

**CORPUS OF POTMARKS FROM THE PROTODYNASTIC TO
EARLY DYNASTIC CEMETERY AT KAFR HASSAN DAWOOD,
WADI TUMILAT, EAST DELTA, EGYPT**

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Over a hundred potmarks have been discovered at the East Delta site of Kafr Hassan Dawood (KHD), recorded both on ceramic and stone vessels. Some of the signs found at KHD are unique, while most are comparable with signs found at many contemporary East Delta sites, such as Minshat Abu Omar, Minshat Ezzat, Tell Ibrahim Awad, Tell el-Samara and the main cemeteries of the large urban centres of Memphis and Abydos.

Out of the total amount of 1775 ceramic vessels found at the cemetery, 88 had engraved potmarks, which equates to 4.9%. Out of a total of 275 stone vessels, 2 were found to have engraved potmarks, which equates to 0.72%. Out of a total of 752 graves 39 contained vessels with potmarks, representing 5.2% of the total graves excavated. The vast majority of potmarks were discovered on storage or wine jars, although some were found on beer jars or breadmoulds. The most elaborate graves with the largest amount of grave goods: 913 and 970 had the largest amount of vessels with potmarks. Three serekhs were also found, one of King Ka/Sekhen in Grave 1008 and one of King Narmer in Grave 210 and another in Grave 913. These kings seem to have been instrumental in bringing the East Delta under Thinite rule. The occurrence of potmarks seems to increase towards the beginning of the 1st Dynasty, with the majority of potmarks having been found in tombs of the higher classes.

Some of the potmarks may be explained as geographical indicators: potmarks with the ḥwt sign, including possible Delta locations: potmarks with the ḥwt sign associated with a fish sign. Three distinct types of marks can be distinguished amongst the potmarks – abstract accounting signs, potters marks and pre-formal hieroglyphs.

General Introduction

Kafr Hassan Dawood (KHD) is located on the southern edge of the Wadi Tumilat in the East Delta, 8 km east of Al-Tell el-Kebir and 40 km west of modern Ismailia (Hassan 2000; Hassan *et al.* 2003). Both the settlement and cemetery of this community have been located, however, water

seepage from a land reclamation project in the vicinity of the settlement made its excavation too impractical.¹ Archaeological work has, therefore, focused on the excavation of the cemetery. From 1989 to 1995 the local Supreme Council of Antiquities (SCA) Inspectorate under the direction of Mohammed Iewa el-Moslamy, assisted by Mohammed Salem El-Hangouri excavated 921 graves. From 1995 until 1999 the mission was a collaboration between University College London and the SCA under the direction of Prof. Fekri A. Hassan and a total of 1069 graves have now been excavated: 752 Protodynastic to Early Dynastic Periods, and 317 Late Period to Ptolemaic Period.² A final monograph series on the results of the excavations at KHD is being prepared for publication (Hassan *et al.*, in prep.).

The cemetery originally seems to have consisted of approximately 1300 burials that date from the late Protodynastic Period (Naqada IIIB) to the Early Dynastic (Naqada IIIC2) although the ongoing analysis of the ceramic assemblage indicates the possibility of slightly earlier and later periods. A total of 1775 ceramic vessels and 275 stone vessels have been recovered. A selection of the potmark corpus is presented here, as research relating to the SCA excavations is ongoing.

Intra-site Analysis

Most of the potmarks found at KHD were applied before the firing of the ceramic vessel, with the exception of KHD4100, and all of them are of the engraved variety with no cursive inscription in ink having been recovered. The engraving of the potmarks into the wet clay appears to have been by a pointed instrument, either a wooden stylus — sharpened stick or reed or a fine flint point. No other forms of early palaeography, such as sealings or bone or wooden tags were recovered from the site, although this may be due to the poor rate of preservation at the site. The majority of the graves containing the potmarks are concentrated in the north-south sector in the central part of the cemetery, which corresponds with the most richly furnished and most elaborate graves at

¹ A series of test pits located what appeared to be settlement remains at a depth of 4 m below surface.

² During the analysis of the graves from KHD, it was necessary to assign new grave numbers to groups of contexts that were originally given feature numbers, which is why the total number of graves has increased slightly from previous publications. As the analysis of the Eastern cemetery (Late Period to Ptolemaic) continues, this number may change further. When the investigation of the cemeteries is completed a fuller temporal distribution of graves within the cemetery will be possible.

the site (Tassie & van Wetering 2003). Although most of the potmarks are comparable with signs found at contemporary sites nearby, such as Minshat Abu Omar (MAO) and Tell Ibrahim Awad (TIA), some are unique, for example, the large sign that may possibly represent a shield (KHD4071) and the temple sign (KHD4008). Unlike the potmarks on ceramic vessels, potmarks on stone vessels are much rarer. Two of these have been found at KHD, one in Grave 890 and the other in Grave 970, both large rectangular mud-lined graves.

Out of a total of 104 potmarks,³ 102 different potmarks were recorded on ceramic vessels from 38 graves, as well as two potmarks (KHD4004 & KHD4054) recorded on Egyptian alabaster tall cylindrical beakers (KHD2005 & KHD2101) from two different graves. A simplified ceramic and stone vessel typology is used here (ongoing ceramic analysis will duly provide a fuller ceramic typology of the KHD vessels), dividing the vessels on which potmarks are found into eight ceramic forms and one stone vessel form (Fig. 1). Both van den Brink (1992) and Kroeper (2000) give a simplified pottery typology in their respective articles on potmarks. As their typologies are slightly more extensive than the one used here, several of their functional categories are compounded here. Within the KHD elongated storage “wine” jar category are Kroeper’s (2000) *serekh*, ovoid flat large and wine jar types; and within the ovoid storage “beer” jar category are Kroeper’s (2000) small ovoid types. As Chart 1 shows the vast majority of potmarks have been found on elongated storage “wine” jars (47%) with a lesser amount found on ovoid storage “beer” jars (20%). A few were found on small squat jars (3%), large bulbous jars (2%), small piriform jars with flat bases (1%), bowls (3%), flat oval breadmoulds (3%) and Egyptian alabaster tall cylindrical beakers (2%). Several potmarks were on potsherds/unidentifiable vessels (19%).

The internal distribution of the potmarks in relation to the distribution of wealth/status within the cemetery is based on Rowland (1998; 2003), Rowland & Hassan (2003) and Tassie & Van Wetering (2003). The graves were initially split into eight contextualised categories: 1, 2-4, 5-8, 9-16, 17-32, 33-64, 65-128 and 129-256 based on number of grave goods. For

³ The authors have recently received the majority of the data pertaining to the 1989-1995 seasons, which were originally omitted or not available when Mohammed Ilewa el-Moslami and Dr Mohammed Salem El-Hangouri of the local SCA gave Prof. Hassan their records. The data includes representations of the *serekhs* from Grave 210 and 913 as well as a further 100 potmarks not included in this preliminary study. To include the new data (received May 2006) would require a major re-writing of the article, therefore, the new data will form the core of another study to be presented at *Origines 3* and some will be included in the report to be presented in a volume of *ASAE*.

this present analysis, graves with no grave goods (201) have been omitted from the calculations as they cannot by their nature contain vessels with potmarks. The grave with the greatest number of potmarks, and also the greatest number of pottery vessels with potmarks, is Grave 913, which has 23 potmarks on 19 different vessels. The grave with the next largest number of potmarks and vessels with potmarks is Grave 970, with 19 potmarks on 14 pottery vessels. These two graves dating to Naqada IIIc (c. 3050 BC) are the largest and most richly furnished graves in the cemetery. However, although both the graves are the same size (6 × 4 m), Grave 970 was robbed in antiquity, which may account for the differential in the amount of potmarks (and also total number of grave goods present). Following Tassie & van Wetering (2003) the eight initial categories have been grouped into three social categories based on grave goods and grave architecture 1-4 grave goods = Grade 1, 5-16 grave goods = Grade 2, >17 grave goods = Grade 3. The results show that graves with 1-4 artefacts are the least likely to contain vessels with potmarks; the category 5-16 vessels are over twice as likely to have vessels with potmarks compared to Group 1, whereas rich graves with >17 vessels have better than a 2:1 chance of containing vessels inscribed with a potmark (see Table 1 & Chart 2). This indicates that at KHD the elite segment of society were the most likely to have inscribed vessels in their graves and as such probably controlled the exchange networks and pottery production and saw these items as prestige goods, owning these vessels gave them great kudos.

Since only a small proportion of the graves have been aged and sexed (Tucker 2003),⁴ the analysis of potmarks in relation to these attributes has not been attempted.

The *serekhs* at KHD, the Delta and Southern Levant in relation to Upper Egypt

Three *serekhs* have been found at KHD, one of King Ka/Sekhen in Grave 1008, the other two of King 'Narmer' one in Grave 210 and the other in

⁴ No bioarchaeologist was present at the site prior to 1995 and only limited information was able to be retrieved from the extant skeletal remains from those graves still accessible, also, the low rate of skeletal preservation often made the sexing of individuals difficult and in some case impossible. The two largest graves — 913 and 970 — only contained fragments of skeletal material, as did 1008 and 923, making it impossible to discern the age or sex. Grave 956 is the only elite grave with potmarks to be aged and sexed — adult male, all other elite graves were excavated prior to 1995.

Grave 913.⁵ These kings seem to be instrumental in bringing the East Delta under Thinite control (van Wetering, in prep. b) and also correspond with a period of seemingly intensive Thinite contact with the Southern Levant (see Braun & van den Brink, this volume). The significance of vessels with *serekhs* within graves, excluding the tomb of the king in question, is still very problematic. As stated elsewhere (Tassie & Van Wetering 2003; Van Wetering & Tassie 2003), KHD cannot be considered to have been an important, regional political centre like Tell Ibrahim Awad or Tell Beni Amir. The appearance of vessels with Thinite royal names seems to imply some sort of interaction between the elite at KHD and the Thinite administration. It might be that these vessels represent gifts from these Thinite kings to local chieftains or rulers to align or consolidate their allegiance to the newly established Thinite rule in their area. As such, the contents of these vessels from the Thinite kings may have been used in local feasting ceremonies thereby enhancing the prestige of the local rulers. It is also possible that a vessel with the *serekh* of a Thinite king reached KHD via indirect contact; the direct contact being between the Thinite administration and a regional ruler in the East Delta. This ruler may have redistributed part of the commodities he received from Upper Egypt to his own dependants, like the local chief at KHD who in return provided his overlord with, for example, agricultural goods and fishing-related products procured from the Wadi Tumilat area (van Wetering, in prep. b).

The only other East Delta site where the *serekh* of Ka/Sekhen has been found is TIA, whereas the *serekh* of Narmer is known from MAO, TIA, Ezbet el-Tell/Kufur Nigm (EET) and an unnamed East Delta location. Many other Protodynastic and Early Dynastic *serekhs* have been found in the Delta, such as that of *Iry-Hr*, which has only been found at the settlement of Tell el-Farkha (TEF) (Jucha, this volume). Plain *serekhs* have been found at MAO and TIA, an unreadable *serekh* was also found at MAO, and anonymous ones at EET and MAO. The Double falcon *serekh* is only known from TIA, whereas *Ny-Hr* is known from both TIA and EET. *Hr-Crocodile* is only recorded at MAO, and a Horus? *serekh* from an un-identified East Delta location (van den Brink 2001: 86). At Buto

⁵ Dr Mohammed Salem el-Hangouri (2000) describes both the *serekh* from Grave 210 (a 1.8 × 1.3 m rectangular grave with five pottery vessels) and Grave 913 as being of Narmer, however, on initial examination of these *serekhs* they appear to be unlike any so far recorded for this king. After further research they will be presented at *Origines* 3.

in the West Delta *serekhs* of both *Ny-Hr* and *Hr-Ka* have been found (van den Brink 2001: 86). In the Sinai at el-Beda *serekhs* of Double Falcon and a plain one have been recovered, plain *serekhs* have also been found at Sheikh Zuweid (van den Brink & Gophna 2004). At Site A/137 a Double falcon *serekh* was also found and a Horus? *serekh* was found at Site C/64 (van den Brink 2001: 89-93). In the Southern Levant the *serekh* of Ka was found at Tell Lod, whereas the *serekh* of Narmer has been recovered at Tel Lod, Tel Erani, Tel Halif/Arad, and Tel es-Sakan (van den Brink 2001: 85).

As some of these *serekhs* found in the (East) Delta are not present at Upper Egyptian sites, it has been argued that some of these *serekhs* belong to Lower Egyptian rulers (van den Brink 2001: 83; Köhler & van den Brink 2002; Jiménez Serrano 2001; 2003; van Wetering, in prep. b). Progressively from the late Protodynastic Period and during the early 1st Dynasty, the *serekhs* of Thinite kings appear at Lower Egyptian sites as well as sites in the Southern Levant (van Wetering, in prep. a). The presence of *serekhs* in graves does not prove direct access to royal workshops or even direct royal patronage nor does the palaeography of these *serekhs* indicate that they were all made in central workshops. At least some of these *serekhs* were made in regional administrative workshops under royal authorisation (Van Wetering & Tassie 2003). Although the owning of vessels with a *serekh* may not indicate direct royal contact, it is clear that such vessels or more likely their contents were perceived of as a status symbol (van Wetering, in prep. b): a way to favour and be favoured by *m3't*, be in beneficent aura of the divine personage of the king (Raffaele 2005a). Wengrow (2006: 210-211) suggests that the distribution of *serekhs* constitutes evidence for the insertion of royal agency into the attachment of visible marks of identity placed with the dead. As stated above, the interaction between the Thinite court and the elite of a Lower Egyptian site cannot be inferred from the presence of a vessel with the *serekh* of a Thinite king within the graves of those elite. However, the appearance of these kinds of vessels in Lower Egyptian contexts at a time of Upper Egyptian political expansion is nonetheless an indication of some kind of contact, be it direct or indirect (Köhler, this volume; van Wetering, in prep. b). If it is established that this contact is direct, these objects (be it the vessel engraved with the king's name and/or the contents) may be indicators of friendly political relations or even possibly allegiance to the Thinite administration at a time when Lower Egypt, which most likely consisted of several political units of different sizes, came under the political realm of the Thinite state.

The Stone Vessels with Potmarks at KHD

Two tall cylindrical beakers made of Egyptian alabaster: KHD2005 (Grave 970) and KHD2101 (Grave 890) have been recorded at KHD as having potmarks (Fig. 2). The stone vessels at KHD constitute 12% of the total grave goods recovered from the cemetery (ceramic vessels = 78% and other objects = 10%) and only 2 vessels (0.72%) of the 275 stone vessels were engraved. Grave 890, a mud-lined grave of 3 × 1.5 m, had a total of 34 grave goods, whereas Grave 970, a mud-lined grave of 6 × 4 m, had 85, although this grave showed signs of ancient tomb robbery. The two potmarks found, KHD4004 and KHD4054, are Type Group N – Crosses, with signs and Type Group O – Criss-cross respectively. Both could have been allocated different categories, KHD4004 as it comprises of two signs could have been put in Type Group F – *mr* ~ hoe, whereas KHD4054, because of the way the sign is constructed could have been allocated to Type Group E – *hwt*.

Most of the literature covering potmarks does not include those on stone vessels (van den Brink 1992; Dreyer 1999; Engel 1997; Kroeper 2000), either because there are no engraved stone vessels at the site(s) or because they are regarded as a different genre of early writing. However, a *pr/hwt* sign with a cross in its centre is recorded on a tall shouldered jar (R.B.1655) from Tell el-Samara (Gabr el-Baghdadi, pers comm. 2005). The majority of stone vessels with inscriptions have been found in the royal cemetery at Abydos, Umm el-Qa'ab and in the Step Pyramid Complex galleries of Netjerykhet Djoser.⁶ These, like the ceramic vessels, fall into two main types: engraved or cursive inscription in ink, with the former being the most common (Raffaele 2005a; 2005b). The cursive ink inscriptions, according to Raffaele (2005a), were meant as temporary notation and generally added to the interior of the vessel, as an indication of the name and main titles of the owner or donor and the occasion or ceremony, e.g. the heb-sed. The provenance of the material, vessel size, workshops, producers and temples could also be written in ink. However, the engraved inscriptions, such as the ones on the KHD vessels,

⁶ The vessels found in certain galleries of the Step Pyramid Complex were originally part of 1st Dynasty cultic monuments and 2nd Dynasty royal tombs' assemblages, which were located in the general area where during the early 3rd Dynasty the Step Pyramid complex was constructed (van Wetering 2004: 1074-1077). Some of the stone vessels found in the Step Pyramid galleries are now on display in the Imhotep Museum, Saqqara. A selection of stone vessels and sherds with potmarks is on display in the Egyptian Museum of Antiquities, Cairo and many are recorded in Quibell 1904/1905, particularly pl. 56.

were meant to be permanent, usually engraved on the exterior of the vessel to be fairly visible (Raffaele 2005a). The subjects engraved on the vessels consisted of royal names, names of deities, high officials' names, temples or shrines, palaces, provisions for royal, administrative or religious institutions, and feasts and ceremonies at which the vessels and their contents were offered (Raffaele 2005a).

Given that most inscriptions on stone vessels have been found in royal necropolises (Raffaele 2005a), the finding of two inscriptions on stone vessels in a low ranking cemetery is incongruous with this pattern. However, most of the inscriptions found on vessels in the royal cemeteries are longer than one or two signs (Raffaele 2005b). The inscriptions found on the KHD stone vessels are short, similar to examples found on ceramic vessels that are usually made of only one or two to five signs (van den Brink 1992: 267). For this reason the inscriptions on the KHD stone vessels are grouped with the potmarks engraved on ceramic vessels. If the inscription KHD4054 is read as *hwt* then it may indicate a provision or offering for an administrative building or shrine. The inscription KHD4004 consists of the *mr* and \times signs, if the vessel itself is included as a determinative, then this inscription may indicate the substance once held within – unguent or oil and the inscription may be an abbreviated or early form of *mrht*, which often uses a tall cylindrical beaker stone vessel as a determinative in later formal hieroglyphic writing (Gardiner 1957: 569). As this vessel was found in a group of other tall cylindrical beakers of Egyptian alabaster, the \times may indicate that it was $\frac{1}{4}$ of the total oil or unguent offered or may mean mixed, as in mixed oils. A similar potmark consisting of a *mr* and \times sign was found at Abydos on a stone vessel sherd (CG14442) from a tall cylindrical beaker of Egyptian alabaster, although on this example there were traces of black pigment in the inscribed signs (Quibell 1904/1905: pl. 56).

The Potmark Corpus

For consistency, the Potmark Type Groups used by Kroeper (2000) at MAO are followed here to present the KHD potmarks (Appendix 4 provides a concordance to the potmark groups used by van den Brink 1992 and his *serekh* typology [van den Brink 2001]). As with Kroeper (2000) the KHD potmarks are not presented in a stylised or abstract form, but rather how they appeared on the vessels. The ordering of potmarks, not in a chronological sequence, but in groups of like potmarks is done purely

for ease of presentation and to give an ordered overview of the signs found at KHD (see Appendices).⁷

The growing corpus of potmarks from both Upper and Lower Egypt (including the oases and deserts) is providing valuable insights into the early development of writing in Egypt. The corpus of potmarks from KHD adds to this in a minor way with a few unique signs, as well as known signs, in the mortuary context of a small-scale agricultural community. To allow for full use of the KHD material in current research, the database of the KHD potmarks includes contextual information which is attached as an Appendix to this study. However, due to space limitations, the potmarks are not shown to scale, although the exact measurements of the individual potmarks are given in the contextual information (Appendix 2).

Regional Inter-site Analysis

The comparative analysis⁸ of the KHD potmarks has been conducted mostly with MAO, the nearest contemporary cemetery to KHD with a published corpus of potmarks (Kroeper 2000). Continuing research into comparisons with the potmarks from mortuary contexts at TIA, EET, TEF, Minshat Ezzat (MEZ), Tell el-Samara (TES), and Tell el-Daba'a/Qanan (TDQ), is helping to contextualise the KHD potmarks into a regional perspective.⁹ As part of this ongoing research, the KHD potmarks are not only being compared to East Delta cemetery sites but also to those from both large urban centres¹⁰ and smaller villages¹¹ in other parts of Egypt, to discern whether a distribution pattern is apparent.

⁷ The majority of the potmark drawings were completed by Bram Calcoen, with additional ones added by Aloisa de Trafford, Annette Kjølby, G.J. Tassie and Joanne M. Rowland. At the time of writing only some of the potmark drawings and photographs from pre-1995 had been supplied by Mohammed Salem El-Hangouri. The representations of the potmarks are kept in a registration book at a scale of 1:1 along with the contextual information stored in a database. The Kafr Hassan Dawood system of registering finds consists of a four-digit number preceded by the site code KHD. All pottery vessels are numbered from KHD0001-0999, potsherds from KHD1000-1999, stone vessels and sherds from KHD2000-2999, small finds from KHD3000-3999 and potmarks from KHD4000-KHD4999.

⁸ As all the KHD potmarks are from a mortuary context, for the time being the comparative analysis has mainly been carried out with other cemetery sites in the East Delta, particularly MAO, which has 422 early graves excavated (Kroeper & Wildung 1994; 2000).

⁹ The authors would like to thank Salem G. El-Baghdadi (MEZ, TES & TDQ), Gaëlle Bréand (Adaïma) and Mariusz Jucha (TEF) for their invaluable help in providing unpublished information on the potmarks from their sites.

¹⁰ Large urban centres: This-Abydos (Umm el-Qa'ab cemetery), Memphis (Saqqara cemetery), Nekhen [Hierakonpolis], and el-Zawayda *South Town* [Naqada].

¹¹ Smaller farming villages: el-Adaïma as well as settlements and cemeteries in the Badari region.

There is, to a large extent, a correspondence in types of potmarks found at KHD and those found at MAO, although there is less variety and quantity within the KHD type groups. At KHD, the numerical appearance of signs per potmark is in concordance with the figures found at MAO (Kroeper 2000: 215), however, the Thinite corpus of van den Brink (1992: 271) differs significantly from the figures from both MAO and KHD (see Chart 3). The distribution of potmarks on various types of ceramic vessel types correlates well with the potmark distribution amongst vessel types at MAO (Kroeper 2000: 214-5) and also in the wider context (van den Brink 1992: 69), where the highest percentage was found on elongated storage “wine” jars, followed next by the ovoid storage “beer” jars, with the other types of vessels having much smaller percentages. Only one of Kroeper’s (2000) *serekh* type vessels was found at KHD and this was grouped with the elongated storage “wine” jars. This vessel, KHD0070, was found in Grave 1008 and is a large Type III storage jar, with scollop decoration around its shoulder and a pronounced flaring rolled rim (van den Brink 1996: fig 3: 17) and an incised *serekh* containing the name of King Sekhen (Ka) in the lower compartment (van den Brink 2001: typology no. 10.b.1-2). This jar is comparable to a jar found at Helwan dated to Naqada IIIB (van den Brink 1996; 2001; Saad 1947), which places it at the end of the late Protodynastic period. In Grave 1008 another three potmarks were found, one on the same vessel and two others on separate vessels. These are the only four potmarks found dating to the Naqada IIIB period at KHD and this concurs with the findings of Kroeper (2000: 215) that there was an increase in the amount of potmarks and vessels with potmarks in the Naqada IIIC/1st Dynasty period. At MAO, only one of the elite graves from the Naqada IIIC period was found not to contain any vessels with potmarks (Rowland 2003), which again correlates well with the KHD findings.

Some of the potmarks that are made up of a *hwt* sign and one or more additional signs (KHD4035, KHD4042) seem to represent place-names, and of these, the ones whereby a *hwt* sign is coupled with a fish sign might point at Delta localities (Kroeper 2000: 188, 208-209). As many Delta estates/sites are attested as having a fish sign in their name, at least as early as the Old Kingdom (Bietak 1975: 149-177; Kaplony 1981) it may well indicate the place of origin of the vessel or a regional redistribution centre (Kroeper 2000: 216). As most of the potmarks were incised before firing, the place of origin is more likely indicated, rather than a regional redistribution centre (unless the place of origin was such a centre), for this would imply that certain vessels were produced at a site with

the express intention of naming the large nodes of redistribution, rather than place of origin.

Potmarks with a fish sign and a *hwt* sign have been found at several East Delta cemetery sites: four at KHD (KHD4000, 4034, 4051, 4058), nine at MAO (Kroeper 2000: 208), one at EET (van den Brink, pers comm. 2005), at least two at MEZ (el-Baghdadi 2003: 145) and another two at TES (el-Baghdadi, pers comm. 2005). Similar groups of signs are also mentioned by van den Brink (1992) in his index (Group XXVI) and the provenance (van den Brink, pers comm. 2005)¹² of these vessels may well indicate that this kind of potmark did indeed represent a (East) Delta place-name. A few of the *hwt* and fish potmarks were found at Abu Roash, which would correspond with an identification of Abu Roash as a distributive node in the transport network between Delta and Valley centres (van Wetering & Haanen 2002; van Wetering & Tassie 2003: fig. 3). Of the fish + *hwt* potmarks found in the Nile Valley, most come from the Memphite region (primarily the elite cemetery at North Saqqara, with smaller amounts found at Abusir, Tura and Tarkhan near the Faiyum) with a lesser amount from Abydos (royal cemetery at Umm el-Qa'ab). This distribution pattern is in accord with the large royal administrative centres acquiring or appropriating goods, particularly wine and other foodstuffs originating from (East) Delta localities to supply their feasting (Hayden 1996: 127-46; Sherratt 2002: 69-70; also see Jiménez Serrano 2002 for early Egyptian festivals) and redistribution requirements. Also, the absence of this type of potmark from the corpus of about 900 potmarks from the small agricultural community of Adaima in Upper Egypt (Bréand, pers comm. 2005) would seem to support this distribution pattern: that the large royal administrative centres were the final destination of goods from the Delta, rather than smaller Upper Egyptian communities having direct access.

As would be expected (Renfrew & Bahn 1991: 307-338), a large proportion of these *hwt* and fish potmarks have been discovered at the places of origin: (East) Delta localities and their regional redistribution nodes. Outside of the Delta these potmarks are only found in the Memphite region, the main royal residence and administrative centre of early Egypt (van Wetering 2004: 1055) and to a lesser extent Abydos. The preliminary pattern that is emerging is a multi-modal pattern, which indicates

¹² The authors would like to thank Dr. E.C.M. van den Brink for providing us with detailed information concerning the provenance of several potmarks listed in his corpus (van den Brink 1992).

these items were transported by riverine vessels — a much more efficient distribution method over long distances — rather than down-the-line overland exchange. That the majority of potmarks have been found engraved on elongated storage “wine” jars seems to indicate that the contents of these types of vessels were considered important, even prestige goods by the royal administration. If, as indicated by residue analysis (Hartung 2002: 437; Zohary & Hopf 2000: 157), some of these types of vessels did indeed contain wine, it may indicate that the (East) Delta was a wine producing area or redistribution centre for wine from the Levant (Tassie *et al.*, in prep.). The wine and to a lesser extent beer may have been a significant component of funerary (and other) rituals, with some being consumed during the rites and others placed in the grave.

These transactions between the (East) Delta sites and the large administrative centres may well have been part of a system to reinforce allegiances, and as such a crucial part in the formation of the state. The ongoing regional analysis is looking into the possibility of identifying a distribution pattern of this type of potmarks at cemetery sites in the East Delta. It might be possible to identify the ancient name (or at least the signs) of certain Lower Egyptian sites. Tentatively, the presence at KHD of these place-name potmarks in relation to MAO seems to point at: [1] a limited access for the majority of the KHD inhabitants [burials] to goods from outside their locality,¹³ and [2] regional goods exclusively directed at the elite/high status [graves] during a limited time frame — late Protodynastic until the early 1st Dynasty.¹⁴

Potmark and Early Palaeography Discussion

Several of the signs that constitute the potmarks are recognisable as early forms of formal writing (Hassan 1983). In the KHD potmark corpus, these signs are: *pṛt* / *ḥwt* – Type Groups B, C and D (Gardiner sign list O1), *ḥwt* — Type Group E (O6), *mr* – Type Group F (U6), *k3* – Type Group G (D28), *niwt* – Type Group H (O49), × crossed sticks – Type Group N (Z10), *nṯr* – Type Group U (R8), and n, a cattle hobble –

¹³ However, it is uncertain whether the stone vessels found at KHD were made locally with the raw materials transported to the site or the finished vessels were imported, so this assumption is limited to pottery and their contents.

¹⁴ However, against this argues the fact that more elite/high status burials were investigated in the central part of the cemetery by the local SCA prior to 1995 and the data from these burials, including the potmarks, although now available, have not yet been analysed due to time constraints (see note 3).

Type Group V (V20). Although these signs cannot be fully understood yet, progress in this area is continually being made (Kaplony 1963; 1968; Kahl 1994; 2001a; 2001b; Kahl *et al.* 2002; 2003; 2004; Regulski, this volume). This work is not attempting to interpret all of the potmarks, but to present the KHD potmarks for addition into the growing corpus, so that philologists and palaeographers can use the contextualised material to help better understand this important area of the study into Egyptian state formation.

Many of the signs consist of one sign or abstract strokes, although up to five signs are also recorded (van den Brink 1992: 267, and see chart 3), however, longer inscriptions are also recorded on the vessels (Kroeper 2000: 188). These marks on the vessels can be divided into at least three categories (see below), with one of the categories being preformal hieroglyphs.¹⁵ Similar preformal hieroglyphic signs can also be found on jar sealings and seal impressions, indicating that this category of signs were indeed part of the same writing system.

It appears from the KHD potmarks and other potmarks that there are at least three distinct types of signs:

- 1) Preformal hieroglyphs
- 2) Accounting marks
- 3) Potters marks

The preformal hieroglyphs, such as Type Groups A, B, C, D, E, F, G, H, N, U and V appear to be precursors of signs that go on to become formal hieroglyphic signs. The single and multiple strokes and dots, Type Groups Q, R, S, and T, particularly when applied to the rim or base of the vessel, may be accounting marks indicating the number of vessels made, whereas the thumb and nail prints on the rims of Type Group J, may just be potters marks. Kroeper (2000: 216) conducted statistical analysis examining whether there were any correlations between the number of strokes and dots and the size and volume of the vessels and could find no parallels. The latter category, thumb, nail and finger prints are not to be confused with finger prints that are often found on the body of the vessel, impressed there during the course of the manufacture of the vessel. These production marks have been found, generally on the outside of

¹⁵ The use of the term preformal hieroglyphs is following the term first defined by Regulski this volume. These signs can also be defined as informal or nonstandardised as not all of these signs go on to become hieroglyphs, but to keep consistency and create conventions Regulski's term has been maintained throughout.

the shoulder or inside where the rim meets the shoulder of the vessel on ovoid storage or “beer” jars, such as KHD0010 (outside) and KHD0012 and KHD0014 (inside). These marks appear to be where the potter smoothed the applied rim to the body of the vessel and failed to blend this application smoothly as these were rough ware vessels.

As both the abstract strokes and dots and potters marks appear with preformal writing inscriptions it cannot be said that the preformal hieroglyphs developed out of these abstract signs. Kroeper (2000: 188) concurs that the preformal writing on the vessels was a precursor to the formal hieroglyphic writing system of the Early Dynastic and Old Kingdom.

Synthesis and Interpretation

One of the common traits of emerging pristine states (apart from the Incas) is the development of writing, it is not merely a manifestation of the social order, but is embedded within it (Postgate *et al.* 1995: 459). The emergence of these early writing systems were primarily utilitarian, administrative in nature; although this is not to negate that some components originated in ceremonial symbols and that writing was also used to display the agenda of the ruling class (Postgate *et al.* 1995: 479). The individual logograms (where each symbol represents a complete word or idea), which were often kept in the more developed hieroglyphic writing system, would often represent one whole word. These writing systems were initially not able or designed to represent continual spoken dialogue, rather, the representation of linguistic syntax was a later adaptation of its original structures and function, which related more closely to other non-linguistic modes of communication (Wengrow 2006: 203). Although some of the potmarks cannot be considered as true writing as they do not seem to correspond to a segment of language, others (preformal writing) should be seen as early writing and not just as a system of symbols (Hoffman 1979: 291-292; Petrie 1900: 29-32; Postgate *et al.* 1995: 459).

A particularly noteworthy potmark is KHD4005, which represents a crocodile/lizard. Comparative crocodile potmarks have been found on stone vessels (Kaplony 1968: 12-14) and on ceramic vessels (van den Brink 1993: 294, Group XXXIV-8). On the stone vessels, the crocodiles are depicted from above, whereas the KHD potmark, as well as the one shown by van den Brink depict the crocodile from the side. The size of the KHD potmark makes it more of a decoration than a potmark, the size of the potmark in the van den Brink corpus is not known. Another seemingly unique potmark is KHD4008, which might be identified as a

temple-sign (see Fig. 3.B). There is no similar sign at MAO nor in a wider context (van den Brink 1992), however, faience models in the form of, and depicting temple structures were found within the temple deposits at TIA and these resemble the KHD potmark (van Haarlem 1998: 183, fig. 18-c, fig. 19-a). The shield-like potmark (KHD4071) is extraordinary, as it is almost as large as the elongated storage or “wine” jar it is engraved on. To the best of our knowledge, it is the largest potmark ever found in early Egypt. The large crocodile¹⁶ and shield-like potmarks might be more decorative than actual logograms. Two other remarkable potmarks consist of the *k3* sign, with in the one case a macehead [KHD4016] and in the other case, two additional signs [KHD4021], which might represent a name *Iy-k3* (Kaplony 1963: 1108, Abb. 113) although the sign within the *k3* sign is identified by Kroeper (2000: 210) as a *ntr* sign, which might then represent *ntr-k3*, which could possibly be read as divine soul. The only macehead potmark at KHD is KHD4016, whereas this sign is more frequent at MAO (Kroeper 2000: 208-209).

Amélineau (1899: 199-200) and de Morgan (1897: 165) thought that potmarks indicated the contents of vessels. However, as potmarks were usually applied before firing in the ceramic workshops and similar potmarks are found on different vessel types it seems unlikely that the engraved type indicated the contents of the vessel (*contra* Emery 1949: 154-156). At MAO the residues in 27 pottery vessels with potmarks were examined and no correlation could be established between the two (Kroeper 2000: 216). Dreyer (1993) suggested that the potmarks denoted estates, indicating the provenance of the vessels and their contents. Van den Brink (1992: 276) reviewed many of the previous suggestions as to the possible meaning of potmarks (ownership marks, potters marks, contents description, indicators of the wine inside the vessel) and suggested that a single sign might suffice to convey basic information, with further signs adding more details. Wengrow (2006: 236-239) seems to make no distinction about how the potmark was applied to the vessel and suggests that they are all indications of the place where the produce was made and the type and quality of produce the vessel held (and sometimes of the donor).

However, the potmarks on ceramic vessels can only truly be understood if divided into two main types: engraved and cursive inscriptions in ink, with the former being the most common. The cursive ink inscriptions

¹⁶ During Prof. Hassan’s excavations at Naqada in the early 1980s several Naqada I pottery vessels were found with crocodile signs inscribed on them.

were a more temporary notation and need not have been applied at the same place of origin as the vessel. These types of inscriptions may indicate the name and main titles of the owner or donor and the occasion: feast or ceremony, at which the vessel was offered. Ink tax marks were also added, primarily to cylindrical vessels in the Protodynastic and the 1st Dynasty (Kaplony 1963). The engraved inscriptions fall into two sub-categories, those applied before firing, which were meant as permanent markers and those inscribed after firing, which may have acted like the ink inscriptions. The potmarks found on imported wares were usually always of the kind engraved after firing (van den Brink 1992: 276; Kroeper 2000: 216). Those potmarks engraved before firing may indicate the provenance of the material, amount of vessels made, workshop, producer, estate, royal name, name of a deity, high official's name, name of a temple, shrine, or palace, or provisions for royal, administrative or religious institutions, and feasts and ceremonies at which the vessels and their contents were offered.

Although Postgate *et al.* (1995: 465) proposed that the potmarks became more standardised during the 1st Dynasty, indicating that the centralised administration was responsible for the collection and redistribution of commodities (also see van den Brink 1992: 275, note 1; and Wenigrow 2006: 251), it seems unlikely that the royal administration was responsible for applying all of the various potmarks. The standardisation of the regional economic-administrative systems' potmarks more likely occurred during the course of regular economic interaction between the national and local elites. The rarity and importance of vessels with potmarks on made them so valuable that they were placed within the graves of individuals that owned them or offered as part of the mortuary ritual to these individuals. Although some of the potmarks would have been produced by the central administration, others were produced by the local elites, for regional and long distance trade, for accounting of taxable percentages for the royal administration, and to identify the donors of the offerings at graves, shrines or temples. Once the full meanings of the potmarks are better understood, particular areas of importance, such as how the economy, administration and trade relations functioned during the early state will be better understood. This area of study can therefore elucidate many of the processes that contributed to the rise of the early state and went on to maintain it.

Future analysis of the distribution of all the potmarks found to date is essential, using database and Geographic Information System (GIS) technology to map the spatial distribution of the potmarks found throughout

Egypt and record the contextual and palaeographic information. Although intra-site maps have been constructed (Bréand, pers comm. is in the process of constructing one for Adaïma; Rowland 2003 has completed one for KHD), these cannot show the extent of the various potmarks distribution throughout Egypt. The establishment of a multi-disciplinary Potmarks Research Group at the International Conference on Predynastic and Early Dynastic Egypt, Origines II at Toulouse is a much needed step in the right direction to analyse potmarks, not only within the site perspective (Kroeper 2000), but also within the wider context (both Upper and Lower Egypt) and time range (Predynastic Period to Middle Kingdom).

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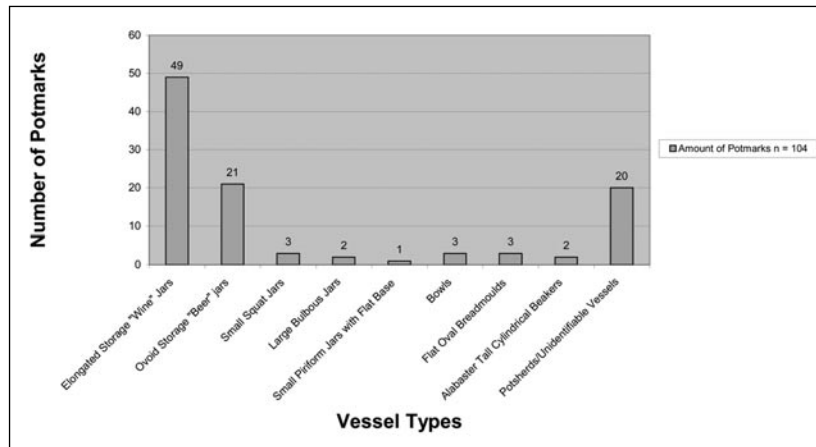


Fig. 1. Distribution of Potmarks on the various types of vessels found at KHD.

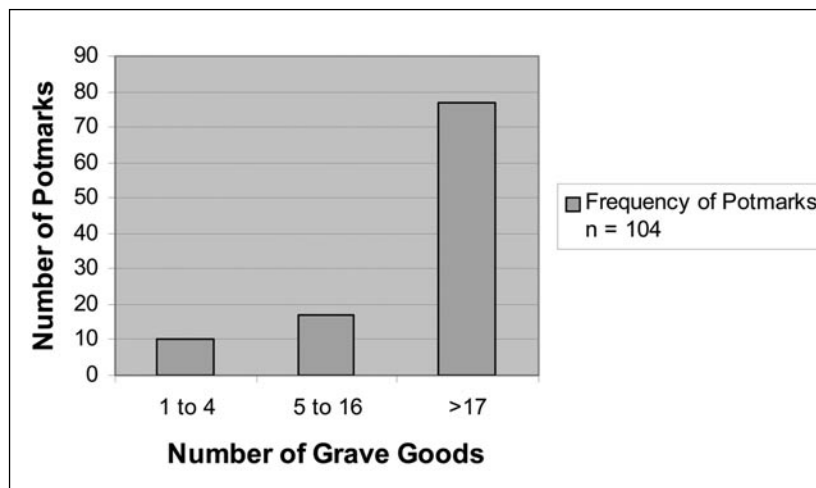


Fig. 2. Distribution of potmarks according to wealth/status inferred from total number of grave goods found per grave.

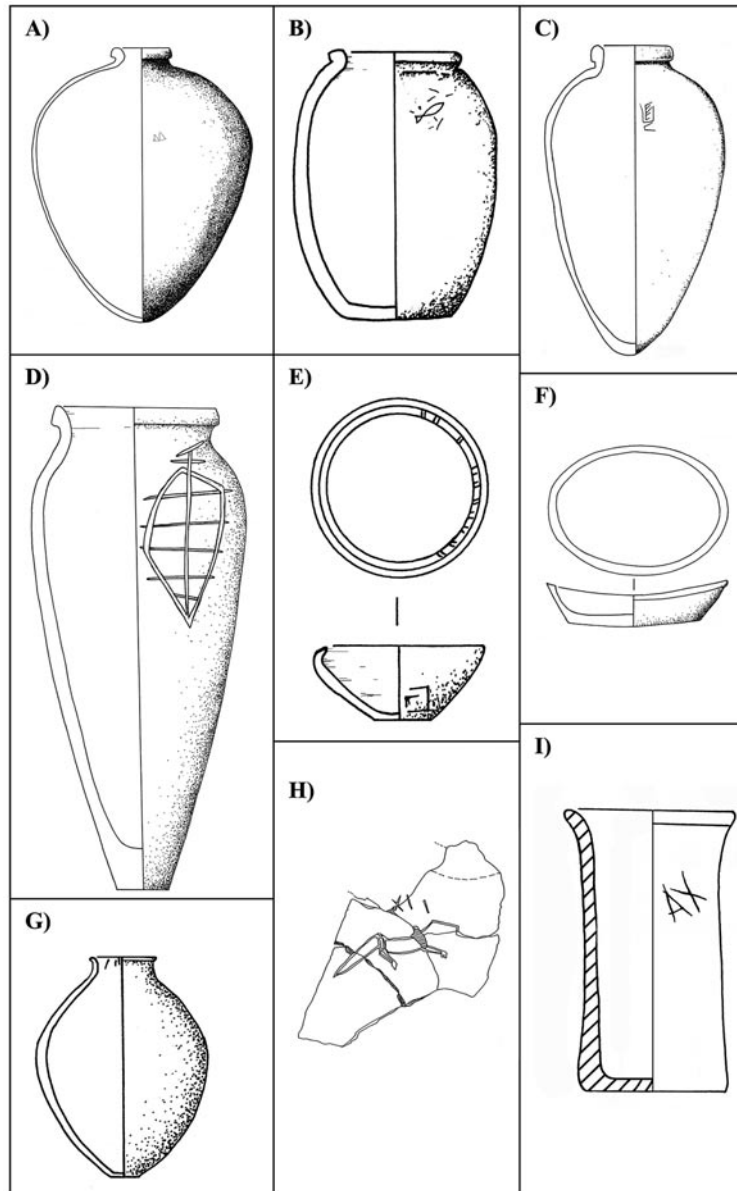


Fig. 3. Types of vessels with potmarks. A) Large bulbous jars. B) Small squat jars. C) Ovoid storage "beer" jars. D) Elongated storage "wine" jars. E) Bowls. F) Flat oval bread moulds. G) Small piriform jars with flat bases. H) Potsherds/unidentifiable vessels. I) Egyptian alabaster tall cylindrical beakers. Drawn by Subhadra Das, drawings not shown to scale.

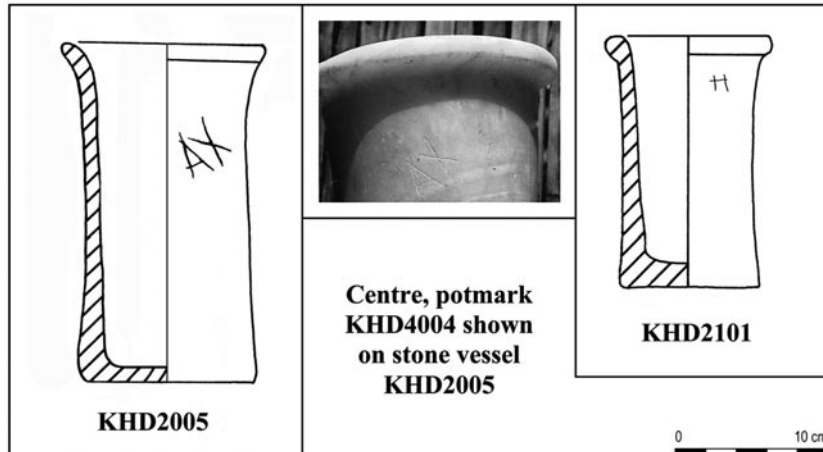


Fig. 4. Stone vessels with potmarks. Drawn by Subhadra Das.

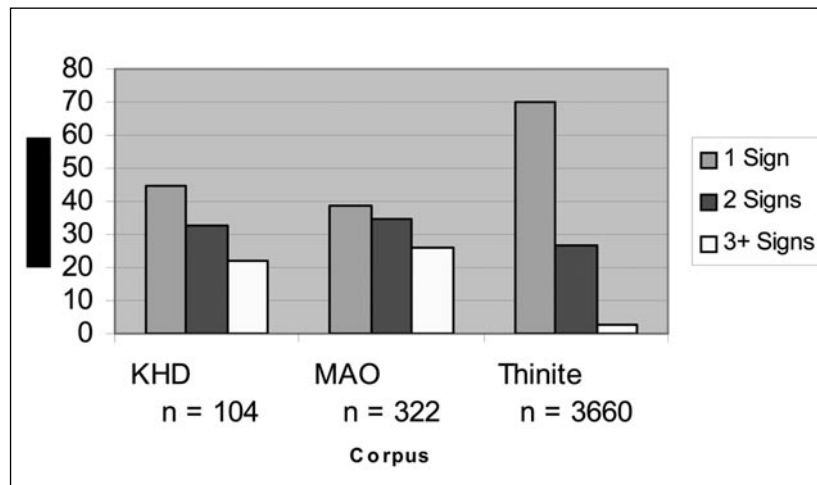


Fig. 5. The numerical appearance of signs per potmark.
 For the KHD (3 signs = 15%; 4+ signs = 7%) and MAO (3 signs = 17%; 4+ signs = 9%) corpora the 3 and 4+ signs have been combined for comparing them with a mid-range of van den Brink's (1992) corpus (1 sign = 60%-80%; 2 signs = 15%-35%; 3 or more signs = up to 5%).

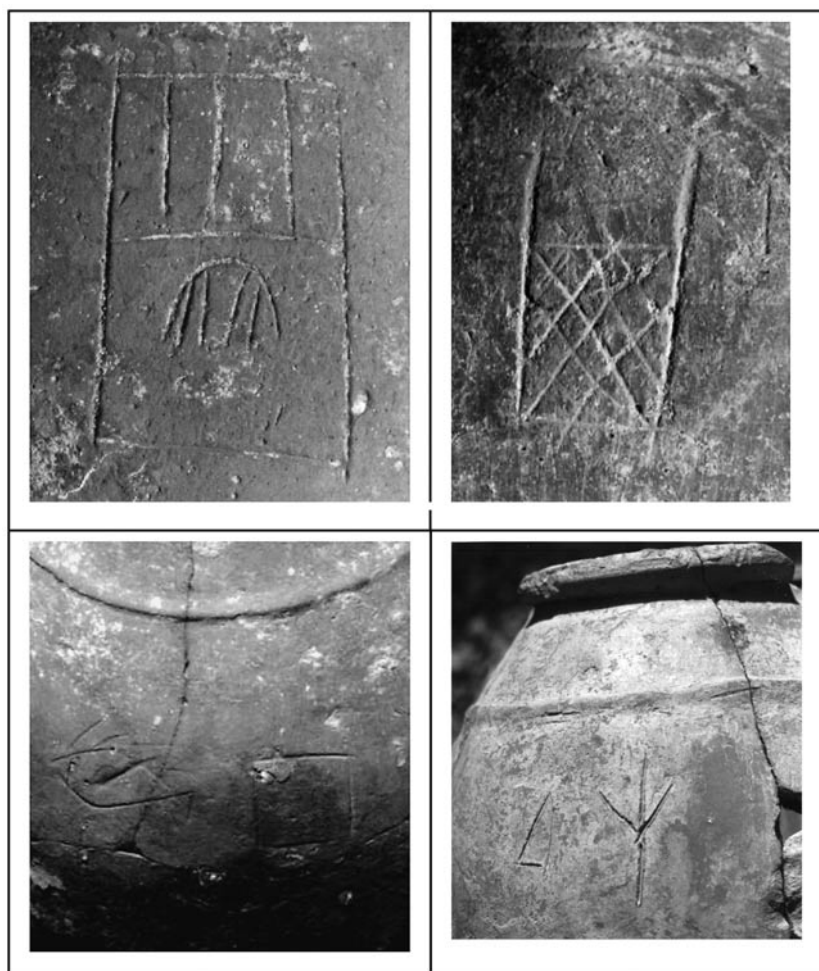


Fig. 6. Various ceramic potmarks, not to scale.

	Group 1 (1-4 Grave Goods)	Group 2 (5-16 Grave Goods)	Group 3 (>17 Grave Goods)
Number of Graves/ with Potmarks	258: 7 (2.7 %)	268: 16 (5.9 %)	25: 15 (60 %)
Total Number of Potmarks per Group	10 (9.7 %)	17 (16.5 %)	77 (73.8 %)
Number of Graves with More than one Inscribed Vessel	1 (14 % of graves with potmarks)	1 (6.2 % of graves with potmarks)	13 (86.6 % of graves with potmarks)

Table 1. Numbers of graves with potmarks according to wealth inferred by number of grave goods. In the first row of the chart, if the graves (201) with no grave goods are added to the Group 1 figure of amount of graves (258 + 201 = 459) the percentage with potmarks goes down even further to 1.5 %, as the number with potmarks (7) does not change.

POTMARKS FROM THE CEMETERY AT KAHR HASSAN DAWOOD

KHD POTMARKS TYPE GROUPS					
Type Group A: Sweats		Type Group B: pr / s ac, with fish sign			
KHD 4010	KHD 4053	KHD 4003	KHD 4034	KHD 4051	KHD 4050
Type Group C: pr		Type Group D: pr with signs			
KHD 4063	KHD 4035	KHD 4042	KHD 4059		
Type Group E: pr					
KHD 4006	KHD 4008	KHD 4028	KHD 4076	KHD 4077	KHD 4079
Type Group F: sar - hoe		Type Group G: s with signs		Type Group H: s with signs	
KHD 4031	KHD 4016	KHD 4024	KHD 4049	KHD 4041	KHD 4052
Type Group I: Angles, triangles, and segments					
KHD 4026	KHD 4047	KHD 4055	KHD 4087	KHD 4100	
Type Group J: impressions & rim marks			Type Group K: Plant and glass-like signs		
KHD 4059	KHD 4087	KHD 4081	KHD 4023	KHD 4024	KHD 4025
Type Group L: (cont.)		Type Group M: Circle & circular		Type Group N: Animal and animal-like signs	
KHD 4093	KHD 4096	KHD 4011	KHD 4005	KHD 4017	
Type Group O: Crosses, with signs (two sticks crossed?)					
KHD 4082	KHD 4084	KHD 4028	KHD 4044	KHD 4045	KHD 4057
Type Group P: Criss-cross					
KHD 4032	KHD 4039	KHD 4054	KHD 4090	KHD 4098	
Type Group Q: Harpoons & hooks		Type Group R: Z strokes / dots			
KHD 4038	KHD 4015	KHD 4039	KHD 4040	KHD 4056	KHD 4064
Type Group Q: (cont.)		Type Group R: 3 strokes / dots			
KHD 4021	KHD 4094	KHD 4039	KHD 4018	KHD 4033	KHD 4061
Type Group R: (cont.)		Type Group S: 4 strokes / dots			
KHD 4073	KHD 4082	KHD 4084	KHD 4095	KHD 4022	KHD 4036
Type Group S: (cont.)		Type Group T: More than 4 strokes/dots			
KHD 4065	KHD 4087	KHD 4093	KHD 4007	KHD 4038	KHD 4043
Type Group T: (cont.)		Type Group U: sar - Temple flag			
KHD 4065	KHD 4069	KHD 4019	KHD 4029	KHD 4103	KHD 4099
Type Group V: Cattle Hoofs, with and without other signs					
KHD 4037	KHD 4093	KHD 4092	KHD 4095	KHD 4096	
Type Group W: Undefined signs		Type Group X: Fragmentary signs			
KHD 4071	KHD 4001	KHD 4012	KHD 4083	KHD 4014	
Type Group X: (cont.)					
KHD 4029	KHD 4027	KHD 4046	KHD 4060	KHD 4101	KHD 4102

Table 2. Corpus of potmarks from KHD.

Potmark No.	Placement on vessel	Type of Vessel	Grave No.	Height & Width of Potmark in mm	
KHD4000	Shoulder	Wine Jar	823	H. 49	W. 35
KHD4001	Body	Beer Jar	1008	H. 18	W. 35
KHD4002	Body	Wine jar	913	H. 40	W. 20
KHD4003	Body	Wine Jar	970	H. 23	W. 30
KHD4004	Body	Alabaster TCB	970	H. 28	W. 27
KHD4005	Shoulder	Wine jar	970	H. 66	W. 109
KHD4006	Body	Beer Jar	1005	H. 43	W. 37
KHD4007	Body	Beer Jar	956	H. 28	W. 22
KHD4008	Body	Wine Jar	923	H. 61	W. 35
KHD4009	Neck	Wine Jar	923	H. 41	W. 21
KHD4010	Body	Scalloped wine jar	1008	H. 79	W. 50
KHD4011	Body	Scalloped wine jar	1008	H. 38	W. 45
KHD4012	Body	Wine jar	970	H. 44	W. 46
KHD4013	Body	Wine jar	970	H. 28	W. 26
KHD4014	Body	Wine jar	970	H. 25	W. 26
KHD4015	Body	Beer Jar	956	H. 22	W. 14
KHD4016	Body	Wine jar	970	H. 55	W. 52
KHD4017	Body	Squat jar	927	H. 30	W. 27
KHD4018	Inside rim	Beer jar	970	H. 5	W. 9
KHD4019	Shoulder	Squat jar	968	H. 8	W. 12
KHD4020	Body	Wine jar	970	H. 47	W. 67
KHD4021	Body	Beer jar	1011	H. 31	W. 21
KHD4022	Body	Wine Jar	970	H. 66	W. 70
KHD4023	Shoulder	Wine jar	970	H. 75	W. 75
KHD4024	Body	Wine jar	970	H. 53	W. 60
KHD4025	Body	Wine jar	970	H. 65	W. 45
KHD4026	Shoulder	Large bulbous jar	970	H. 40	W. 62
KHD4027	Shoulder	Large bulbous jar	970	H. 32	W. 40
KHD4028	Body	Wine jar	913	H. 30	W. 30
KHD4029	Shoulder	Beer jar	923	H. 15	W. 15
KHD4030	Body	Wine jar	913	H. 45	W. 15
KHD4031	Base	Wine Jar	1008	H. 29	W. 35
KHD4032	Body	Beer Jar	913	H. 28	W. 22
KHD4033	Bottom	Oval breadmould	913	H. 23	W. 17
KHD4034	Body	Wine jar	913	H. 41	W. 56
KHD4035	Body	Wine jar	913	H. 49	W. 45

POTMARKS FROM THE CEMETERY AT KAHR HASSAN DAWOOD 229

Potmark No.	Placement on vessel	Type of Vessel	Grave No.	Height & Width of Potmark in mm	
KHD4036	Body	Wine jar	913	H. 51	W. 26
KHD4037	Body	Wine jar	913	H. 46	W. 43
KHD4038	Body	Wine jar	913	H. 47	W. 26
KHD4039	Body	Beer jar	913	H. 17	W. 6
KHD4040	Body	Wine jar	913	H. 38	W. 20
KHD4041	Body	Wine jar	913	H. 26	W. 57
KHD4042	Body	Wine jar	913	H. 50	W. 80
KHD4043	Body	Wine jar	913	H. 90	W. 77
KHD4044	Body	Beer jar	913	H. 20	W. 14
KHD4045	Below rim	Beer jar	913	H. 6	W. 5
KHD4046	Body	Beer jar	970	H. 4	W. 25
KHD4047	Body	Wine Jar	1027	H. 55	W. 11
KHD4048	Body	Wine jar	1024	H. 23	W. 12
KHD4049	Shoulder	Wine jar	1024	H. 26	W. 47
KHD4050	Body	Wine jar	913	H. 31	W. 9
KHD4051	Body	Wine jar	913	H. 30	W. 35
KHD4052	Shoulder	Beer jar	913	H. 20	W. 31
KHD4053	—	Wine Jar	913	—	
KHD4054	Under rim	Alabaster TCB	890	H. 11	W. 12
KHD4055	Shoulder	Beer jar	299	H. 42	W. 44
KHD4056	Base	Beer jar	890	H. 67	W. 31
KHD4057	Body	Beer jar	1034	H. 41	W. 18
KHD4058	Below shoulder	Wine jar	823	H. 52	W. 56
KHD4059	Rim	Wine jar	1021	H. 17	W. 47
KHD4060	Body	Wine jar	888	H. 53	W. 55
KHD4061	Bottom	Oval breadmould	970	H. 23	W. 24
KHD4062	Base	Oval breadmould	970	H. 15	W. 18
KHD4063	Shoulder	Wine jar	970	H. 15	W. 10
KHD4064	Shoulder	Beer jar	913	H. 47	W. 16
KHD4065	Shoulder	Beer jar	913	H. 30	W. 29
KHD4066	Shoulder	Beer jar	923	H. 58	W. 30
KHD4067	Rim	Piriform jar	1014	H. 4	W. 10
KHD4068	Lower body	Bowl	184	H. 14	W. 14
KHD4069	Body	Squat jar	111	H. 69	W. 59
KHD4070	Body	Beer jar	186	H. 83	W. 57
KHD4071	Body	Wine jar	143	H. 330	W. 150

Potmark No.	Placement on vessel	Type of Vessel	Grave No.	Height & Width of Potmark in mm	
KHD4072	Body	Wine jar	123	H. 17	W. 16
KHD4073	—	—	166	H. 18	W. 29
KHD4074	—	—	184	H. 12	W. 11
KHD4075	—	—	186	H. 19	W. 22
KHD4076	—	—	210	H. 32	W. 38
KHD4077	—	—	222	H. 19	W. 50
KHD4078	—	—	223	H. 26	W. 56
KHD4079	—	—	229	H. 18	W. 54
KHD4080	—	—	233	H. 21	W. 44
KHD4081	—	—	233	H. 11	W. 26
KHD4082	—	—	233	H. 12	W. 20
KHD4083	—	—	298	H. 27	W. 32
KHD4084	—	—	384	H. 26	W. 11
KHD4085	—	—	551	H. 12	W. 36
KHD4086	—	—	551	H. 18	W. 24
KHD4087	—	—	551	H. 14	W. 40
KHD4088	Body	Wine jar	601	H. 17	W. 39
KHD4089	Body	Wine jar	601	H. 95	W. 80
KHD4090	—	—	716	H. 12	W. 49
KHD4091	Rim	Bowl	184	H. 4	W. 88
KHD4092	Body	Wine jar	834	H. 33	W. 63
KHD4093	Body	Wine jar	834	H. 60	W. 78
KHD4094	Body	Wine jar	834	H. 8	W. 17
KHD4095	—	—	879	H. 15	W. 43
KHD4096	Body	Wine jar	890	H. 66	W. 44
KHD4097	Body	—	142	H. 28	W. 80
KHD4098	Body	Wine Jar	651	H. 13	W. 11
KHD4099	Body	Wine jar	651	H. 38	W. 26
KHD4100	Body	Bowl	956	H. 22	W. 50
KHD4101	Body	—	927	H. 25	W. 88
KHD4102	Body	—	923	H. 115	W. 55
KHD4103	Shoulder	Beer Jar	923	H. 14	W. 11

Table 3. Contextual information for the KHD potmarks.

POTMARKS FROM THE CEMETERY AT KAHR HASSAN DAWOOD 231

Grave	Number of vessels with potmarks on	Number of Potmarks
111	1	1
123	1	1
142	1	1
143	1	1
166	1	1
171	?	?
184	2	3
186	2	2
210	1	1
222	1	1
223	1	1
229	1	1
233	3	3
298	1	1
299	1	1
384	1	1
551	3	3
601	2	2
651	2	2
716	1	1
823	1	2
834	3	3
879	1	1
888	1	1
890	3	3
913	19	23
923	4	6
927	2	2
956	3	3
968	1	1
970	14	19
1005	1	1
1008	3	4
1011	1	1
1014	1	1
1021	1	1
1024	1	2
1027	1	1
1034	1	1

Table 4. Distribution of KHD potmarks amongst the various graves.

KHD Group	MAO Group	Van den Brink Group	KHD Potmarks
A	<i>Serekhs</i> (Tab. 2a)	10.a.1*	4010; 4053
B	<i>Pr/Hwt</i> with fish (Tab. 2a)	XXVI / I	4000; 4034; 4051; 4058 (LX; XII)
C	<i>Hwt</i> (Tab. 2a)	I / II	4063
D	<i>Pr/Hwt</i> with second elements (Tab. 2a)	I	4035 (LXI); 4042 (XII; XIV); 4089 (XII)
E	<i>Hwt</i> ? (Tab. 2b)	II / XVIII	4006; 4008; 4048; 4076; 4077; 4078 (XVIII); 4079;
F	<i>Mr</i> –hoes (Tab. 2c)	XVII	4031
G	<i>kA</i> (Tab. 2b)	III	4016 (XXXVII); 4021 (XI; XXI); 4049
H	with <i>njwt</i> (Tab. 2b)	XXVIII / XXXI	4041; 4052
I	Angles, triangles and segments (Tab. 2b)	XII / XIII / XXXII	4026; 4047; 4055; 4087; 4100
J	Simple impressions / cuts on the lip (Tab. 2c)	N/A	4059; 4067; 4091
K	Plant/like (Tab. 2c)	XLII	4023; 4024 (XII; IV); 4025; 4093; 4096
L	Circle & circular (Tab. 2d)	V	4011
M	Animal/like (Tab. 2b)	XXXIV	4005; 4017
N	Crosses (Tab. 2d)	VIII	4002; 4004; 4028; 4044; 4045; 4057; 4070; 4075; 4086
O	Criss-cross (Tab. 2f)	XLVIII	4032; 4050; 4054; 4080; 4088
P	Harpoons & other hooks (Tab. 2b)	LXXVII	4036
Q	2 strokes or dots (Tab. 2d/e)	XX	4015; 4039; 4040; 4056; 4064; 4068; 4074; 4081; 4094
R	3 lines and/or dots (Tab. 2e)	XXXV	4003; 4007; 4009; 4018; 4033; 4061; 4062; 4066; 4072; 4073; 4082 (XLV); 4084 (XLV); 4085
S	4 lines and/or dots (Tab. 2e/f)	LIV	4027; 4030; 4083; 4097
T	More than 4 strokes and/or dots (Tab. 2f)	N/A	4038; 4043; 4065; 4069 (IV)

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KHD Group	MAO Group	Van den Brink Group	KHD Potmarks
U	<i>nTr</i> (Tab. 2c)	XI / XLVII	4019 (II); 4029; 4099; 4103
V	Single stroke? (Tab. 2d)	VII	4037 (XXV); 4040; 4092 (XXV); 4095; 4098
W	N/A	N/A	4071
X	Fragmentary (Tab. 2f)	N/A	4001; 4012; 4013; 4014; 4020; 4027; 4046; 4060; 4101; 4102

Table 5. A concordance of the published Protodynastic to Early Dynastic potmark corpuses based on van den Brink 1992; 2001 and Kroeper 2000. In the KHD Potmarks column, the numbers in brackets refer to additional signs or alternative readings in the van den Brink Corpus.

* When the potmark was sent electronically the potmark was unfortunately turned upside down, and should rather be categorised under 10.b.1.

