1981, 35) it is unlikely that mica has been intentionally added as a tempering material in the past: 'it occurs naturally in many clays and where mica is present in ancient material, it is likely to have been a natural inclusion in the clay'.

[38] There is also a class of uncertain technique because the sherds were too small to assign them to any technique.

[39] Not all material has been processed and shape variations are not fully listed yet.

[40] Kling and Muhly 2007, 130.

[41] Crewe 2007b, 210.

[42] Hocking (2001, 138) provides evidence for Iron Age pottery where reducing firing was used to create a clear effect where no buff clays were found in the area. Instead of importing buff clay, the ancient potters developed a reduction technique creating the same effect.

eralogical composition, we can consider the firing of the vessels to be the main difference. In that view, we might think about the above mentioned idea about creating a desired effect? Since the majority of these large vessels are fired in a range of brown colours, it may also be related to considerations of cost effectiveness and quality control.[43] Of course different clays require an different firing and Hemsley[44] points out that Cypriot clays need considerable preparation before use and the firing needs much care as well. Again, petrographic analysis will clarify whether firing technologies correspond to the use of specific clays, such as marl clays which are better not fired over 900°C to prevent rapid body collapse[45] or the use of reduction techniques.[46] In addition, the description of minerals, their size, amount and distribution are also relevant for determining the firing conditions.[47]

Correlation shapes–fabric

The different fabric groups have demonstrated that particular shapes and vessel sizes correspond to some of the fabric classes. The same calcareous clays were used for both large vessels such as jars, basins and small pithoi (Fabric I) as well as for smaller vessels such as bowls, jugs and craters (Fabric II). The difference occurs in the preparation (size, density, sorting of the inclusions) leading to the conclusion that the potter differentiated amongst these fabrics according to vessel shape and size and for this reason both fabrics are labelled as a separate fabric.[48] Fabric III with PWWM II fragments was used for the production of vessels found on most Late Bronze Age sites and also comes in a vast series of shapes such as jugs and craters. Their fine paste differs them from the other groups which are part of the utilitarian equipment whereas for Fabric III we might suggest a different function. The most significant patterning however, appears in Fabric IV. This fabric encompasses a group of typical large open bowls, produced in a fabric which contains a lot of organic matter. So far, fabric IV is the only fabric with such an abundant use of organic material, also characterised by the absence of gritty bases and a self-slip. Therefore the vessels may belong to a different production, hitherto labelled as a local feature.[49] It is possible that they are connected with some specific functions of the site and that they are related to agricultural, cultic or metallurgic activities practised at Alassa *Pano-Mandilaris*.[50] So far, these vessels do not seem to be used at Alassa *Paliotaverna* which is the administrative seat with ashlar buildings and storage facilities and which is connected with other activities such as control and political activities.[51] Iacovou[52] points out that the two excavated areas are in fact separated and that they probably had separate roles, which could be corroborated by the distribution pattern of the bowls of Fabric IV.

Finishing: surface treatment

Most vessels have no surface treatment but there are fragments with a self-slip or wash which is usually somewhat lighter than the fabric colour. Fabric III vessels (PWWM II) have a thin pale yellow slip, which creates a white effect.

As already observed on other sites, there is a close affinity between the plain and white painted wares.[53] Three of the fabrics used for plain wares at Alassa *Pano-Mandilaris* were also used for the WPWM III ceramics: Fabric II.A, II.B and IV.A. Fabric IV.A conducts somewhat different as the grey core is replaced by evenly fired sherds with thinner walls and a very dense use of small pores. We could categorise this as a fourth variant of Fabric IV. Of course, there are more fabrics used to produce these WPWM III vessels and some of these fabrics are of a much finer quality. But the fact remains that in terms of fabric there is no difference between some of the plain and the white

[43] Rice 1984, 203.
[44] Hemsley 1991, 215.
[45] Hemsley 1991, 215.
[46] Hocking 2001, 134–136.
[47] Rye 1981, 118; Sinopoli 1991, 12. Clay minerals decompose during firing. If these minerals remain the same, this provides an indication of the maximum firing temperature (Rye 1981, 118).
[48] With the results from the petrography the preliminary classification will need to be adjusted and variations will be sorted in a different way depending on the outcome of the analyses.
[49] Similar shapes occur on other Late Bronze Age sites, but the fabric is not described in such terms to make a comparison with the characteristics of fabric IV (e.g. Karageorghis 1984, 34, pl. XXXVI, 18; Keswani 1989, 18; fig. 20.9; Kling and Muhly 2007, 131, 205, 7–8). Another observation on these vessels is their porosity/permeability and their more standardized shape which may be an important matter to consider in view of pottery economics as they may imply standardized units of measure or refer to specific functions and inform on pottery specialisation (Rice 1984, 202, 203).
[50] Hadjisavvas 1989, 40–41; 1999, 206–208.
[51] Hadjisavvas 2000, 396.
[52] Iacovou 2007, 8.
[53] E.g. Öbrinck 1979, 46.

painted wares, and Öbrinck[54] observed at Hala Sultan Tekke that 'WPWM III may to some extent be regarded as decorated plain'. This also seems to be part of a longer tradition, as Crewe[55] noticed for early Enkomi where 'both wares were also made from the same fabrics and therefore considered as subsets'. According to provenance studies[56] it is most probable that WPWM III may have only been made in a few limited production sites. Petrographic analysis will shed more light on the relation between PWWM and WPWM III and this might inform if some of the plain wares were also products of a few limited sites.

Conclusion

This paper wanted to underline the importance of the ceramic variability recorded at the LC IIC–LC IIIA site of Alassa *Pano-Mandilaris* and to draw the readers' attention to the possible meanings of these variations. The assemblage of plain ware vessels is the largest group of ceramics uncovered on site[57] and based on macroscopic examination six different fabrics were discerned for the production of these vessels. A new study including petrographic analysis will provide more answers regarding the different fabrics and their mineralogy and will test the validity of macroscopic described fabrics. It is my intention to publish these results in relation to the earlier descriptions in such a way that they are of assistance to other researchers involved in the study of these type of ceramics.

At this point we can conclude that the Alassa *Pano-Mandilaris* assemblage fits within the known parameters of LC IIC–LC IIIA assemblages from other sites in Cyprus. This is especially true for Fabric III with PWWM II fragments which seem to be part of an island wide tradition with typical vessels such as jugs and craters in a fine fabric with very small inclusions and pores, strong wheel traces and a white slip. It was already suggested that these vessels could be the products of more specialized potters and that they were used for different purposes. The bulk of the other plain vessels are characterized by a high intra-site variability both in terms of fabric and shape. The question remains open whether these variations can be assigned to regional variations exclusively. Further examination of material from other sites in the Kouris valley will aim to solve this question by observing whether similar traditions were in use. The preparation of fabric pastes, the parallel occurrences of hand and wheel made vessels in similar fabrics and shapes, the different firing techniques and the finishing of vessels inform on the pottery technology used by the Alassa potters. Parallel to other sites it seems that mostly calcareous clays were selected for the production of plain vessels, both for hand and wheel made forms. Some of the forms were decorated with paint and this is the only feature[58] that distinguishes some of the plain and WPWM III ceramics. The large open bowls (Fabric IV) are a very distinct group in the plain ware repertory and it is possible that they are connected with specific activities related to the site. Again petrographic analysis will aim to solve these questions by telling us exactly how plain and WPWM are related to each other and if Fabric IV bowls have a specific porosity/permeability which might be related to a specific use.

As the Alassa assemblage is in very fragmentary state we will concentrate on shape variability as much as possible to try to establish in how far these products were part of a standardized manufacture process.

Once we have established the characteristics and the organisation of the production of plain wares at Alassa, it will become possible to study interaction patterns between the different communities of LC Cyprus. How the knowledge on pottery technology was shared or was particular information/know-how not shared? The answers to these questions will help our understanding of the meaning of localised and regional features recorded in LC ceramics and to see how they are reflective of some socio-economical aspects of Late Cypriot society: which types of plain wares were locally produced and which ones were imports? Were the imports accompanied by the import of other vessels such as WPWM III? Were some of the Alassa plain wares exported to other sites and if they did, did they follow exchange patterns similar to other materials? Further study will be able to outline the degree of localised or centralised production and control in the Kouris Valley and these data will be viewed in relation to the economic, political and cultural conditions.

Finally, it must be underlined that this paper is based on an ongoing project and that some of the views expressed might need some future adjustments.

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[54] Öbrinck 1979, 46.
[55] Crewe 2007a, 129.
[56] Knapp and Cherry 1994.
[57] Plain wares and plain pithoi included.
[58] So far it seems that both wares were used for the production of different vessel shapes, but this is still a topic under study.

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Appendix

Fabric I. Gritty–Granular

Fabric I.A brown

Technique: hand

Texture: gritty–granular (also gritty bases)

Inclusions: black gritt (t.8) has a moderate (15%)–very common (30%) density and is moderately–well sorted [other inclusions have a far less density and sorting]

Fabric colour: variety of brown: pale yellow (2.5Y 7/3)–reddish yellow (5YR 5/6)–pink (7.5YR 7/3)–light brown (5YR 6/4)–strong brown (7.5 YR 5/6)

Slip: if a self-slip is present it is most often lighter than the fabric: pale yellow (5Y 7/3)–very pale brown (10 YR 7/3)–pink (7.5YR 7/3)–light gray (2.5YR 5/2)–brown (7.5YR 5/2)

Firing: if there is a core, it can be pink–grey–light reddish brown; diffuse or sharply defined

Shapes: open shapes (large jars, pithoi)

Wall thickness: ca. 1,5–3 cm

Fabric I.B orange

Technique: hand

Texture: granular–medium sandy (also gritty bases)

Inclusions: black gritt (t.8) has a moderate (10%)–very common (30%) density and can be moderately–well sorted

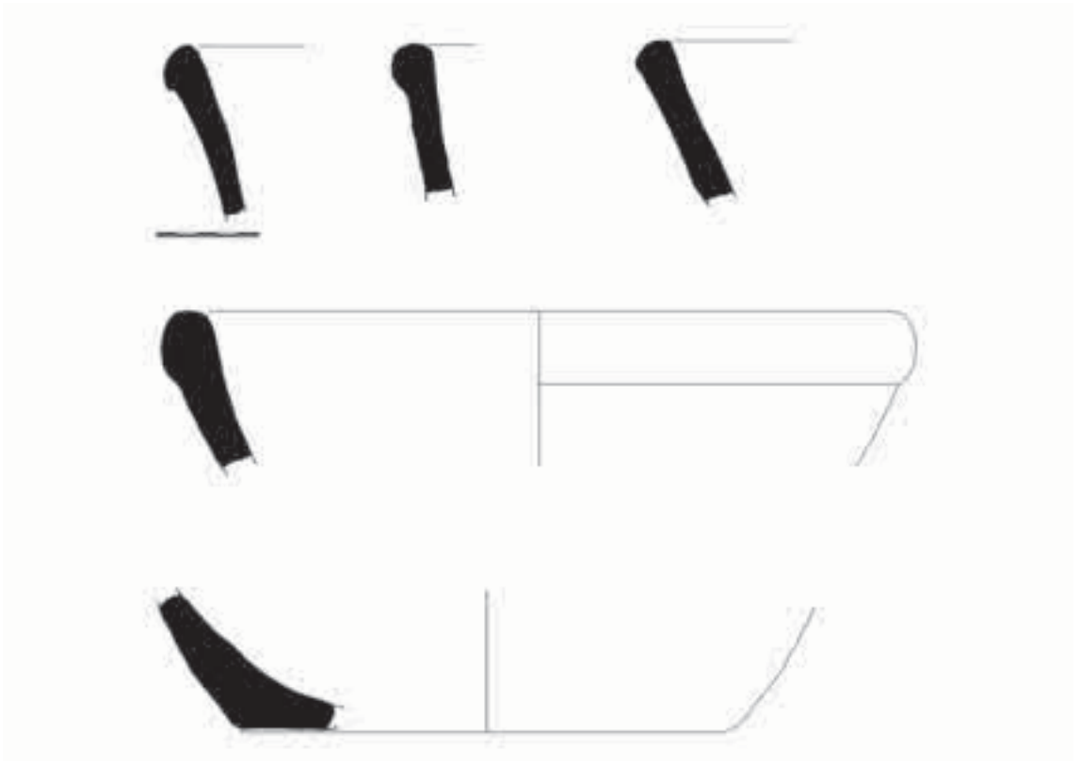
Fabric colour: pink (7.5YR 8/3)–reddish yellow (5YR 6/6)–red (2.5YR 5/6)

Slip: light grey (2.5Y 7/2)–very pale brown (10YR 7/4)

Firing: if there is a core, it can be light red–yellowish red or pinkish grey; diffuse or sharply defined

Shapes: open (large jars, basins or large bowls, pithoi)

Wall thickness: ca. 2–3 cm



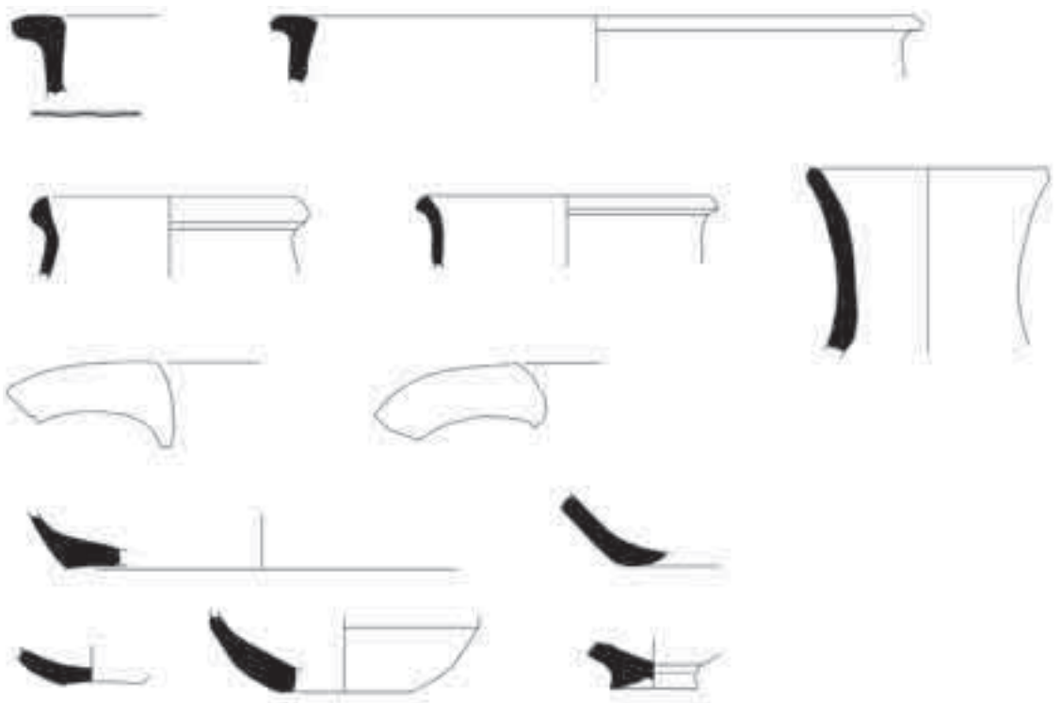
Fabric II. Sandy

Fabric II.A brown

Technique: hand, wheel
Texture: medium sandy (sometimes gritty bases)
Inclusions: black gritt (t.8) has a moderate (10%)–very common density (30%) and is very well sorted and well mixed within the fabric
Fabric colour: wide variety of brown: pale yellow (2.5Y 7/3)–light yellowish brown (10 YR 6/4)–reddish yellow (7.5YR 6/6)–gray 2.5 5/1–brown 7.5YR 5/2
Slip: pale yellow (2.5Y 7/3)–light yellowish brown (10YR 6/4)–light grey (5Y 7/2)
Firing: if there is a core, it can be pink, light red or dark grey; mostly sharply defined
Shapes: open (bowls, craters) and closed (jugs)
Wall thickness: ca. 0,5–1 cm

Fabric II.B orange

Technique: hand and wheel
Texture: medium sandy (sometimes gritty bases)
Inclusions: black gritt (t.8) has a moderate (10%)–common density (20%) and is very well sorted and well mixed within the fabric
Fabric colour: reddish yellow (5YR 6/6)–yellowish red (5YR 5/6)–red (2.5YR 5/6)
Slip: yellowish red (5YR 5/6)–light yellowish brown (10 YR 7/4)–very pale brown (10 YR 7/4)
Firing: if there is a core, it is red, grey or yellowish brown; it is diffuse or sharply defined.
Shapes: open (bowls, craters) and closed (jugs)
Wall thickness: 0,5–1 cm



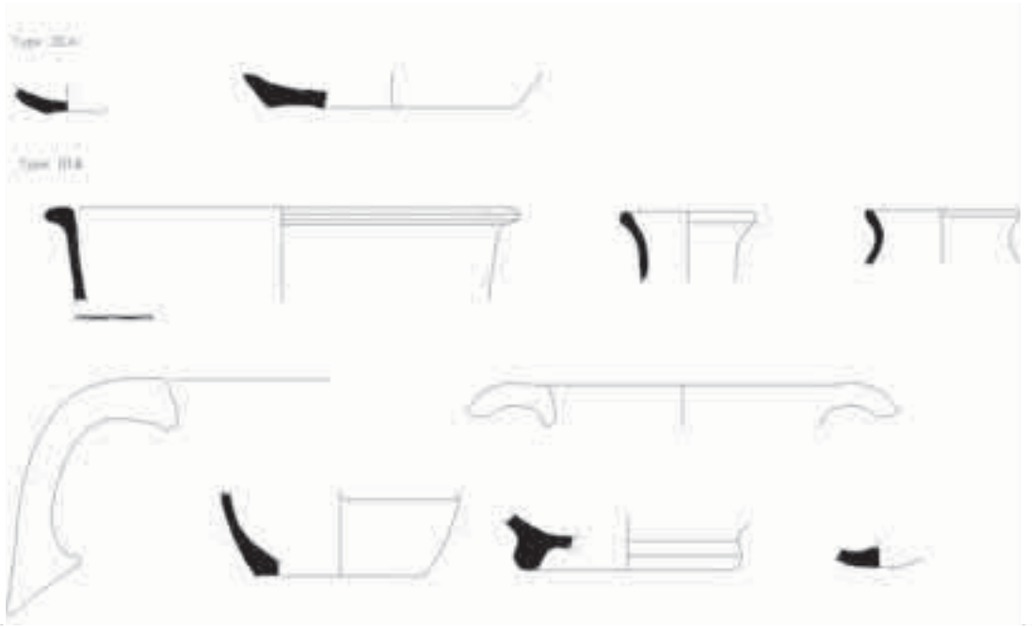
Fabric III. Plain White Wheelmade II

Fabric III. A brown

Technique: strong wheel traces
Texture: medium soapy
Inclusions: the inclusions are of small size and very well mixed within the fabric: even distribution of the different types of inclusions such as the white, black, brown and red. Very common (30%) use of pores.
Fabric colour: from reddish yellow 7.5YR 6/6–yellowish red 5YR 5/6–light yellowish brown 10 YR 6/4
Slip: sometimes there is a slip/wash in gray 10 YR 6/1–pale brown 10YR 6/3
Firing: no core–diffuse core (yellowish red 5YR 5/6)–uneven oxidation
Shapes: open shapes (large bowls)
Wall thickness: 0,5–1 cm
Decoration: parallel grooves above base

Fabric III.B orange

Technique: strong wheel traces (two traditions: spacious and non-spacious)
Texture: medium soapy
Inclusions: the inclusions are of small size and very well mixed within the fabric: even distribution of the different types of inclusions such as the white, black, brown and red. Very common (30%) use of small voids (pores)
Fabric colour: reddish yellow (5YR 6/6)–light red (2.5YR 6/6–10 R 6/6)
Slip: no slip, pale yellow (2.5Y 7/3)–light brownish gray (2.5Y 6/2)
Firing: no core–diffuse core (yellowish red 5YR 5/6)–uneven oxidation; slight/distinct mottling
Shapes: open (craters) and closed (jugs)
Wall thickness: 0,5–1 cm
Decoration: parallel grooves in neck



Fabric IV. Organic Temper?

Fabric IV.A brown

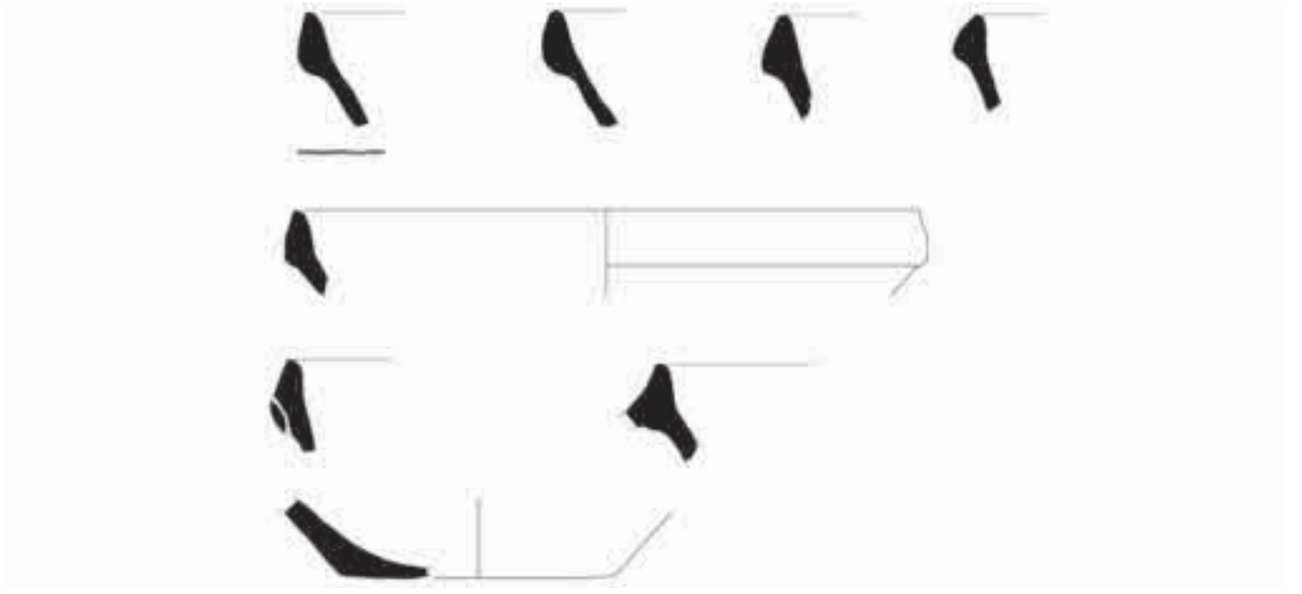
Technique: hand and wheel
Texture: medium soapy (no gritty bases)
Inclusions: particular use of inclusions, extensive use of organic matter (elongated voids) and other types (need to be identified)
Fabric colour: pale brown (10YR 6/3)–light brown (7.5YR 6/4)–brown (7.5YR)–strong brown (7.5YR 7/6)
Margin colour: reddish yellow (7.5YR 6/6)– reddish gray (5YR 5/2)
Firing: in almost every case, there is a very strong grey core which is sharply defined
Shapes: open (bowls) and closed vessels (jugs)
Wall thickness: ca. 1,5 cm

Fabric IV.B red

Technique: hand and wheel
Texture: medium soapy (no gritty bases)
Inclusions: particular use of inclusions, extensive use of organic matter (elongated voids) and other types (need to be identified)
Fabric colour: yellowish red (5YR 5/6)–red (2.5YR 5/8)
Margin colour: red (2.5YR 5/6)–pale brown (10YR 6/3)
Firing: the core is red, grey or brown and can be diffuse or sharply defined
Shapes: open (bowls, basins) and closed, also used for pithoi
Wall thickness: ca. 1,5 cm

Fabric IV.C buff

Technique: hand and wheel
Texture: medium soapy–fine (no gritty bases)
Inclusions: particular use of inclusions, other types (need to be identified)
Fabric colour: reddish yellow (6/6)–light yellowish brown (10YR 6/4)–very pale brown (10YR 7/3)
Margin colour: –
Firing: if there is a core, it can be grey or brown, diffuse or sharply defined
Shapes: open and closed vessels
Wall thickness: ca. 1,5cm



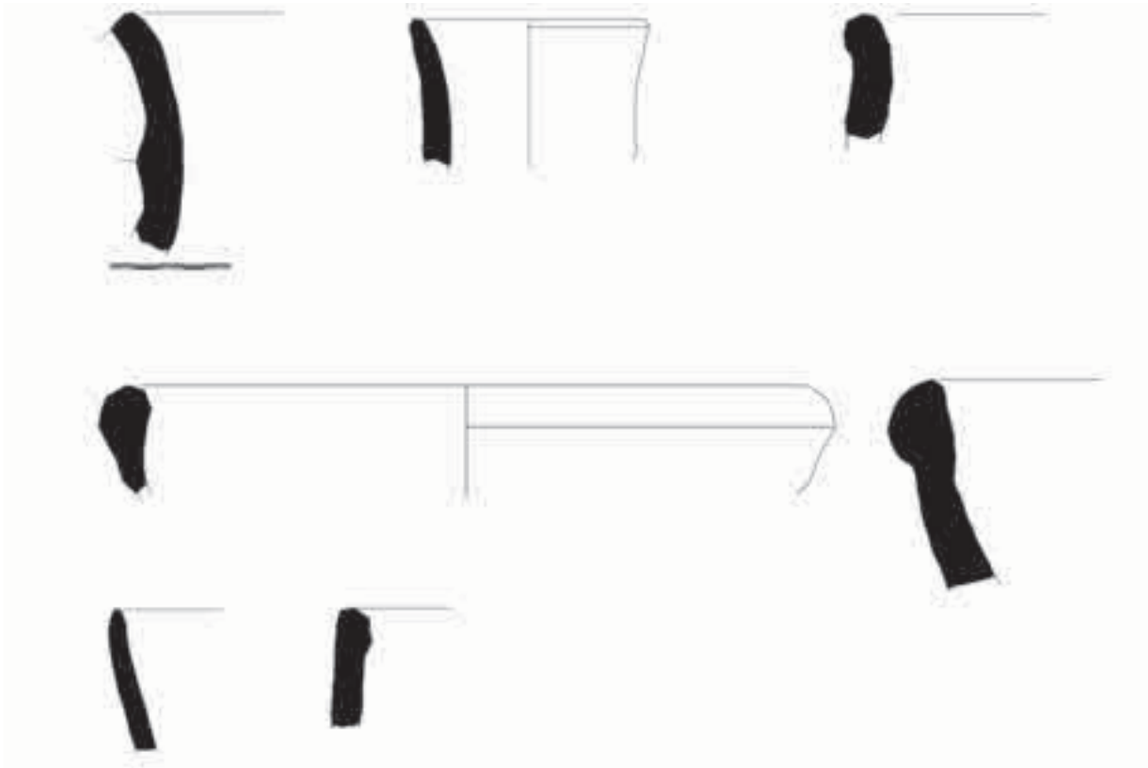
Fabric V. Special Inclusions

Fabric V.A Presence of different types of brown inclusions. Mostly no surface treatment. No specific shapes.

Fabric V.B Presence of different types of red inclusions. Mostly no surface treatment. No specific shapes.

Fabric V.C White coloured fabric with granular texture (very common use (30%) of black gritt particles). No surface treatment.

Shapes: open (basins) and closed (jugs).



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