

SOME NOTES ON THE "HIEROGLYPHIC" DEPOSIT FROM KNOSSOS *

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It is generally accepted that in the Protopalatial period (MM IB-MM II), Crete consisted of a number of "polities" that were centred upon the central buildings, which have been found beneath the Neopalatial palaces at Knossos, Phaistos, Malia, and perhaps Petras and Zakro (Fig. 1)¹. The island-wide fire destructions that marked the end of the Protopalatial period (MM IIB) have ensured the preservation of clay documents that testify to the administrative concerns of these centres. The use of two different scripts that possibly denote two different languages in geographically differentiated regions corresponds well with this picture of political fragmentation². Cretan Hieroglyphic was used in North and North-East Crete, in the administration of the centres of Knossos, Malia and Petras, while the palace of Phaistos in the Mesara kept its written administration in Linear A. Each script was associated with a different range of administrative documents,

* ASSA = T.G. Palaima (ed.), *Aegean Seals, Sealings and Administration, Proceedings of the NEH-Dickson Conference of the Program in Aegean Scripts and Prehistory of the Department of Classics, University of Texas at Austin January 11-13, 1989* (Liège 1990).

CHIC = J.-P. Olivier – L. Godart, *Corpus Hieroglyphicarum Inscriptionum Cretae*, (ÉtCrét 30) (Paris 1996).

SM I = A.J. Evans, *Scripta Minoa I. The Written Documents of Minoan Crete with Special Reference to the Archives of Knossos* (Oxford 1909).

PM I = A.J. Evans, *The Palace of Minos at Knossos I* (London 1921).

Minoan Roundel = E. Hallager, *The Minoan Roundel and other Sealed Documents in the Neopalatial Linear A Administration (Aegaeum 14)* (Liège-Texas 1996).

Knossos = D. Evely, H. Hughes-Brock and N. Momigliano, *Knossos. A Labyrinth of History. Papers in Honour of Sinclair Hood*, (Oxford 1994).

¹ J.F. Cherry, "Polities and Palaces: some Problems in Minoan State Formation", in A.C. Renfrew and J.F. Cherry eds., *Peer Polity Interaction and Socio-Political Change (New Directions in Archaeology)* (Cambridge 1986), 19-45.

² I. Schoep, "The Origins of Script and Administration on Crete", *OJA* 18 (1999), 265-276.

some of which are typical of one or the other script: roundels and page-shaped tablets, for example, are associated with Linear A administration, whereas two – and four-sided bars, medallions (unsealed round discs of clay with a perforated tenon) and crescents (crescent-shaped lumps of clay with three sides which are formed around a string) are characteristic of Cretan Hieroglyphic. The recent discovery of an archive containing Cretan Hieroglyphic documents at Petras³ has added two new document types to the already existing corpus: the two-hole hanging nodule and a type that is a combination of a direct object sealing and a hanging nodule.

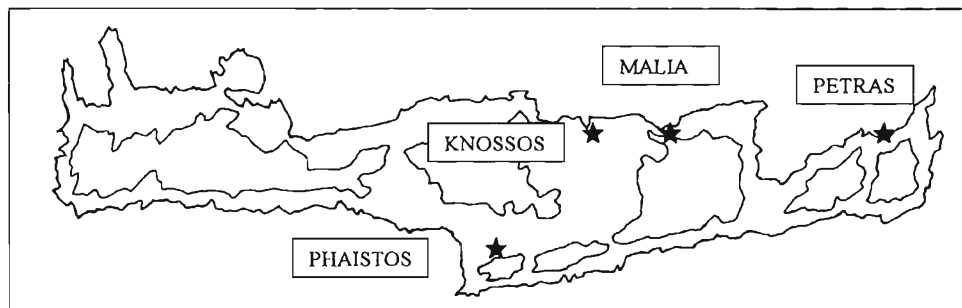


Fig. 1 – Map of Crete showing Protopalatial centres of Knossos, Malia, Phaistos and Petras.

Thus, although the administrations employing respectively Cretan Hieroglyphic and Linear A to keep their administration are clearly differentiated with regards to the script and document types, differences in the composition of the deposits occur between the administrations employing Cretan Hieroglyphic. At Malia, this can be noted for the administration in the palace and in Quartier Mu; furthermore, differences exist between Malia and Knossos and Malia and Petras. In order to shed light on the internal relationships between these three major political centres in the Protopalatial period, this paper will examine whether these differences can be defined as chronological differences or local idiosyncrasies. Therefore all factors that may have influenced the composition of the respective deposits such as chronology, taphonomy (*in situ* or part of a fill), architectural context (central *versus* non-central building) and function of the original deposit must be taken into account.

³ M. Tsipopoulou – E. Hallager, "A New Hieroglyphic Archive from Petras, Siteia", *Kadmos* 35, 1996, 164-167.

TAPHONOMY AND CHRONOLOGY OF CRETAN HIEROGLYPHIC DEPOSITS

Knossos

The majority of the Cretan Hieroglyphic documents from Knossos come from a narrow rectangular space beneath the staircase, which is situated at the northeast end of the "Long Corridor" outside magazines 16-18. More documents have been found in the area of the West Wing: a fragment of a rectangular bar in the "Room of the Lady's Seat"⁴, a medallion and impressed inscription in Magazine 4 and a medallion in Magazine 6⁵. In addition, in the 1901 preliminary report, a few pictographic seals are mentioned from the 13th Magazine which, according to Evans, formed part of a small deposit independent from the main deposit⁶. The medallion from Magazine 6 and the fragmentary bar from Magazine 17 come from a disturbed context⁷. On the same day that the Cretan Hieroglyphic documents were found in magazine 4, a blocked doorway was opened and it is possible that the former were caught in this blocking⁸. It seems fair to argue that the "Hieroglyphic Deposit" in the rectangular space at the northeast end of the Long Corridor with its 102 documents⁹ constitutes the main hoard and that the others were strays, especially since none of the latter can be argued to have been found *in situ*.

Different scenarios may be envisaged regarding the nature of the deposit beneath the staircase, which either constitutes filling material or the remains of a destruction layer. Since during excavation, the appearance of the first documents coincided with the appearance of the east-west cross wall and the north-south wall, which divides the Corridor into two compartments, it may be assumed that they were found relatively high up. If

⁴ D. Evely, "On the Tablets from the Room of the Lady's Seat at Knossos", *Kadmos* 32, 1993, 61-66.

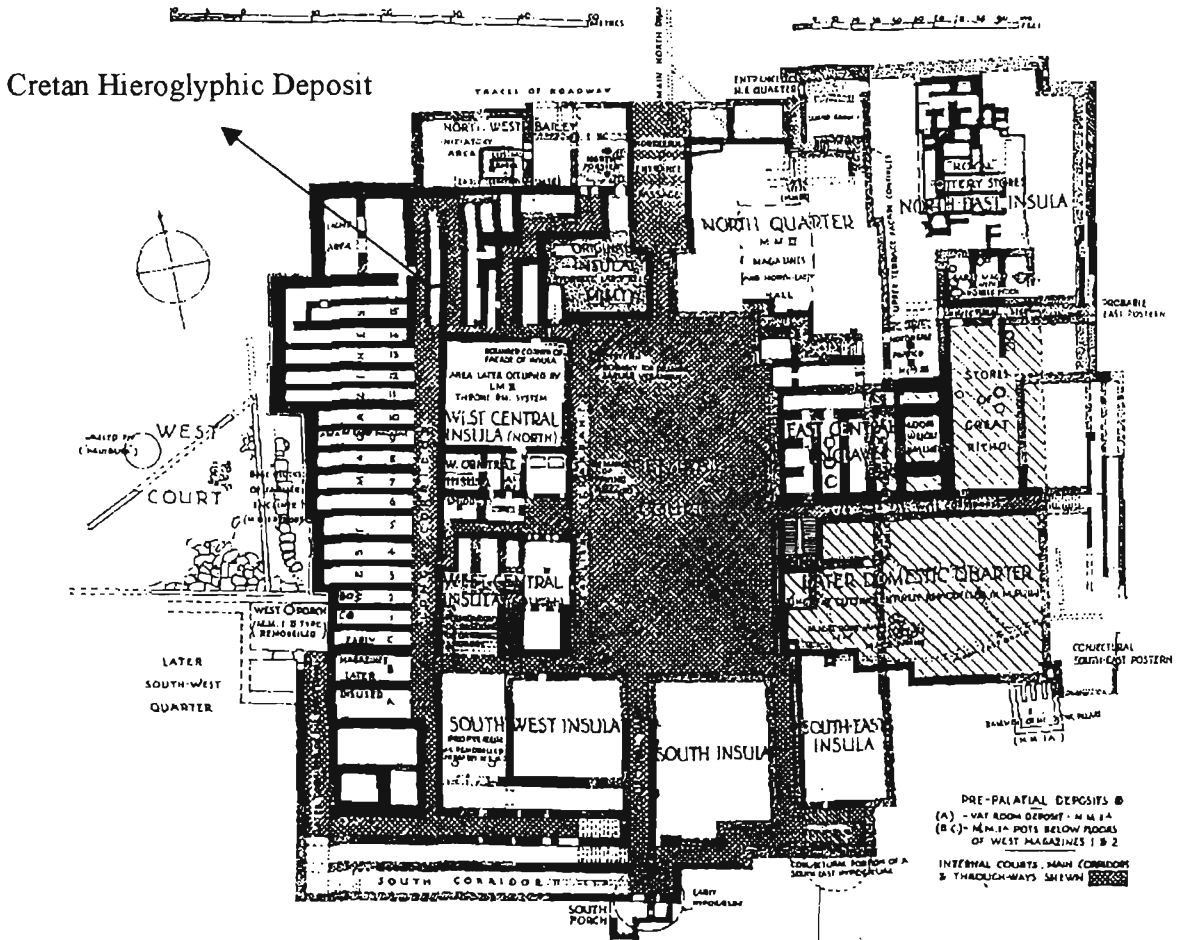
⁵ J. Raison, *Le palais du second millénaire à Cnossos II. Le front Ouest et ses magasins*, I (*ÉtCrét* 29) (Paris 1993), 141, note 993.

⁶ A.J. Evans, "The Palace of Knossos. Provisional Report of the Excavations for the year 1901", *BSA* 7, 1900-1901, 41; see also M.A.V. Gill, "The Knossos Sealings: Provenance and Identification", *BSA* 60, 1965, 58-98, 66.

⁷ Raison (*supra* n. 5), 38, note 253, 113, note 788. This implies that it is not a problem for Cretan Hieroglyphic documents to have been found together with Linear B tablets, see D.J.I. Begg, *Minoan Storerooms in the Late Bronze Age* (PhD. Univ. of Toronto 1975), 190-191; Id., "Continuity in the West Wing", in R. Hägg & N. Marinatos eds, *The Function of the Minoan Palaces. Proceedings of the Fourth International Symposium at the Swedish Institute in Athens, 10-16 June 1984* (Stockholm 1987), 183.

⁸ Raison (*supra* n. 5), 25.

⁹ J.-P. Olivier, "The Inscribed Documents at Bronze Age Knossos", in *Knossos*, 157-170.



they formed part of destruction debris, it is unlikely that, if the documents had not been contemporary with the staircase, the destruction debris would have been left *in situ* while the rest of the corridor was cleared. This would suggest that the documents are contemporary with the staircase, whether they fell from the first floor after the collapse of the wooden staircase or from shelves in the space beneath the staircase. A second scenario is that the documents represent the clearance of destruction debris in the West Wing, but the lack of any pottery or any other material does not favour this interpretation and furthermore, there is no evidence that on Crete

administrative documents were discarded in fills beneath floors, staircases etc. as frequently as is the case in the Near East. Thus, the total lack of sherds and the fact that the documents were found high up in the deposit could suggest that the documents formed part of an archive *in situ* or fallen from the first floor. As to the date of the deposit, since in either scenario the staircase would have been in place before the deposition of the documents, the MM III sherds, found during a sounding beneath the first steps of the staircase, may provide an indication as to their date¹⁰. They could have been fired during the destruction that accompanied the earthquake at the end of MM IIIA. Thus, there are archaeological indications that the date of the deposition of the Hieroglyphic Deposit might be MM III rather than MM IIB. A comparison of the external characteristics of the documents with those from Malia and Petras will allow to further define its date.

The dates proposed for the "Hieroglyphic Deposit" by Kenna, Yule and Reich are all based on stylistical criteria and range between MM II and MM III (Table 1)¹¹. No pottery was found with the documents and the dates Evans proposed, first MM III¹² and then MM II¹³, are based on the iconography of the seal impressions and perhaps on the date proposed for the staircase, which changed from LM I¹⁴ to MM II¹⁵.

The ongoing discussion about the "Hieroglyphic Deposit" not only concerns its date, but also its homogeneity. Despite the homogenous external characteristics of the documents (clay, firing, colour and the preservation of the surface), Gill and Pini have questioned their homogeneity¹⁶. Pini, on account of the naturalistic character of some of the seals, divided the deposit into two groups that belong to a hoard assembled over a longer period; one group comprises earlier non-naturalistic motifs and another advanced motifs impressed by convex seal faces. Pini bases the MM III date of the "more advanced iconography" on the document types on

¹⁰ Raison (*supra* n. 5), 143, 167.

¹¹ V.E.G. Kenna, *Cretan Seals, with a catalogue of the Minoan Gems in the Ashmolean Museum* (Oxford 1960), 37; Id., "Seals and Sealings with Hieroglyphic Script", *Kadmos* 8, 1969, 104; Yule, however, argues for a MM II date on the basis of a comparison with the Malia and Phaistos iconographic material, counteracting Reich 1970 (P. Yule, *Early Cretan Seals: A Study of Chronology. Maburger Studien zur Vor-und Frühgeschichte* 4 (Mainz 1980); J.J. Reich, "The Date of the Hieroglyphic Deposit at Knossos", *AJA* 74, 1970, 406-408.

¹² *SM* I, 19-22.

¹³ *PM* I, 273.

¹⁴ This in spite of the fact that Evans mentions MM III pottery from a sounding beneath the first steps of the staircase (Raison (*supra* n. 5), 143, 167).

¹⁵ Raison (*supra* n. 4), 143, 167; *SM* I, 19-22; *PM* I, 273.

¹⁶ Gill (*supra* n. 6), 66; I. Pini, "The Hieroglyphic Deposit and the Temple Repositories at Knossos", *ASSA*, 39.

which they occur, flat-based nodules and a pear-shaped nodule. This approach is questionable and from an administrative point of view, it seems unlikely that the clay documents would have been kept long enough to reflect an evolution in seal stones and iconography: they are in the first place temporary documents which were discarded once their function was fulfilled. Moreover, an identical impression (*CHIC* #164) on a flat-based nodule *and* a crescent also seems to preclude the creation of two chronological groups¹⁷. Furthermore, the discovery of hanging nodules in a MM IIB context at Petras demonstrates that they can no longer be considered as a later type of document.

Table 1 – Dates proposed for “Hieroglyphic Deposit” at Knossos

	Date	Criteria
Evans	MM II	stylistical (date of seal-impressions) date of staircase?
	MM III	
Pini	MM III	stylistical and typological (types of documents)
Kenna	MM IIB/MM IIIA	stylistical
Yule	MM II	stylistical
Reich	MM III	stylistical

Malia and Petras

At Malia, the documents from Quartier Mu and the palace clearly belong to different periods. The documents in Quartier Mu were fired in a MM IIB destruction layer and are contemporary with the documents from Petras, which were found beneath a floor of the Neopalatial palace¹⁸. The fact that Quartier Mu was abandoned after MM IIB and not disturbed by later activities provides a window onto Protopalatial administration, as the documents were found in their original location. The Petras documents also seem to have been found in a MM IIB destruction layer.

The “Hieroglyphic Deposit” from the palace at Malia (room III8), somewhat erroneously named by the excavators since it also contained Linear A documents, was attributed by Pelon to MM IIIB¹⁹. It is not clear,

¹⁷ It cannot be excluded that flat-based nodules existed in MM IIB since they were known at Phaistos; see also response by Poursat to Pini (*supra* n. 16), 55.

¹⁸ Tsipopoulou-Hallager (*supra* n. 2), 164-7.

¹⁹ The stratigraphy in room III8 could, however, suggest a date slightly earlier (I. Schoep, “Context and Chronology of Linear A Administrative Documents”, *Aegean Archaeology* 2, 1995 [1997], 29-65).

whether the deposit was a fill or a destruction layer *in situ*. Pini cast doubt on the homogeneity of the documents from III8 on account of the presence of a naturalistic seal-impression and Linear A documents²⁰. However, the naturalistic seal-impression was not found in the deposit itself but in the neighbourhood²¹ and there is no reason to doubt that the documents form a coherent context for several reasons²². First of all, there is a large degree of interaction between Cretan Hieroglyphic and Linear A in the shapes of the bars and tablets and in their epigraphy: Linear A is written on four-sided bars which elsewhere are only used for Cretan Hieroglyphic; an initial cross, typical of Cretan Hieroglyphic inscriptions, precedes the Linear A inscription on MA 1. The co-occurrence of Linear A and Cretan Hieroglyphic documents and the date of the deposit are indirectly confirmed by the discovery of another Linear A inscribed four-sided bar (MA 10) in a MM III context elsewhere in the palace (room IXb). Furthermore, the documents from the "Hieroglyphic Deposit" are very similar, in terms of clay and external appearance²³, and externally very different from those found in Quartier Mu. In this way, although the Maliote "Hieroglyphic Deposit" is perhaps best defined as a fill beneath a later floor, the homogeneity of the documents suggests that they represent a more or less original deposit.

The functions of the deposits

There is a necessary link between the composition or typological variety of a deposit and its function; hence the importance of the documents being *in situ* or part of a fill. When assessing differences between deposits pertaining to the presence or absence of a certain document type, the original function of the deposit must be kept in mind.

The wide variety of document types in Cretan Hieroglyphic administration and their distinct external features suggest that each document fulfilled a specific function. A distinction can be made between

²⁰ I. Pini, "Minoische und Helladische Tonsiegel", in *Aux origines de l'hellénisme. La Crète et la Grèce. Hommage à H. van Effenterre*, (Paris 1984), 78. Chapouthier mentions that this clay conoid was not found in the "deposit" itself, but in the neighbourhood, and therefore it cannot be used to date the "Hieroglyphic deposit" (F. Chapouthier, *Les écritures minoennes au Palais de Mallia (ÉtCrét 2)* (Paris 1930), 3 note 6).

²¹ O. Pelon, J.-P. Olivier, – F. Vandenabeele, "Un nouveau document en linéaire A au palais de Malia", *BCH* 103, 1979, 3-27.

²² Chapouthier (*supra* n. 19), 3, note 6: "L'empreinte c provient d'un cachet d'argile trouvé dans le voisinage".

²³ The fine black specks on documents from III8 leaves no doubt that they had been subjected to the same conditions.

“archives” and “working deposits”, the former referring to the documents which were kept for reference purposes, the latter to documents which were found in close association with rooms that had a particular function (e.g. store rooms) and were related to a particular transaction²⁴. It is clear that some document types are characteristic of one or the other, and consequently, the presence or absence of a document type should be considered in connection with the function of the room in which it was kept at the time of destruction²⁵. Quartier Mu provides a good example of “working deposits”, with the documents being found where they functioned at the time of the destruction. It seems that two-sided bars, direct object sealings, medallions and noduli were associated with the storage of agricultural bulk commodities, whereas two inscribed cones were found in association with the storage of luxury goods. Petras was described as a “working archives” by the excavator but the publication of the context will show whether this implies an “archive” or a working deposit²⁶.

The contexts of the “Hieroglyphic Deposits” in the palace at Knossos and Malia are less clear, mainly because they were not found in a destruction layer *in situ* and may have been disturbed by later activities. The range of documents found together in these deposits is much wider than in Quartier Mu, where at the most three types were found together in a single context. As is the case in Linear A, the wide range of documents could suggest that the context is an archival context rather than a working deposit²⁷.

The architectural contexts of the documents

With the exception of Quartier Mu at Malia²⁸, all Cretan Hieroglyphic documents come from central buildings of which remains were found beneath the Neopalatial palaces. If the situation in LM IB Crete, when Linear A is found in palatial buildings, central buildings of non-palatial

²⁴ This as opposed to ‘historical archives’ which incorporate all documents which have become irrelevant for the day-to-day administration, but are kept for their historical value (G. Goossens, “Introduction à l’archivéconomie de l’Asie antérieure”, *Rd’A* 46, 1952, 98-107).

²⁵ This has been clearly illustrated for Linear A administration where different document types are found in deposits that had different functions in the process of information gathering and storing.

²⁶ Tsipopoulou – Hallager, (*supra* n. 3).

²⁷ Schoep (*supra* n. 19).

²⁸ It has been suggested that a four-sided bar found during the prospection could indicate yet another administrative location (S. Müller – J.-P. Olivier, “Prospection à Malia: deux documents hiéroglyphiques”, *BCH* 155, 1991, 65-70).

character but also in non-central buildings, constitutes a valuable reference point, then the distinction between these contexts may be an important one. It must be noted that in the Neopalatial period, not all document types that occur in central and palatial buildings are attested in non-central buildings. From this it follows that some documents seem to have been the prerogative of the central administration²⁹.

The relationship between Quartier Mu and the Protopalatial predecessor of the later palace at Malia still eludes us, with the result that it is not clear whether the differences in administration (cf. *infra*) are due to a *palatial* versus *non-palatial* context or to the chronological difference that existed between both. At present, the excavator believes that there is no reason to consider the administration in Quartier Mu to be separate from that in the palace³⁰.

None of the other settlements yielded evidence for Protopalatial administration outside the palatial building, although seal stones were quite common in private houses. Considering its proximity to the palace, the South-East Pillar Basement at Knossos cannot really be seen as separate from the palace. The date of the pear-shaped nodule, direct object sealing and nodulus may range anywhere between MM IA and the Neopalatial period³¹.

Assessing inter-site differences: a question of chronology or local idiosyncrasies?

The discovery of the Petras deposit was of major importance to our understanding of Cretan Hieroglyphic administration, not only for its quantitative addition to the corpus but also because it provided a point of reference for the hitherto chronologically isolated context of Quartier Mu. The best way to assess the differences that occur between the Cretan Hieroglyphic administrations at Knossos, Malia and Petras is to compare the contemporary administrations of Quartier Mu and Petras on the one hand, and on the other, the documents from Quartier Mu with the stratigraphically later documents from Malia palace. This approach will

²⁹ I. Schoep, "Towards an Interpretation of different Levels of Administration in Late Minoan IB Crete", *Aegean Archaeology* 3, 1996 [1999], 75-86.

³⁰ J.-C. Poursat, "Potiers et peintres à Malia (Quartier Mu), Crète: le Camares provincial entre tradition et innovation", in R. Laffineur – P. Betancourt, *TEXNH. Craftsmen, Craftswomen and Craftsmanship in the Aegean Bronze Age*, Proceedings of the 6th International Aegean Conference (Liège-Texas 1997), 301-304.

³¹ J.A. MacGillivray, "The Early History of the Palace at Knossos (MM I-II)", in *Knossos*, 45-56, 51.

allow an explanation of these differences as chronological or local idiosyncrasies (cf. *infra*).

The contemporary administrations at Quartier Mu and Petras show a number of differences, which mainly pertain to the presence or absence of certain document types; thus, cones are confined to Quartier Mu whereas two-hole hanging nodules and a document that is a combination of a sealing and a hanging nodule are only attested at Petras. The presence of two-hole hanging nodules in a MM IIB context implies that at Knossos, they form an integral part of the Cretan Hieroglyphic administration and must not be later than MM IIB³². The combination sealing-nodule is absent from Quartier Mu and the slightly later "Hieroglyphic Deposit" in the Malia palace, and does not occur again until the LM III period, when it is used in Linear B administration³³. A surprising absentee from Petras is the two-sided bar, which occurs in Malia palace and Quartier Mu as well as in a MM IIB context at Symi³⁴. Since Quartier Mu presents mainly evidence for working deposits (cf. *supra*), it cannot be excluded that the absence of two-sided bars from Petras, and for that matter also Knossos (cf. *infra*), indicates that we are dealing with different types of deposits. In this respect, the presence of two-hole hanging nodules at both Knossos and Petras could also point in this direction.

The administrations of Quartier Mu and Petras have also several documents in common: four-sided bars, medallions, direct object sealings, noduli and crescents. Some of these show minor typological differences. The crescent from Petras was inscribed and impressed, whereas the crescents from Quartier Mu were only impressed. At Petras, impressed crescents were used along with inscribed crescents, which could suggest that the absence of inscribed crescents from Quartier Mu does not necessarily reflect a less developed stage or lower level of administration. The publication of the medallions from Petras will show whether they were perforated like those from Quartier Mu (see *infra*), or Knossos and Malia. Regarding the format of the text on the four-sided bar from Petras, the way of subdividing the surface

³² It has been questioned whether they belonged to the original 'Hieroglyphic Deposit' (*Minoan Roundel*, 55-56; Pini (*supra* n. 20), 43). Two-hole hanging nodules were used in MM IIB in the palace at Phaistos. The use of two-hole hanging nodules alongside crescents prompts the question of the respective functions of these documents.

³³ It is remarkable that this type appears again in Linear B administration since it is not attested among the thousands of nodules used in the Neopalatial Linear A administration. See also E. Hallager, "Hieroglyphic and Linear B Sealing Administration", *BICS* 42, 1997-1998, 221.

³⁴ A. Lembessi, P. Muhly, J.-P. Olivier, "An Inscription in the Hieroglyphic Script from the Syme Sanctuary, Crete (SY Hf 01)", *Kadmos* 34, 1995, 63-77.

of the bars into horizontal registers is also attested at Malia and Knossos palace.

The way Cretan Hieroglyphic administration evolves at Malia from MM IIB to MM III is illustrated by the documents from Quartier Mu and the “Hieroglyphic Deposit” in the palace. Of the Cretan Hieroglyphic document types that are attested in Quartier Mu, two and four-sided bars, medallions and crescents remain in use. The perforation in the tenon of the medallions is now perpendicular in relation to the medallion’s surface, instead of parallel as at Quartier Mu. A published medallion from Petras has a perpendicular perforation, but it came from a different context than the new deposit and was not found *in situ*³⁵. The future publication of the medallions from the MM IIB context will show whether the type of perforation is a chronological feature or not. The crescents, as noted above, are inscribed and impressed which, as the new Petras finds suggest, is not a chronological indicator.

It is not clear whether the absence of cones and direct objects sealings from the palace is due to the different functions of the original deposits or to a chronological difference. None of these documents is attested at Petras, which is contemporary with Quartier Mu, but considering the possible function of the deposit, one may not expect them to be. The presence of flat-based nodules or parcel nodules in the palace and their absence from Quartier Mu is hard to explain. If flat-based nodules were already used in archival contexts in MM II, one would expect them at Petras. However, their absence here is an *argumentum ex silentio*.

The most spectacular innovation of the MM III administration of the palace is undoubtedly the introduction of Linear A writing and types of documents that are associated with the Linear A administration at MM IIB Phaistos, such as for example roundels. The absence of any signs of Linear A writing or Linear A support types at either Petras or Quartier Mu suggests this was a post-MM IIB development. The occurrence in the palace of Linear A on Cretan Hieroglyphic bars and the epigraphy, which betrays a Cretan Hieroglyphic “touch”, suggests that Cretan Hieroglyphic was the original script of the administration and that Linear A was only adapted later. In this respect, the absence of page-shaped tablets with Linear A, which were used in the Phaistos administration in MM IIB and will be the canonical tablet shape in LM I, is particularly telling.

To conclude, it may be noted that while the differences between the contemporary contexts of Petras and Quartier Mu mostly concern the

³⁵ M. Tsipopoulou – E. Hallager, “Inscriptions with Hieroglyphs and Linear A from Petras”, *SMEA* 37, 1996, 7-46.

presence or *absence* of particular document types, which may be due to the size of the samples or the function of the deposits, the differences between the chronologically different deposits from Malia palace and Quartier Mu are more complex. It seems that, although most of the types attested in Quartier Mu are still used in MM III, sometimes with a slightly evolved shape (e.g. medallion), a startling change appears in the form of Linear A writing, its associated document types and perhaps a number of new document types (three-sided bar, flat-based nodule). This assessment provides a framework within which the “Hieroglyphic Deposit” from Knossos can be placed and perhaps dated more closely.

PLACING THE KNOSSOS “HIEROGLYPHIC DEPOSIT”

The absence of the two-sided bar from the “Hieroglyphic Deposit” at Knossos could be explained by a possible chronological difference or by a depositional difference. However, the former seems to be excluded by the presence of two-sided bars in the palace at Malia in MM III. In addition, their absence from Petras (cf. *supra*) suggests a depositional difference to be the more likely explanation. Moreover, the freeze-frame provided by Quartier Mu suggests that four-sided *and* two-sided bars were used simultaneously in the administration, albeit not in the same contexts. The number of two-sided bars is too low to allow a comparison of their lexical information with that on four-sided bars, but it does seem that they were used for booking logograms (Kato Symi) as well as lexical entries (Quartier Mu). Since the shape of the Cretan Hieroglyphic documents of and by itself conveyed meaning, as is suggested by their typological variety, it is very likely that the two-sided bars fulfilled a different function from the four-sided bars; this may be supported by the fact that two-sided and four-sided bars in Quartier Mu were found in separate locations. It has been suggested that two-sided bars may have been working documents and four-sided bars more final, archival, documents³⁶. Although it is likely that they ended up in archival contexts (their four sides allowed them to contain a lot of information), some of their external features, such as the perforations, which imply that they were hanging from a string, and the fact that the entries were scribbled on from different directions, suggest that they were also some sort of working documents, albeit of a very different nature³⁷.

³⁶ J.-C. Poursat, “Hieroglyphic Documents and Sealings from Malia, Quartier Mu: a Functional Analysis”, *ASSA*, 25-29.

³⁷ It seems that four-sided bars were kept in archival documents (they contain sometimes very large quantities). Considering the disorganised character of the inscriptions on them, it is feasible that the information on them would have been copied

Taking into consideration these observations, it seems best to put the *absence* of two-sided bars from Knossos down to function of the deposit as an “archive” as opposed to a working deposit.

Table 2 – Attestations of inscribed Cretan Hieroglyphic document types

	KN/P	MA/M	MA/P	PE	SY
two-sided bars		10	6		1
four-sided bars	19	2	8	2	
three-sided bar	1		1		
oblique tablets	2		2		
medallions	19	13	7	9	
crescents	29		1	frags of 4	
cones		2			
impressions ³⁸	32	13	1	?	

A document type common to both the “Hieroglyphic Deposits” from Knossos and Malia but not attested elsewhere is the three-sided bar. In both, the bars seem to be inscribed in Linear A³⁹. Their absence from MM IIB deposits and the fact that at Malia at least, they are certainly inscribed with Linear A could suggest that this shape was not used in the MM IIB Cretan Hieroglyphic administration. The shape is surprising when one considers that the three sided prism is one of the most important shapes for seal stones inscribed with Cretan Hieroglyphic⁴⁰.

Two more documents that are only attested in Malia and Knossos palace are oblong tablets and flat-based nodules. Since at Malia, the former were also used to write Linear A, their use in Cretan Hieroglyphic administration could be due to Linear A influence; indeed, their shape could suggest an intermediate shape between the typical Cretan Hieroglyphic bars and the Linear A page-shaped tablets. Whether the absence of flat-based nodules, which were used to seal perishable documents, such as papyrus and parchment⁴¹, is due to a chronological difference, the non-palatial character of the building in the case of Mu or the function of the deposit remains

on other documents in a more organised way, but this remains conjectural as no such documents have yet been recovered.

³⁸ This category was created by *CHIC* to refer to all impressions made by Cretan Hieroglyphic sealstones on a wide range of document types including crescents, noduli, flat-based nodules, direct objects sealings etc.

³⁹ The limited number of signs on the Knossos bars does not allow to confirm this (*CHIC*).

⁴⁰ Yule (*supra* n. 11).

⁴¹ See *Minoan Roundel*, 158.

undecided (cf. *supra*)⁴². The rounded characters of the Cretan Hieroglyphic script and the painted signs on some of the Chamaisi vases suggest that it may have lent itself better to writing in ink with a brush than on clay with a stylus⁴³. These observations could hint at the use of documents in perishable materials, but this of course remains conjectural.

Like its counterpart at Malia, the “Hieroglyphic Deposit” at Knossos also contains Linear A elements: some crescents seem to have been inscribed with Linear A⁴⁴ and it was already noted that the three-sided bar, oblong tablets and perhaps the flat-based nodule could be due to Linear A influence. There are no specific Linear A document types such as roundels and it is clear that the interaction between Linear A and Cretan Hieroglyphic at Knossos is quite different than at Malia in MM III, where scribes were writing Linear A and/or Cretan Hieroglyphic. This could imply that the Knossian “Hieroglyphic Deposit” was situated in time between the administrations of Quartier Mu and Petras and the “Hieroglyphic Deposit” from Malia palace.

An additional feature of the administration at Knossos that is worth investigating further because it is perhaps a later feature than MM IIB is the practice of multiple sealing, as opposed to merely duplicating or triplicating the same seal. As yet, the multiple sealing system is not attested in MM IIB contexts at Monastiraki, Phaistos and Malia Quartier Mu. The evidence from Petras is sketchy, but so far it seems that no two different seals have been impressed on a single document.

Although purely on the basis of their external appearance it could be argued that the Knossos documents represent a further stage in the development of Cretan Hieroglyphic administration than Quartier Mu and Petras, some aspects of palaeography present a more ambiguous character. Great importance has been attached to the way in which numerals, especially hundreds, are rendered in Cretan Hieroglyphic⁴⁵. In Quartier Mu hundreds are rendered by long oblique strokes, whereas in the palace open circles are used besides oblique strokes. Open circles were also used in

⁴² It seems that in the Neopalatial administration, sealings that been attached to perishable materials were only found in central buildings and their dependencies (Schoep (*supra* n. 2), 79-80).

⁴³ Cf. T.G. Palaima, “Comments on Mycenaean Literacy”, in J.T. Killen, J.L. Melena, J.-P. Olivier eds, *Studies in Mycenaean and Classical Greek Presented to John Chadwick* (*Minos* 20-22) (Salamanca 1987), 499-510.

⁴⁴ It seems noteworthy that these crescents were not impressed by Cretan Hieroglyphic seal stones.

⁴⁵ J.-C. Poursat – J.-P. Olivier, “Un nouveau document en hiéroglyphique de Malia”, *Kadmos* 10, 1971, 16-19.

Linear A, which again underlines the influence of the latter script on Cretan Hieroglyphic at Malia. At Knossos, however, despite the presence of some Linear A features, which even involve Linear A characters on Cretan Hieroglyphic supports such as crescents, hundreds were mostly rendered by oblique strokes, with the exception of #065 and possibly #067 (*CHIC*)⁴⁶. If at Petras, oblique strokes were used for the hundreds, it could imply that open circles were a later feature.

CONCLUSION

It was suggested that the Cretan Hieroglyphic documents from Knossos seem to represent a further evolution from those at Quartier Mu and Petras, and may therefore be situated in time between the documents from Petras and those from the palace at Malia. This is also suggested by the "traditional" way of rendering hundreds and the restricted Linear A features. However, this date must remain conjectural as it lacks stratigraphical evidence and one cannot exclude that on account of the proximity of Phaistos and Knossos and the contacts between the two Protopalatial centres, the Linear A features at Knossos were earlier than further east at Malia and Petras. It may be significant that the observations on the date of the "Hieroglyphic Deposit" at Knossos seem to find a reflection in the much discussed date of the pottery associated with the final phase of the "First Palace" at Knossos. This has been noted to be closer to Levi's Third Phase (MM IIIA) than the MM IIB destruction levels at Phaistos⁴⁷, but was recently nevertheless dated to MM IIB⁴⁸.

It was stressed that although Cretan Hieroglyphic was the original script of the administrations at Knossos, Malia and Petras, it became obsolete as a writing system sometime at the end of MM III and was replaced by Linear A. The reasons for its disappearance are not clear, although it is generally accepted that Linear A would have been better able to cope with the complex needs of a more sophisticated administration⁴⁹. In MM IIIB or early LM I, the bookkeeping system at Knossos was using Linear A and its associated document types, as suggested by the page-shaped tablets, roundels, noduli

⁴⁶ *CHIC*, 28; J.G. Younger, "The Cretan Hieroglyphic Script: A Review Article", *Minos* 31-32, 1996-1997 [1998], 379-400.

⁴⁷ P.M. Warren – V. Hankey, *Aegean Bronze Age Chronology* (Bristol 1987), 54.

⁴⁸ J.M. MacGillivray, *Pottery Groups of the Old Palace Period (British School at Athens Studies, 5)* (London 1998).

⁴⁹ T.G. Palaima, "Origins, Development, Transition and Transformation: The Purposes and Techniques of Administration in Minoan and Mycenaean Society", *ASSA*, 83-104.

and flat-based nodules from the Temple Repositories. Crescents, medallions, four-sided bars etc. were replaced by a new range of documents, most of which have predecessors at Phaistos, and the only hint at the earlier existence of another writing system is the “administrative cross” on some roundels⁵⁰.

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⁵⁰ E. Hallager, “The Knossos Roundels”, *BSA* 82, 1987, 55-70.