

## EVIDENCE FOR SEAL USE IN PRE-PALATIAL WESTERN CRETE

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At present, there is a debate concerning the use of seals in pre-palatial Crete. Judith Weingarten, on the one hand, argues that seals, although produced since the beginning of EM II, were not used for administrative purposes until the foundation of the palaces.<sup>1</sup> Ingo Pini, on the other hand, maintains that the seals had been used for administrative purposes ever since the Minoans started to produce seals.<sup>2</sup>

In this paper we shall concern ourselves with those 'sealings' and sealed objects from relatively certain pre-palatial contexts (*Fig. 1*) — thus leaving out of the discussion more than half of the seal impressions (with EM seal-devices) listed by Pini in his discussion of the problem.



*Fig. 1* Map of Crete with Pre-palatial sites with evidence for use of seals.

\* Two of the Khamaleuri sealings were discovered in March 1992, only seven months before this symposium. We are grateful to the organizer, Professor J.-Cl. Poursat, for inviting us to present the material here. Likewise we are greatly indebted to Dr. Ch. Kritzas of the Heraklion Museum and epimeletria Ioanna Serpetsidaki for permitting and facilitating our study of the comparative material with such a short notice as was the case. A similar thank is due to Professor C. Davaras for helping us in the Agios Nikolaos Museum. Likewise, we wish to thank Judith Weingarten for correcting the English text. The photographs from the site of Khamaleuri are by Maria Vlasakis. The drawings of the sherds RM 13248 and KH II 6635, and the spindle whorl RM 13247 are by Voula Vrontadaki, while the remaining photographs and drawings are by E. Hallager.

<sup>1</sup> J. Weingarten in: ASSA 105f.

<sup>2</sup> I. Pini in: ASSA 34ff.

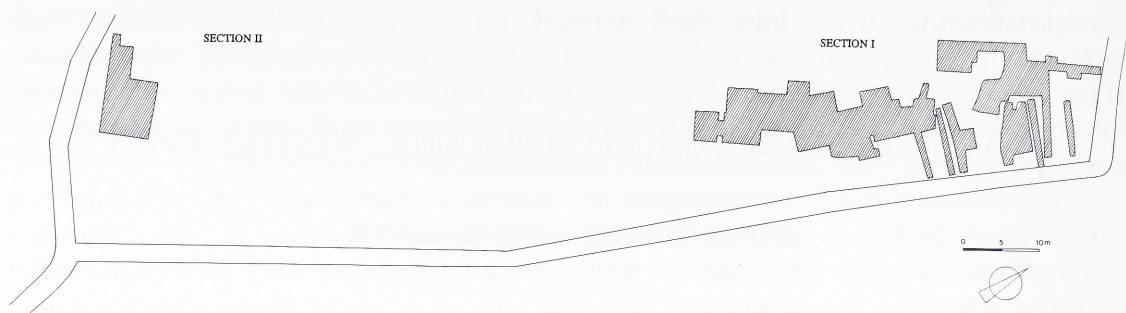


Fig. 2a Khamaleuri. General map of the site.

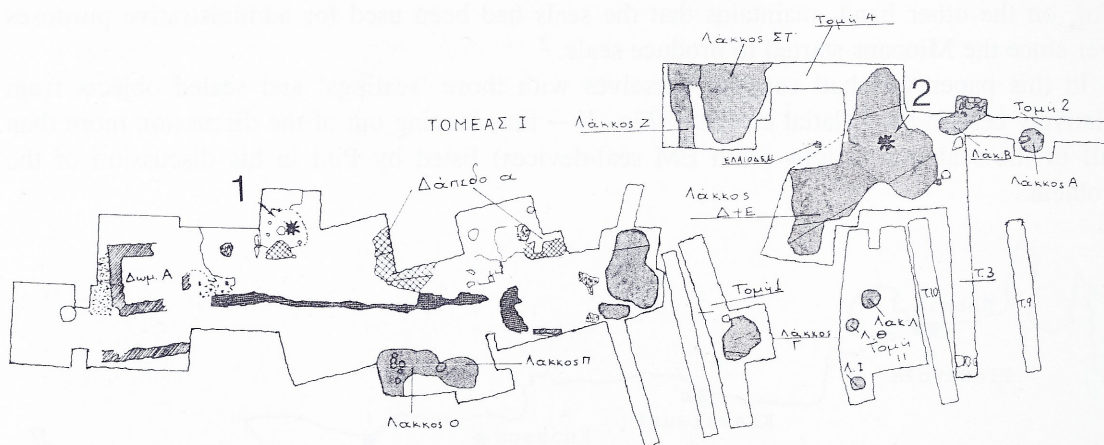


Fig. 2b Section I with indications of the find spots of the sealings: 1. Spindlewhorl RM 13247; 2. The sealing RM 13249.

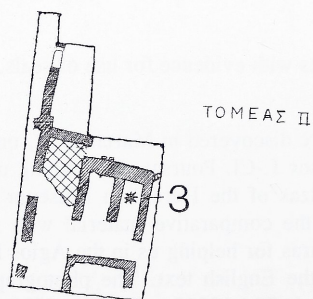


Fig. 2c Section II with indication of the find spot of the sealing: 3. The plate fragment RM 13248.

Table 1 List of sites with pre-palatial use of seals.

Mus. No.	Place	Context	Date	"S"	Other
HM 432	Sphoungaras	Cemetery	MM I?	x	
HM 1177	Archanes	Phourni	MM IA	x	
HM 2934	Archanes	Phourni	EM III/MM IA	x	
HM 1099	Knossos	S edge of Palace	EM III	x	
HM 4814	Palaikastro	House D 32	EM		loom weight
-	Palaikastro	Kastri	EM III/MM IA		jar handle
??	Trypiti	settlement	EM I/II	x	
ANM 3237	Myrtos	settlement, Room 29	EM II	x	
??	Pyrgos	Mno MP 73/257	EM III/MM I		jar handle
??	Mallia	(no 290)	EM/MMI?		jar handle
??	Mallia	(no 195)	EM/MMI?		cubic weight
??	Mallia	Below Palace	EM/MMIA	x	
HM 3517	Khamezi	building	MM IA		loom weight
SF 10033	Knossos	W court House	EM IIA	x	
SF 211	Knossos	W court House	EM IIA	x	
RM 13247	Khamaleuri	Section I	MM IA		spindle whorl
RM 13249	Khamaleuri	Section II	EM III/MM IA	x	
RM 13248	Khamaleuri	Section I	EM III/MM IA		open vessel
XM II 6635	Khania	GSE LM IIIB	EM/MM IA ?		open vessel
XM KH 1569	Khania	GSE, EM	EM II/III	x	
XM II 2062	Platyvola	cave	EM II		open vessel

In this paper, we use the term 'sealing' to mean a lump of clay with one or more seal impression(s) which had been attached to another object for the purpose of security or for identification. In addition, there are seal impressions stamped on loom weights, spindle whorls, handles of vases and the interior of vases.

From Ingo Pini's list we consider the following to be from reasonably secure pre-palatial contexts (*Table 1*): one from Sphoungaras,<sup>3</sup> two from Archanes,<sup>4</sup> one from Knossos,<sup>5</sup> two from Palaikastro,<sup>6</sup> one from Trypiti,<sup>7</sup> Warren's Myrtos sealing,<sup>8</sup> Cadogan's jar handle from Pyrgos,<sup>9</sup> and one certain and two possibilities from Mallia.<sup>10</sup> To this list can be added two EM II sealings from the West Court House at Knossos<sup>11</sup> and a stamped loom weight from Khamezi,<sup>12</sup> for a total of 15 items. In this paper, we now add 3 examples from Khamaleuri, 2 from Khania, and 1 from the Platyvola cave.

We shall first present the West Cretan evidence in some detail and afterwards discuss their possible implications together with the other pre-palatial evidence.

## THE ARCHAEOLOGICAL CONTEXT

### *Khamaleuri*

The Khamaleuri area is known in the archaeological bibliography since the 1960's as the site of an important prehistoric settlement. This was determined from an English and a German survey as well as from attempts of the local school teacher and pupils to gather

<sup>3</sup> HM 432. This sealing was found "in a region where the Early Minoan interments and the later (MM III/LM I) pithos burials were confused." (E. Hall, *Excavations in Eastern Crete, Sphoungaras, Philadelphia 1912*, 70). For two reasons the early date seems preferable: 1. The seal device appears to be pre-palatial and 2. The only comparable type of 'sealing' are the two EM III/MM IA 'sealings' from the cemetery at Archanes. (HM 1177 and 2934).

<sup>4</sup> HM 1177, cf. Ergon 1987, 124 Fig. 151. and HM 2934, cf. Prakt 1980, 373, Pl. 218 $\tau$ .

<sup>5</sup> HM 1099, cf. M.S.F. Hood – V.E.G. Kenna in: *Antichità Cretesi. Studi in onore di Doro Levi, I* (Catania, 1973) 103ff. Figs. 1–2.

<sup>6</sup> HM 4814, E. Eccles, BSA 35, 1940, 49 No. 41 Fig. 27; on the pre-palatial date: P. Warren, *Kadmos* 9, 1970, 31 n. 9. HM No. cf. L.H. Sackett – M. Popham, BSA 60, 1965, 304 No. 21 Fig. 18,21.

<sup>7</sup> HM no No., cf. ARepLondon 1986/87, 57.

<sup>8</sup> ANM 3237. cf. P. Warren, *Myrtos. An Early Bronze Age Settlement in Crete* (1972) 40f. 227 No. 134 Fig. 97 Pl. 77C.

<sup>9</sup> cf. Pini (*supra* n. 2) 36 and n. 16.

<sup>10</sup> Certain is M. Hue – O. Pelon, BCH 116, 1992, 31ff. Fig. 33–34. The two possibilities are J.-Cl. Poursat in: B. Detournay – J.Cl. Poursat – F. Vandennebeele (eds.), *Fouilles exécutées à Mallia, Le quartier Mu, ÉtCrét 26* (1980) Nos. 290 and 295, 202 and 204; both were found out of context (p. 192) but 290 is considered to be "antérieure a la période d'occupation du Quartier Mu".

<sup>11</sup> For the two Knossos sealings: D.E. Wilson, *The Early Minoan IIA West Court House at Knossos*, PhD diss. University of Cincinnati 1984 (University Microfilms 84-20922) 210f. We are grateful to David Wilson for showing us these sealings.

<sup>12</sup> Mentioned by Eccles (*supra* n. 6), 48.

surface archaeological material.<sup>13</sup> Some locate another palatial centre of Minoan Crete here, the town of da-<sup>\*</sup>22—to of the Linear B script<sup>14</sup> and the evidence so far supports this view. The area, of course, was inhabited continuously in Minoan times as the surface pottery proves.

M. Vlasakis began the present trial excavations in 1991 at the Bolanis site, a field owned by Mr. D. Stratidakis (132.60 x 31/17 m.). Although the long, continuing cultivation of the fertile soil resulted in very thin filling up and the destruction to a great degree of the ancient ruins, findings were as expected. We recognized architectural remains from two pre-palatial phases (transitional EM III/MM IA and advanced MM IA) as well as of the LM IIIB/C period. Between these periods (and afterwards) the site was uninhabited and unused.

In Section I the remains of EM III/MM IA period consisted mainly of big rubbish pits (*Fig. 2b*) with a very few wall foundations. We are now starting to uncover a MM IA settlement, probably of an industrial nature, that functioned in an open, specially arranged area. The excavated area revealed a long cobbled path, north of which were three hearths of different constructions: one rectangular hearth made of mud bricks, a second elliptical hearth of red clay, and a four-sided hearth with shallow cavities at its edges made of a combination of yellow soft limestone (kouskouras) and red clay. All hearths have stone outlines and bedding. We have also been able to distinguish other fire-spots and remains of small wall foundations of an improvised construction.

At the west of the section is a four-sided room and the beginnings of a second room, divided by the cobbled path. There are many burnt clay utensils, some of which will probably help in the identification of the type of industrial activity carried out on the site. The big pits with their large quantities of pottery are still unexplained, but they do explain the abundant surface ceramic finds we have always observed here. The settlement seems to have been suddenly abandoned at the end of the MM IA phase.

LM IIIC1 habitation is evidenced only from circular pits of quite different construction than those of EM/MM. The later pits are of rather small size, containing grey burnt soil, broken pottery and bones. Excellent examples of the pottery phase have been uncovered here. It seems that these diggings were not rubbish pits (as were the EM/MM pits) but contained ritual cult materials, similar to the pits elsewhere in the Rethymnon district, at Sybritos on the peak of the Kephala hill.<sup>15</sup>

In Section II (*Fig. 2c*), at the west side of the field, part of a MM IA building has been uncovered, along with some EM III/MM IA finds (*Fig. 3*). An impressive, long descending

<sup>13</sup> W. Schiering – W. Müller – W.-D. Niemeier, AA 1982, 17ff.

<sup>14</sup> J. Bennet in: *Texts, Tablets and Scribes. Studies in Mycenaean Epigraphy and Economy* (1988) 38 and n. 63; id., AJA 89, 1985, 238; J. Moody, *The Environmental and Cultural Prehistory of the Khania Region of West Crete. Neolithic through Late Minoan III*. PhD diss. University of Minnesota 1987, Appendix IV; J. Chadwick in: *Antichità Cretesi. Studi in onore di Doro Levi, I* (1973), 199ff. The tablets mention mainly sheep/wool textiles, olives, grain and aromatics (*Cyperus rotundus*). See also M. Andreadaki-Vlasaki in: *Ελλάπινη. Τόμος τιμητικός για τον καθηγητή Νικόλαο Πλάτωνα*, 1987, 55ff. Figs. 1–5 and Pls. 1–16.

<sup>15</sup> N. Metaxa-Prokopiou in: *La transizione dal Miceneo all'Altro Arcaismo. Dal palazzo alla città* (1991) 373ff.; *Κρητική Εστία* 2, 1988, 313 Pl. 10 and 3, 1989/90, 275 Pl. 7.

open slab area is probably a street running between two houses. No furnishings were found in the rooms; there are no signs of fire nor of earthquake to justify their abandonment at the end of MM IA, at the same time as in section I.

When the site was re-inhabited in LM IIIC1, a section of the old MM IA foundations was partly reused by a new house currently being excavated; this extends mainly west of the slab area, so the eastern part of the excavation preserves the MM IA remains at the same level as its neighbouring LM IIIC1.

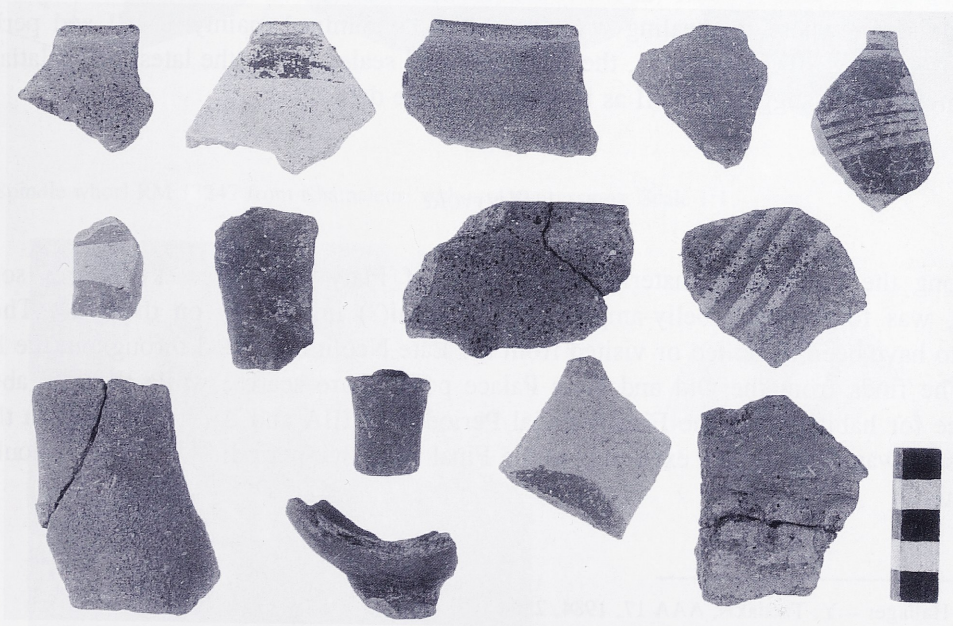
The first of the Khamaleuri sealings is a spindle whorl (RM 13247) (*Fig. 6*) found at a depth of 0,27 m. on hearth No. 3 (with the circular cavities); hearth's depth: 0,35 m. (*Fig. 2b*). The spindle whorl's surface is partly burnt, probably as a result of its position on the hearth. Many obsidian flakes and three pieces of stone vases were also associated with the hearth. An MM IA jug was found in situ beside the SE corner of the hearth. Other sherds from the area are seen on *Fig. 4*. Immediately to the east is a pit filled with pottery, contemporary or older. The inside of the hearth is unexcavated, so we do not yet know any structural details. The hearth was on the same floor level as the other two hearths described above; there was a fire spot with many obsidian flakes at its west side. This hearth seems to have had the same industrial function as the other hearths, fire spots in the area of the cobbled path.



*Fig. 3* Khamaleuri. Part of EM III/MM IA house in Section II.



*Fig. 4* Selection of pottery found together with the stamped spindle whorl, area of hearth 3.



*Fig. 5* Selection of pottery found in pit B, section II, together with the sealing RM 13249.

The second Khamaleuri seal impression (RM 13249), stamped on the interior of an open vessel (*Fig. 11*) was found in a rubbish pit east of the area of the hearths in a complex of pits of EM III/MM IA (Pit D+E) and circular diggings of LM IIIC1 date (*Fig. 2b*). From this pit complex 660 kilograms of pottery was collected.

The third sealing (RM 13248) (*Fig. 8*) comes from a pit in the interior of the MM IA house of Section II (*Fig. 2c*). The north part of the room was divided into two by a wall (*Fig. 3*). Its floor lay over an EM III/MM IA pit, only the eastern portion of which has been dug. It contained a large amount of pottery (*Fig. 5*) along with two pieces of well baked clay slabs and a fragment of a stone vase.

### *Kastelli, Khania*

Further west, in Khania, one or probably two instances of seal-use from the pre-palatial period have been discovered, both from the Greek-Swedish Excavations. One, without context, was found in 1984 in a rubbish pit of LM IIIB2 date.<sup>16</sup> This was a seal impression (CMS V Suppl. 1A No. 150) stamped on the interior of a large open vessel (XM II 6635; *Fig. 14*).

The second, a 'true' sealing (XM KH 1569; *Fig. 15*) was found during rescue excavations in Odos Kanevaro in 1989.<sup>17</sup> It was found in the second layer below a floor of the MM IA period destroyed by fire and with complete vases *in situ*. The first layer below the MM IA floor was a level with EM III (and a few MM I sherds near the top), and the second layer below the floor where the sealing was discovered contained mainly EM II and perhaps a few sherds of EM III. In any case, the sealing is well sealed below the latest pre-palatial floor at the site, and we suggest EM III as its latest possible date.

### *Platyvola*

Among the pre-palatial material in the cave of Platyvola, a few kilometres south of Khania, was found a tall belly-amphora with a seal(?) impression on the base. The cave seems to have been inhabited or visited from the Late Neolithic Period throughout the Bronze Age. The finds from the Old and New Palace periods are scarce, while there is abundant evidence for habitation in the Final Palatial Period (LM IIIA and B). The vase with the seal impression was dated by the excavator to the Final Neolithic period,<sup>18</sup> although it could be a little later.

<sup>16</sup> E. Hallager – Y. Tzedakis, AAA 17, 1984, 25f.

<sup>17</sup> See E. Hallager and Y. Tzedakis, AAA 21, 1988, 17.

<sup>18</sup> L. Godart – Y. Tzedakis, *Témoignages archéologiques et épigraphiques en Crète occidentale du Néolithique au Minoen Récent IIIB* (1992) 48ff. Pl. XLIII,2.



We hope that this introduction has demonstrated the pre-palatial context of the sealings to be discussed — with the exception of one from GSE.

### COMMENTED CATALOGUE

#### *Khamaleuri finds*

##### *The spindle whorl RM 12247; (Fig. 6)*

Spindle whorl, completely preserved. Clay very finely gritted with few extremely fine sand corns. Light grey brownish; at bottom and lower part of side burnt dark grey to black. Pierced with vertical hole. The whole surface is covered with impressions of a seal's edge, for a total of 39 impressions — but only a small part of edge is impressed each time.



Fig. 6 Spindle whorl RM 13247 from Khamaleuri with seal impressions. Scale 1:1.

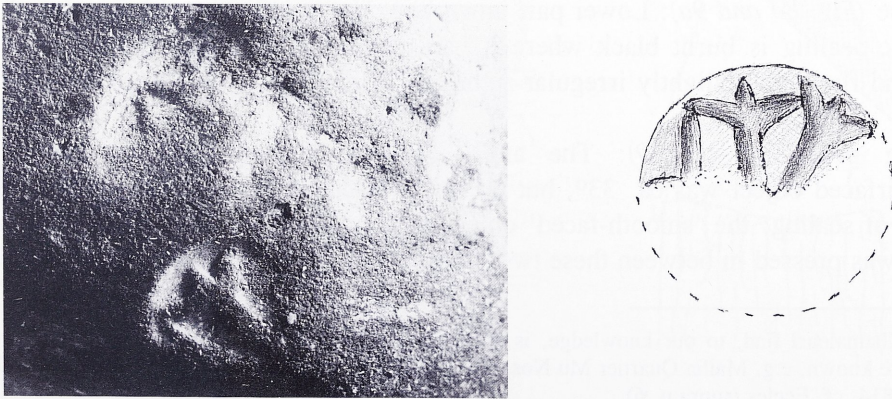


Fig. 7 Photograph and composite drawing of the seal impression found on the spindle whorl RM 13247.

*The seal impressions (Fig. 7)*

All 39 impressions are faint and badly preserved. Apparently, each time the same part of the rim of the seal has been impressed. The impressions seem to indicate a more or less circular flat seal (cylinder?) with an original diameter of perhaps 1.1 cm. The composite drawing of the best preserved impressions suggests a motif which may be described as branches with pointed leaves at the end, radiating from the centre of the seal. Mpd. of seals 0.9 x 0.55 cm.

Two good pre-palatial parallels for this motif may be found: on an ivory cylinder from the tholos tomb in Kalathiana (CMS II,1 No. 127) and another ivory cylinder from tholos tomb B in Platanos (CMS II,1 No. 272).

Comments: Seal impressions on spindle whorls are not common<sup>19</sup> but stamped loom weights are well known from the pre-palatial period until the end of LM I; there are at least three pre-palatial examples from the Aegean: Palaikastro,<sup>20</sup> Khamezi<sup>21</sup> and from Lerna III<sup>22</sup>.

*The clay sealing RM 13249; (Fig. 8a–d)*

Clay sealing of unknown type. Practically completely preserved. Relatively soft, finely gritted, brick red clay. The sealing is roughly of triangular shape with ends of very different character. L. 5.6 cm; W. 3.7 cm; H. 3.1 cm.

Bottom (*Fig. 8c and 9b*): The bottom of the clay sealing seems to have been pressed against a piece of flaked wood not more than 3 cm wide; on one side the clay goes down the side of the wood(?); on the other (front) side is a fracture which shows that it had been pressed against the wood here too.

Front (*Fig. 8a,b*): The front is covered with seal impressions from a stamp seal (Diam. 2.5 cm) pressed four times (partly overlapping) against the front.

Right end: is unworked and below whatever was sealed.

Left end: Clearly pressed against the two objects to be sealed. All covered with finger prints.

Reverse (*Fig. 8d and 9a*): Lower part unworked. Upper left part with imprint of the other object; the sealing is burnt black where it had touched this object. The object was rather smooth and flat with a slightly irregular right end which continued beyond the sealing to the left.

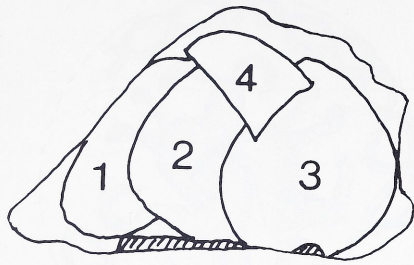
Sealing procedure (*Fig. 9*): The angle between the edge of the wood and the smooth-surfaced object was ca. 33°, but the two objects clearly did not touch each other at the point of sealing; the 'smooth-faced' object seems to have rested on something different. The clay was pressed in between these two objects.

<sup>19</sup> The Khamaleuri find, to our knowledge, is the only one from a pre-palatial context; a few proto-palatial examples are known, e.g. Mallia Quartier Mu Nos. 292 and 293? cf. Poursat (*supra* n. 10) 204 Figs. 274. 276.

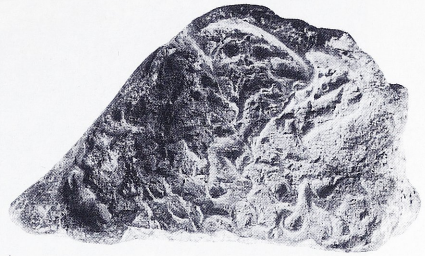
<sup>20</sup> HM 4814, cf. Eccles (*supra* n. 6).

<sup>21</sup> HM 3517, cf. Eccles (*supra* n. 6).

<sup>22</sup> M.H. Wiencke, *Hesperia* 38, 1969, 508 No. 191. Pl. 129 (now exhibited in the Argos museum).



a



b



c



d

Fig. 8a-d The sealing RM 13249 from Khamaleuri.

a) schematic drawing showing the position of the 4 impressions (compare b); b) front; c) bottom; d) reverse.

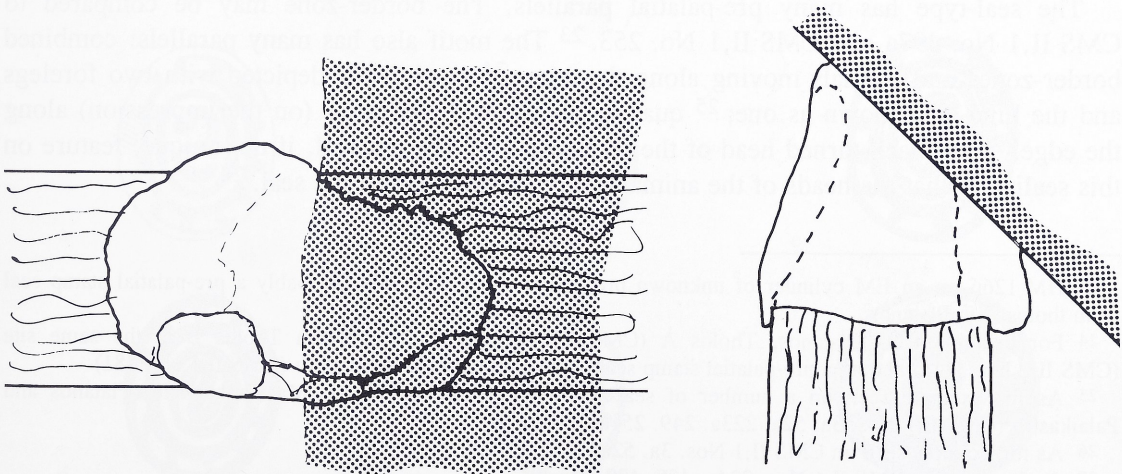


Fig. 9a.b Drawing of "position" of the Khamaleuri sealing RM 13249.

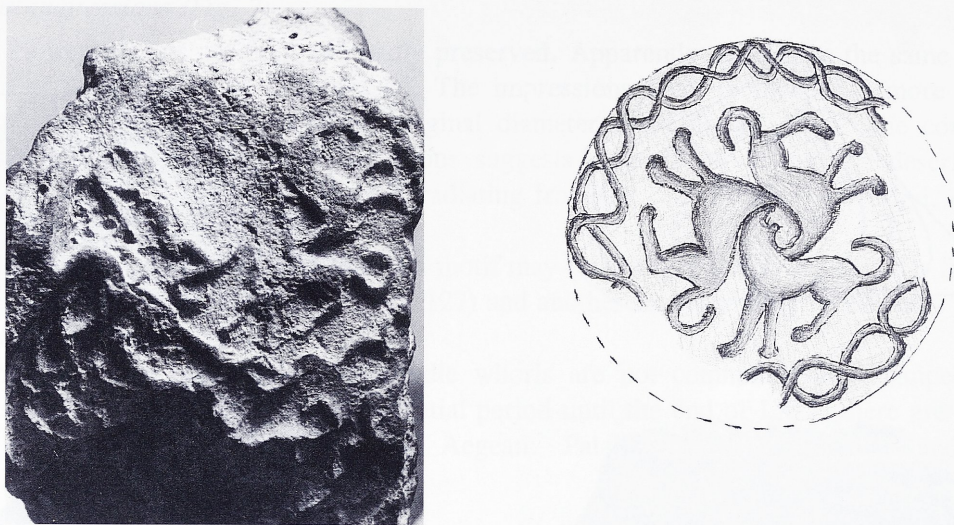


Fig. 10 Photograph and composite drawing of the seal impression on RM 13249.

Seal impressions (Fig. 10): four imperfectly preserved impressions from one seal. The seal surface was very flat, indicating the use of a cylinder? Motif: a rope pattern on the edge, forming a continuous row of lying 8's. Inside, three long-necked quadrupeds (lions?) moving clockwise around the centre of the seal. Forepaws are separated while the hindleg is only shown as one; curvy tails; where visible, the heads are looking backwards *en regardant*; mouths are open. In fact the same line seems to separate the heads of two lions. Diam. 2.54 cm.

The seal-type has many pre-palatial parallels. The border-zone may be compared to CMS II,1 No. 497a and CMS II,1 No. 253.<sup>23</sup> The motif also has many parallels: combined border-zones and animals moving along the edge;<sup>24</sup> quadrupeds depicted with two forelegs and the hind-legs shown as one;<sup>25</sup> quadrupeds moving clockwise (on the impression) along the edge;<sup>26</sup> the back-turned head of the quadruped.<sup>27</sup> The unusual, if not unique, feature on this sealing is that the heads of the animals meet in the centre of the seal.<sup>28</sup>

<sup>23</sup> HM 1266 on an EM cylinder of unknown provenance, and HM 1044, probably a pre-palatial stamp seal from tholos A in Platanos.

<sup>24</sup> For example from Platanos, Tholos A (CMS II,1 Nos. 251a. 253). From Tholos B at the same site (CMS II,1 No. 311a) and on a pre-palatial stamp seal from Rousolakkos, Palaikastro (CMS II,1 No. 481)

<sup>25</sup> As for example seen on a number of seals from Drakones, H. Triada, Marathokephalo, Platanos and Palaikastro (CMS II,1 Nos. 3a. 52a. 223a. 249. 251a. 311a. 481).

<sup>26</sup> As for example seen on CMS II,1 Nos. 3a. 52a. 251a. 311a.

<sup>27</sup> As for example CMS II,1 Nos. 224a. 408. 489.

<sup>28</sup> We know only of one other example where part of the animals actually meet in the centre of the seal, but it is quite different from the Khamaleuri seal. It is an ivory cylinder from Archanes (HM 2253) where the long horns of four goats? join in the centre of the seal (CMS II,1 No. 382a).



Fig. 11 Drawing and photograph of the vase RM 13248 with the seal impression. Scale 1:2

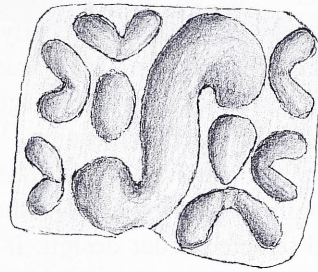


Fig. 12 Photograph and drawing of the seal impression found on the plate RM 13248.

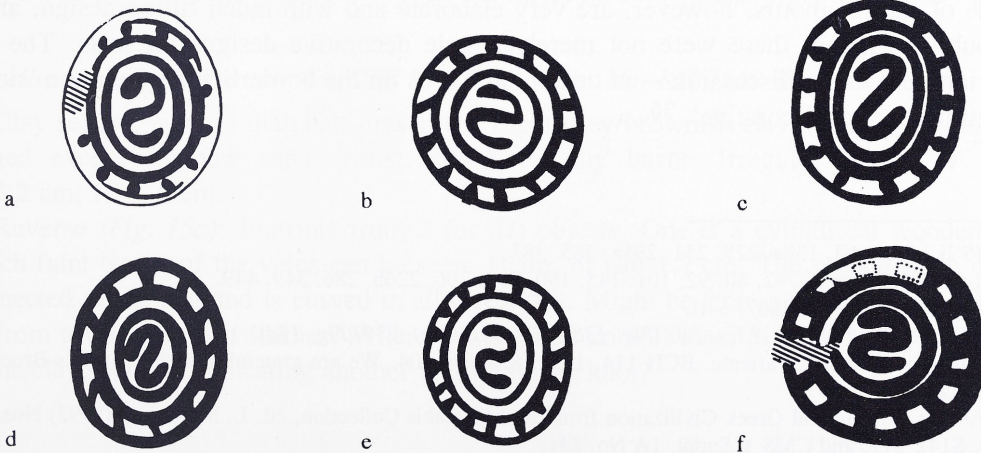


Fig. 13a-f The six almost identical seals with the simple "administrative" S.

*The Plate RM 13248 (Fig. 11)*

Open plate/bowl, rim fragment. Flat, slightly everted rim. Light brown clay with some holes and few larger inclusions of schist. Slightly burnt on outer part of rim. No polish or slip visible. On outside two faint lines; the vertical is probably a crack while the horizontal may have been caused by the smoothening instrument. Interior roughly 'brushed'. On interior also one completely preserved seal impression. 'Brush' marks also over seal impression. Handmade. H. 5.5 cm; W. 6.8 cm; Th. 0.7 cm.

Seal impression (*Fig. 12*): Almost rectangular impression with flat surface — from prism? or the like. The main motif is a 'S' with a dot (or drop design) on either side. Along the edge is found a crescent shaped design — two on each short side and one on each long side. H. 2.04 cm; W. 1.8–1.6 cm.

The crescent shaped filling ornaments are quite popular on pre-palatial seals where they are described as 'double leaves'.<sup>29</sup> The main 'S'-motif (often remirrored, single, double or in combinations) is well attested from the pre-palatial period onwards. More often than not, the motif is — as on this seal impression — followed by additional ornaments.<sup>30</sup> It is interesting that this motif frequently occurs on seals with hieroglyphic inscriptions, either alone or with hieroglyphic signs. It is also incised on clay documents (KE Wc 2 and KN Wc 23) for which reason it has been argued that this sign/motif is an administrative symbol with an unknown, but specific meaning.<sup>31</sup> On six almost identical pre-palatial seals from Lenda (*Fig. 13b. c*), Platanos (*Fig. 13d. e*),<sup>32</sup> Krotos Kainourghiou (*Fig. 13f*)<sup>33</sup> and in the Mitsotakis collection (*Fig. 13a*)<sup>34</sup> the design is without filling ornaments, but surrounded by a circle and simple border design. It seems that identical (rather than different) designs have been attempted in these six cases which strongly indicates that these seals were produced for a purpose different from the usual one: identification of person or office. Given that the earliest hieroglyphs also go back to the pre-palatial period,<sup>35</sup> it would not be surprising to find that the 'S' already existed as an administrative symbol in this period.

Some of the 'S'-motifs, however, are very elaborate and with much filling design, and it may be doubted whether these were not merely simple decorative designs on seals. The seal impression here under discussion — in our opinion — is on the borderline between the 'simple administrative' and 'decorative'.<sup>36</sup>

<sup>29</sup> CMS II,1 Nos. 63. 138a. 228. 251. 295a. 385. 387.

<sup>30</sup> e.g. CMS II,1 Nos. 2. 42. 80. 92. 101. 145. 190. 204. 206. 226b. 286. 349. 449.

<sup>31</sup> E. Hallager, BSA 82, 1987, 64ff.

<sup>32</sup> CMS II,1 Nos. 190 (*Fig. 13c*). 220 (*Fig. 13b*). 270 (*Fig. 13e*). 279 (*Fig. 13d*).

<sup>33</sup> EM II–III context, A. Pariente, BCH 114, 1990, 828 Fig. 204. We are grateful to Helen Hughes-Brock for this reference.

<sup>34</sup> I. Pini in: Minoan and Greek Civilization from the Mitsotakis Collection, ed. L. Marangou (1992) Nos. 283 (coll. No. S14), 217, and CMS V Suppl. 1A No. 241.

<sup>35</sup> For example at Archanes, see further J.-P. Olivier in: Transition 258.

<sup>36</sup> Chr. Boulotis in his contribution at Clermont-Ferrand (not published in this volume), however, suggests that the 'S' represents snakes.

*The GSE finds**The bottom of open vessel No. Π 6635 (Fig. 14)*

Clay vessel, base fragment from open vessel with impression from a seal? Light red brownish, semi-coarse with schist inclusions. No slip, no paint, the fragment is only slightly curved. Hand made. Impression from 'simple' seal on the interior of the vessel. Mpd. 11.4 cm; Th. 0.7 (centre)—1.2 cm (where fragment starts to turn);

Seal impression: The impression (CMS V Suppl. 1A No. 150) is from a flat seal with raised motif consisting of a circle with a cross, with small angles in each quarter of the circle. For about 1/4 an extra thin stroke/impression is seen. Diam. of seal 3.1 cm.

Usually more elaborated variations of this design are found in the pre-palatial period.<sup>37</sup> One seal in the Metaxas collection, however, is extremely close to ours.<sup>38</sup> In this very simple form, as on Π 6635, the motif seems to disappear after the protopalatial period.

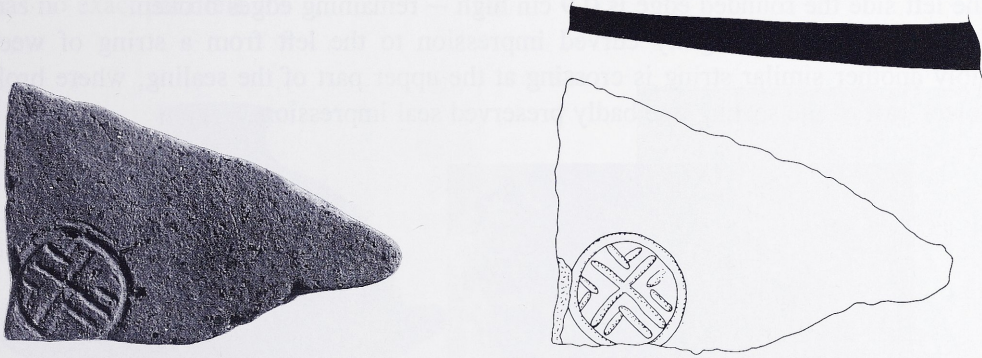


Fig. 14 Drawing of the sherd XM Π 6635 with the seal impression CMS V Suppl. 1A Nr. 150. Scale 1:2.

*The clay sealing Excavation No. GSE 89-TC 37, Mus. No. KH 1569 (Fig. 15a–c).*

Clay sealing — more than half preserved. Light grey/brownish clay, slightly porous, finely gritted except for few sand corns; soft and badly burnt. Irregular shape. W. 2.5 cm; L. 3.2 cm; H. 1.8 cm.

Reverse (Fig. 15a): Imprints from 2 (or 3?) objects. One is a cylindrical wooden peg of which faint traces of the veins can be seen. Diam. of peg 1.7 cm. The second main object is connected to the peg and is curved in all directions. Might be from a pommel, but could also be from a large knot of leather? Where the peg and knot(?) meet there is a slight depression in the clay, perhaps indicating another folding of the knot?

<sup>37</sup> CMS II,1 Nos. 74. 96. 116. 288. 292. 460. 470.

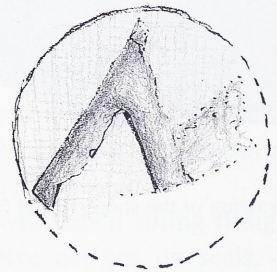
<sup>38</sup> CMS IV No. 56, said to come from Mallia.



*Fig. 15a–c* Reverse, obverse and preserved edge of the sealing XM KH 1569.

Sides/edge (*Fig. 15c*): Where the clay meet the peg from outside there is only a thin edge. On the left side the rounded edge is 0.9 cm high — remaining edges broken.

Surface (*Fig. 15b*): Slightly curved impression to the left from a string of weed/reed. Possibly another similar string is crossing at the upper part of the sealing, where broken. At the lower part of the sealing one badly preserved seal impression.



*Fig. 16* Photograph and drawing of the seal impression on XM KH 1569.

Seal impression (*Fig. 16*): one very worn impression from roughly circular seal with almost flat surface — cylinder? Calculated original Diam. 1.15 cm, in which case roughly half the seal device is preserved. Motif: impossible to determine beyond a 'Z' or zigzag line. Considering, however, that half the impression seem to be preserved the design must have been very simple, with rather thick lines, e.g. CMS II,1 Nos. 200, 218 and 246; in any case, it is too worn to justify further speculation.

Sealing procedure: Clay pressed up against object to be sealed. Apparently, after the seal was impressed one or two strings of weed/reed were bound around the object and clay to further secure it.



If the sealing procedure is correctly interpreted, it perhaps implies that the sealed object was intended for transport, in which case the single seal impression might perhaps be understood as identifying rather than actually securing (since the string did not go in or under the clay). Possibly, but not certainly, it may be a variant of Fiandra's Type B2 from Arslantepe.<sup>39</sup>

*The Platyvola jar XM No. II 2062 (Fig. 17).*

Completely preserved tall belly-amphora with 'brush-decoration', and with a seal impression or 'potter's mark' impressed on the base. Thick whitish worn-out slip covers its surface. Clay: greyish-brown. H. 54.5 cm. Diam. of base 10.4 cm.

The 'potter's mark' (Fig. 18) stands out in relief and was designed in clay before the vase was fired. The motif: a triangle filled in with eight dots or ovals; outside one of the sides there is another, but probably accidental dot. The sides of the triangle are 3.8 cm, 4.0 and 3.5 cm. Although a few large 'filled-in' triangle motifs do exist in the pre-palatial period, this motif has no exact parallels.<sup>40</sup>



Fig. 17 The belly-amphora from Platyvola, XM II 2062.

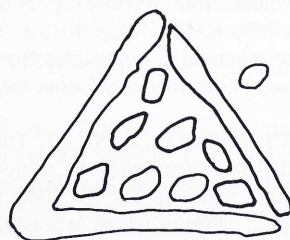


Fig. 18 The "potter's mark" on XM II 2062.

<sup>39</sup> P. Ferioli – E. Fiandra, *Origini* 1983 (1988), 455ff.

<sup>40</sup> CMS II,1 Nos. 330, 359.

## PRE-PALATIAL SEAL-USE

The six west-Cretan seal impressions increase the pre-palatial corpus by 40%; there are now 21 examples from relatively certain pre-palatial contexts (*Table I*). Of these, 11 are probably true sealings, while 10 are impressed on pottery, loom weights or a spindle whorl. This extremely limited amount of material, while not permitting any firm conclusions, does give us an incentive to discuss the problems they present.

Beginning with the unique spindle whorl, the obvious question is whether or not the 39 fragmentary impressions were meant as a decoration (as was probably the case with an incised spindle whorl from Myrτος)<sup>41</sup> or if they had the same general meaning as seal impressions on later spindle whorls and loom weights?<sup>42</sup> Stamped loom weights of all periods usually bear only a single, centrally placed seal impression<sup>43</sup> stamped before the weight was baked; for example, the EM loom weight from Palaikastro.<sup>44</sup> According to Poursat such impressions "suggest some sort of control and organization of the production".<sup>45</sup>

Poursat expresses the same opinion regarding seal impressions on vase handles and this may apply equally to impressions found on the interior of open vessels; e.g. the two examples from Western Crete. It seems still more the case with the *Platyvola* jar where the 'potter's mark' on the base of the vase was not intended to be visible. However, different interpretations are also possible. Could they, after all, be decorations as, for example, was suggested for mainland and Cycladic finds of stamped pottery?<sup>46</sup> Could they be 'potter's marks'?<sup>47</sup> or simple means of identifying property? These repeated seal impressions may perhaps be explained as 'decoration' or control within private household economy, or it may well have expressed some kind of administrative control within a pre-palatial community.

<sup>41</sup> Warren (*supra* n. 8) 229 No. 151 Fig. 99 Pl. 78A. As decoration is certainly also meant the many painted spindle whorls from Myrτος; e.g. Nos. 26. 157. 159.

<sup>42</sup> see *infra* n. 45.

<sup>43</sup> The spherical loom weights from Monasteraki are an obvious exception, being impressed many times.

<sup>44</sup> Also at contemporary Lerna the system with loom weights with a single seal impression is known, cf. (*supra* n. 21).

<sup>45</sup> J.-Cl. Poursat in: ASSA 55. This opinion would also be supported by HM 4815, a disk-shaped loom weight from Palaikastro (probably of proto-palatial date: Eccles [*supra* n. 6] Nos. 41. 48–49), both incised with the hieroglyphic sign No. 36 (B) [042 in the new edition by Olivier and Godart], and stamped by a four-sided hieroglyphic prism of which at least the trowel sign No. 18 (A/B) [044 in Olivier and Godart] can be clearly seen. For numeration of signs: Evans, SM I 187. 195 and Fig. 102; and "Tableau des signes" kindly provided to us by J.-P. Olivier.

<sup>46</sup> Wiencke (*supra* n. 22) 508; slightly modified in her discussion of the entire material, 517ff. as "marks or decoration".

<sup>47</sup> As for example argued for later periods, see for example Evans, SM I 142 in his comment on the seal impressions found on pottery from Palaikastro (No. P-143). This impression is interesting, because the same seal has been identified on three fragments of pottery found at different places in Palaikastro (cf. Eccles [*supra* n. 6] 47 No. 30,1–3) and because one of the impressions (No. 30,3), like the Khamaleuri find was impressed "inside rim fragment of a yellow cup". The date of the seal seem to be MM or earlier.

Turning now to the 11 true sealings, the two from Archanes and one from Sphoungaras may be isolated as a separate group<sup>48</sup> for two reasons: 1. they are all of the same general type: three- or four-sided, pierced at the top and with a seal impression at the bottom and 2. all three were found in cemeteries. It may be significant that similar sealing types are found at different sites, perhaps indicating a uniform administrative sealing practice.

The remaining eight sealings seem to be different from the proto-palatial types. The Trypiti sealing is a large fragment which, however, does not reveal what was sealed.<sup>49</sup> The Knossos sealing HM 1099 is a canonic jar stopper with a clear imprint of the rim of the jar on the reverse; this may have only been for "household management".<sup>50</sup> The newly-discovered Mallia sealing is fragmentary; no imprints on the reverse are preserved to show what may have been sealed.<sup>51</sup> The Myrtos sealing and the two Knossos sealings from the West Court House, however, are of a different character and may have had a true administrative character, although we cannot judge their precise function.

The Khamaleuri sealing is at present unique, although a fragment of a possibly pre-palatial Knossos sealing, HM 1200, could be of similar type. Furthermore, the description of two unidentified Lerna Sealing types (Type U, Nos. 142 and 143) is reminiscent of the Khamaleuri sealing.<sup>52</sup> It would be interesting if this were another example of uniform sealing practice at different prepalatial centres.

GSE TC 37 is the only sealing with string marks — but only on the outside of the sealing. We have suggested that this was because the object 'sealed' had to be transported. And this sealing gives us reason for two final speculations/observations:

1. From securing strings on the outside of a clay sealing to having them inside (or at the reverse), as is done in later administration, is not a very big step. Is this an example of a phenomenon which may have developed naturally into the administrative sealing system we find in the palatial periods — suggesting that the impact from the Near East may perhaps have been slightly overemphasized?

2. Are all pre-palatial sealings of local clay? If not — if the sealings have travelled some distances — they may perhaps be considered as part of a wider administrative system as may be the case in later periods.<sup>53</sup> In our opinions, the clay of the GSE sealing need not be local

<sup>48</sup> It was suggested to us that this 'group' may have had counterparts at Lerna. This comparison, however, is doubtful since the Lerna IV specimen are well burnt seals (cf. Wiencke [supra n. 22] 509 Pls. 129–130) while, to the best of our knowledge, those from Archanes and Sphoungaras are cones with seal impressions. It might be tempting to compare the Cretan sealings with the later 'medallions' — pierced clay disks with hieroglyphic inscriptions, perhaps intended as labels on commodities transported.

<sup>49</sup> We are grateful to Andonis Vasilakis for showing us his sealing.

<sup>50</sup> J. Weingarten in: ASSA 56.

<sup>51</sup> Hue – Pelon (supra n. 10) 31.

<sup>52</sup> M.H. Wiencke, *Hesperia* 27, 1958, 104, described as roughly triangular in section, one face with seal impression, one smooth and one with shallow diagonal reed marks. Substituting 'reed marks' by 'wood' (as probably seen on Lerna No. 130, *ibid.* Pl. 28), makes the similarity striking.

<sup>53</sup> As so excellently demonstrated by Weingarten for the LMI period in: *Bronze Age trade in the Mediterranean*, ed. N.H. Gale, (Jonsered, 1991) 303ff., and as hinted by Kanta for the MM II period (Μοναστηράκι Αμαρίου, presented at the 7th International Cretological Congress at Rethymnon 1991).

to Khania; according to David Wilson and Peter Day, the Knossos sealing SF 211 cannot be of local Knossian clay.<sup>54</sup>

The increasing evidence for pre-palatial seal use helps us to understand better the nature of early sphragistic practices. The evidence of seals impressed on spindle whorls, loom weights, and jar handles (and perhaps open vessels as well) may suggest some sort of control and organization of production. Similar sealing types found in different parts of the island may indicate uniform administrative sealing practice, while imports of sealed objects may likewise indicate a need for seals in the administration of the pre-palatial society.

One general observation concerning pre-palatial 'sealings' (including most of Pini's possible pre-palatial sealings, but excluding the Archanes/Sphoungaras group) is that it is difficult to see how they were attached to the objects they sealed. None have string-marks on the reverse or inside; it is often difficult to imagine how they could have secured the integrity of the items they were applied to. Might their primary function thus have been to identify ownership or authority.<sup>55</sup>

We stress that the material at present does not permit more than observations and conjectural hypotheses. However, it seems to favour the idea that administration of production, trade, and perhaps storage, was needed in pre-palatial Crete and that seals — as in the later periods — were a vital instrument in this administration.

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<sup>54</sup> We are most grateful to Peter Day and David Wilson for permission to mention this observation of theirs.

<sup>55</sup> Also Ann Blasingham in her paper at Clermont-Ferrand (not published in this volume) indicated that the use or function of the pre-palatial seals might have been different from the one known in the following proto-palatial period.