THE ORIGINS OF WRITING AND ADMINISTRATION ON CRETE

Summary. During the Protopalatial period, two scripts were used in Minoan administration, Cretan Hieroglyphic and Linear A. Each script system has its own range of typical administrative documents, e.g. roundels for Linear A and medallions for Cretan Hieroglyphic. Some other sealed document types, and especially direct object sealings and noduli, are common to both systems. It is argued here that, prior to the development of script and as early as the Prepalatial period, a single administrative system based on the use of such direct object sealings and noduli existed on the island. The subsequent diversity formed part of an assemblage of cultural features used to mark the different political organisations that were formed during the transitional Early Minoan III/Middle Minoan I period.

WRITING AND SEALING IN THE PROTOPALATIAL PERIOD

During the Protopalatial period (Middle Minoan IB–IIB, c. 1900–1700/1650 BC), two different script systems were used on the island of Crete, which seem to be geographically restricted. In the north and north-eastern regions of the island, especially at Knossos, Malia and Petras, Cretan Hieroglyphic seems to have been used. Linear A appears as the script of the central-southern region, the Mesara (Phaistos). This duality is also clearly illustrated by the predominant distribution of Cretan Hieroglyphic seal stones in the north and north-eastern regions (Fig. 1). At the moment, we are not able to say whether both scripts reflect the same or two different languages. The apparent geographical restriction of both scripts, however, seems roughly to coincide with ‘cultural regions’ identified on the basis of distribution maps for particular objects of the same period (e.g. sheep bells, Khamaizi juglets, etc.). Thus ‘cultural groups’ have been respectively identified in North Central Crete, South-Central Crete (?), Malia-Lasithi and East Crete (Cadogan 1994) and have been equated with political entities centred around the palaces of Knossos, Malia, Phaistos and presumably Zakro. The spatial restriction of the two scripts, however, seems rather to correspond with the distribution of specific Prepalatial burial customs, especially the round tholos tombs in the Mesara and the house-like tombs of North and North-East Crete (Soles 1992), which remained in use through part of the Protopalatial period. It has been remarked that both burial traditions meet at Arkhanes, south of Knossos, where funerary constructions appear to amalgamate both types. This observation may prove
relevant in the light of the so-called ‘Arkhanes script’. This script has hitherto been found on some 15 seal stones, dating to EM III/MM IA, on which about ten different signs are incised (Grumach and Sakellarakis 1966; Yule 1980, 169). Most examples of this ‘Arkhanes script’ come indeed from the Phourni necropolis at Arkhanes, but seal stones bearing signs of the ‘script’ have also been found at Pangalochori (east of Rethymnon) and Moni Odigitria in the Mesara (Godart and Tzedakis 1992). The relationship between the signs of the ‘Arkhanes script’ and those of the Linear A and Cretan Hieroglyphic scripts is not clear. Although some seem to have counterparts in the Cretan Hieroglyphic syllabary, the presence of a sign-group, usually read as A-SA-SA-RA, also provides a link with Linear A (Olivier 1996, 107). It can therefore not be ruled out that both Cretan Hieroglyphic and Linear A go back to a common ancestor, especially when one considers that both scripts share a number of signs, both syllabic and logographic. However, the way numerals are rendered differs slightly. The shared signs may also imply that their creation or adaptation from a common, unknown ancestor may not have been long separated in time. This creation or adaptation was apparently paired with the adoption of a range of archival documents that seem to be distinctive to each writing system, probably to suit the direct purposes of the respective administrations.

Figure 1
Distribution of Cretan Hieroglyphic seal stones and archival material (after CHIC, 20)

Thus, whereas Cretan Hieroglyphic uses two- and four-sided bars and inscribed seal stones, Linear A generally uses page-shaped tablets. In addition to the differences in script and inscribed archival documents, both scripts also make use of a different range of sealed documents. For example, medallions, unsealed round clay discs pinched along the top with a perforated tenon, are restricted to the Cretan Hieroglyphic administration, whereas roundels are characteristic of the Linear A administration. This typological diversity suggests that the administrative organisation may also have been in some way different. The different types of documents used at Phaistos on the one hand, and at Knossos, Malia and Petras on the other, may well point towards differences in the ways administration was conducted and conducted.
the hinterland exploited and monitored. This would then imply that the political economy of the First Palace ‘states’ was organised along different lines (Knappett and Schoep in preparation).

The spatial restriction of the two scripts could well mean that the origin of the two systems should be sought in their respective regions, meaning in concreto that ‘Proto-Linear A’, from which canonical Linear A obviously developed, perhaps originated in South-Central Crete at Phaistos and Cretan-Hieroglyphic either at Knossos or in the more eastern regions of the island. This view will naturally stand or fall with future discoveries.

Here, I want to draw attention to the common features that can be observed in both the Cretan Hieroglyphic and Linear A scripts and administrative systems. Thus, despite its name, the so-called ‘Hieroglyphic Deposit’ in the palace at Knossos may contain some Linear A elements, if we accept that some crescents are actually inscribed in Linear A (CHIC, 18). In the Phaistos palace, a single MM IIB sealing was impressed by a Cretan Hieroglyphic seal stone. Since the date of the Knossian ‘Hieroglyphic Deposit’ unfortunately remains problematic, with authors preferring a MM II (SM I, 19–22, 144–5; Yule 1978, 1–7) or MM III date (Reich 1970, 406–8; Pini 1990, 33–54), the Phaistos example may perhaps suggest that some interaction between the two scripts already existed in MM IIB.7 That this was also the case at Knossos at an even earlier stage (MM IIA) may be hinted at by the discovery of a fragmentary tablet, a document which is usually attributed to Linear A. This fragment was found together with a nodulus (perhaps impressed by a Cretan Hieroglyphic seal stone) and a basket sealing.8 It may be assumed that these rare occurrences of, respectively, Cretan Hieroglyphic at Phaistos and Linear A at Knossos result from some kind of interaction or communication between the two polities. The fact that the MM IIB Cretan Hieroglyphic deposits in Quartier Mu at Malia and the palace at Petras show no trace at all of Linear A may imply that such interaction was very limited and perhaps exclusively concentrated within the North-South Knossos-Phaistos axis.9 The scarcity of such interaction may, on the other hand, also be a chronological indicator, implying that the Knossos Hieroglyphic Deposit does indeed date to MM IIIA, since the Hieroglyphic Deposit from the palace at Malia, which shows clear interaction between the two scripts, dates to the mature MM III period (Pelon 1983, 703; Schoep 1995 [1997], 34–6).

Even if we consider the interaction between the two scripts instead as being a late feature, with the administrations in the respective Protopalatial ‘states’ presenting a picture of regionalism, we still have to face the fact that some sealed document types are common to both Cretan Hieroglyphic and Linear A administrations. Indeed, it is surprising that while almost all document types in use respectively in Linear A and Cretan Hieroglyphic differ substantially, noduli, direct object sealings and two-hole hanging nodules are shared.10 A possible explanation for this may be found in the Prepalatial period. Indeed, it is suggested here that the use of direct object sealings and noduli in the two different administrative systems does not result from a potential interaction, as noted above, but from the fact that these documents were already used in the Prepalatial period as part of a uniform administrative system which existed without the aid of writing and perhaps even pre-dated it. Before elaborating this point, it seems opportune briefly to review the origins of administration on Crete. Scholarly opinion is divided on questions as to when, why and
how administration emerged. As to ‘when’ and ‘why’, it is generally assumed that the creation of any administrative system is closely connected with the rise of ‘statehood’. On Crete, this step would be reflected by the construction of palatial complexes, traditionally situated in MM IB (Knossos) (MacGillivray 1990) or slightly earlier (MM IA) for Malia (Pelon 1992, 13). Opinions as to ‘how’ differ between an indigenous development (Pini 1990a) and the importation of the system from the Near East in MM IIA (Weingarten 1994). This issue is considered in detail below and it will be suggested that recent discoveries of Prepalatial administrative documents on Crete make a local development more likely.

A discussion of the origins of administration naturally prompts the question whether this coincided with the invention of writing as such. On present evidence, administration on Crete started earlier, without the use of writing, and as such agrees with Near Eastern evidence. Indeed, recent research has adequately presented a case for the existence of administrative systems, largely based on sealings, tokens and bullae (Schmandt-Besserat 1992; Ferioli and Fiandra 1990, 225), which functioned as bookkeeping tools without the device of writing.11 Such systems employed set rules governing the issue, collection and preservation of sealings and apparently could cope with extremely complex transactions. Although their long-term filing and prediction capacities have been questioned (Driessen 1995, 242), it has also been shown that these sealing systems easily survived the introduction of writing (Fissore 1994), which only appeared at the end of the fourth millennium.

For Crete, our earliest evidence for writing is represented by the ‘Arkhanes script’ mentioned earlier. Only attested on seals, it is not considered a script as such (Olivier 1986, 1989) but it does imply that writing existed as early as EM III-MM IA (2300/2150–1900 BC), during the Prepalatial period. Undoubtedly, it is because they only survive as a result of fire destructions that our earliest true written documents on Crete date to the mature Protopalatial period (MM II) and are administrative documents (tablets, bars, etc.). From at least Early Minoan II onwards (c. 2800/2700 BC), however, there is evidence for administrative documents, which should imply that the genesis of administration and script was not contemporaneous. Since the earliest written archival documents on Crete were found inside the palaces (e.g. Phaistos, MM IIB), a close relationship between palaces and script seems acceptable, with writing functioning as a tool of control and exclusion. Whether the construction of the palaces (or rather the social complexity of which they are a reflection) pre-dates the invention of writing or the other way around is a more difficult question, and is perhaps primarily one of terminology.

ADMINISTRATION DURING THE ‘PREPALATIAL’ PERIOD?

The archaeological record of the Cretan Early Bronze Age has yielded a multitude of seal stones (Blasingham 1983) and seal-imprints impressed before firing on movable objects, such as vases, loomweights and hearth rims (see Vlasaki and Hallager 1995, Table 1, for an overview). Poursat (in response to Pini 1990, 55) favours the idea that the latter suggest some sort of control and organisation of production, a remark which makes sense in the light of the importance that such sealed handles and loomweights would gain in the later Cretan Hieroglyphic administration.12 Apart from these, less than half a dozen sealed clay
documents are known from Prepalatial Crete (Weingarten 1990, 105). These have been identified by Weingarten (1994) as testifying to ‘household management’ and not to administration. She believes that an administrative system is inconceivable before the foundation of the Old Palaces when the system would have been directly imported from the Near East, perhaps in MM IIA.13 Likewise, the sphragistic as opposed to administrative use of these seals has been stressed (Pini 1990; Pullen 1994). This view seems erroneous and I believe sufficient evidence exists to argue for the existence of a proper administrative system or economic organisation already in the Prepalatial period on the island. Aruz (1994, 211–35), correctly in my opinion, has already drawn attention to the fact that the use of identical seals on a variety of objects is suggestive of an administrative purpose and new discoveries seem to settle this matter: more direct object sealings were found at Khania (Hallager and Tzedakis 1988, 17)14 and Khamalevri (Vlasaki and Hallager 1995, 260–4) and a nodulus was found in the palace at Malia (Hue and Pelon 1992, 31–3 and figs. 33–4). All seem to date to a period preceding the construction of the MM IB palaces.

Weingarten has built her case on a distinction between an ‘administration’ — which had to be local, small-scale, isolated and sporadic — and ‘an administrative system’ — which had to be larger scale and continuous — (Weingarten reply to Pini 1990a, 56; Eadem 1994). Since direct object sealings have now been found at several locations on Crete, we can no longer speak of an isolated and local practice. Indeed, the possibility presents itself that we are dealing with a uniform administrative system. As is well known, direct object sealings were in use on the Greek Mainland from at least the mature Early Helladic II period onwards. Although long considered as an isolated aberration, recent discoveries underline that the sealings of the ‘House of Tiles’ at Lerna, form a recurrent feature of central places,21 characterised by the presence of Corridor Houses. This suggests at the least that such a degree of social and economic complexity had been reached that central buildings with a redistributive function were needed to monitor larger territories and communities.22

TABLE 1

Prepalatial Administrative documents

<table>
<thead>
<tr>
<th>Provenance</th>
<th>Document type</th>
<th>Inventory Number</th>
<th>Context</th>
<th>Number impressions</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arkhanes15</td>
<td>pierced cone?</td>
<td>HM 1177</td>
<td>Phourni</td>
<td>1</td>
<td>MM IA</td>
</tr>
<tr>
<td>Arkhanes</td>
<td>pierced cone?</td>
<td>HM 2934</td>
<td>Phourni</td>
<td>?</td>
<td>EM III/MM IA</td>
</tr>
<tr>
<td>Khania</td>
<td>sealing</td>
<td>XM KH 1569</td>
<td>GSE, EM</td>
<td>2</td>
<td>EM II/III</td>
</tr>
<tr>
<td>Khamalevri16</td>
<td>sealing</td>
<td>RM 13248</td>
<td>Bolanis house</td>
<td>4</td>
<td>EM III/MM IA</td>
</tr>
<tr>
<td>Knossos</td>
<td>sealing</td>
<td>SMV 865 (SF 211)</td>
<td>West Court fill</td>
<td>1</td>
<td>EM IIA</td>
</tr>
<tr>
<td>Knossos</td>
<td>sealing</td>
<td>SMV 866</td>
<td>West Court fill</td>
<td>1</td>
<td>EM IIA</td>
</tr>
<tr>
<td>Knossos</td>
<td>jar-stopper19</td>
<td>HM 1099</td>
<td>floor South Front House</td>
<td>2</td>
<td>EM III</td>
</tr>
<tr>
<td>Malia</td>
<td>nodulus</td>
<td>?</td>
<td>fill</td>
<td>1</td>
<td>EM IIB</td>
</tr>
<tr>
<td>Myrtos</td>
<td>sealing</td>
<td>ANM 3237</td>
<td>room 29</td>
<td>3</td>
<td>EM IIB</td>
</tr>
<tr>
<td>Sphoungaras</td>
<td>pierced cone?</td>
<td>HM 432</td>
<td>cemetery</td>
<td>1</td>
<td>MM I?20</td>
</tr>
<tr>
<td>Trypiti</td>
<td>sealing</td>
<td>?</td>
<td>Adami Korfali</td>
<td>2</td>
<td>EM II(?)</td>
</tr>
</tbody>
</table>

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The Cretan evidence, dating to EM II-MM IA, therefore suggests that administration without writing came from the Mainland, rather than being a direct importation from the Near East, but also that this development took place some time in the Early Bronze Age. The ambiguity about the interpretation of the Prepalatial sealed documents on Crete is mainly due to the fact that none or very few actually come from buildings which can with certainty be identified as ‘central buildings’. Most of these Prepalatial documents are attested in what seem to be ‘house contexts’. Although this, in my opinion, seems to make the presence of the sealed documents even more relevant, it raises the question whether such central buildings existed at all or were needed on Prepalatial Crete. For many authors, Early Minoan society is characterised as largely egalitarian, with only minor indications of social differentiation (Warren 1972, 266–7; 1987, 52; Branigan 1984, 1991). In such an interpretation, the existing scale of socio-political complexity would not have required the use of a system to regulate certain transactions, such as the incoming and outgoing of goods.

Although our knowledge of the structure of Prepalatial Minoan economy and society contains many gaps, I believe there is sufficient evidence to suggest more elaborate forms of social organisation (cf. Whitelaw 1983, 337). Part of the evidence is economic. Petrographical analysis of pottery by Wilson and Day (1994, 86–7) has shown conclusively that from EM I onwards, an intricate network of inter-site relations existed. This pattern of production and distribution of pottery could well point towards some higher organising and regulating power. Pini also suggests that seal stones from a workshop in the Mesara, which are found in other parts of Crete, may have been traded (Pini 1990b, 126). The other evidence is largely architectural. Wilson (1994, 42, 43) has presented an impressive case for the existence of a central authority at Knossos in EM IIA. This is shown by an ambitious building programme, which increased the area for building on the levelled hilltop with houses of the settlement terraced on the slopes around it. Moreover, the architectural features of settlements such as the courts and streets at Vassiliki betray the involvement of some kind of central authority. The substantial walls at Palaikastro (Dawkins 1905, 272–3) (Fig. 2) provide a glimpse of EM II monumental architecture (at least 27 m by 23 m). The NW Platform at Knossos and some remains at Tylissos (Hazzidakis 1934, 59–60, pl. XXXIII) are dated to EM III (Branigan 1970, 1994). In addition, the numerous pure EM IIA fills at Knossos may point towards substantial building activity (cf. Wilson 1994). More convincing, and to my mind conclusive, are the recent results from the soundings beneath the Middle Minoan floors of the palace at Malia (Fig. 3). Here, part of a substantial Early Minoan IIB construction came to light, the walls of which have almost exactly the same orientation as the later Middle Minoan and Late Minoan palaces (Hue and Pelon 1992, 31–3, figs. 33–4; Pelon 1992, 13) (Fig. 3). A collection of domestic wares, a clay nodulus and a gold bead were found in association with this building. The combination of storage, a prestige item and an administrative document together in a well-planned building leave little doubt, in my opinion, that these remains represent some kind of predecessor of the Protopalatial Palace.

Even if we accept that the architectural shape of a palace (as defined by Warren 1987) is a Middle Minoan IB creation, this does not exclude the possibility that buildings with a different architectural layout fulfilled
the function of central buildings already in the Early Minoan period, as has been suggested for the Helladic Corridor Houses. They may have been functioning on a smaller scale and perhaps represent a lower social complexity than either the ‘First Palaces’ or their Early Helladic II counterparts, but they may well have needed certain types of
sealing administration, which exceed ‘household management’. As has been noted, the earliest sealings in the Near East (seventh and sixth millennia\textsuperscript{26}), serve primarily two purposes: they not only define the property of a person or group of persons but also deny outsiders access to this property. Consequently, sealings imply an unequal distribution of goods, which, in my opinion, makes their use within small domestic units unlikely. Rather they were used in relation to the handling or circulation of goods beyond the domestic unit. The responsibility for (but not the ownership of) these goods is transferred to the persons handling the seals (Akkermans and Duistermaat 1997, 24).\textsuperscript{27} If we agree that sealings point towards the existence of an administrative system, it follows that it is unlikely that households would be sealing documents if such a system was not also used by some central institution. The Cretan Early Minoan evidence, in my opinion, therefore implies the existence of central authorities, even if most of the actual evidence for these authorities is indirect. Although direct object sealings may just have been a way of preventing tampering with the contents of containers, rather than testifying to the existence of real administration, the use of noduli at this early stage clearly indicates a degree of administrative complexity\textsuperscript{28} and sophistication for the Early Minoan system, although it is not clear what precise transaction the noduli represented. If this type of sealed document already formed an integral part of the administrative corpus of the Prepalatial period, then direct object sealings certainly played part. In the Near East, direct object sealings represent withdrawals rather than incoming goods and it is tempting to posit a similar function for the Early Minoan sealings,\textsuperscript{29} although it must be noted that they may have been slightly different from the Protopalatial types (Vlasaki and Hallager 1995, 269). The Prepalatial examples fall into different types and seem to have been sealing containers (RM 13249 (?), SMV 866, jar-stopper HM 1099; XM KH 1569) and doors (ANM 3237: Warren 1972, 226). For SMV 865 (Weingarten 1994, 174) and XM KH 1569 (?) (Vlasaki and Hallager 1995, 265) it has been suggested that the clay is non-local and that the containers had been transported from elsewhere. RM 13249 (Khamalevri) seems to have been pressed against a piece of wood and a smooth-surfaced object. It is not clear what object the Trypiti sealing was pressed against (Vlasaki and Hallager 1995, 269). Although some of the Prepalatial direct object sealing types may be slightly different from their Protopalatial successors, it seems that both were sealing more or less the same types of documents (containers and/or doors). Both direct object sealings and noduli continue into MM IB,\textsuperscript{30} well into the Protopalatial period. Their origin, however, can be traced back into the EM II period.

To gauge the workings and complexity of Prepalatial administration currently remains impossible considering the limited number of documents and their often unclear context.\textsuperscript{31} The fact that the Knossos South Front House stopper, a sealing from Khania and possibly the Myrtos sealing (Branigan 1969, 17) were sealed by different seals is suggestive of a more sophisticated system, exceeding in complexity the practice of sealing by a single seal stone or the possible involvement of two parties (Weingarten 1994, 176).

THE ORIGINS OF ADMINISTRATION

In summary, I believe the evidence allows us to put forward the following hypothesis. The shared use of direct object sealings and noduli in both Cretan Hieroglyphic and Linear A Prepalatial administrative
systems, together with document types exclusively reserved for each system, and the presence of precisely these common sealed documents in the Prepalatial period, suggest that certain types of administration were already fully developed during this early period. Since these sealed documents were not designed to carry an inscription, they seem in fact to pre-date the invention of writing or its application for administrative purposes, as suggested by the document types exclusively reserved for each system. The shared sealed documents seem to form part of a uniform administrative system (pace Vlasaki and Hallager 1995, 269) in use in the Prepalatial period over large parts of the island. They were retained when the early states, as defined by cultural regions, were being established. The creation of two different writing systems followed only at a later stage when, in the Protopalatial period, writing together with other cultural markers would underline difference. 32

Acknowledgements

Part of this research was undertaken thanks to a Michael Ventris Memorial Award given to me in 1998. As always I thank Dr. J. Driessen for his criticism and advice, P. Tomkins for reading the English, Y. Papadatos for useful comments, the F.W.O.-Vlaanderen for their support, and Prof. T.G. Palaima and the students at PASP-Austin where the ideas presented here were first tried out. The absolute dates in this paper are taken from P.M. Warren and V. Hankey, Aegean Bronze Age Chronology, Bristol, 1989, 169.

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NOTES

1 One can completely rule out that one script is religious and the other administrative (cf. Hieroglyphic and Hittite) or that one is monumental and the other cursive (Egyptian Hieroglyphic and Hieratic), since they are both attested on archival documents.

2 The appearance of a rash of EM III/MM I small tholos tombs of Mesara type in northern and eastern Crete could suggest small-scale movements (Branigan 1995, 33–9). From tholos Epsilon at Arkhanes (in use from EM II until MM II) comes a larnax possibly painted with three signs which could be Linear A (Olivier in press).

3 The seal stone from Pangalochori was found in a LM IIIA/LM IIIB chamber tomb (Godart and Tzedakis, 125) and is hence not relevant to the discussion. The one from Moni Odigitria may come from an EM III–MM IA context like the Arkhanes one (Vasilaki 1992, 213).

4 The identification of the ten signs with signs from the ‘classic’ Cretan Hieroglyphic repertoire is not certain and may not be Cretan Hieroglyphic in the strict sense (Olivier 1996). This is the earliest attestation of script on Crete and if the A-SA-SA-RA is indeed a sign-group with religious meaning it is not impossible that the earliest script was introduced in connection with religion.

5 Typological variety is greater in the Cretan Hieroglyphic administration (noduli, direct object sealings, medallions, crescents, cones and apparently also a combination document of a sealing and nodule) than in Linear A (roundels, noduli, flat-based nodules, and nodules).

6 As I have noted elsewhere (Schoep 1995 [1997], 42), it cannot be ruled out that the ‘curious’ mixture in «vano 25» represents an accumulation over time and that Proto-Linear A, which seems mainly to occur on the two-sided bars, was not actually used at the same time as a form of Linear A, which is canonical but with an archaic character, and occurs on page-shaped tablets.

7 Other possible Hieroglyphic inscriptions occur on two sherds (Militello 1990); there is furthermore the erratic tablet discovered by Pernier, where it is not clear what script is represented (CHIC # 122 [1]).

8 This deposit comes from the SW House (cf. Weingarten 1994, 177–8) and will be published by Macdonald, Weingarten, Driessen and Schoep.

9 North-Central and South-Central Crete form a geographical unit and communication must have been easy between these areas (Sbonias 1995, 7).

10 Three were found at Petras (Tisipopoulou and Hallager 1996) and another, which was impressed by a Cretan Hieroglyphic seal stone, was found in the
Kamares Pit Area or SE Pillar Room which was in use from MM IA well into the Neopalatial period and thus the nodule cannot be dated (MacGillivray 1994, 45–56).

11 The conclusions of the Archives Before Writing conference on administration in the Near East painted a similar picture and the earliest attestations of direct object sealings can now be brought back to the late seventh millennium BC.

12 The same may be hinted at by the potters’ marks which are attested on EH II pottery.

13 The MM IIB system in Phaistos already shows an evolution away from the Near Eastern sealing model (Weingarten reply to Pini 1990a, 56).

14 ‘A clay sealing with the impressions of at least two stamp seals preserved on the surface and with impressions from probably peg and pummel [read: pommel] on the reverse’.

15 Vlasaki and Hallager draw attention to the sealed objects from the cemeteries at Sphoungaras and Phourni which seem to be three- or four-sided objects pierced at the top and impressed at the bottom (Vlasaki and Hallager 1995, 269).

16 Besides the sealing, an impression on a bowl and a spindle whorl with 39 impressions on its surface were found.

17 Panagiotaki (1993) mentions ‘vase stoppers’ but also ‘direct object sealings’ and does not specify.

18 Panagiotaki (1993). The date of these sealings is insecure since it is not known whether they come from pure or contaminated contexts and the date may range somewhere between EM-MM IA. A pure EM IIA fill was found beneath the Area of the Olive Press (Wilson 1994, 36).


20 Vlasaki and Hallager 1995, 253 Table I, 254, note 3.

21 Besides Lerna and Akovitika, sealings were also found in EH II contexts at Asine, Corinth (for references, see Pullen 1994, 49), Tiryns and Provatsa on Makronisos (Pini 1990 for references).

22 The Cyclades throw no light on this subject and, except for jar sealings from the Zar Cave on Naxos (EH III), no signs of administration have been found there (CMS V.1B) (Younger 1996, 161).

23 For an assessment of possible predecessors of the later palaces in Prepalatial Crete, see Warren (1987, 47–56).

24 According to Day and Wilson, the clay of SF 211 (See Table 1) cannot be local (Vlasaki and Hallager 1995, 270).


26 E.g. direct object sealings were found at Bouqras, Syria; Jarno Hassuna and Yarim Tepe, Iraq (cf. Archives Before Writing).

27 Ferioli and Fiandra (1990, 223) also make the point that sealings do not function only to prevent theft (other methods could be used for this) but that their main function is to be found in the legal-administrative field.

28 In Weingarten’s view, however, they only testify to an extended role for seals but not necessarily to any administrative structures (Weingarten 1994, 171–88).

29 It has been suggested that the number of impressions on the direct object sealings indicates the quantities withdrawn (Godart 1990, 147).

30 Three noduli which were stamped by the same seal were found in a MM IB level near the South-West Palace angle (Weingarten 1994, 177).

31 Ferioli and Fiandra (1990, 223) distinguish between ‘conservation’ and ‘distribution’ storerooms: the former were only used to store precious materials as well as other goods and to supply the ‘distribution’ storerooms; most of the sealing activity, however, was going on in the latter which was under constant supervision.

32 Cadogan 1990 posited that the regionalism which characterises the Protopalatial period started to develop in EM III.

ABBREVIATIONS


REFERENCES


HAZZIDAKIS, J. 1934: *Tylissos à l’époque minoenne (Études Crétoises, 3)* (Paris).


OLIVIER, J.P. 1996: Les écritures crétoises: sept points à


YULE, P. 1980: Early Cretan Seals: A Study of Chronology (Marburger Studien zur Vor-und Frühgeschichte, 4) (Mainz).