

Chapter 6

Lower Egyptian ceramic assemblages

1. POTTERY CLASSIFICATION SYSTEMS

The type of ceramic fabric and its surface treatment are the fundamental features based on which Lower Egyptian pottery is classified in this publication. By reference to these two characteristics it was possible to classify pottery into sets of ware groups with different combination of surface properties, characterized by one fabric, or a set of closely related fabrics (Payne 1993: 26 after Nordström 1972: 40-44, 48-57).

However, comparing Lower Egyptian pottery from different sites involves certain difficulties stemming from differences in classification systems used by respective authors of site reports. Those classifications were based on various combinations of features taken into account in the process of assigning vessels to ware groups.

1.1. Buto – Tell el-Fara'in, Ezbet el-Qerdahi

In Buto, T. von der Way (1997: 81-84) identified three ware groups taking into consideration types of clay and tempers (if any). Additionally, Ware 1 was divided into seven subwares, depending on surface treatment.

Ware 1a	group of pottery with wet smoothed surfaces without slip;
Ware 1b /1c	group of pottery covered with slip, from bright red to brown (1b – dark slip; 1c –light slip);
Ware 1d	group of thick-walled pottery with the inner surface covered with lime coat;
Ware 1e	group of pottery with the outer surface covered with lime coat;
Ware 1f	group of thin-walled pottery with surface covered with white lime coat, sometimes smoothed;
Ware 1g	group of thick-walled pottery with a distinctive white, striated decoration in the rim zone;
Ware 2	group of pottery made of ceramic paste containing large pieces of crushed limestone and crushed pottery (1-2mm);
Ware 3	group of pottery made of ceramic paste containing a large amount of crushed shells.

Each individual ware group has its own vessel forms. The same classification system was applied by T. von der Way (1997) during the analysis of pottery from Ezbet el-Qerdahi.

From 1993 to 2000 excavations in Buto were lead by D. Faltings, and pottery from layers III and IV was analyzed by E.Ch. Köhler (1993; 1998). Interestingly, according to E.Ch. Köhler (1998: 44) in terms of technology and typology the pottery from layer IIIa is to a great extent similar to pottery from layers I and II, which can be probably attributed to the fact that all those layers are associated with the Lower Egyptian culture. E.Ch Köhler used her own pottery classification system, considering the Vienna system to be only partially adequate for describing the early Nile Delta pottery (Köhler 1998: 13-14). Ware groups identified by her by reference to manufacturing technology are characterized by the type of clay, type and size of temper and the presence of slip.

1.2. Heliopolis

Pottery classification proposed by F. Debono and B. Mortensen (1988: 25) took into consideration pottery fabric, shape, color and surface treatment. As a result, the researchers assigned each vessel type to one of the three following ware groups:

1. Straw-tempered ware – group of pottery made of clay tempered with straw and chaff;
2. Sand-tempered ware – group of pottery made of clay tempered with very fine sand;
3. Palestinian ware – group of pottery imported from Southern Levant.

1.3. Kom el-Khilgan

As no detailed reports from the site at Kom el-Khilgan have been published, one may only assume that the system used to describe pottery from Adaïma and from Tell el-Iswid (see below) was also used in reference to pottery from Kom el-Khilgan.

1.4. Maadi, Wadi Digla

I. Rizkana and J. Seeher (1987: 24-32; 1990) classified pottery into ware groups by reference to color and surface treatment, presence of slip, the character of clay and temper, and finally break-color and break-zonation. Based on the above qualities they identified five ware groups. In addition, group I was further divided into four additional subgroups, depending on vessel surface color and treatment.

Ware Ia	Black Ware;
Ware Ib	Reddish-Brown Ware;
Ware Ic	Local Painted Ware;
Ware Id	Local Blacktopped Ware;
Ware II	Red Burnished Ware;
Ware III	Yellowish Washed Ware;
Ware IV	Imported Blacktopped Ware;
Ware V	Palestinian Ware.

Each of the above groups is represented by different vessel forms.

1.5. Minshat Abu Omar

In her general publications describing pottery from the oldest graves at Minshat Abu Omar, K. Kroeper (1985; 1986/87; 1988) applied the terminology used in the classification system developed by W.M.F. Petrie (1921), *e.g.* R-ware, D-ware, W-ware. In more detailed publications presenting individual graves and their content the description of pottery technology involved the identification of clay and temper (type and size), as well as a reference to the Vienna System. Surface color was described according to the Munsell color system (Kroeper & Wildung 1994; 2000).

1.6. Tell el-Farkha

So far, the so called Vienna System was used in analyzing the pottery of the Lower Egyptian culture (see Nordström 1972; Nordström and Bourriau 1993), whereby fabric and surface treatment were the basic qualities according to which ware groups were identified (Chłodnicki *et al.* 1991; 1992a; 1992b; Jucha 2005; Mączyńska 2002: 100-104; 2003a; 2003b; 2004; 2012). The following ware groups were identified in Tell el-Farkha¹:

- R1: Rough coarse ware, equivalent to Petrie's Rough class; Fabrics Nile C3 – Nile C4 (adapted after Vienna System Nile C). It is characterized by a very rough surface with large voids from burned-out organic temper.
- R2: Rough ware; Petrie's Rough class; Fabrics Nile B2, Nile C1-2. The rough, wet smoothed surface has voids from burned-out organic temper (2-5mm), which is less coarse than that of R1 ware.
- P: Red slipped ware; Petrie's Red-polished class; Fabrics Nile A, Nile B, Nile C1. The surface is covered with light red, red or reddish-brown slip, polished or burnished. The "Lower Egyptian" fiber temper was also recorded among vessels belonging to this ware group.
- Y: Yellow slipped ware. Vessels coated with yellow slip are present in Petrie's classes R, L and even W; Fabrics Nile A, Nile B, Nile C. The surface is covered with yellow (cream) slip, smoothed, polished or occasionally burnished (for more details see Mączyńska 2004).

1.7. Tell el-Iswid, Tell Ibrahim Awad

Only short pottery analysis reports from those two Lower Egyptian sites have been published so far. In both cases E.C.M. van den Brink (1989: 67-70; 1992b: 53-54) did not use a formalized classification. He presented the Lower Egyptian ceramics in a descriptive way taking into consideration technological (clay and temper) as well as the typological (forms and ornamentation) qualities.

In 2007 the team of the French Institute of Oriental Archaeology in Cairo began to explore the site. As regards Lower Egyptian pottery, F. Guyot (*in press*) identified 8 fabrics taking into account clay types and temper sizes.

1 For the Western Kom system see Jucha 2005.

AV1	group of pottery made of Nile clay tempered with coarse organic temper;
AV11	group of pottery made of Nile clay tempered with medium organic temper;
AVM1	group of pottery made of Nile clay tempered with coarse organic and mineral temper;
AVM11	group of pottery made of Nile clay tempered with mineral temper;
AM	group of pottery made of Nile clay tempered with mineral temper;
AF	group of pottery made of Nile clay tempered with fibrous temper;
C	group of pottery made of marl clay;
LS	group of pottery made of less clay.

1.8. Other sites

Along with ceramic materials found on big, well explored sites, there are also small collections of Lower Egyptian ceramics, found during rescue project accompanying construction works in Giza (Mortensen 1985; el-Sanussi & Jones 1997) and Tura (Kaiser & Zaugg 1988). Moreover, in 1985 results of an analysis of 12 Lower Egyptian vessels from the es-Staff cemetery were published. The cemetery was explored in 1935 by L. Habachi (Habachi & Kaiser 1985). In short descriptions of those collections the authors presented the pottery in a descriptive way, sometimes (in the case of Giza and Tura) with references to the classification system used in Maadi and Wadi Digla. The pottery from the cemetery of Beni Amir was shortly described by a vessel type, dimensions and analogies from other sites (el-Moneim 1996: 260-272).

In a short publication on pottery from Mendes, R.F. Friedman (1992) analyzed in a descriptive way the basic qualities of the pottery assemblage, along with elements of the classification system proposed in her doctoral dissertation on Upper Egyptian settlement pottery. The classification of R.F. Friedman's (1994) is a modified version of the system proposed by M.A. Hoffman and M. Berger (1982: 67-68) to describe pottery from the Hierakonpolis site.

1.9. Summary

A comparison of the qualities considered in classification systems presented above shows that those systems are to some extent similar and the existing differences between them stem from different combinations of qualities used to identify individual ware groups. Difficulties in comparing ceramics from individual sites might be overcome by analyzing them in detail without references to existing classification systems.

Another inherent challenge in comparing Lower Egyptian pottery from various sites covered by this chapter is that most of those have different chronologies. The sites represent three different phases of the culture (Tab. 3). While Lower Egyptian pottery tradition is a continuum, there are visible differences in pottery forms and ornamentations between its phases.

Lower Egyptian pottery addressed in this chapter comes from settlements (*e.g.* Buto, Tell el-Farkha, Tell el-Iswid, Tell Ibrahim Awad, Maadi) as well as from cemeteries (Helio-polis, Maadi, Wadi Digla, Minshat Abu Omar). A comparison of materials from a settlement and a cemetery is apparently difficult when one considers the differences in the very nature

of those materials. Pottery found in settlements served a different function than vessels found in cemeteries. The former was used for household purposes, such as storage or preparing/consuming food, whereas the latter was used as grave offerings. Lower Egyptian cemeteries explored so far (*e.g.* Heliopolis, Maadi, Wadi Digla, Minshat Abu Omar) have shown that there are no significant differences between pottery from settlements and from cemeteries. It has not been proven that pottery offered as grave goods was made especially for that very purpose. The only difference between the two pottery types is that some vessel forms that were not found in cemeteries appeared to be quite common in settlements. On the basis of the research conducted in Minshat Abu Omar K. Kroeper (2004: 878) concluded that vessels found in graves had not been used before. However, it goes beyond doubt that the repertoire of local forms found in the graves of that cemetery (lemon shaped jars, bag shaped jars, Perie's R76 and R84 jars) is the same as in settlements dated to NIIC-D, such as Tell el-Farkha (Mączyńska *in press c*). Our knowledge of Lower Egyptian burial customs allows one to assume that there was no division into settlement and cemetery pottery. Vessel functions and meanings in both contexts may have been different, but vessel forms were the same. However, the foregoing does not disprove that vessels used in cemeteries were new or previously unused and were purchased or made for this very purpose.

2. TECHNOLOGY

The mode of paste preparation, vessel production and firing process was similar in all phases of the Lower Egyptian culture.

2.1. Raw materials

Lower Egyptian pottery was predominantly made of alluvial Nile clay tempered with mineral temper of sand or crushed stones, as well as with organic temper of straw, chaff and dung. The last type of temper took the form of small particles, usually shorter than 3mm, with circular cross-sections, 1mm in diameter (Rizkana & Seeher 1987: 25; Debono & Mortensen 1988: 25). The distribution of organic particles coming from animal dung in the paste is regular and parallel to vessel walls (Nordström & Bourriau 1993: 163). In some cases sand or chaff was replaced by crushed shells (Buto Ware 3). Long and thin organic fibrous temper was also used as an organic filler, *e.g.* at Tell el-Fara'in-Buto, Tell el-Farkha, Tell el-Iswid, Maadi, Mendes, Minshat Abu Omar², leaving tiny cracks on the vessel's surface after firing. Temper size depended on the vessel form. Ceramic paste tempered with fine mineral material (sand) was used for making better quality vessels, characterized by thinner walls and smoothed surface, sometimes covered with slip. Coarse mineral temper resulted in wall roughness, further increased by the presence of organic temper which would leave characteristic small holes (negative impressions of burnt-out straw or chaff) (Rizkana & Seeher 1987; 1990; Debono & Mortensen 1988; van den Brink 1989: 55-108; von der Way 1997).

² See Köhler 2008: footnote 13.

Pottery made of marl clay, the deposits of which are present in Upper Egypt, was registered on such sites as Tell el-Farkha, Buto, Tell el-Isuid or Minshat Abu Omar. Most finds from settlement sites were fragments of D-ware and W-ware imported from the south (van den Brink 1989; von der Way 1997; Jucha 2005: 55; Mączyńska *in press c*). In the cemetery in Minshat Abu Omar, certain graves contained a few complete vessels with painted decoration and with characteristic wavy handles (Kroeper 1985; 1986/87; 1988).

2.2. Vessel making process

As the potter's wheel was not used, all Lower Egyptian vessels were hand-made, either of a single piece of clay or by coil or slab building. Turning was sometimes used, usually to form vessels' upper parts. Most probably they were placed on turning devices – either in baskets or on small wooden platforms, turned by the potter's feet or one hand. Vessel surface could be covered with slip or smoothed with a hard or soft object. Surface smoothing direction was usually vertical or diagonal on the body and horizontal around the rims (Arnold 1993: 85-86; Bourriau *et al.* 2000: 121-147).

Vessels were fired in hearths and simple kilns, at a temperature from 700 to 800°C (von der Way 1997: 81). After firing, clay color ranged from red to red brown, brown, and to black. Break color could either be uniform, or show darker (black or brown) zones, depending on firing atmosphere and its likely changes during the process. Vessel surfaces were hardly ever uniform, and due to imperfect firing conditions and little control over the firing process surface showed variously colored stains.

3. WARES AND FORMS

Individual elements considered in the typological analysis presented below are discussed jointly, irrespectively of their chronology. An overview of differences between materials from each of the three phases of the Lower Egyptian culture can be found in the final part of this chapter.

3.1. Wares

Considering the type of ceramic fabric and the method of surface formation, Lower Egyptian pottery can be divided into four basic ware groups (Tab. 17):

Rough ware	vessels with rough surface;
Red slip ware	vessels with surface covered with slip, ranging from red to plum and brown to black;
Yellow slip ware	vessels with surface covered with light lime coat;
Blacktopped ware	vessels with a characteristic blackened rim.

Table 17. Pottery wares of the Lower Egyptian culture.

WARES	BUTO	HELIOPOLIS	MAADI/WADI DIGLA	TELL EL-FARKHA	TELL EL-ISWID (IFAO)
Rough ware	Wares 1a	<i>Straw-tempered ware</i> (types I-IV, VIIA, IX, X)	Wares Ia, Ib	<i>Rough ware</i>	AVM1 AVM11, AV1, AV11
Red slip ware	Wares 1b, 1c, 2	<i>Straw-tempered ware</i> (types Vb, VI, VIII)	Ware II	<i>Red slip ware</i>	AV11.2, AVM11.2 AE2
Yellow slip ware	Wares 1f and 1g	<i>Straw-tempered ware</i> (types Va, VIIb), <i>sand-tempered ware</i> (types XI, XII)	Ware III	<i>Yellow slip ware</i>	AV1.7, AVM11.7
Blacktopped ware	-	-	Wares 1d, IV	-	-

Rough ware

Rough ware is characterized by the presence of medium and coarse mineral and organic temper. Ceramic fabric of this kind belongs to the Vienna system groups N. IB2-IC1-2. Vessel surface after firing is rough despite earlier wet smoothing, either by hand or using a soft object, *e.g.* a piece of cloth or animal skin (von der Way 1997: 81-84). In some cases the upper part of the vessel could be subjected to turning. Surface color ranges from red to red brown, brown, and to black, and break color could either be uniform, or show darker (black or brown) zones. Various colored stains are visible on vessel surfaces. As a group, Rough ware corresponds to Ware Ia, Ib from Maadi and Wadi Digla, Tura, Giza, Ware 1 in Buto, Straw-tempered ware in Heliopolis types I-IV, VIIa, IX, X, Rough ware in Tell el-Farkha, Tell el-Isvid and Tell Ibrahim Awad and AVM1, AVM11, AV1, AV11 in Tell el-Isvid. This type of pottery clearly prevails in inventories from each site. It should be remarked however that the presence of slip was identified on Ware Ia and Ib from Maadi and Wadi Digla, Rough ware from Tell el-Farkha as well as AV.1 and AVM.1 from Tell el-Isvid. However, in Maadi the presence of slip on black surface (Ware Ia) is difficult to confirm due to the non-oxidizing firing atmosphere, as a result of which carbon settled not only on the surface but also penetrated into vessel walls (Rizkana & Seher 1987: 24). Nonetheless, pottery belonging to these two groups was classified as Rough ware owing to other characteristic feature, namely manufacturing technology and surface treatment (Rizkana & Seher 1987: 23-24). A similar approach was taken in Heliopolis, where pottery classification system is based first of all on technological features, *i.e.* ceramic fabric composition. As a result, individual ware groups simultaneously include rough surface vessels, red slip vessels and white slip vessels (Debono & Mortensen 1988).

Red slip ware

Pottery covered with slip colored red to brown was made of ceramic fabric containing fine mineral temper and occasionally small amount of finely cut straw/chaff (N. IAB). This group of ware is also characteristic for fine and long organic temper (so-called fibrous temper) leaving hairline cracks on the surface. It was registered in Buto, Tell el-Farkha, Tell el-Iswid, Mendes and Minshat Abu Omar. As regards jars, slip covers their outer surface and possibly part of the inner surface just under the rim. In the case of bowls, either both surfaces or only the inner one is covered. Slip thickness varies. Slip covered surfaces were smoothed with a soft or hard object. Smoothing direction was usually vertical or diagonal on the body and horizontal around the rim. Break colors are usually uniform, although breaks with darker zones are also known. This group of vessels includes Ware 1b and 1c from Buto, Ware II from Maadi and Wadi Digla, Straw-tempered ware types Vb, VI, VIII from Heliopolis, Red slip ware from Tell el-Farkha, as well as AV11.2, AVM11.2 and AF.2 from Tell el-Iswid.

Yellow slip ware

Vessels covered with light lime slip are rarely found among Lower Egyptian pottery. This type of surface finishing is characteristic first of all for the pottery from Heliopolis (Debono & Mortensen 1988: 27). On other sites, Yellow slip ware is either far less numerous, or not present at all. In terms of technology, this group of pottery is fairly diverse. In the settlement of Maadi and in Wadi Digla, Yellow slip ware pottery was made of ceramic paste containing mineral temper consisting of sand and crushed limestone – Ware III (Rizkana & Seeher 1987: 29; 1990: 76). In Heliopolis, pottery of this kind belongs to both Straw-tempered ware types Va, VIIb and Sand-tempered ware types XI, XII (Debono & Mortensen 1988: 25-30). A similar situation occurs in Buto, Tell el-Iswid and Tell el-Farkha, where vessels covered with white lime coat were made of ceramic fabric containing both coarse mineral temper – N. IB2, N. IC and fine organic temper – N. IA, N. IB1 (von der Way 1997: 87; Mączyńska 2008; *in press* b; Guyot *in press*).

Slip thickness also varies from one site to another. In Maadi and Wadi Digla the slip coat is relatively thin, becoming transparent or even invisible in some places. Its color ranges from brown-yellow or red-yellow to yellowish-green or gray-green. Slip-covered surface may show traces of smoothing with a soft object (Rizkana & Seeher 1987: 29; 1990: 76). In Heliopolis vessels covered with white or beige lime coating show traces of wet smoothing (Debono & Mortensen 1988: 25-30). In Buto, pottery with white slip is divided in two groups differing in terms of temper size and wall thickness. In the thick wall group – Ware 1d, vessels were covered with slip to improve its tightness, while narrow wall vessels – Ware 1g had a white, striated decoration in the rim area, formed by immersing this part of the vessel in white liquid slip and subsequently wiping it with a soft object. In addition, slip-covered thin wall vessels had well smoothed surfaces (von der Way 1997: 84). The pottery from layer II in Mendes also includes vessels covered with a thick layer of yellow slip (Friedman 1992: 200).

Blacktopped ware

Pottery with a characteristic black rim zone was registered only in the ceramic assemblage from the Maadi settlement. I. Rizkana and J. Seeher (1987: 27, 29) identified two groups of such pottery, differing by the place of origin. Analyses show that the assemblage from Maadi contains not only original Naqadian blacktopped pottery imported from Upper Egypt – Ware IV, but also its local imitations – Ware Id.

The Maadi settlement assemblage contains a total of 12 fragments of imported vessels with discernible black tops. It seems that the local function of such vessels was different than in the south. While in Upper Egypt blacktopped pottery was usually deposited as grave offerings, no graves containing vessels of this kind were discovered either in Maadi or in Wadi Digla. It seems that such vessels were used by the settlement's inhabitants, rather than offered as grave goods. Their low number and the presence of local imitations could suggest their high value. Possibly, possession of such vessels denoted particular social status (Mączyńska *in press* a; d).

In terms of technology, pottery imported from the south differs from its local imitations. Ceramic fabric used to make blacktopped ware contains only mineral temper of sand and crushed stone. Vessel surface is covered with slip, either dark red, plum or red brown. The rim zone is colored black, both inside and outside³. Break color in the rim zone is also black, while it changes to red brown with a black core in the other vessel parts. The entire surface was very well polished with a hard object, either vertically or diagonally.

Local imitations of blacktopped ware (Ware Id) differ from imported originals first of all by the presence of organic temper and a different character of the black rim zone. In vessels manufactured locally only the outer surface is black, while break color is light brown or red brown. Furthermore, only the outer surface of the vessel is covered with slip. Imitations of blacktopped ware are not as carefully crafted as originals.

3.2. Vessel forms

Each ware group is characterized by specific vessel forms.

Rough ware

Since this group is fairly widespread, it is characterized by a rich repertoire of open and closed forms. Among closed forms, the most numerous subgroup on all sites discussed here are various types of jars with globular or ovoid body, flat or pointed base, without neck or with a short distinguished neck, wide or narrow mouth and a slightly everted rim – Maadi, Wadi Digla, Giza types 3, 4, 5, Buto types G1a, G1b, G2a, G2b, Heliopolis types I-IV, es-Staff, Abb. 1/1,4,5,7,8,9, Tura Taf. 42a,b; 43a, b-d, Tell el-Iswid types 3a1, 3b1, 3b2, 4b1, 4b2-2 (Rizkana & Seeher 1987: pls. 7-23; Debono & Mortensen 1988: pls. 1-4; von der Way 1997: Taf. 1-13;

³ For more details about the methodology of obtaining black rims of this kind see Rizkana & Seeher 1987: 27; Lucas & Harris 1962: 380; Davies 1962; Hendrickx *et al.* 2000: 171-187; Baba & Saito 2004).

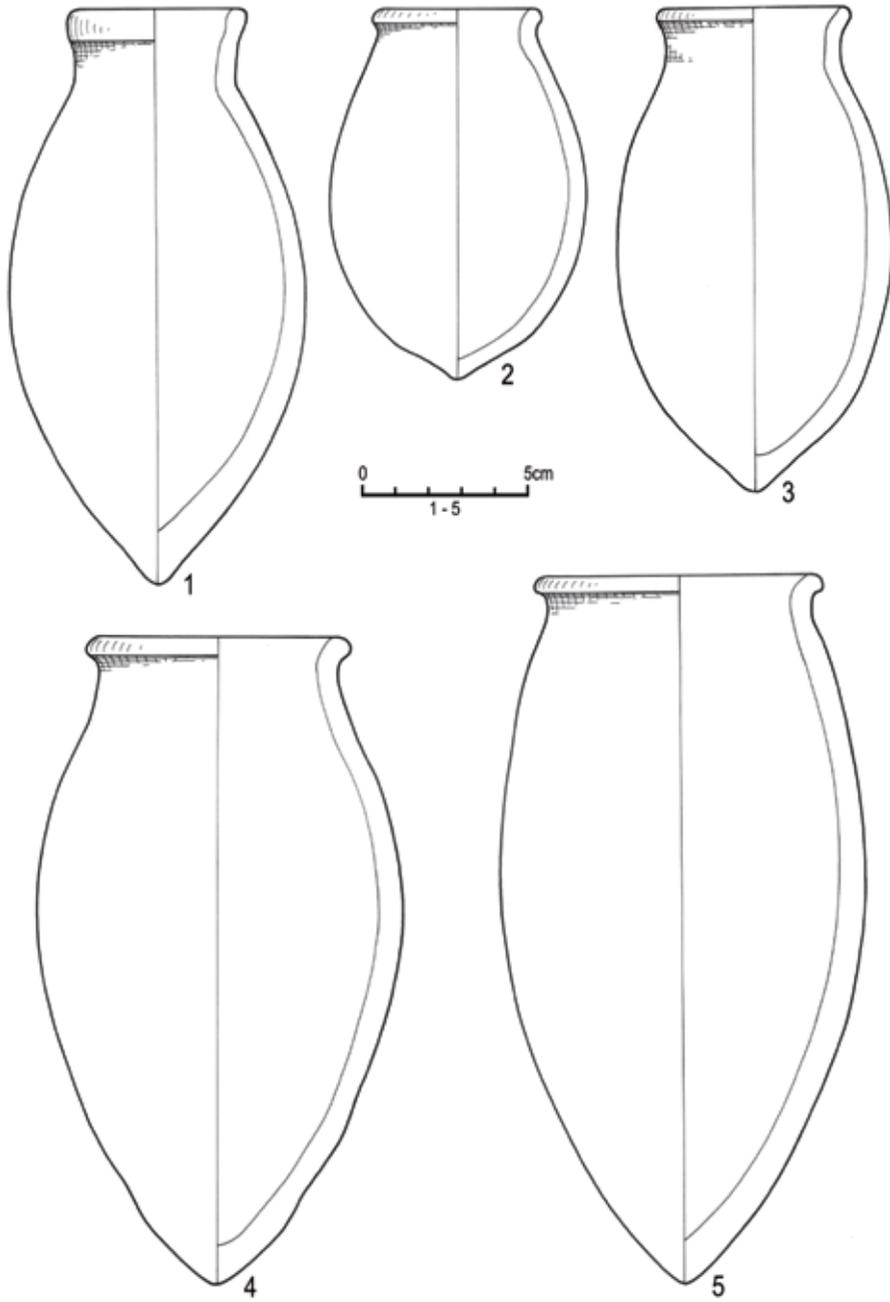


Figure 9. Tell el-Farkha. Lower Egyptian pottery.

Guyot *in press*). On such sites as Maadi, Wadi Digla and Heliopolis, another typical form are jars on a raised base – Maadi type 1, characteristic mostly for Ware Ib and Heliopolis types Va, Vb (Rizkana & Seeher 1997: pls. 1-5; Debono & Mortensen 1988: pl. 5). Rough surface forms also include small jars with a short vertical neck and pointed or round body, usually referred to as lemon shaped jars or bag shaped jars (Figs. 9, 10:1-2, 4; Pl. 12) – Buto type G1a1; Tell el-Iswid type 4b) (von der Way 1997: Taf. 1, 3:4-10; Mączyńska 2012: figs. 1.5,7; 3). Lemon shaped jars are believed to be strong cultural markers of Naqada IIC, specific to the Lower Egyptian culture (Buchezy & Midant-Reynes 2007; 2011). However, as shown by an analysis of grave contents from Upper Egypt carried out on the basis of available publications made by E.Ch. Köhler (*in press b*), vessels of this kind are fairly common in the south as well. The results of the said analysis seem to challenge the assumption that lemon shape jars are cultural markers. In Tell el-Farkha they account for approx. 45% of all closed forms, while in Tell el-Iswid only a few fragments of these vessels were registered. Rough ware from Mendes, Tell el-Iswid and Tell el-Farkha includes holemouth jars (rim diameter: 12-17cm), most probably used for cooking (Friedman 1992: 200; Sobas 2012: 183; Guyot *in press*). In Maadi, Rough ware also comprises large storage jars – type 6, all belonging to Ware Ib and big vessels with a wide, flat base, vertical walls and wide mouth – type 7 (Rizkana & Seeher 1987: 37, pls. 24-31). In Buto, Rough ware includes storage jars with a ridge running parallel to the rim (Habachi & Kaiser 1985: 43-46; Mortensen 1985: 145-147; Debono & Mortensen 1988: 25-30; Rizkana & Seeher 1987: 34-40; 1990: 26-27, 78-89; van den Brink 1989: 67-71; 1992b: 53-54; el-Sanussi & Jones 1997: 241-253; von der Way 1997: 88-94). In Tell el-Farkha in layers dated to the Lower Egyptian culture Rough ware consists of small and medium size rolled-rim jars, wide-mouthed jars with an undistinguished neck and flat or pointed base, similar to Petrie's R81 and R84 (Figs. 11:1-3; 12:3). For a long time it had been believed that vessels of this kind belonged to the Naqadian pottery tradition and their presence was linked to the so-called Naqadian expansion (Mączyńska 2004; Jucha 2005). However, analyses of pottery from Tell el-Farkha showed that vessels of this kind were known already in the first phase of the settlement, and their relative quantity compared to other forms in phases 1 and 2 on the Central Kom was constant (approx. 10% of all diagnostic sherds). The presence of R81 and R84 jars in Tell el-Farkha could be explained by their function (Mączyńska 2008; *in press a*). According to S. Hendrickx *et al.* (2002: 293-294) Petrie's jars R81 and R84 are the early beer jars. Given that breweries were registered already in phase 1 of the settlement in Tell el-Farkha, such early emergence of jars of this kind in the north could have been caused by the need for storage vessels for beer produced in the settlement. Therefore, if the idea of beer production originated in the south, the idea of its storage could have also come from the same region. It is undeterminable who made these vessels, but Lower Egyptian potters were probably able to follow Upper Egyptians and could have produced similar vessels in the north using the same, well available Nile clay, since the production of early beer jars did not require any special skills (Mączyńska *in press d*). R81 and R84 jars are also characteristic for layer IIIa in Buto, although a few

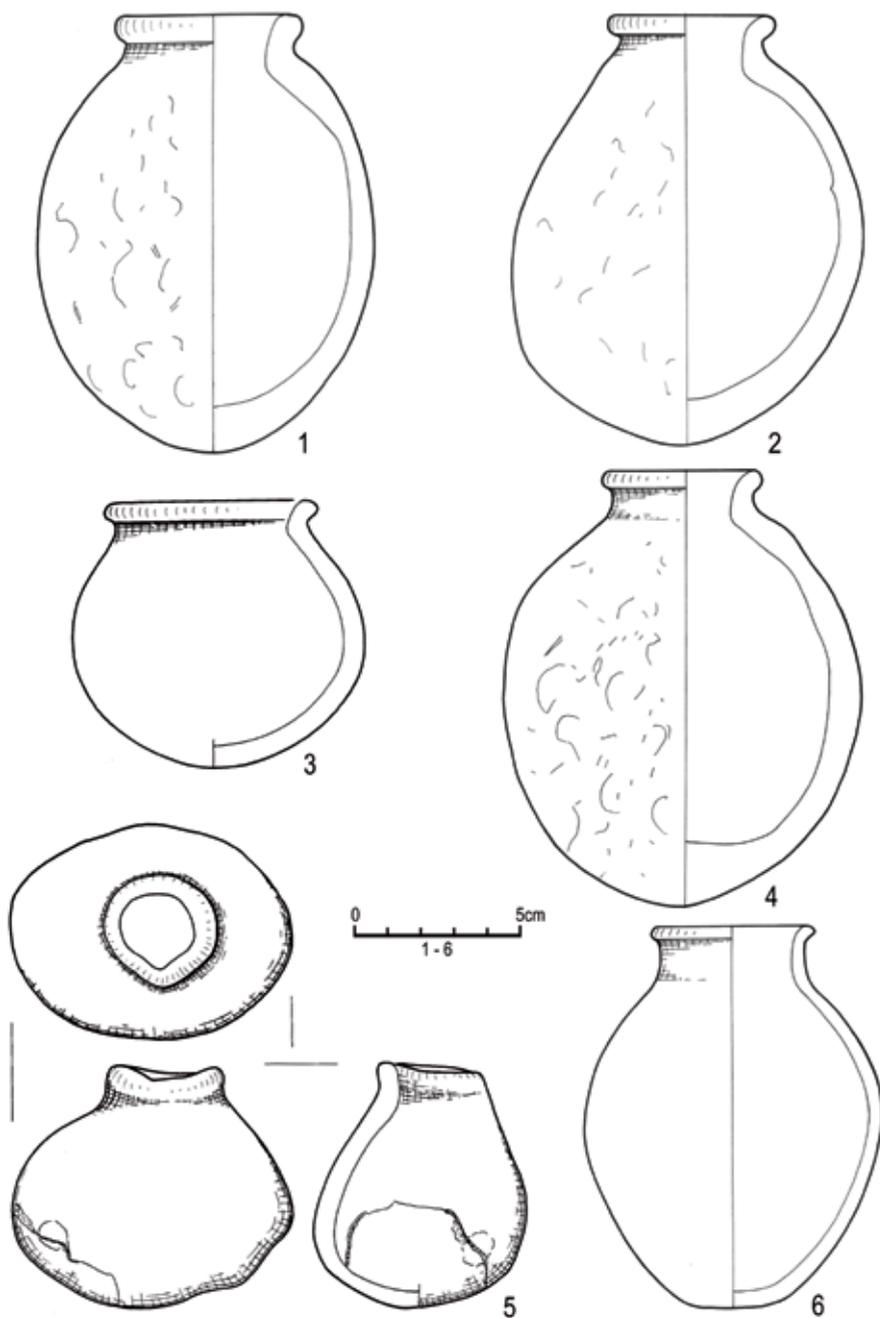


Figure 10. Tell el-Farkha. Lower Egyptian pottery.

such vessels are also known from older layers (Köhler 1998: 44). Vessels of this type were also registered in group I graves dated to Naqada IIc-d in Minshat Abu Omar, *e.g.* graves 665, 669 (Kroeper & Wildung 1994; 2000).

As regards open forms, Lower Egyptian culture sites are dominated by conical bowls differing from one another mostly in terms of rim shape. Particularly characteristic are irregular forms with a simple or slightly everted rim and convex or straight walls (Fig. 13:2-4). Their bases can be either flat or round – Maadi types 1, 2, Buto types O1a,b, O2, es-Staff Abb. 3, 6 (Rizkana & Seeher 1987: pls. 48-52; von der Way 1997: Taf. 20-27). In some cases, *e.g.* in Buto type O3b and O3c, rims are so strongly everted that they form a T-shaped profile (von der Way 1997: Taf. 33). Less numerous are deep bowls with convex walls and a thickened rim – Maadi type 3, Buto type O3a (Rizkana & Seeher 1987: pl. 54; von der Way 1997: Taf. 30). Rough ware bowls further include large pans with diverging walls (wall diameter of approx. 60cm) with brown-red surface, most probably used for mashing organic products (food) – Maadi type “pans”, Buto O5a. According to I. Rizkana and J. Seeher (1987: 42, pl. 53), such function is suggested by a thin layer of crushed limestone or calcite pressed into wet surface of the vessel. Considering relatively low hardness of the pressed stone fragments, such pans must have been used for mashing soft, probably organic substances. In addition, the group of pans with brown-red surface include deeper pans with a thickened club-like rim – Maadi type “basins”, Buto type O5b (Rizkana & Seeher 1987: pl. 59; von der Way 1997: Taf. 33).

Red slip ware

In Maadi, Wadi Digla this group includes globular or elongated jars with a short neck and slightly everted rim – type 5 (Williams 1982: 220; Rizkana & Seeher 1987: 39; 1990: 85-87). Explorations of the cemetery of Heliopolis yielded the same types of elongated vessels with everted rim on a flat or raised base – types Vb, VI and vessels with simple distinguished neck, everted rim and globular, flat or pointed base (Debono & Mortensen 1988: pl. 5). The situation is similar in Buto, Tell el-Iswid and Tell el-Farkha, although one should also mention fairly common elongated vessels with ovoid body, clearly distinguished vertical neck and slightly everted rim – Buto types G1a-b, G2a-b, G3a and Tell el-Iswid types 3b1, 4b3, 4b4 (Fig. 10:6; von der Way 1997: Taf. 1-8). In Tell el-Farkha, this group also contained big jars with distinguished necks tapering towards a rolled rim (Fig. 11:4-5; Maćczyńska *in press* e).

Red slip ware also features a number of open forms. In settlements their relative frequency is clearly lower than that of open-form Rough ware vessels. In Maadi only a few slip covered bowls were registered, *e.g.* a bowl with convex walls and a straight, slightly everted rim – type 3. In Buto the number of bowls is greater. They are represented by vessels of straight or slightly convex walls of various thicknesses – type O1a, flat forms with strongly everted rim – T-shaped profile and a ridge running parallel to the rim – type O3a (von der Way 1997: 92-93, Taf. 5). In Tell el-Iswid bowls covered with red slip have their Rough ware

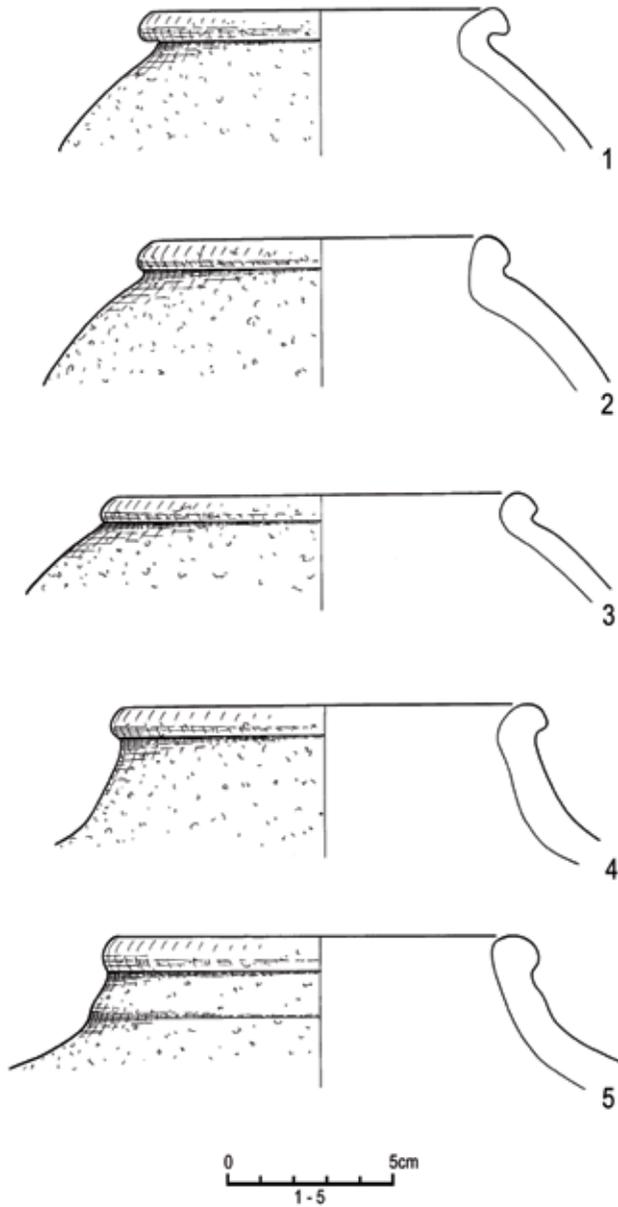


Figure 11. Tell el-Farkha. Lower Egyptian pottery.



Figure 12. Tell el-Farkha. Lower Egyptian pottery.

equivalents, namely bowls with convex walls and a rolled rim, conical bowls with a simple rim, shallow bowls with convex walls, *e.g.* types 1a1, 1b2, 2a1, 2b1-b. In Tell el-Farkha, Rough ware covered with red slip is dominated by two shapes: simple vessels with straight sides and a simple, rolled or everted rim, as well as medium-depth bowls with a rounded rim and concave walls (Fig. 13:1; Mączyńska *in press e*). In cemeteries open-form Red slip ware is virtually non-existent. Such a duality results from the fact that open-form group consists mostly of vessels used in households. In settlement sites their number should be greater than the number of closed forms, given their common use and the inherently high risk of damage. A different situation takes place in cemeteries, where bowls are either not found at all or discovered as single, isolated finds, usually as jar lids (Debono & Mortensen 1988: 29; Rizkana & Seeher 1990: 27, 87).

Red slip also covers all vessels with thin and long fibrous organic temper. In Tell el-Iswid fibrous temper is found in various vessel forms: a holemouth jar, a small globular jar and jars with an everted rim (Guyot *in press*, fig. 9). In Tell el-Farkha this type of temper was registered in sherds, probably coming from a variety of vessel forms. Thus far only one such form has been identified: a jar with an everted rim, similar to those registered in Tell el-Iswid (Guyot *in press*). This kind of jars is also known from Buto, but it seems that T. von der Way (1997) did not notice this kind of temper. E.Ch. Köhler (1998: 10-11), who investigated materials from younger layers of the site, recorded the presence of fibrous temper in vessels from layers III and IV, dated to the beginning of Naqada III. Buto is the only site where this type of temper was registered in vessels from younger layers (Köhler 1998: 43-44, Taf. 69:1-2). Fibrous temper was registered mostly among closed forms – various kinds of jars (Köhler 1998: Taf. 15:19-21).

Yellow slip ware

In Maadi jars characteristic for this particular ware feature globular and elongated jars with a narrow mouth, everted rim and narrow flat base – type 5a as well as large jars with a globular or elongated body, everted rim and V-shaped bottom – type 5c (Rizkana & Seeher 1987: 40). In Wadi Digla, researchers registered only two Yellow slip ware jars. Both of them were classified as jars with a globular body, distinguished neck and everted rim – type 5a (Rizkana & Seeher 1990: 87). In Heliopolis, explorations yielded vessels with a globular body, similar to forms known from Maadi and Wadi Digla types Va, XI, XII and vessels with a straight, long neck, slightly everted rim and flat base, additionally thickened on the outside – type VIIb (Debono & Mortensen 1988: 57-30). In Buto, white lime slip is characteristic for a number of wares. Ware 1d includes thick-walled storage jars with a ridge running parallel to the rim. Furthermore, Ware 1d and 1g vessels include jars with an ovoid or globular body known also from Maadi, Wadi Digla and Heliopolis – type G2a (von der Way 1997: 89). In Tell el-Iswid white slip ware represents 1% of the entire pottery assemblage. Like in Buto, Yellow slip jars include ovoid or globular vessels – type 4a2 (Guyot *in press*).

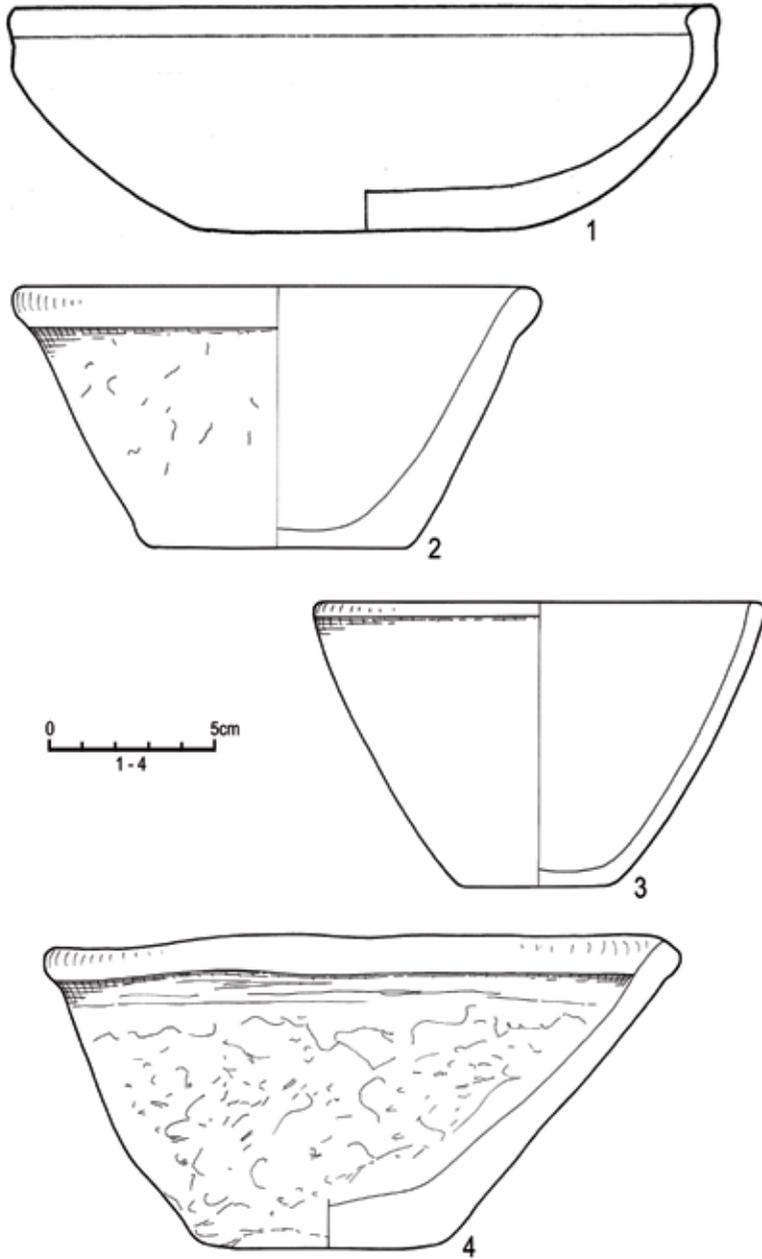


Figure 13. Tell el-Farkha. Lower Egyptian pottery.

Open forms are present only in inventories from the settlement in Buto, Tell el-Iswid and Tell el-Farkha. In Buto those are bowls with straight, convex and occasionally concave walls – types O1b, O2a as well as large vats and pans – type O5 (von der Way 1997: 92). In Tell el-Iswid this ware group features conical bowls with a straight rim and bowls with concave walls and rolled rim (Guyot *in press*). In Tell el-Farkha sherds covered with yellow slip are probably fragments of big vats, similar to those registered among rough pottery of this phase (Mączyńska *in press* e).

Blacktopped ware

Vessels with discernibly black rim were found exclusively in Maadi. Both original imports from the south and their local imitations have the same forms, although their relative proportions may vary. Blacktopped ware includes jars, beakers and bowls (Rizkana & Secher 1987: pls. 68-71). Most jars are quite small. The most characteristic are jars with a squat body and straight ogival rim – type 8 a and b. In addition, a single vessel of shape similar to type 5a was found. It has a globular body, distinguished short neck and everted rim – type 9 (Rizkana & Secher 1987: 52). S-profile beakers constitute a fairly homogenous group. One of the forms is characterized by a gradually increasing diameter from base to rim, giving the vessel a tulip-like profile. Another form is more slender and has a more pronounced S-profile. Its greatest diameter is at mid-height of the body.

The relative number of bowls compared to jars and beakers is very low, which is in line with the general scarcity of these forms on the entire site. Such a situation is attributable to the research method applied in the 1930s, whereby archeologists' attention concentrated on complete vessels only. Imported forms include fragments of shallow and deep bowls with convex walls – types 1a and b and fragments of shallow bowls with slightly everted rims – type 2. Their local imitations include a fragment of a straight-sided hemispherical bowl with a slightly everted rim – transitional form between type 1b and type 2 (Rizkana & Secher 1987: 51-52).

3.3. Miniature vessels

Miniature vessels from Lower Egyptian sites do not constitute a large group of artefacts. Forms of miniature jars and bowls include both copies of larger vessels, as well as forms without full-scale equivalents. Not all proportions of miniature copies correspond to those of originals, and consequently small differences may occur, *e.g.* as regards rim diameter (Rizkana & Secher 1987: 46, pls. 33-34, 48; von der Way 1997: 95).

The number of registered miniature vessels is 97 in Maadi, 29 in Buto, 8 in Tell el-Farkha and 3 in Tell el-Iswid. The group as a whole consists of both jars and bowls. Most miniature jars are Rough ware, although Red slip ware miniatures are not unknown. The dominating form are globular jars with a narrow mouth and base and everted rim – Maadi type 5a, Buto type G2a, vessels on a raised base – Maadi type 1 and elongated jars with a strongly

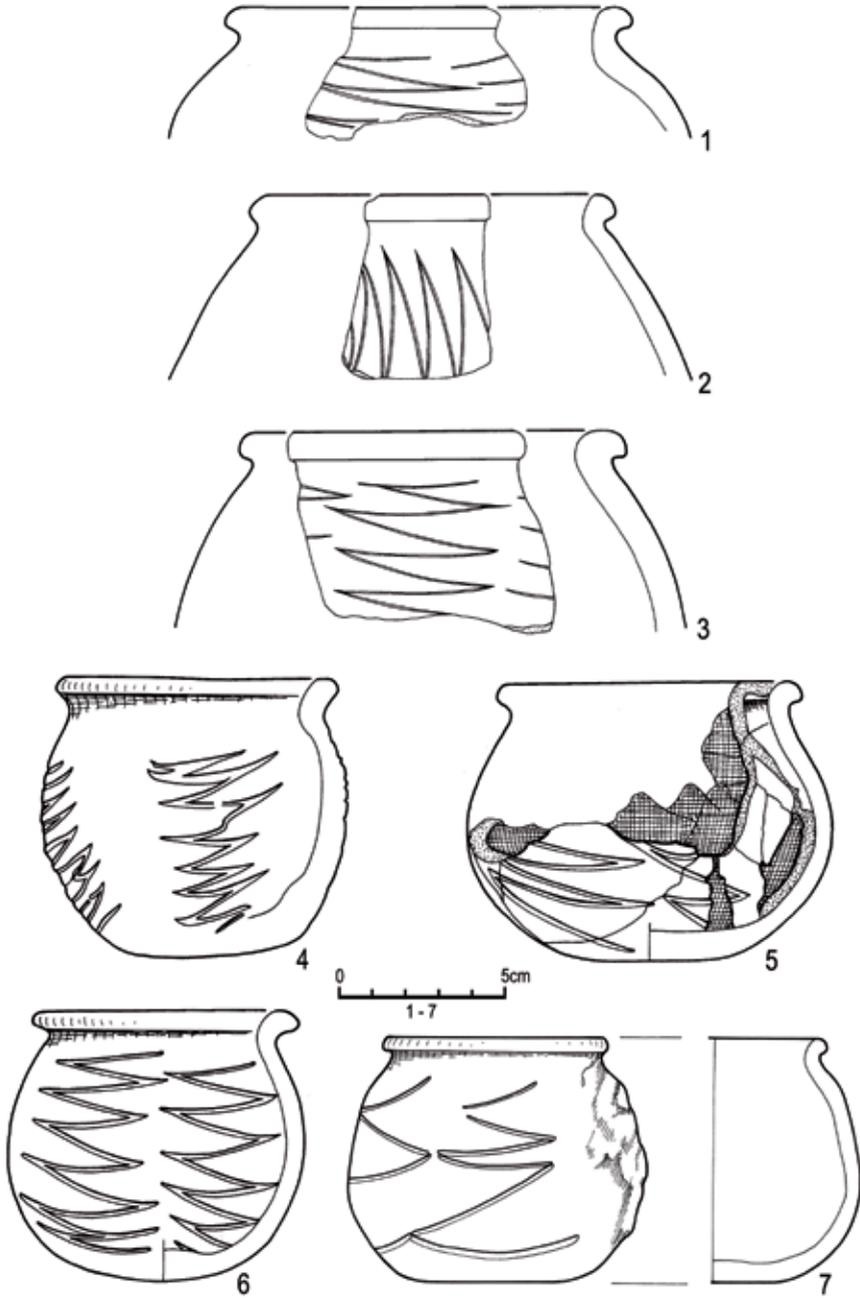


Figure 14. Tell el-Farkha. Lower Egyptian pottery.

everted rim – Buto type G1a. In Maadi attention is drawn to two miniature vessels on a raised base with two horizontally pierced lug-handles. According to I. Rizkana and J. Seeher (1987: 46), vessels with lug handles resemble basalt jars known from Maadi.

In Buto, a miniature jar with an everted rim, elongated body and a knob at the base could be an imitation of a stone vessel. According to T. von der Way (1987: 95), the base knob may imitate a raised base. On this site miniature bowls outnumber miniature jars. Fairly common are simple semicircular vessels, forms with an everted rim, as well as bowls with a flat or pointed base. Particularly remarkable is a mid-depth pointed-base miniature bowl with a strongly everted rim.

In Tell el-Farkha miniature vessels are rather innumerable. Attention is drawn to 5 small globular jars with a round base and a rolled rim (Figs. 10:3; 14:4-7; Pls. 11, 13). 3 of them are decorated with an incised zigzag pattern. The jars are not exactly miniatures, but nonetheless they are much smaller than other jars with an incised zigzag pattern known from the site. Another note-worthy item is a vessel with an asymmetrical oval body with rough surface (Fig. 10:5), and two Rough ware bowls – one made of a small lump of clay, and the other slightly larger, with a flat base, straight diverging walls and simple rim (Mączyńska 2012: figs. 1:1-4, 6; 4:4; 5:6-7).

In Tell el-Iswid researchers found 3 miniature vessels in the form of small buckets made of very fine fabric (Guyot *in press*).

According to I. Rizkana and J. Seeher (1987: 46), miniature vessels could have been toys or – in the case of vessels with handles – substitutes of full-scale vessels. Miniature vessels could have also been containers *e.g.* for cosmetic oils. The last hypothesis was partially confirmed by excavations in Maadi, where miniature bowls with well visible traces of red, greasy stains were found. Miniature bowls could have also been used as lids for larger vessels.

3.4. Special forms

Special forms of Lower Egyptian pottery include vessels or fragments of churns, as well as bird and boat shaped vessels.

Although churns are known from Chalcolithic and EBI Southern Levant, they are extremely rare ceramic forms (see Chapter 3; Kellner & Amiran 1953: 11-14; Amiran 1969: 33-34; Braun 1996; Braun & van den Brink 1998: 82). Specimens found in Maadi – 1 vessel and 1 fragment (Rizkana & Seeher 1987: pl. 64:1-2) and in Buto – 1 vessel fragment (von der Way 1997: Taf. 39:2) are locally-made products, wet polished and covered with red slip (see Chapter 8).

In Maadi and in Buto researchers also registered bird shaped vessels. They do not constitute a homogenous group and differ from one another in terms of color and size. From Maadi come four fragments of vessels of this kind (Rizkana & Seeher 1987: pl. 64:3-5). Two of them belong to Ware Ib, and the other two to Ware Ia and Ware Ic. Three of them are rather small (approx. 20cm), but the size of the fourth one most probably matched the

actual size of the bird. Lower Egyptian layers in Buto contained 3 fragments of bird shaped vessels, 5 to 5.5cm long and 3 to 3.5cm wide (von der Way 1997: Taf. 58:6-7). Both in Maadi and in Buto bird representations are rather schematic, showing a more or less prominent beak and some incised details, such as eyes or feathers. Available fragments suggest that the opening used to fill or empty bird-shaped vessels was placed on the bird's back. Similar vessels are known from Upper Egypt (e.g. Petrie 1920: pl. XXIV, 1-11; 1921: pl. XVIII, F69A-T) and from the Chalcolithic Southern Levant (e.g. Gophna & Lifshitz 1980: fig. 5.6).

Other special forms include boat-shaped vessels. In Maadi approx. 17 fragments coming from different items were found. All of them are similar in terms of shape, technology and surface finishing, and are classified as painted ware (Ware Ic) covered with cream slip and painted red patterns. Boat-shaped vessels resemble a canoe-like boat with sharp, recurring ends and U-shaped or V-shaped cross-sections (Rizkana & Seeher 1987: 48, pl. 65). Similarly shaped boats appear as decorations on D-ware pottery.

Special forms also include potstands used with vessels whose bases were neither wide nor stable, angular vessels (two fragments in Maadi: a plate and a deeper vessel) and multiple vessels (Rizkana & Seeher 1987: pls. 60:1,5; 33:25-31; 62:1, 3).

3.5. Miscellanea

This group includes a variety of handles, lids, spouts and fragments of perforated sherds.

Handles

Handles are rarely present on Lower Egyptian pottery. They can be found both on vessels made locally and on those imported from Southern Levant and Upper Egypt. They can be divided into several groups, differing from one another in terms of shape and place of fastening. Those groups include loop-handles, lug-handles, ledge-handles and wavy-handles.

As far as vertical loop-handles raising from the rim are concerned, on most vessels there is only one such handle. In Maadi they were used on small cup-like jars with a globular body and on similarly shaped larger jars. Handles of this kind were functional only on small vessels. On larger vessels they were purely decorative, because the vessel was too heavy (Rizkana & Seeher 1987: 39). Fragments of similar handles are also known from Buto, but due to their high degree of fragmentation it cannot be fully explained on what vessels they were used (von der Way 1997: 103).

Apart from loop-handles, other vertical handles on Lower Egyptian pottery include smaller lug handles of a circular or oval cross-section. One of its ends is attached to the vessel's neck, and the other to the shoulder. In some cases, such a handle is made of two, or even three coils of clay. Although handle opening was not too big, it was large enough to ensure comfortable control of the vessel. Handles of this kind were registered in Maadi on Southern Levantine jars with a funnel-shaped neck and distinct shoulders (Rizkana & Seeher 1987: 54), as well as in Buto, where due to the high degree of fragmentation it is impossible to determine on what vessels they were used (von der Way 1997: 103).

Lug-handles are small handles with a very small hole drilled through them. They were usually placed in the upper part of the vessel and took the form of oval or round knobs or swellings with a semicircular cross-section. Handles of this kind were found in Heliopolis on an elongated jar with a raised base (Debono & Mortensen 1988: pl. 8) and in Wadi Digla on globular jars (Rizkana & Seeher 1990: 49, 62, pls. 34, 53). In Buto, researchers found a small handle with a drilled-through hole, similar to lug-handles from Maadi (von der Way 1997: 103).

Another group of handles known from Lower Egyptian pottery are ledge-handles, fastened to the lower part of the vessel, below the jar's largest diameter (two handles on either side). This type of handles was found only on imported Southern Levantine pottery (see Chapters 3 and 8). The outer edge of those handles has rather shallow indentations, most probably made by finger. Handles of this kind were registered in Buto, Tell el-Isiwd, Tell el-Farkha and Minshat Abu Omar (Pls. 10, 23). They were placed approximately at two-thirds of the vessel's height, two handles on either side. Their outer edge showed well visible indentations and bumps, formed by squeezing the edge between the thumb and the index finger.

Horizontal handles referred to as wavy-handles can also be found on jars imported from Upper Egypt. However, Upper Egyptian vessels with wavy-handles were large elongated jars with a short neck and everted rim (Petrie's W22 and 24). So far, jars with wavy-handles have been registered in Buto, Tell el-Farkha and in Minshat Abu Omar graves (Kroeper & Wildung 1994; 2000; von der Way 1997:104, Taf. 47-48; Sobas 2012).

Spouts

Spouts make a rather innumerable group of items. One of the preserved spout fragments comes from the settlement in Maadi. According to O. Menghin and M. Amer (1936), it once belonged to a jar. A different interpretation was presented by I. Rizkana and J. Seeher (1987: 49-50). According to those researchers, the said fragment was part of a handle loop, used to reinforce the bond between the handle and the wall. I. Rizkana and J. Seeher are of the opinion that the spout from Maadi could have also been a cylindrical neck of a vessel or a specific cylindrical clay tube of unknown function. The researchers further suggest that some of the churns whose fragments were found in Maadi and Buto had a similar cylindrical neck. The spout function could have been replaced by an indentation in the rim, forming a short lip protruding from the wall.

Another spout was registered in the pottery assemblage from Heliopolis. It was found on a vessel of unspecified fabric, identified from a photograph. The vessel is a black ovoid jar with everted rim, filter in the mouth and spout below the rim on a perforated pedestal foot (10cm in diameter). Thus far, it is the only example of this type of jars found on Lower Egyptian sites (Debono & Mortensen 1988: 31).

Lids

This group of clay items includes both purpose-made lids, as well as bowls used as lids. The overall number of such items is rather low. Their identification is possible only in the case of purpose-made lids. Bowls used as lids can be identified as such only if they are found *in situ*, either on top or inside a jar.

In Maadi two lids were registered. One of them was disc-shaped and was made of a fragment of a larger vessel with perforation along the edges, most probably for fastening the lid to the jar (Rizkana & Seeher 1987: pl. 61). The other lid has the shape of a small disc with a lug protruding on one side. In the cemeteries of Maadi, Wadi Digla and Heliopolis researchers found bowls or their fragments that could have been used as lids (Debono & Mortensen 1988: 34; Rizkana & Seeher 1990: 27, 87). In Buto, Tell el-Farkha, Tell el-Iswid and Tell Ibrahim Awad no lids have been found so far. It is not impossible that the function in question was served by small bowls or lids made of organic materials, such as fabric or skin plastered with mud. In the cemetery of Heliopolis one grave contained a jar with traces of mud on the rim, possibly left by a plug or lid made of mud (Debono & Mortensen 1988: 24, 34).

Perforated sherds

Small perforations in pottery could have served a variety of functions. Depending on the intended purpose, they were made either before or after firing. Perforations in the rim zone were usually made before firing and were used to fasten lids, while those made after firing are most probably traces of repairs. Such perforations were made along crack lines and were used to join the broken pieces together (Rizkana & Seeher 1987: 50). Apart from perforated sherds, excavation works in Buto also yielded 3 fragments of jars with relatively large holes made by finger in wet clay before firing. Most probably the jars were used as strainers, but due to the small size of available fragments the exact form of those vessels remains unknown (von der Way 1997: 103).

4. DECORATION

Lower Egyptian pottery decoration can be divided into four groups, depending on the technique: incised, impressed, painted and plastic.

The most typical ornamentation motif were zigzags made with a long and narrow tool with a sharp edge, moved in alternating directions, leaving a characteristic pattern behind it. One variety of this motif is a dotted zigzag made with a similar technique but involving the use of a different, comb-like tool (Figs. 14; 15:6-9). The distance between zigzag arms could vary. Continuous zigzags were usually made vertically, while dotted zigzags were horizontal. Motives like that were registered on pottery from Buto, Tell el-Farkha, Tell Ibrahim Awad, Tell el-Iswid and Tell el-Murra on Rough ware jars with a globular body, undistinguished neck and slightly everted rim (van den Brink 1989; 1992b; Chłodnicki *et al.* 1991; 1992a; 1992b; von der Way 1997: 96-98; Jucha 2005; *pers. comm.*; Mączyńska 2002: 100-104; 2003a; 2003b; 2008; *in press e*).

Another motif made with a technique similar to the dotted zigzag technique could be parallel rows of closely spaced dots, known from Lower Egyptian pottery found in Buto. Like zigzag motives, parallel dotted lines can be found on Rough ware pottery. One such vessel was additionally covered with red slip (von der Way 1997: 97).

Parallel rows of closely spaced chevrons are yet another decoration motif present on Lower Egyptian pottery. The length of a single chevron varies from 0.8 to 1.4cm, and the greatest width is 0.2 to 0.3cm. This particular motif is known from Buto and Tell el-Iswid (von der Way 1997: 98). Patterns similar to rows of chevrons known from Buto include rows of fingerprints and rows of nail-marks.

Pottery from Buto, Ezbet el-Qerdahi, Heliopolis Maadi and Wadi Digla is also characteristic for rows of impressed dots – fingerprints made on shoulder or around necks of globular body jars or bowls with a wide mouth and everted rim. In Maadi, Wadi Digla and es-Staff this type of decoration can be found on Red slip ware – Ware II, while in Heliopolis it decorates jars belonging to Sand tempered ware types XI and XII (Debono & Mortensen 1988: 30; Habachi & Kaiser 1985: 43-46; Rizkana & Seeher 1987: 50; 1990: 87). In Buto, impressed dots were made on Rough ware bowls covered with red slip (von der Way 1997:100, pl. XVII), whereas in Ezbet el-Qerdahi researchers found 3 fragments of Rough ware jars with such decoration (Wunderlich *et al.* 1989: 313-316, Abb.2/6,7).

The last impressed motif on Lower Egyptian pottery is a crescent, made just under the rim of Rough ware bowls (Fig. 12:1-2). A motif like that was registered in Buto, Tell el-Farkha and Tell el-Iswid (van den Brink 1989: 55-108; 1992b: 63-54; Chłodnicki *et al.* 1991: 5-33; 1992a: 171-190; 1992b: 45-62; von der Way 1997: 100, pls. XXIX, 2-8; XXXVIII, 10-11; Jucha 2005; Mączyńska 2002: 100-104; 2003b; 2008; Guyot *in press*).

Among incised motives, one can differentiate systems of lines and so-called potmarks. As far as the former are concerned, in Buto, Tell el-Farkha and Maadi a variety of diagonal lines systems were registered (Rizkana & Seeher 1987: 50; von der Way 1997: 99). In its turn, the group of potmarks is much more diverse, as it includes marks made both before firing (in wet clay) and after firing. Potmarks were made either on the outer or inner surface of the vessel, under the rim. According to I. Rizkana and J. Seeher (1987: 29) marks made in wet clay could have denoted the potter, while those made after firing could have been made to identify the owner of the vessel (or its content). It seems however that the meaning of potmarks is not so straightforward and continues to be debated among archeologists (*cf.* Helck 1990; van den Brink 1992a; 1996; 2001; Kroeper 2003a; Jucha 2008; Tassie *et al.* 2008; Anselin 2011; Breand 2011; Hartmann 2011; Wodzińska 2011).

Potmarks took a variety of forms. Single vertical lines were rather uncommon. Usually they were combined with horizontal lines to form geometric patterns of squares or rectangles, sometimes internally divided. Other geometric motives include crossing lines, circles, hooks, chevrons and S-lines, sometimes grouped together to form more sophisticated combinations (Debono & Mortensen 1988: 24, 33, pls. 4, 5, 6, 17; Rizkana & Seeher 1987: 50-51, pls. 78, 79; 1990: 87, pls. 35, 42, 46, 50, 55; von der Way 1997: 99, Taf. 41).

The interesting group of potmarks found in Maadi and on a single vessel from Heliopolis includes representations of plants and animals, such as crocodiles or other unidentified quadrupeds (Debono & Mortensen 1988: fig. 15/6; Rizkana & Seeher 1987: pl. 79/1, 3-6, 12-14). Human representation is known from one vessel found in Maadi, where a human head with a discernible nose and eyebrows can be recognized (Rizkana & Seeher 1987: 50-51, pl. 79/10).

The other type of decoration consists of painted motives. Compared to the two types discussed above, painted motives are the least numerous. Painted decorations are known from Maadi, where they were found on Wares Ic and II and accounted for approx. 0.5% of the entire pottery assemblage (Rizkana & Seeher 1987: pls. 42-47). Painted motives on bowls are twice more common than on jars. As regards Ware Ic, vessel surface was originally covered with light slip forming contrastive background for the decoration. Ornamentation colors include dark red, dark brown and even brown black. Paint was applied in the form of rather thick lines. Sometimes vessels were covered with an irregular system of lines, dots and slashes that could have formed a net pattern or other, more sophisticated systems. Net patterns usually formed connected U-shaped, wavy, zigzag or radial lines, or systems of intersecting lines. In addition, combinations of those elements could have formed a variety of other patterns (*e.g.* ladders). Less sophisticated patterns are also known, such as rope imitation pattern around a jar neck, passing through one of its lugs, used in practice to hang the vessel. Other motives include painted dots scattered all over the vessel surface.

Although vessels with painted decorations are preserved only fragmentarily, in Maadi a number of sherds with figural representations were found. One of them was interpreted by O. Menghin and M. Amer (1932: 31) as a fragment of a palm tree or a schematic representation of a human figure. Over 30 years later S.P. Tutundzić (1966: 115) concluded that the image had been originally interpreted upside-down and that it actually depicts the front end of a boat with a human figure standing on it. The figure is slender, has a small head and one of its arms hangs low. A crescent near the hips may symbolize the figure's feminine gender. Other figural representations from Maadi include two birds and a variety of floral motives. Due to the high degree of fragmentation it is impossible to identify their details (Rizkana & Seeher 1987: 43-45, pl. 43:15).

Vessel fragments with painted decorations were also found in Tell el-Farkha, Buto and in Tell el-Iswid. All of them belong to D-ware and are imports from Upper Egypt (Fig. 15:1-5, 10). Most of them were made of marl clay. In Tell el-Farkha, painted pottery from the settlement's phase 1 features a spiral motif and a system of wavy lines with triangles underneath them. All those elements are known from Upper Egypt, where they are present on pottery dated to the second half of Naqada II. In layers dated to phase 2 of the settlement, fragments with such motives as wavy lines, ss-patterns, aloe and a boat fragment were found. All of them are dated to NIIC-D (Pls. 18-19). The other fragments show poorly decipherable decorations, rendering their precise identification impossible (Jucha 2005; Sobas 2012; Mączyńska *in press c*).

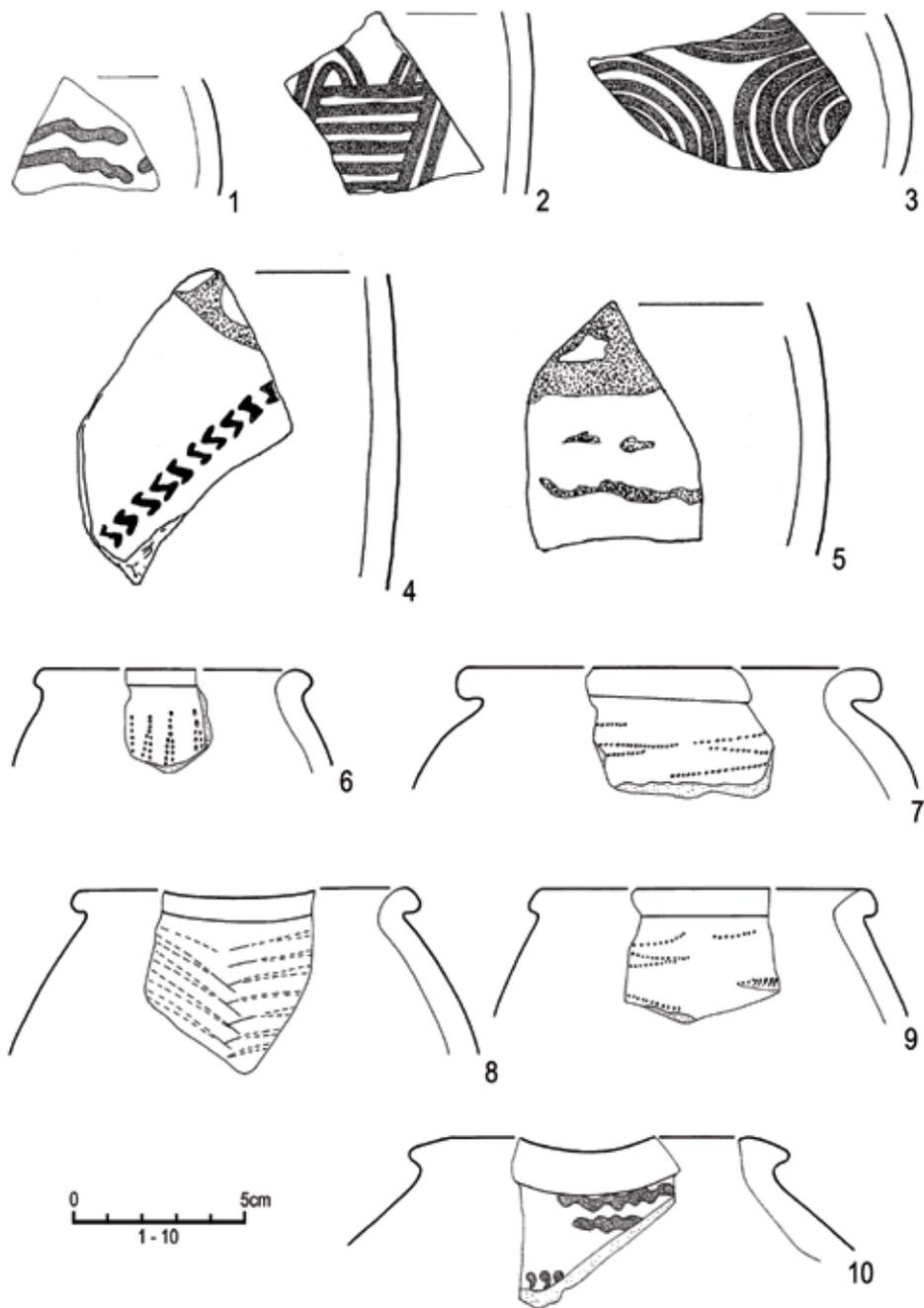


Figure 15. Tell el-Farkha. Naqadian and Lower Egyptian pottery.

In a number of graves from Minshat Abu Omar researchers found complete D-ware vessels. The most remarkable are 4 small, squat, lug-handles jars corresponding to Petrie's D9c. Two of them feature a painted dark red spiral motive. The others are decorated with wavy, parallel, and horizontal lines. On one jar, wavy lines on the body are interrupted by one line of a horizontally arranged ZZ-pattern. However, particular attention is drawn by an oval, lug-handles jar with 2 painted boats with 2 cabins in the middle. Between and just under the ships there are 2 trees and a mountain range made up of 5 triangles. In addition, between the trees there are 2 rows of S-lines (Kroeper 1985: 12-14, figs. 1-4; Kroeper 1986/87: figs. 3-5).

Plastic elements are the last group of Lower Egyptian pottery ornamentations, represented mostly by knobs, present both on locally made vessels and on Southern Levantine imports. Knobs were either oval or elongated. They were usually placed on vessel shoulders, either individually or in groups of as many as 6. Sometimes they were accompanied by a row of diagonally impressed oval indentations, registered in Buto, Maadi and Wadi Digla.

Another form of plastic ornamentation, known only from Buto, is a wavy rim characteristic for straight-walled open forms. It was formed by pressing the rim with a thumb from the top (or from the side, if the rim was everted). According to T. von der Way (1997: 102) and D. Faltings (2002: fig. 10:4), wavy rim bowls have their analogies in the Chalcolithic and EBI Canaan (see Chapters 3 & 8).

A few Lower Egyptian vessels also feature plastic ridges. In Maadi two fragments of such vessels were found (Rizkana & Seeher 1987: 50). In addition, certain larger storage vessels from Maadi have a plastic ridge running around the vessel just under the rim, with numerous holes pierced perpendicularly through it. More ridges go from the circumferential ridge towards the base, thus forming a more sophisticated arrangement.

5. VESSEL FUNCTIONS

The function of a ceramic vessel depended on a number of factors. The two most important ones were the vessel's form and the composition of the ceramic fabric (Rice 2005: 207-242). The type and size of temper determined the vessel's physical properties, which in their turn determined the vessel's durability and fitness for a given purpose. Fine temper was adequate for vessels whose walls had to be thin and smooth, while coarse temper was more suitable for vessels that could have thick, irregular and rough walls. Fine temper was added *e.g.* to paste used to make liquid containers. To further reduce wall permeability, walls were smoothed and covered with slip. Tableware (bowls, cups, plates) also had smooth walls, which made cleaning easier. Coating with slip or smoothing facilitated the removal of food remains.

The presence of coarse mineral or organic temper (quartz or straw) facilitated evaporation of water contained in the clay and improved the circulation of hot gases inside vessel walls, thus making the firing process more efficient and economical. Furthermore, coarse temper increased vessel wall resistance to thermal shock, thus preventing damage caused by

heating and cooling. For this reason, this type of temper was most often used in the process of making cookware. Temper made of crushed limestone had similar properties. However, such temper was used very rarely due to complex chemical reactions occurring at temperatures above 660°C, eventually resulting in cracks in and brittleness of vessel walls. Coarse temper vessels covered with light slip could have also been used for storing cool water. Their porous walls were more permeable for water which subsequently evaporated and formed an insulation layer, which in its turn prevented the water inside the vessel from heating up. In addition, white-colored walls of such jars reflected sun rays.

Sometimes the function of a vessel was also determined by its shape. Most cookware forms had simple outlines, no carination, and round bases to reduce the effect of thermal shock inherent to the cooking process (Köhler 1998: 40-41; Killebrew 1999: 83-126; Bourriau *et al.* 2000: 121-147; Rice 2005: 227-242). Storage vessels had restricted forms, making closing and pouring easy. Vessels used for transportation required portability, so they had to be light-weight and preferably came with handles. Their orifices were restricted to facilitate closing and to protect the content. Tableware and cookware had to be stable and unrestricted to ensure easy access (Rice 2005: tab. 7.2).

Solid understanding of physical and chemical properties makes vessel production more efficient, but it needs to be remembered that such knowledge was not available to the Delta inhabitants in the 4th millennium BC. However, through observations and repeated trial and effort people could possibly discover certain relationships between types of temper, vessel shapes and their practical use. Sometimes vessel functions were determined by other factors, such as current fashions or preferences of a group or possibly even individuals. Such preferences could have been determined by the ideological system. Apart from purely utilitarian functions, vessels could have had a symbolic function as well (*e.g.* grave goods). Our understanding of these aspects supported by detailed ethnoarcheological observations and analyses projects ideal situations, which rarely took place in the past, as decisions were made in a different cultural context. An interesting observation was made by K. Kroeper (2004) in Minshat Abu Omar. Although vessels deposited as grave goods did not differ from those used in settlements (either in terms of form or technology), ceramic offerings do not show any use wear traces. On that basis it could be assumed that they were manufactured or purchased for the very purpose of depositing them in a grave.

6. SOCIAL ASPECTS OF POTTERY PRODUCTION

The technology, production methods and firing conditions of Lower Egyptian pottery suggest that there was little specialization in pottery production. E.Ch. Köhler (1997: 81-89) uses the term 'household production' to describe this stage of craft development, characterized by rather unsophisticated manufacturing conditions. All pottery was hand-made and fired in open hearths or primitive kilns, providing no or little control over firing process. As a result, vessel walls were relatively thick and uneven, and their surfaces were soft,

with frequent traces of burned-out organic temper. Vessel colors were non-uniform, with multiple darker and/or brighter patches. According to E.Ch. Köhler (1997: 81), Lower Egyptian potters were not economically dependent on their craft which was more seasonal rather than full-time and thus required relatively little workload. Pottery production was also affected by the specific climate of the Nile Delta. Considering reasonably cold winters (from October to March) involving torrential rains, high humidity (approx. 80%) and low temperatures, pottery production was possible only in summer, when warm and arid climate allowed to dry and store vessels.

Interesting insights were provided by ethnographic analyses of contemporary Egyptian pottery production held by E.Ch. Köhler (1997: 82) in the Delta, and specifically in Disuq near Buto. Although today's workshops are technically more advanced and have purpose-made facilities for vessel drying and storage, work in the winter season is still impossible due to cold and humid climate. Potters are forced to temporarily close their workshops and to sell either stock built up in summer or vessels imported from Upper Egypt. According to E.Ch. Köhler, potters' dependence on weather conditions in the Delta in the early and middle Predynastic period must have been much greater, since the climate was much more humid than today.

According to E.Ch. Köhler (1997: 82-89), the organization of Lower Egyptian pottery production could have been also affected by the culture's agricultural character, limiting the community's potential in this particular area. The researcher concluded that in summer, offering the most favorable climate for pottery making, pottery was produced mostly by women who were not busy with harvest and stayed at home taking care of their children.

7. SUMMARY

The above overview of Lower Egyptian pottery presents its key diagnostic features. To make material analysis possible, various classification systems applied by researchers analyzing pottery from different sites were unified. Such unification made it possible to capture interesting phenomena related to pottery production. Apart from constant features, such as production technology and certain vessel forms (jars with a globular body and slightly everted rim), some of the recorded elements were unique to a given phase or site. Such variations are a reflection of the sites' chronological diversification and intra-cultural differences stemming from local pottery making traditions.

In terms of manufacturing technique and technology, pottery from all three phases of the Lower Egyptian culture is similar (see Tab. 2). Its common features are:

- prevalent use of Nile clay;
- sand, straw and chaff as the most common type of temper;
- simple production techniques (vessels were made of a single lump or coils/slabs of clay);
- simple firing conditions (open hearths, simple kilns);
- prevalence of Rough ware.

Differences between consecutive phases can be seen first of all in vessel forms and ornaments.

Typical early phase elements are:

- blacktopped ware – beakers, jars, bowls (Maadi);
- slender jars on a raised or pointed base (Heliopolis, Maadi, Wadi Digla);
- large storage vessels (Buto, Maadi);
- bowls with thumb-indented rim (Buto);
- jars decorated with knobs (Buto, Heliopolis, Maadi, Wadi Digla).

Typical middle phase elements are:

- zigzag pattern (Buto, Tell el-Farkha, Tell el-Iswid, Tell Ibrahim Awad);
- impressed crescent pattern (Buto, Tell el-Farkha, Tell el-Iswid, Tell Ibrahim Awad);
- prevalence of vessels with pointed or round bases over those with flat based (Buto);
- prevalence of jars with a globular body and everted rim over other jar types (Buto, Tell el-Farkha, Tell el-Iswid, Tell Ibrahim Awad);
- jars with a vertical neck, simple, slightly everted (or thickened on the outside) rim and pointed or round base, known as lemon shaped jars and bag shaped jars (Buto, Kom el-Khilgan, Tell el-Farkha, Tell el-Iswid).

Typical late phase elements are:

- greater share of pottery made of marl clay (Tell el-Farkha);
- higher frequency of jar forms: Petrie's R81 and R84 (Tell el-Farkha, Buto);
- increased amount of pottery with painted decorations (D-ware).

Moreover, site assemblages include vessel forms typical for all phases of the Lower Egyptian culture. This could be explained by their functionality and popularity. These include:

- bowls with a simple or slightly everted rim, convex and straight walls, and flat or round base;
- jars with a globular or elongated body, flat or round base with distinguished or undistinguished short neck and narrow or wide mouth.

An analysis of pottery from each individual site reveals certain differences reflecting site-specific local conditions. The Lower Egyptian culture is not internally homogenous and each site represents a somewhat separate local community. There can be many underlying reasons, such as the effect of local tradition, environmental conditions, choices made by each community, as well as external factors, such as the presence of representatives of other cultures. When analyzing material effects of cultural processes, an archeologist is not always able to interpret those factors, and some of them are simply untraceable.

Thus far, a handful of important characteristics unique to one or two sites have been identified:

- prevalence of vessels with cream or beige lime coat in the cemetery of Heliopolis;
- presence of vessels made of Nile clay tempered with crushed shells in the settlement of Buto;
- presence of locally made blacktopped ware in the settlement of Maadi;
- presence of vessels combining local and Levantine traditions (*e.g.* wavy rims) in the settlement of Buto;
- presence of jars R81 and R84 already in Naqada IIC in the settlement of Tell el-Farkha.

Some of the above characteristics may be a consequence of preferences and/or requirements of a given community (lime coat, miniature vessels, locally made blacktopped pottery, beer containers), while others may be a form of adaptation to the local environment (crushed shells used as temper) or the effect of “foreign” presence (elements of Levantine tradition).

The Lower Egyptian culture (and therefore its pottery) continues to be subject to archaeological studies. Excavation works are still under way on the sites in Tell el-Farkha, Buto, Tell el-Iswid and Sais, and each season yields more and more information. It seems that the priority of the studies of Lower Egyptian pottery is to investigate its regional differences. However, achieving that goal requires access to more materials, unification of pottery classification systems used on every site and intensification of reconnaissance surveys to discover new Lower Egyptian sites. Equally important will be a new typological approach to pottery and introduction of analyses of individual vessel features in the context of the entire pottery making process.