



**Potmarks from Early Dynastic Buto and Old Kingdom  
Giza: Their occurrence and economic significance**

*Anna Wodzińska*

**British Museum Studies in Ancient Egypt and Sudan 13 (2009): 239–61**

# Potmarks from Early Dynastic Buto and Old Kingdom Giza: Their occurrence and economic significance

*Anna Wodzińska*

## Introduction

The main focus of this paper is the corpus of potmarks retrieved from the ceramic material of the Old Kingdom settlement at Heit el-Gurob, studied by Ancient Egypt Research Associates (AERA). The occurrence of the potmarks from Giza is then compared with the appearance of marks from Early Dynastic/early Old Kingdom Buto, and the question of which pots bear potmarks is investigated. Can we state that the vessels were marked to reflect similar activities in these two different localities? Did the function of the potmarks vary between sites, or was it also dependent on the time of their fabrication?

## Heit el Gurob settlement

The Giza Plateau, with its very important Old Kingdom cemetery fields, can also be characterized as the location of significant settlements dating mainly to Dynasty 4. One of the largest domestic sites is Heit el-Gurob. Situated in the shadow of the knoll known as el-Gebel el-Quibli, Heit el-Gurob has been excavated between 1988 and 2008 by AERA under the directorship of Mark Lehner (Lehner and Wetterstrom 2007). The settlement is a large urban area located to the south of the Wall of the Crow. Lehner divides it into several main districts including the Gallery Complex, the Eastern Town, and the Western Town (Fig. 1).

Within the Gallery Complex, the galleries are organized into three very regular sets of elongated structures oriented north-south, and built around three streets running east-west, designated Northern, Main and Southern. Each of the galleries has a similar plan composed of an elongated rectangle separated into two areas; that is, a longer sleeping/living area and a small house/kitchen area at the rear. The entrance to each of the galleries faced on to the street. Some of the gallery units also contained industrial areas at the back, including bakeries, a copper workshop, and a possible faience working area.

The Eastern and Western Towns, built respectively to the east and west of the galleries, appear to be conventional settlements with houses. Each of the houses resembles a typical “snail-like” Egyptian dwelling, with the private part in the centre and the industrial/kitchen areas built around it. The houses in the Eastern Town are much smaller than those in the Western Town. The Western Town appears to be restricted to wealthier citizens who were probably connected to the royal court.

On the basis of the seal impressions, the entire settlement can be dated to the reigns of Khafre and Menkaure; however, Menkaure is mentioned more frequently (Lehner 2002, 34). The very narrow time frame, large domestic area, and numerous artefacts give us a rare opportunity to look at the lives of Old Kingdom Egyptians.

### Giza Plateau Mapping Project (GPMP) ceramics

The Heit el-Gurob ceramic assemblage reflects typical Old Kingdom material with a predominance of bread moulds along with red-slipped vessels, stands, and crude beer jars. Thus far 263,588 complete pots and diagnostic fragments have been described (as of the end of 2008).

The pottery types were organized into the following shape classes (Wodzińska 2007, 285–86): AB – jars, closed forms; CD – bowls, open forms; E – stands; F – bread moulds.

The most characteristic types are:

- Jars: AB1 – white/pink coated storage jars; AB2 – red coated storage jars; AB4 – so-called beer jars; AB7 – large marl storage jars.
- Bowls: CD1 and CD2 – plates; CD3 – bowls with straight/slightly flaring walls and direct rim; CD6 – red carinated ‘Meidum bowls’; CD7 – white carinated bowls; CD20 and CD21 – hole mouthed basins; CD22 – large spouted basins; CD25 – large mixing vats; CD32 – bowls with internal ledge.
- Stands: E1 – high stands; E2 – low stands.
- Flat bread trays: F1A – rounded with ledge rim; F1B – rounded with sloping rim; F1C – large oval trays.
- Conical bread moulds: F2A – small; F2B – medium sized; F2C – large with flat internal bottom.

### Heit el-Gurob potmarks

Heit el-Gurob yielded 456 potmarks, which represent 0.17% of all of the described ceramic fragments. Of these 237 (51.97%) were made before firing and the other 219 (48.03%) after firing. Marks were predominantly on the external vessel surface (approx. 80%). Ceramic material from a settlement site is usually very fragmentary, thus, the preserved potmarks are in many cases not completely preserved. However, the Heit el-Gurob ceramics include many large pieces with well preserved potmarks, which allow us to make some interesting observations about these intriguing markings.

### Potmarks executed before firing

The largest number of potters’ marks made before firing were incised on the walls of bread moulds (n=99 pieces; 41.77%) (Fig. 2). Jars (AB) were the next most frequently marked type (n=79; 33.33%), especially type AB7, large marl storage jars. No complete jar of this type carrying a potter’s mark has been preserved, but the fabric and surface of the sherds indicate that they derive from AB7 jars. Marks on the bowl class (total n=46; 19.4%) were executed most frequently on white carinated bowls, CD7. Potters’ marks on stands constituted 3.8% of the recorded marks.

The ceramic types at Heit el-Gurob are very numerous, encompassing approximately 200 categories. Thus, it appears that the number and type of marked pots was quite limited. The restricted group of ceramic types bearing potmarks has already been noted in Early Dynastic contexts (van den Brink 1992, 269).

Let us look at the data differently. What is the percentage of marked pots within particular ceramic types? The diagram in Fig. 3 shows the relative frequencies of nine pottery types carrying potmarks. It is clear that, although the conical bread moulds (F2) generally bear the most signs within the site's entire pottery corpus, jars, especially AB7 and AB1, bowls with ledge rim (CD23), and white carinated bowls, (CD7), were marked relatively more frequently. These types are shown in Fig. 4.

In many cases the potmark motifs are very difficult to identify due to their fragmentary state of preservation. However, it is possible to summarize them as follows: arch; cross; many parallel lines; straight line; straight line and arch; straight line and dot; two parallel lines; and probable floral motifs. Some hieroglyphic signs are also visible, such as *hm ntr*, *k3*, *mr*, *t*, *p*.

It seems that the most significant potmarks made before firing occur on three ceramic types: F1A – flat bread trays with ledge rim; F2 – conical bread moulds (medium and large variants); and CD7 – white carinated bowls (Figs. 5). Potmarks executed before firing appear almost exclusively on the external surface of the conical bread moulds (F2) and always on the internal surface of the flat bread trays (F1A).

### Potmarks made after firing

The potmarks made after firing were commonly incised on jars (Fig. 6). Most of them appear on body sherds of marl clay, indicating large storage jars of AB7 type. Another large group of marks in this category appears on the walls of jars made of Nile B2 with a white/pinkish wash added to the external surface. These represent medium sized jars (AB1). Among the open forms, mainly white carinated bowls (CD7) carry potmarks.

Within each shape class, the relative percentage of vessels bearing post-firing potmarks is shown in Fig. 7. This tabulation clearly demonstrates that jars and then white carinated bowls (CD7) carried most of the marks, as is the case for the pre-firing potmarks. The pottery types bearing scratched marks are depicted in Fig. 8.

Like the marks made before firing, those scratched after firing are often not easy to identify; however, it is clear that a large variety of motifs were used. In some cases the patterns are similar to those incised before firing, but there is also a larger group of single or grouped hieroglyphs. Additionally, the motifs of these marks were not repeated except in the case of some single patterns, such as notches, strokes, etc.

One ceramic sherd from the Heit el-Gurob settlement bears a king's name (Fig. 9). It is the Horus name of Menkaure, *k3 ht*. It was found within debris layers in one of the houses in the Eastern Town.

### Painted marks

Thirty-two ceramic sherds bear traces of red or white paint. Only a few ceramic types were painted: E2 – short stands; CD7 – white carinated bowls; CD23 – ledge bowls with white wash; E1 – tall stands; and AB4 – beer jars (Fig. 10).

The decoration is incomplete, and in most cases it is impossible to identify the painted pattern. However, some of them can be described as crosses and parallel lines (Fig. 11). In addition, a white carinated bowl that was found by a ramp in the western cemetery bears a clear red painted *mr* sign (Fig. 12). Similar sets of painted marks were found on material from the excavations conducted by Karl Kromer in the area located approximately 50 m to the west of the Heit el-Gurob site. One white carinated bowl had four red painted elongated dots (Kromer 1978, pl. 21.5). Other painted marks can be identified as crosses, human figures, and *mr* signs (Kromer 1978, pl. 28).

It seems most likely that the painted motifs were marks similar to incised potmarks (Wodzińska 2006, 410; 2007, 283).

### Potmarks within the Heit el-Gurob areas

Pots bearing marks occur within the two main areas of the Heit el-Gurob site, the galleries and the town. The Western and Eastern Towns were grouped together because they were clearly built in a different manner and served a different purpose to the galleries. Lehner suggests that these galleries were primarily barracks and work areas for labourers who rotated through stints at Giza (Lehner 2007b, 190–92).

It quickly became obvious that most potmarks came from the galleries (Figs. 13 and 14). This is also true for selected marks on conical bread moulds (F2) (Fig. 15), flat bread moulds (F1) (Fig. 16), and white carinated bowls (CD7) (Fig. 17).

Additionally, I have observed an interesting distribution pattern in the occurrence of some potmarks on conical and flat bread moulds. It seems that the V-shaped potmarks cluster in the northern part of the site close to the southern face of the Wall of the Crow where one of the settlement bakeries was discovered. Although most of that area of the site has not yet been excavated, some bread mould sherds visible on the surface of the overburden bear V-shaped signs not known from other areas of the Heit el-Gurob site, with one exception. One pot with this V sign was found in Area AA, a specialized facility (perhaps for storage) located at the western edge of the Western Town (Lehner 2007a, 21–24).

### Potmark function

According to a number of Egyptologists, potmarks may have served various purposes ranging from: property marks identifying a workshop, individual or institution; content description; capacity indications; source notations; or quantity measure (Adams and Porat 1996, 98; van den Brink 1992, 276, endnote 4, after unpublished manuscript of T. van den Berg; Buchez 2004, 682–83; Kroeper 2000, 216). However, it is also possible that they indicate the destination of

marked vessels (Wodzińska 2006, 411). Of course, the problem is more complicated when we consider marks made both before and after firing.

### **Function of the potmarks made before firing**

Potmarks made before firing found at Heit el-Gurob are very distinctive and are connected to specific ceramic vessel types. Their occurrence may therefore be closely linked to the potter, pot usage, pot contents, pot distribution, pot ownership, and pot destination. The signs in most cases are simple and do not represent hieroglyphs. They are clearly made in an uncomplicated way by people who were evidently not educated in writing (Pantalacci 2002, 446). Since they were made before firing they could have been incised by the potter or assistants. Therefore, their appearance is closely linked to the place of manufacture (Hope 1999, 126; see also Brèand this volume).

Ceramic vessels with repeating sets of motifs appear across the site, although the galleries seem to be the main area of their occurrence. The Gallery Complex was a unique urban structure. The galleries were built within a very short period of time. On the basis of their structure and the artefacts found inside them, they are considered to be living quarters for a large group of people, probably groups of workmen working for the royal court of Menkaure (Lehner and Wetterstrom 2007, 43–44). It seems very likely that the workmen were provisioned with all their basic needs (Redding 2007, 173), including the pottery.

We do not know where the Giza pottery workshops were located. However, it seems most likely that there was not only one workshop, but a production centre responsible for making various ceramic vessels for different recipients, e.g., for domestic and funerary purposes (Wodzińska forthcoming). This centre did not produce all the types represented at Giza. There is the evidence of unfired vessels indicating that bread moulds were made at the site (Wodzińska 2007, 300; forthcoming). This contrasts with the bread moulds found at Ain Asil in the Dakhla Oasis, which were manufactured in the pottery workshop located near the palace of the governor (Soukiassian et al. 1990, 108–112).

If the bread moulds were made at the site, the marks placed on their surface were also executed at the site. The potters perhaps worked very closely with the bakers, and the marks from the moulds may indicate the producer or the baker/bakery as well as the recipient.

Let us look more closely at the bread moulds. The conical bread moulds (F2) bear marks made before firing, almost always on the external surface. Therefore, the marks were not visible on the baked bread. The flat bread trays (F1A) have the incised potmarks always on the internal surface so the loaves baked in them also carry the marks. In this case the potmarks would indicate not only the producer but also the recipient; however, we must keep in mind that the flat bread trays have only one surface suitable for marks—the internal surface. In this light, the potmarks may not have been intended to be visible on the bread at all. If so, it was important that the marks were visible only on the bread moulds. Thus the marks would be associated with the producers rather than the recipients.

Another question is why some of the marks on conical and flat bread moulds are different although they were all made at the same site? It seems more probable that the different marks indicated a different producer's hand or a different production area within the galleries.

Furthermore, it appears that the conical and flat bread moulds were made by different potters who specialized in particular shapes, a practice that can also be observed in modern Egyptian pottery production (Wodzińska forthcoming). If the marks on the bread moulds can be linked to particular bakeries, they could have been used to indicate different bakery areas within the settlement.

It is most likely that, with the exception of the bread moulds, the Heit el-Gurob ceramic types were manufactured in the pottery production centre located elsewhere, not in the area directly connected to the settlement. We do not know where that centre was located. However, there is enough evidence to say that there was at least one Giza pottery centre producing ceramic vessels, not only for the Heit el-Gurob site and other settlement areas on the Giza plateau, but also for the funerary context. The vessels placed in tombs are more or less published, but little of the domestic pottery from the Giza settlement sites, other than that from Heit el-Gurob, has been documented in print. The ceramic material from the Khentkaus settlement (Hassan 1943) and the site excavated by Abdel Aziz Saleh (1996, 1974) is unfortunately only briefly mentioned. It is therefore very difficult to link the products made in this workshop and to trace them across the plateau. There are, however, three separate areas that can be connected to one another. They are Heit el-Gurob itself; the so-called “workmen’s barracks,” a storage and workshop area located just west of the second pyramid (Conard and Lehner 2001); and the settlement debris of the site excavated by Karl Kromer (1978). I have also examined scattered pottery finds in other areas at Giza during numerous walks around the plateau. On the basis of the ceramics, it seems that the Giza pottery workshops were very specialized and produced containers requested by a specific group of people (Wodzińska forthcoming).

One of the very specialized Giza products is the white carinated bowl (CD7) known only from domestic contexts. The bowls are very specific containers probably used during the daily consumption of food (Wodzińska 2006, 415). These bowls also bear potmarks, as noted above. The potmarks, as in the case of the bread moulds, are also simple, although they bear different motifs. These include a cross, a series of parallel lines, and a *mr* sign. These marks are either incised or, less frequently, painted. If the production of the CD7 bowls was the result of special requirements, then the painted and incised signs would perhaps indicate their exact destination, be it a locality or a certain group of people (Wodzińska 2006, 411). The specific use of the pot is also associated with the particular use of a potmark. Hope (1999, 139) states that some pots from late Dynasty 18 Karnak and Malkata were marked in connection with the jubilee festivals. At Heit el-Gurob, the signs on the white carinated bowls must have been linked to the workforce that lived in the galleries. Perhaps the marks indicate the groups of workmen who were receiving certain batches of ceramics.

### **Function of the potmarks made after firing**

The motifs of the marks from Heit el-Gurob that were scratched on the pots after firing are more elaborate than those incised before firing. In many cases they are simple, such as notches on the vessel rim or shoulder. However, single hieroglyphs or groups of hieroglyphs appear frequently. The shape of the hieroglyphic signs indicates that they were made by the

hand of someone who knew how to write; that is, by a scribe or an official. In fact, they could have been made by anybody. Since their occurrence is not associated with the pottery production process they could have been scratched any time between the firing and, in theory, modern times.

The function of the marks made after firing is more difficult to determine than those done before the pot went into the kiln. The marks could have indicated the contents of the stored products inside certain ceramic vessels if they were different from the original contents. According to ethnographic studies it seems clear that each pot type has its own name based on its known specific function (Wodzińska forthcoming). For example, the modern potters of el-Nazla in the Fayum Oasis make nine basic types of pots, each of them with a different name (Wendrich and van der Kooij 2002, 157). If the function of a vessel changed over time, people may have indicated this with a sign scratched on the surface.

The large storage jars, AB1 or AB7, could have been used as containers for a variety of goods. If they were used to contain a very specific product it may have been specified by the presence of certain potmarks placed usually on the highly visible upper part of the shoulder.

Vessels used in the daily consumption of different kinds of food could have carried marks indicating their owners. The Heit el-Gurob site is characterized by white carinated bowls (CD7) which probably served as bowls used in daily consumption by the workmen housed in the galleries (Wodzińska 2006, 420). Those bowls could have been easily transported to the activity areas of the workmen where they could have been used as short term storage pots containing food to be eaten during work. Notably, the marks on the white carinated bowls executed after firing are usually unique and their motifs are not frequently repeated.

It is less likely that the scratched marks were indicators of the pot's capacity. The vessel types with marks from Giza are rather standard in size and their capacity seemed to have been commonly known. The capacity could have been marked to indicate the different volume of stored goods, but such cases would have been very rare since potmarks generally are not very numerous.

The potmarks could have also served as a sort of address indicating the location of certain pots and the place to which they were to be moved. This usage would concern large storage/transport jars, especially AB1 and AB7 in the GPMP typology, which bear most of the marks made after firing, but also before firing.

## **Buto settlement**

Tell el-Fara'in/Buto is a settlement located in the central Delta. It has been intensively excavated by the German Archaeological Institute for over 20 years. The archaeological area consists of three *koms*, A and C being ruins of the Graeco-Roman settlement, and B containing a temple enclosure devoted to Wadjet, mistress of Buto. Near the modern village of Sechmawy lies the region where the earliest layers of occupation at Buto were discovered, beginning with the Buto-Maadi culture, through the transition layers into the Naqada III period, Archaic period (layers 4 and 5) to the beginning of the Old Kingdom (layer 6) up to the Saite period. A large administrative building was found within the Early Dynastic strata, which functioned until late Dynasty 3 or early Dynasty 4 (Faltings et al. 2000; Faltings and Köhler 1996; von der Way

1997; Hartung et al. 2003). Buto was chosen for this study primarily because of the settlement material. Secondly, the Buto ceramics and potmarks are useful here because they are from a slightly earlier, but not too distant, time period.

### **Buto ceramics**

During the 1997–99 seasons, ceramic material dating from Dynasty 2 to the beginning of Dynasty 4 was retrieved (Wodzińska in Faltings et al. 2000). The assemblage of 10,728 complete pots and diagnostic pieces was comprised predominantly of bread moulds, but also included beer jars, significant amounts of plates, some characteristic bowls with an internal ledge placed below the rim, carinated “Meydum” bowls and large mixing vats.

### **Buto potmarks**

One-hundred and forty ceramic fragments with potmarks were found within the described Buto pottery material; 33 came from the so-called C trenches, making up 0.91% of all the ceramic fragments from that context, and 107 from the D trenches, making 1.5% of all described fragments from this context.

Most of the potmarks (n=102; 72.86%) come from bread moulds. They were made before firing and placed on internal and external surfaces in more or less equal numbers. Like the marks from Giza, the motifs from Buto are very difficult to identify due to the poor state of preservation. Although none of them were found complete, some general remarks can be made. The signs are simple, mostly geometric, such as a single line, a combination of two or three lines, a dot, group of dots, and some curving lines (Fig. 18) (see also Köhler 1998, pls. 42–46). No hieroglyphic signs were found. All the marks are unique except for one motif, an ‘eye,’ which occurs on three different bread moulds (Fig. 19).

There are more potmarks from the trenches dated slightly earlier; that is, the D trenches from which material dated to Dynasty 2 originates. Trenches C, on the basis of ceramic types, can be dated to Dynasty 3 or the beginning of Dynasty 4. The difference is very small, but it seems that fewer potmarks were made towards the beginning of the Old Kingdom.

### **Comparison between GPMP and Buto potmarks**

It is very difficult to compare material from Giza and Buto. Both sites functioned as settlements, but each had a different character. The Heit el-Gurob settlement, especially the galleries, functioned as living and industrial areas for groups of workmen. Buto, on the other hand (at least the part considered here), was rather an administrative area.

Some of the ceramic types from both sites are very similar, for example, the bread moulds. The conical bread moulds from Buto bear most of the potmarks. Presently it is impossible to say whether the marks were linked to specific parts of the site, since the material used in this study came from a very small excavated area. However, it is clear that pots from Buto

carry more potmarks than those from Giza. Moreover, different pottery types were marked more frequently in the described settlements. Buto is characterized by bread moulds bearing potmarks. The Heit el-Gurob site can be distinguished by the presence of signs incised and scratched on the surface of storage jars. The differences between the two sites might be connected to the time difference between them, but it may also be related to the different functions of the two settlements.

The potmarks executed on the Buto bread moulds, even if very simple, are more similar to those found at Adaima, dated to the late Naqada III period (Buchež 2004, Figs. 7 and 8), than to those from Giza dated to late Dynasty 4.

## Conclusions

In conclusion, it is possible to state that the function of the Old Kingdom potmarks, at least those from Giza, depends on their exact context. Their meaning is closely related to the function of the site where they were made and then used.

The Old Kingdom potmark motifs from Heit el-Gurob were not influenced by the centralized authority as is assumed to be the case in Early Dynastic Egypt (van den Brink 1992, 274), but they were a result of local requirements associated with the specific local usage of the ceramic vessels.

The Heit el-Gurob potmarks are closely connected to the workforce housed in the galleries. The large storage jars/containers for various goods were used to contain very specific products which could have been specified by the presence of certain potmarks placed usually on the visible upper part of the shoulder. The marks on the bread moulds executed before firing probably represent the site bakeries. The signs on the white carinated bowls might have indicated certain groups of workmen. Marks on white carinated bowls scratched after firing might represent their exact owners, but such a view would require further investigation.

In comparison to the potmarks found on pottery from Buto, it seems clear that the ceramic vessels from Old Kingdom Giza were less frequently marked. Their patterns are also different. The reason for such variation might be the time difference between the two sites, but also the diverse functions of the settlements involved in different activities.

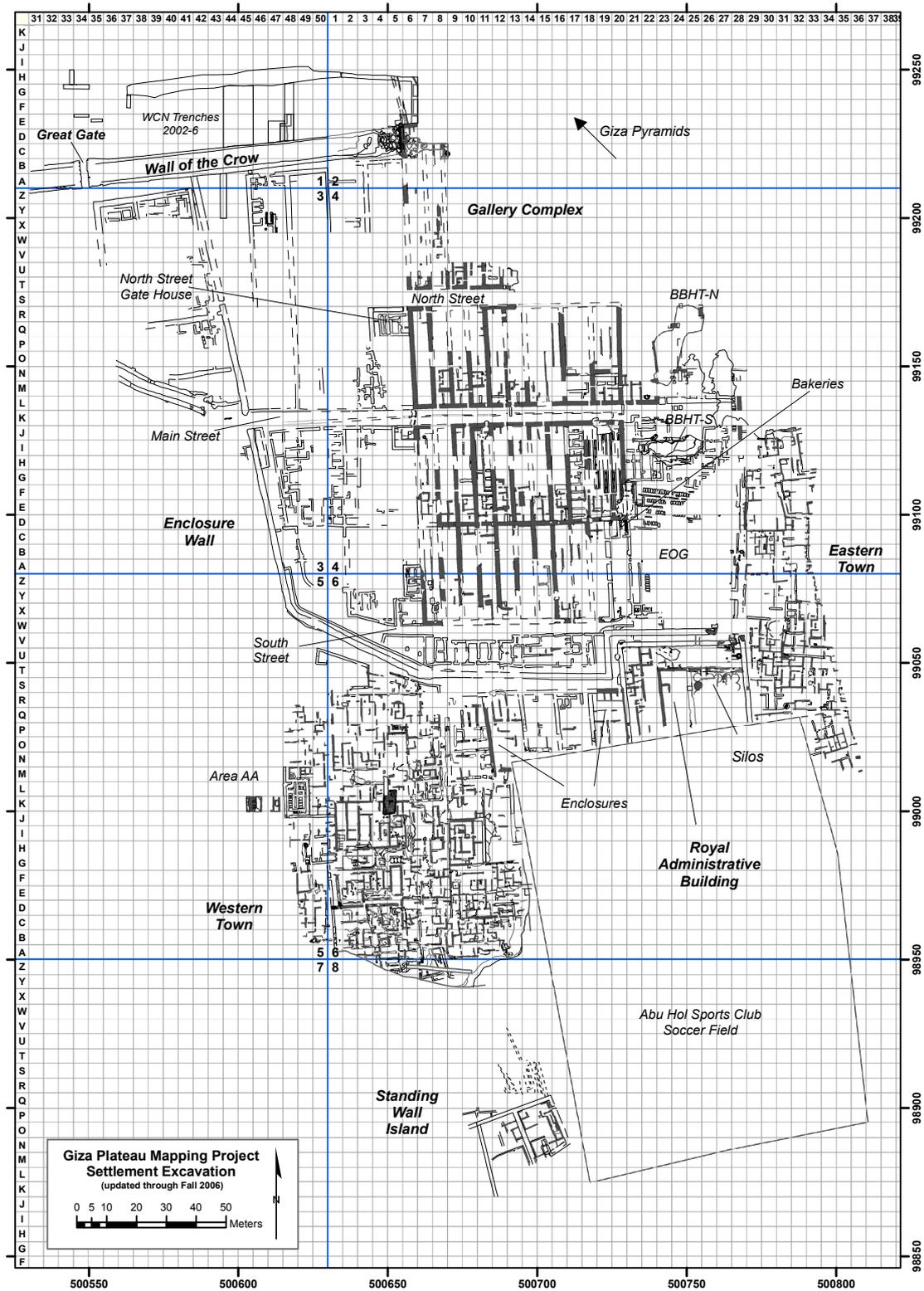
## Acknowledgements

I owe Edwin van den Brink my appreciation for inviting me to participate in the International Potmark Workshop. I also would like to thank Mark Lehner, the Ancient Egypt Research Associates, and the generous donors who support the work of AERA for making my study possible. Moreover, I would like to express my gratitude to Daniel Jones, Richard Redding, and Wilma Wetterstrom, who kindly commented on the present paper and shared their very valuable thoughts.

## Bibliography

- Adams, B. and N. Porat. 1996. Imported pottery with potmarks from Abydos. In *Aspects of Early Egypt*, A. J. Spencer (ed.), 98–107. London.
- van den Brink, E. C. M. 1992. Corpus and numerical evaluation of the “Thinite” potmarks. In *The followers of Horus, studies dedicated to M. A. Hoffman*, R. F. Friedman and B. Adams (eds.), Egyptian Studies Association Publication 2, 265–96. Oxford.
- Buchez, N. 2004. The study of a group of ceramics at the end of the Naqada period and socio-economic considerations. In *Egypt at its origins: Studies in memory of Barbara Adams: Proceedings of the International Conference “Origin of the state: Predynastic and Early Dynastic Egypt,” Kraków, 28 August–1st September 2002*, S. Hendrickx, R. F. Friedman, K. M. Ciałowicz and M. Chłodnicki (eds.), OLA 138, 665–87. Leuven.
- Conard, N. J. and M. Lehner. 2001. The 1988/1989 excavations of Petrie’s “workmen’s barracks” at Giza. *Journal of the American Research Center in Egypt* 38: 21–60.
- Faltings, D., P. Ballet, F. Förster, P. French, C. Ihde, H. Sahlmann, J. Tomalsky, C. Thumshirn, and A. Wodzińska. 2000. Zweiter Vorbericht über die Arbeiten in Buto von 1996 bis 1999. *Mitteilungen des Deutschen Archäologischen Instituts Kairo* 56: 131–79.
- Faltings, D. and E. C. Köhler. 1996. Vorbericht über die Ausgrabungen des DAI in Tell el-Fara’in/Buto, 1993 bis 1995. *Mitteilungen des Deutschen Archäologischen Instituts Kairo* 52: 87–114.
- Hartung, U., P. Ballet, F. Béguin, J. D. Bourriau, P. French, T. Herbich, P. Kopp, G. Lecuyot and A. Schmitt. 2003. Tell el-Fara’in – Buto: 8. Vorbericht. *Mitteilungen des Deutschen Archäologischen Instituts Kairo* 59: 199–267.
- Hassan, S. 1943. *Excavations at Giza IV (1932–1933)*. Cairo.
- Hope, C. A. 1999. Some remarks on potmarks of the late Eighteenth Dynasty. In *Studies on Ancient Egypt in Honour of H.S. Smith*, A. Leahy and J. Tait (eds.), 121–46. London.
- Köhler, E. C. 1998. *Tell el-Fara’in Buto III: Die Keramik von der späten Naqada-Kultur bis zum frühen Alten Reich (Schichten III bis VI)*. Archäologische Veröffentlichungen 94. Mainz am Rhein.
- Kroeper, K. 2000. Corpus of potmarks and inscriptions from the Pre/Early Dynastic cemetery at Minshat Abu Omar (Northeastern Delta, Egypt). In *Recent research into the Stone Age of Northeastern Africa*, L. Krzyżaniak, K. Kroeper and M. Kobusiewicz (eds.), 187–218. Poznan.
- Kromer, K. 1978. *Siedlungsfunde aus dem frühen Alten Reich in Giseh: Österreichische Ausgrabungen, 1971–1975*. Vienna.
- Lehner, M. 2002. The Pyramid Age settlement of the Southern Mount at Giza. *Journal of the American Research Center in Egypt* 39: 27–74.
- . 2007a. Introduction. In *Project history, survey, ceramics, and the Main Street and Gallery III.4 operations*, M. Lehner and W. Wetterstrom (eds.), The Giza Plateau Mapping Project 1, 3–50. Boston.
- . 2007b. Introduction to the Gallery III.4 excavations. In *Project history, survey, ceramics, and the Main Street and Gallery III.4 operations*, M. Lehner and W. Wetterstrom (eds.), The Giza Plateau Mapping Project 1, 185–92. Boston.

- Lehner, M. and W. Wetterstrom (eds.). 2007. In *Project history, survey, ceramics, and the Main Street and Gallery III.4 operations*, M. Lehner and W. Wetterstrom (eds.), The Giza Plateau Mapping Project 1. Boston.
- Pantalacci, L. 2002. Les marques sur la céramique. In *Le palais des gouverneurs de l'époque de Pépy II: Les sanctuaires de ka et leurs dépendances*, G. Soukiassian, M. Wuttman and L. Pantalacci (eds.), FIFAO 46, 446–59. Cairo.
- Redding, R. 2007. Main Street faunal remains. In *Project history, survey, ceramics, and the Main Street and Gallery III.4 operations*, M. Lehner and W. Wetterstrom (eds.), The Giza Plateau Mapping Project 1, 167–74. Boston.
- Saleh, A.-A. 1974. Excavations around Mycerinus pyramid complex. *Mitteilungen des Deutschen Archäologischen Instituts Kairo* 30: 131–54.
- . 1996. Ancient Egyptian house and palace at Giza and Heliopolis. In *House and Palace in Ancient Egypt, International Symposium in Cairo, April 8 to 11*, M. Bietak (ed.), 185–94. Vienna.
- Soukiassian, G., M. Wuttman, L. Pantalacci, P. Ballet and M. Picon. 1990. *Les ateliers de potiers d'Ayn-Asil: Fin de l'Ancien Empire/Première Période Intermédiaire*. Balat 3/FIFAO 34. Cairo.
- von der Way, T. 1997. *Tell el-Fara'in, Buto: Ergebnisse zum frühen Kontext, Kampagnen der Jahre 1983–1989*. AVDAIK 83. Mainz am Rhein.
- Wendrich, W. and G. van der Kooij. 2002. The potters of el-Fustat (Cairo) and el-Nazla (Fayoum). In *Moving matters: Ethnoarchaeology in the Near East*, W. Wendrich and G. van der Kooij (eds.), 147–58. Leiden.
- Wodzińska, A. 2006. White carinated bowls (CD7) from the Giza Plateau Mapping Project: Tentative typology, use and origin. In *Abusir and Saqqara in the Year 2005, Proceedings of the International Symposium, Prague 27–30 June 2005*, M. Bárta, F. Coppens and J. Krejčí (eds.), 405–429. Prague.
- . 2007. Preliminary ceramic report. In *Project history, survey, ceramics, and the Main Street and Gallery III.4 operations*, M. Lehner and W. Wetterstrom (eds.), The Giza Plateau Mapping Project 1, 275–315. Boston.
- . forthcoming. Work organization in the Old Kingdom pottery workshop: The case of the Giza Plateau Mapping Project pottery. In *Studies on the Old Kingdom pottery*, T. I. Rzeuska, and A. Wodzińska (eds.). Warsaw.



GPMP GIS, FLB Feb07  
 Buffalo/2007Season/GIS/maps/site

Fig. 1: Plan of the Heit el-Gurob site.

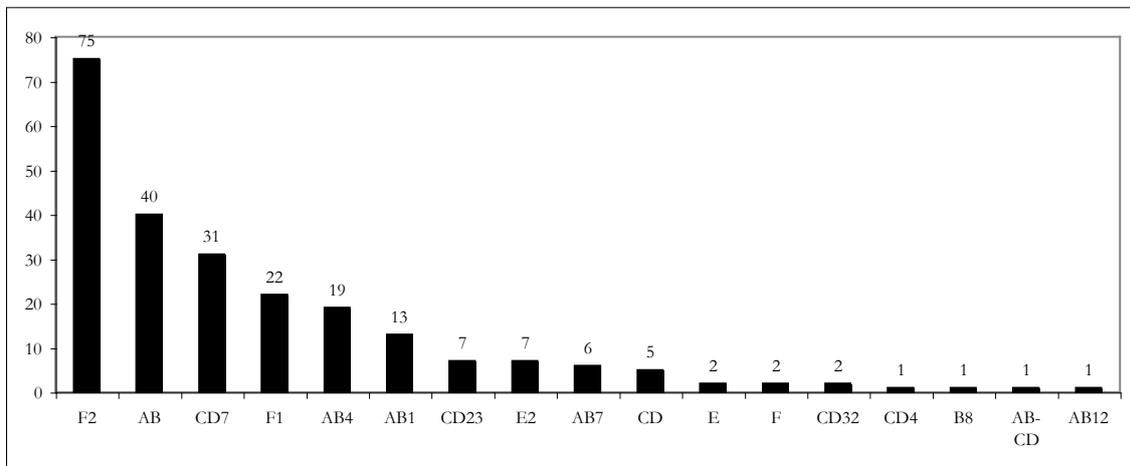


Fig. 2: Number of GPMP ceramic types carrying potmarks made before firing.

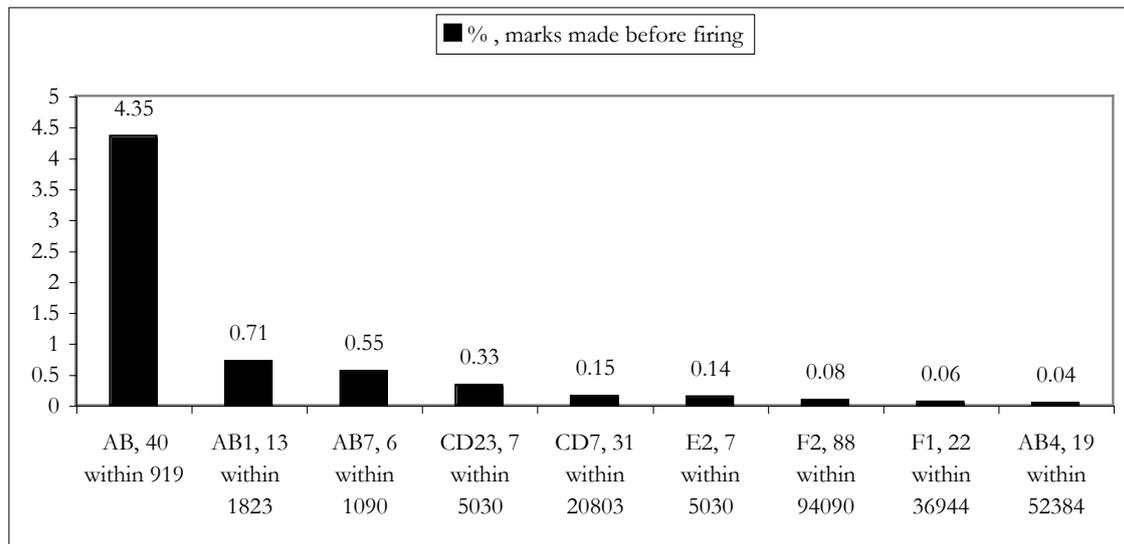


Fig. 3: Relative frequencies of ceramic types with potmarks made before firing.

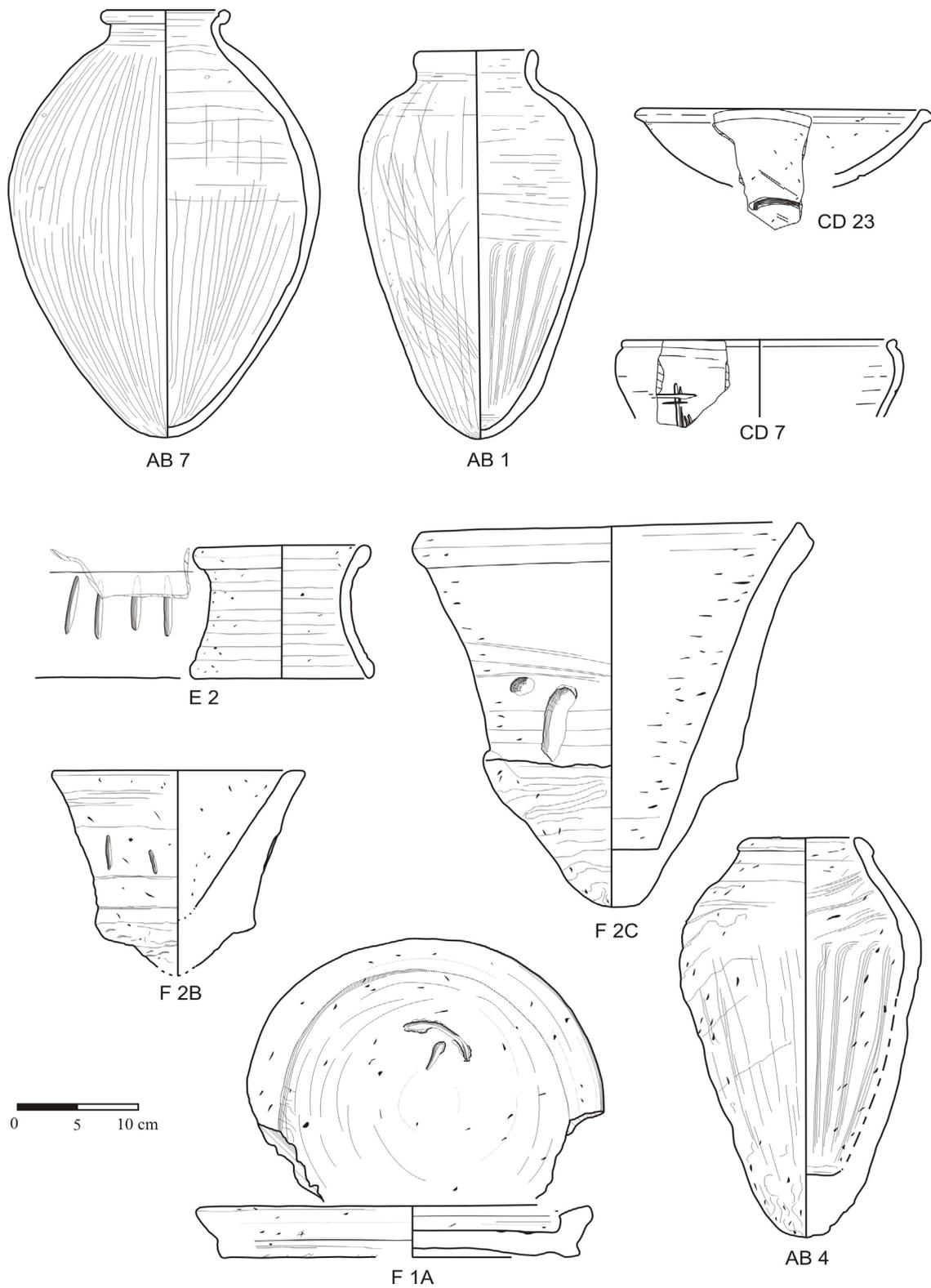


Fig. 4: GPMP ceramic types carrying potmarks made before firing.

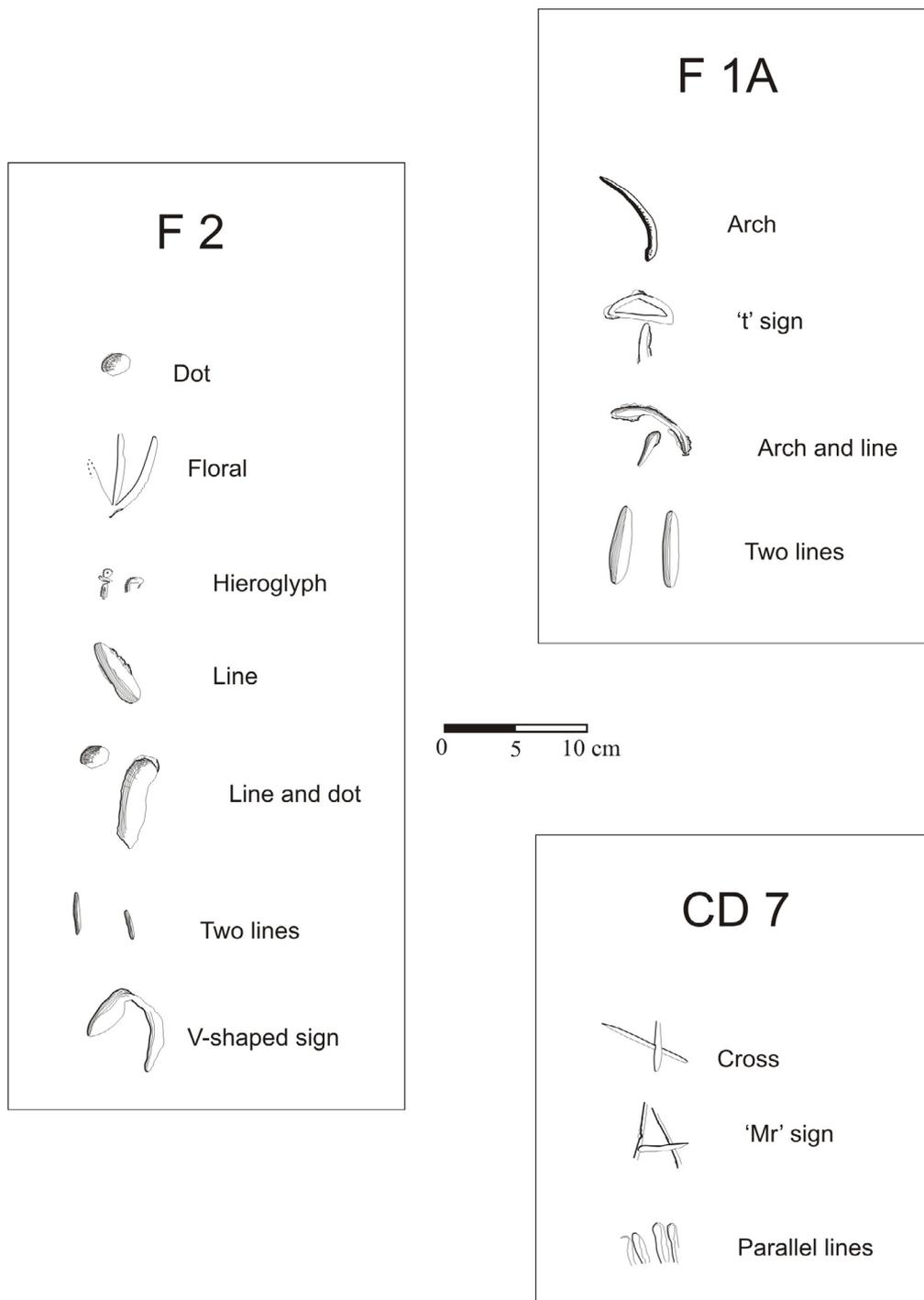


Fig. 5: The most characteristic signs executed on three selected pottery types: F2 – conical bread molds; F1A – flat bread tray; and CD7 – white carinated bowl.

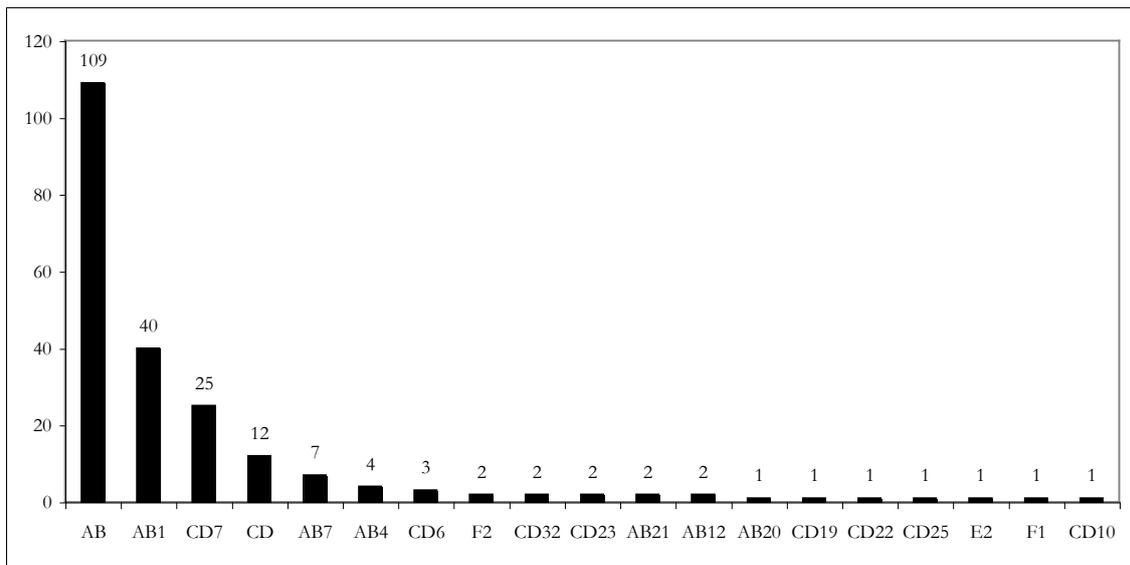


Fig. 6: Number of GPMP ceramic types carrying potmarks made after firing.

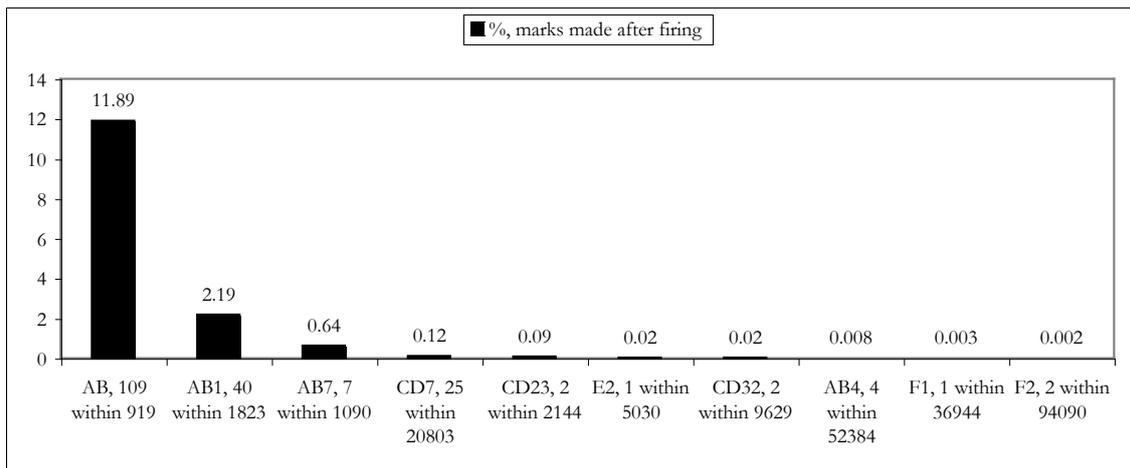


Fig. 7: Relative frequencies of ceramic types with potmarks made after firing.

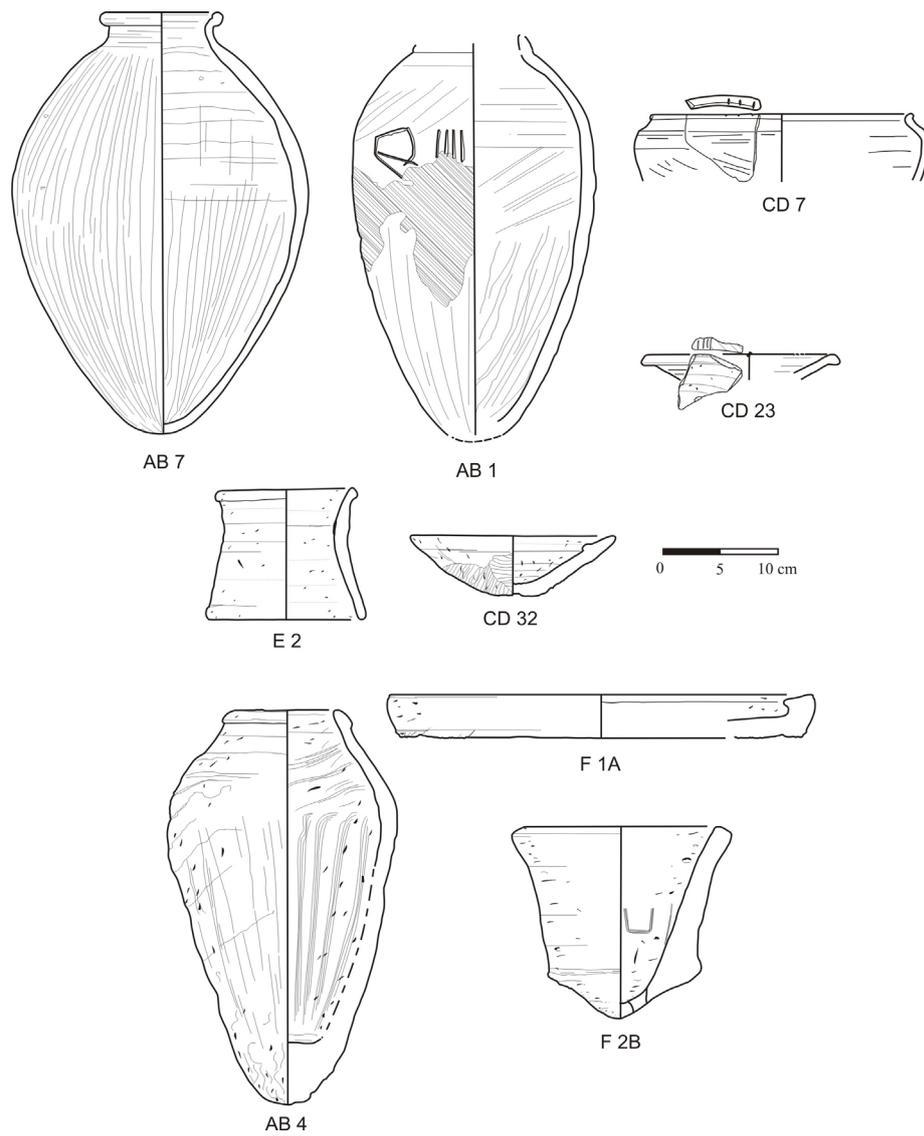


Fig. 8: Heit el-Gurob ceramic types carrying potmarks made after firing.

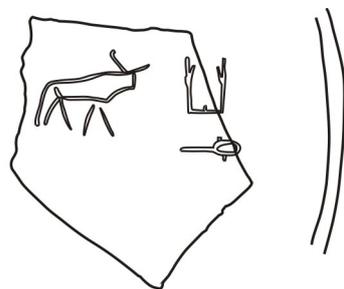


Fig. 9: Potmark with the name of Menkaure made after firing on a marl sherd, probably part of a large storage jar (AB7).



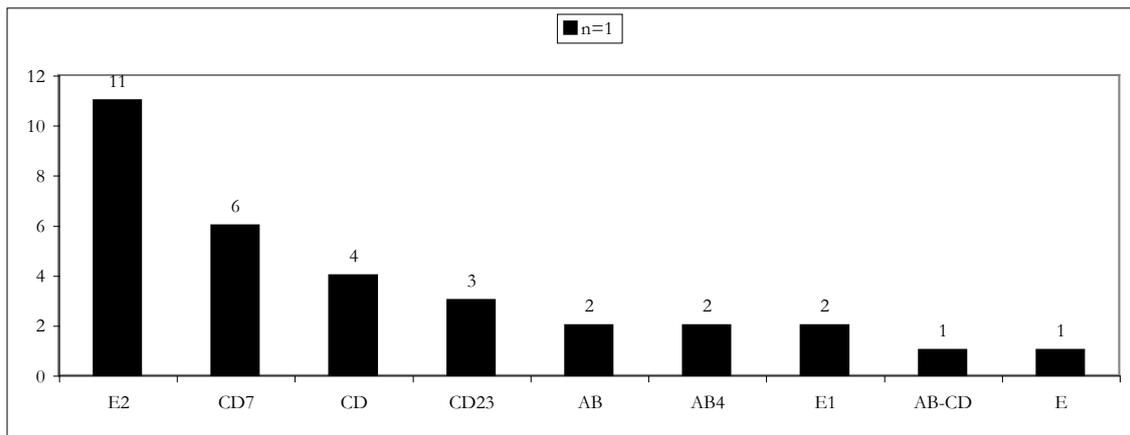


Fig. 10: Number of Heit el-Gurob ceramic types with painted marks.

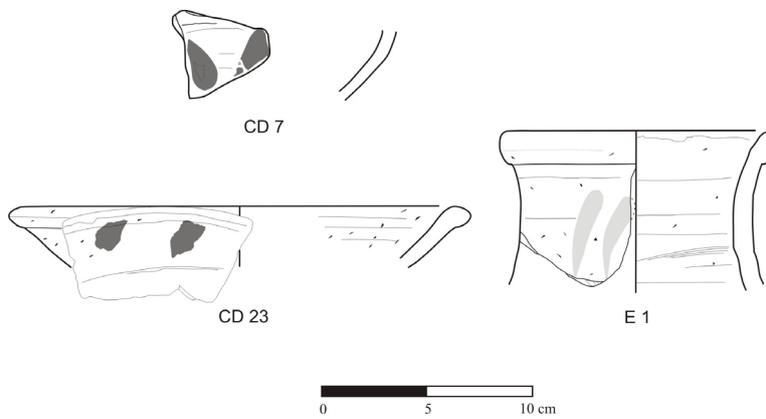


Fig. 11: Heit el-Gurob ceramic vessels with painted marks.



Fig. 12: White carinated bowl (CD7) with a red painted *mr* sign.

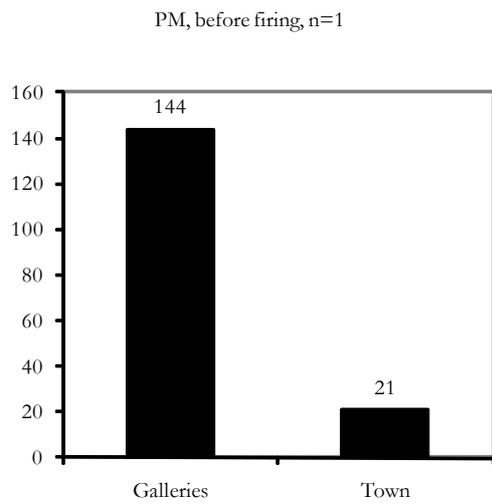


Fig. 13: Frequency of marks made before firing within the main areas of the Heit el-Gurob site.

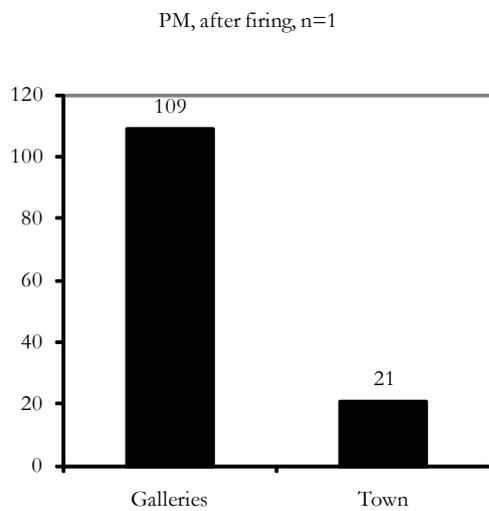


Fig. 14: Frequency of marks made after firing within the main areas of the Heit el-Gurob site.

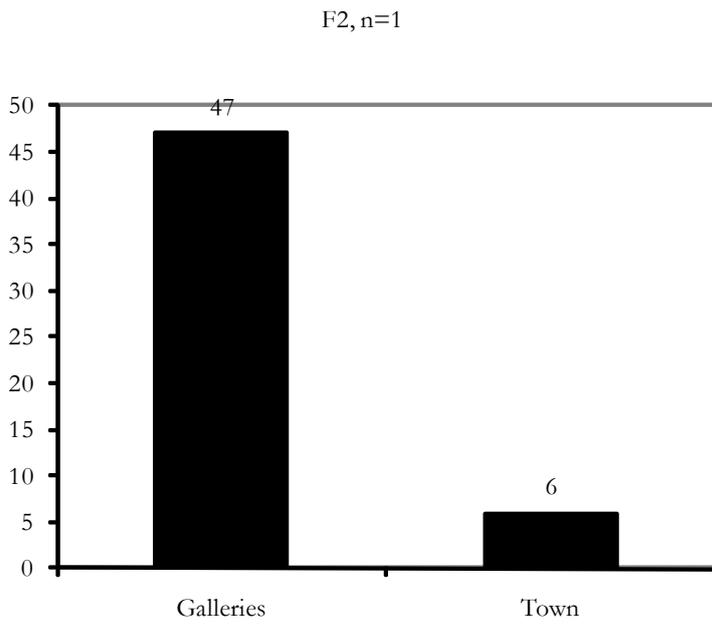


Fig. 15: Frequency of marks found on conical (F2) bread molds within the main areas of the Heit el-Gurob site.

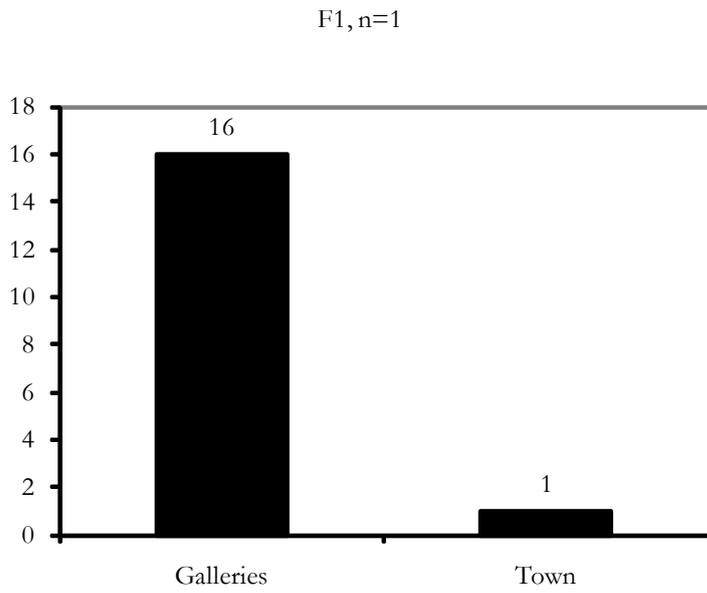


Fig. 16: Frequency of marks found on flat (F1) bread trays within the main areas of the Heit el-Gurob site.

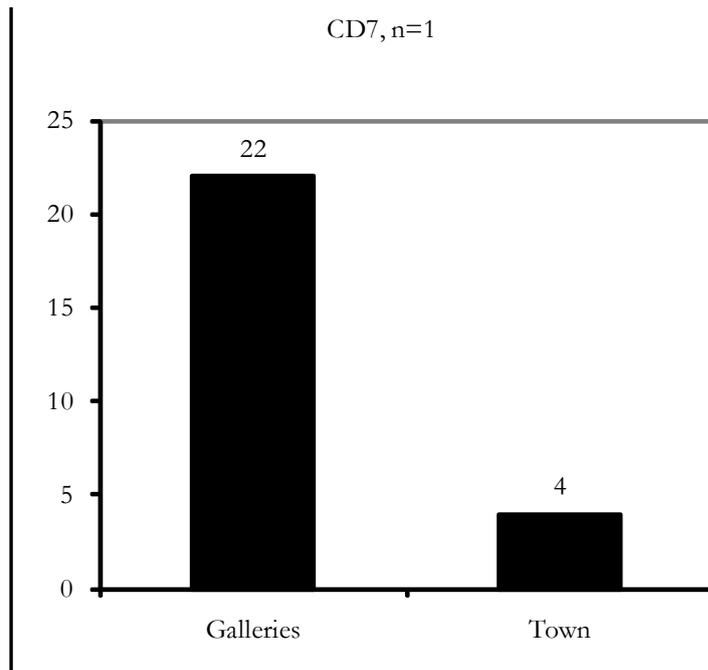


Fig. 17: Frequency of marks found on white carinated bowls (CD7) within the main areas of the Heit el-Gurob site.

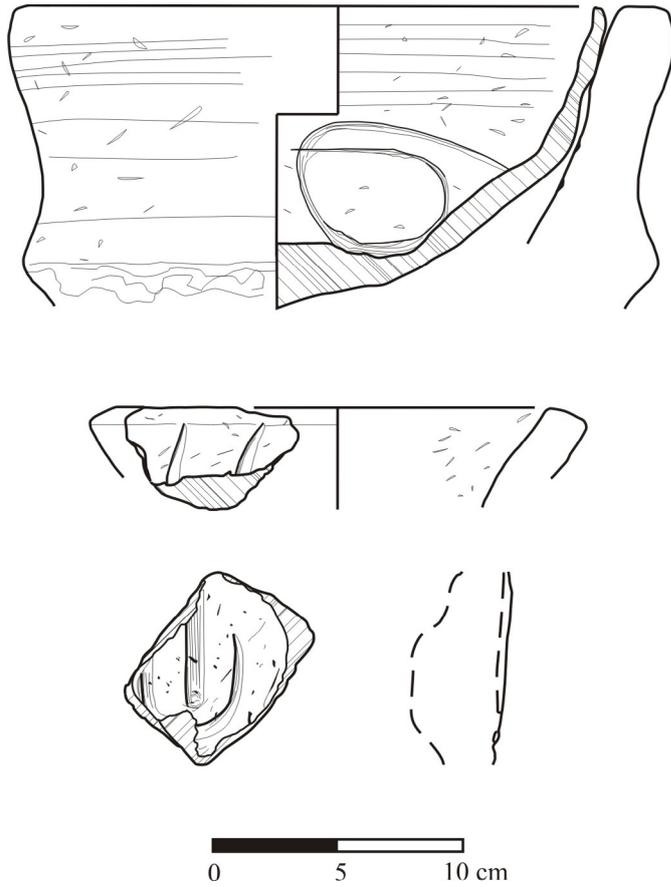


Fig. 18: Selected potmarks from bread molds found at Buto.

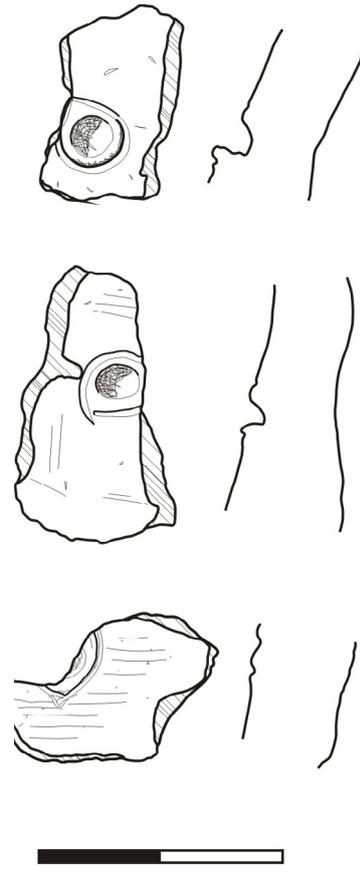


Fig. 19: 'Eye' mark repeated on three different bread moulds from Buto.