

MINOAN LONG-DISTANCE TRADE: A VIEW FROM THE NORTHERN AEGEAN *

For Sinclair Hood

Minoan scholars have occupied themselves with Minoan foreign relations since Sir Arthur Evans wrote *The Palace of Minos*. The long-standing question of the importance of the external trade has received a variety of answers and has provided a rich collection of ideas from maximality to minimality ¹. The renewed interest in Minoan “colonies” and in the concept of a Minoan “thalassocracy” has revived the debate about the movement of peoples and trade goods in the Aegean as well as about trade-notions like the incentive/incentives, and the organisational/operational structure. A small set of new data from the excavations of the 19th Ephoreia of Prehistoric and Classical Antiquities at the tell-settlement site Mikro Vouni ² on the south-western shore of Samothrace, in the north-eastern Aegean, offers a new insight into the subject. During the excavation of a vertical sounding with an area of 28 m² near the summit of the mound in order to establish the site’s sequence, five Minoan clay mini documents were discovered, namely two roundels two noduli and a nodule, illustrating perhaps the best example of the pan-Aegean perspective required for the study of the prehistory of the Aegean islands ³. Apart from the unstratified nodulus ⁴ (Pl. XXXIV), the remaining were contents of a layer of destruction ⁵ with a thickness of ca. 0.90 m in the deposits of the second, counting from the surface,

* The following abbreviations are used in addition to the regular abbr. for periodicals:

CHIC: J.-P. OLIVIER & L. GODART (with the collaboration of J.-C. POURSAT), *Corpus Hieroglyphicarum Inscriptionum Cretae* (*EtCrét* XXX, 1995).

GORILA 1, 2, 5: L. GODART & J.-P. OLIVIER, *Recueil des inscriptions en linéaire A* (1976 [1], 1979 [2], 1985 [5]).

SM I: A.J. EVANS, *Scripta Minoa I* (1909).

The drawings of Pl. XXXIV, XXXVIa (seal impressions) and XXXVIIa-d were made using a WILD M3Z Zoom Stereomicroscope equipped with the drawing tube WILD 308700 (Eyepiece 10X/21, Magnification changer position 6.4/6.5, Objective 1.0X). I would like to express my warm thanks to Drs. J.-P. Olivier, E. Hallager and J. Weingarten for their valuable help, advice and comments. However, any mistakes present in this paper are my own. I wish also to thank Mr. C. Sismanidis for the drawings and Mr. M. Koutsoumanis for his cooperation in the field.

1 Cf. M. WIENER, “The Nature and Control of Minoan Foreign Trade”, *Bronze Age Trade*, 325-50; A. & S. SHERRATT, “From Luxuries to Commodities: the Nature of Mediterranean Bronze Age Trading Systems”, *Bronze Age Trade*, 351-86; A.M. SNODGRASS, “Bronze Age Exchange: a Minimalist Position”, *Bronze Age Trade*, 15-20; M. WIENER, “The Isles of Crete? The Minoan Thalassocracy Revisited”, *Thera and the Aegean World III, Proceedings of the Third International Congress, Santorini, Greece, 3-9 September 1989 I. Archaeology* (1990), 128-61.

2 See D. MATSAS, “Samothrace and the Northeastern Aegean: the Minoan Connection”, *StTroica* 1 (1991), 159-79.

3 J.L. DAVIS, “Review of Aegean Prehistory I: The Islands of the Aegean”, *AJA* 96 (1992), 700.

4 *CMS V Suppl.* 1B, Nr. 321.

5 The stratigraphic character of the sounding has not permitted to undertake area excavation in this layer.

building phase and were not *in situ*⁶. No other certain Minoan finds have been recognised in this layer apart from the light-on-dark vertical handle from a Minoan or Minoanizing probably hemispherical cup which bears a simple pattern of transparent white diagonal lines (Pl. XXXVa)⁷, and two tiny egg-shell sherds with brown slip. The base fragment of a serpentine bowl comes from the disturbed surface levels (Pl. XXXVb)⁸. The ceramic material recovered shows close affinities with that from the early subperiod of Troy VI⁹ and "Periodo Bruno" of Poliochni in Lemnos. Three new ¹⁰ ¹⁴C dates¹¹ from animal bone samples collected in the above layer gave the following results¹² (Pl. XXXVc-d):

Sample Code	Lab Code	material	% Mod	Radiocarbon Age BP	δ ¹³ C	Cal 1 σ range BC	Cal 2 σ range BC
ΕΠ56	DEM 386-337	an. b.	64.86	3477±35	-21.00	1873-1740	1884-1684
ΕΠ64	DEM 387-338	an. b.	64.87	3476±37	-21.00	1873-1739	1885-1682
ΕΠ72	DEM 389-383	an. b.	64.93	3469±35	-21.00	1871-1703	1882-1681

The average of these samples is 3474±22 BP with corresponding calibrated ranges at 1 σ 1866 -1742 BC and at 2 σ 1876-1692 BC. On archaeological grounds a date within the second half of the 18th century BC and most probably towards its end or late MM II/MM IIIA¹³ in Cretan terms seems more probable.

SA Wc 2 (Pl. XXXVe, XXXVIa) is a unique roundel¹⁴, perhaps the most intriguing of all existing roundels¹⁵. Along the edge five impressions from three different seals,

- 6 For a full description of their excavation and recovery conditions see Δ. ΜΑΤΣΑΣ, "Η μινωική παρουσία στο ΒΑ Αιγαίο κατά τη μέση χαλκοκρατία. Στοιχεία από τη Σαμοθράκη", *Πεπραγμένα του Ζ' Διεθνούς Κρητολογικού Συνεδρίου, Ρέθυμνο, 25-31 Αυγούστου 1991* (forthcoming).
- 7 Cf. L. MORRICONE, "Coo - Scavi e scorperte nel 'Seraglio' e in località minori (1935-1943)", *ASAtene* 50-51 (1972-1973: 1975), figs. 274 a, c and 278.
- 8 Cf. P. WARREN, *Minoan Stone Vases* (1969), 244, D 60; 246, D 82.
- 9 For the absolute dating of Troy VI see M. KORFMANN & B. KROMER, "Demircihüyük, Beşik-Tepe, Troia - Eine Zwischenbilanz zur Chronologie dreier Orte in Westanatolien", *StTroica* 3 (1993), 135-71, Abb. 14, 16, 17, 21, and 23.
- 10 The older determinations have been presented in MATSAS (*supra* n. 2), 168.
- 11 The samples were determined in the laboratory of Archaeometry, Institute of Materials Science of the Demokritos National Research Center for Physical Sciences. I would like to thank the director of the lab, Dr. Y. Maniatis, and Dr. Giorgos Fakorellis, who did the measurements.
- 12 References for datasets [and intervals] used: G.W. PEARSON & M. STUIVER, "High-precision bidecadal Calibration of the Radiocarbon Time Scale 500-2500 BC", *Radiocarbon* 35 (1993), 25-33. For the conversion from radiocarbon age to calibrated calendar years the CALIB Rev 3.0, © University of Washington Quaternary Isotope Lab (QIL), was used in conjunction with M. STUIVER & P.J. REIMER, "Extended ¹⁴C Database and revised CALIB Radiocarbon Calibration Program", *Radiocarbon* 35 (1993), 215-30.
- 13 Cf. P. WARREN & V. HANKEY, *Aegean Bronze Age Chronology* (1989), 169 and R. TREUIL, P. DARQUE, J.-Cl. POURSAT, G. TOUCHAIS, *Les civilisations égéennes du Néolithique et de l'Age du Bronze* (1989), 205.
- 14 Almost completely preserved (E. HALLAGER, "The Use of Seals on the Minoan Roundel", *Fragen und Probleme der bronzzeitlichen ägäischen Glyptik. CMS Beiheft* 3 [1989], 56 n. 5) roundel of disc shape. It was broken into two pieces, one of which was recovered in the sieve, during excavation when a small part of the edge was mutilated. Fine clay with a few small inclusions. Surface colour 10YR 4/2 dark grayish brown varying to 5/2 grayish brown and 5/3 brown. Core colour 2.5Y N4/ dark gray near the surface of the unimpressed side, which was the exposed surface of the object as it was lying on the floor, and 2.5Y 4/2 dark grayish brown. Surface smoothed, clear fingerprints on both sides. Th. 1.2-1.53 cm.
- 15 Unlike the majority of the roundels known so far, which all share the characteristic of being impressed on the edge once or more times by one seal, **SA Wc 2** like **KN Wc 3**, **30**, **41** and **46** (E. HALLAGER, "The Knossos Roundels", *BSA* 82 [1987], 55-70) and **MA Wc 13** and **14** (E. HALLAGER & J. WEINGARTEN, "The five Roundels from Malia with a Note on Two New Minoan Genii", *BCH* 117 [1993], 1-18) is a

while there is a sixth impression (Re) made by a fourth seal on one of the two circular sides¹⁶. Like roundels from Knossos¹⁷ and Malia¹⁸ it displays the system of stamping with different seals rather than multiple impressions of the same seal as on SA Wc 1¹⁹. The sealing combination of the pair Rb²⁰ and Rc²¹ repeated twice constitutes the major feature of the multiple seal impressions. Moreover, it is an example of the combined use of hieroglyphs and decorative designs, the latter being probably an elaborated stage of the

multi-seal-impressed roundel, that is it displays the system of stamping with different seals. The nearest parallel to this system are many of the sealings of the Knossos Hieroglyphic deposit. Unlike KN-Rg, KN-Rh, KN-Ri and KN-Rn where we find only single uncertain hieroglyphic signs, SA-Ra and SA-Rb represent a well known hieroglyphic formula like the prisms used in the Hieroglyphic Deposit which mostly contain hieroglyphic inscriptions. Reading: horizontal. In addition, it is the only example in the entire corpus of these clay discs which is impressed on its circular side.

- 16 CMS V Suppl. 1B, 306 (Pl. XXXVIb). Finger (thumb) position 1(a+b) on the impressed circular side of the roundel, where even the imprint of the nail is preserved, and finger position 1 on the unimpressed one (the papillary lines are well enough preserved to understand how the roundel was held; the arrow denotes the direction of the finger) is connected with the impressions Rb₁+Rc₁+Rb₂+Rc₂, while finger position 2 on both sides, with the impressions Rd+Re. However, this doesn't necessarily imply two persons involved in the sealing procedure (cf. HALLAGER [supra n. 15], 67-8); more probably, this change of holding positions is due to practical reasons, because, as experiments with the object itself have shown, it is impossible to make the impression Rd from position 1 (perhaps a police investigation of the fingerprints on this roundel, like that E. Hallager did with KN Wc 41 could tell us if it was a different person who held the roundel from position 2 and did the impressions Rd and Re, although the results of this type of investigation were considered not absolute: E. HALLAGER, "On the Track of Minoan Bureaucrats and their 'Clients' ", *Είλαπίνη. Τόμος τιμητικός για τον Καθηγητή Νικόλαο Πλάτωνα* [1987], 347-53). Another strong indication of the order in which the seals were impressed, apart from the fingerprints on both sides of the roundel, is the space between the individual seal-impressions, preserved or estimated: Rb₁-Rc₁ = 0.45 cm (estimated), Rc₁-Rb₂ = 0.55 cm, Rb₂-Rc₂ = 0.3 cm, Rc₂-Rd = 0.4 cm, and Rd-Rb₁ = 0.8 cm. The larger space Rd-Rb₁ (not large enough, though, for Re to be impressed there) shows that Rd was the last seal impression on the edge and confirms the order indicated by the fingerprints (Rb₁, Rc₁, Rb₂, Rc₂, Rd, Re). On the edge of the roundel, in the space between Rc₁-Rb₂ there are traces of what might be considered as the imprint of a string with a diameter of 0.18 cm. (Were the cushions pierced along their longitudinal axis and threaded onto a string like SA Wa 1?).
- 17 HALLAGER (supra n. 15).
- 18 HALLAGER & WEINGARTEN (supra n. 15).
- 19 CMS V Suppl. 1B, Nr. 326; MATSAS (supra n. 2), 170-1, fig. 5, 15-7.
- 20 CMS V Suppl. 1B, Nr. 325; CHIC, #136. Motif: The hieroglyphic signs-syllabograms of the double axe (042 - references to numeration of hieroglyphic signs are to the numbers given in CHIC-) and the sepia (019) represent the beginning of the so-called *Libation Formula* (cf. MATSAS [supra n. 2], 171-2); for the hieroglyphic versions of it see CHIC, #134, #179, #201, #202, #203, #205, #251, #252, #292, and #315. The body of the sepia appears "swelled" compared with the same sign on SA Wc 1 and SA Wa 1. The S-spiral which follows, occurs very often in hieroglyphic seals and it is considered to be a decorative/filling element (cf. SM I, 230, n° 136*) or a dubious hieroglyphic sign; cf. E. GRUMACH, "The Structure of the Cretan Hieroglyphic Script", *BRL* 46 (1963-4), 353; ID., "The Minoan Libation Formula - again", *Kadmos* 7 (1968), 12; CHIC, #206, #291, #292 where, according to J.-P. Olivier (personal communication) it is, no doubt, a fraction; #292 shows on side β the S-spiral with the cross sign, while on side α the signs 042-019; cf. E. GRUMACH, "Zwei hieroglyphische Siegel", *Kadmos* 1 (1962), 153-62, where he writes that the S-spiral "zweifelloos ein reguläres Schriftzeichen ist" (155). For its occurrence on KN Wc 23, KN Wc 41, KE Wc 2 and a discussion of the problem see HALLAGER (supra n. 15). On Rb a rectangular border consisting of two parallel lines, frames the three signs. The seal impression is from a cushion, shape so far found on roundels, besides Samothrace at Knossos.
- 21 CMS V Suppl. 1B, Nr. 323. Motif: right half: two, one upon the other, zones consisting respectively of four ladder bands displaced against each other; left half: traces of a spiral or loop motif. For a possible origin of this type of decoration see P. YULE, *Early Cretan Seals: a Study of Chronology* (1981), 211. The seal impression is from a cushion as well.

former ²². The meaningful pattern Rb-Rc-Rb-Rc, and not what would have been easy and natural to us Rb-Rb-Rc-Rc follows the strict but obscure rules between the sealing partners of the Multiple Sealing System known at MM IIB Phaistos and MM IIB Knossos (both in the Hieroglyphic Deposit and in the Temple Repositories), and later at LM IB Zakro ²³. The impressions Rd ²⁴ and Re ²⁵ represent the "ordinary" type of seals in the impression procedure, and reflect the differing aesthetic requirements of the individual seal owners who were involved in transactions with the administration. Rd depicts the trend to decorative seal types, while Re probably shows the fondness for naturalism and realistic representation. Only there was not enough space along the edge for the last one, for which reason it had (contrary to the rule) to be impressed on the side of the roundel ²⁶. As far as the pair Rb-Rc is concerned, it probably represents a "message" of the administration/institution (we have to seek behind the seals) or its participation in the transaction ²⁷ by which it is credited with certain (2+2=4?) units of an unspecified but known commodity. Elsewhere ²⁸, I have tried earlier, using the sacral and religious character of the Minoan Libation formula ²⁹, to connect the seal impression SA-Ra ³⁰ (Pl. XXXVIIa) on SA Wc 1 with a temple institution and I have hypothesised a possible Minoan origin of the famous in antiquity Sanctuary of the Great Gods or

- 22 Cf. J. WEINGARTEN, "Old and New Elements in the Seals and Sealings of the Temple Repository, Knossos", *Transition. Le monde égéen du Bronze moyen au Bronze récent. Actes de la deuxième rencontre égéenne internationale de l'Université de Liège, 18-20 avril 1988*, *Aegaeum* 3 (1989), 46; and EAD., "The Multiple Sealing System of Minoan Crete and its possible antecedents in Anatolia", *OJA* 11 (1992), 28-31.
- 23 Cf. J. WEINGARTEN, "The Sealing Structures of Minoan Crete: MM II Phaistos to the Destruction of the Palace of Knossos. Part I: The Evidence until the LM IB Destructions", *OJA* 5 (1986), 279-98; EAD., "The Sealing Structures of Minoan Crete: MM II Phaistos to the Destruction of the Palace of Knossos. Part II: The Evidence from Knossos until the Destruction of the Palace", *OJA* 7 (1988), 1-25; EAD. (*supra* n. 22 [1989]), 39-52; and EAD. (*supra* n. 22 [1992]), 25-37.
- 24 CMS V Suppl. 1B, Nr. 324. *Vierpass*-motif: four J-hooks in quadrangular formation enclose an "omphalos" on the surface of which there are remains of a network pattern. Four voluting hatched leaflets are hung up on the hook heads in a counter-clockwise rotation. Probably from a Petshaft or a discoid.
- 25 CMS V Suppl. 1B, Nr. 322. Motif: A standing goat in left profile. A plant between front and hinder legs, in front of the animal a widthwise striped bow-shaped filling element. Presumably from a Petshaft or a discoid. Cf. YULE (*supra* n. 21), 121-3, pls. 3-4 (nos. 31-9 from the MM IIB Phaistos sealing deposit).
- 26 See n. 16.
- 27 Cf. M. PERNA, "A propos de la fonction des rondelles minoennes", *Kadmos* 30 (1991), 111: "... les rondelles enregistrent uniquement des transactions *intra* palatiales entre le fonctionnaire possesseur de sceau et l'administration, ..."; and ID., "La fonction des rondelles minoennes", *Mykenaiika. Actes du IX^e Colloque international sur les textes mycéniens et égéens organisé par le Centre de l'Antiquité Grecque et Romaine de la Fondation Hellénique des Recherches Scientifiques et l'École française d'Athènes. Athènes, 2-6 octobre 1990* (1992), 525. These redistributive transactions involve the circulation of goods through the agency of a central authority.
- 28 MATSAS (*supra* n. 2), 171-5.
- 29 Cf. W. PÖTSCHER, *Aspekte und Probleme der minoischen Religion* (1990), 27-31. For the linear version of it see Y. DUHOUX, "Le linéaire A: problèmes de déchiffrement", *BCILL* 49 (1989), 59-119 and N. DIMOPOULOU, J.-P. OLIVIER & G. RÉTHÉMIOTAKIS, "Une statuette en argile avec inscription en linéaire A de Poros/Irakliou", *BCH* 117 (1993), 501-21; AB 08-31 is found on both MA Wc 5 and GO Wc 1 where it has the same initial position. E. Hallager (HALLAGER & WEINGARTEN [*supra* n. 15], 8) believes that this formula may have been used on documents with seal impressions and on hieroglyphic seals as a specific administrative "phrase" with unknown meaning.
- 30 CMS V Suppl. 1B, Nr. 326; *CHIC*, #135. I prefer the horizontal reading of the roundel SA Wc 1 (MATSAS [*supra* n. 2], 171) and not the vertical implied by the photographs and the drawing in the CMS and *CHIC*. Apart from SA-Ra, the shaft of the "double axe" (042) is perpendicular to the long axis of the "sepia" (019) sign on CMS XI, Nr. 73 (*CHIC* #201).

Kabeiroi³¹ near the small harbour of the north-western shore of the island in relation to the trade of metals. Indeed, the phenomenon of “temples with no cities” or solitary shrines outside or even far away from settlements could be explained by the “need that trade enterprises had for havens of peace and security, where exchange of goods could be carried on under the protection of divine powers”³². Besides, religious ideology constitutes an element internal to the economy providing one means by which the Minoan elites consolidated their wealth and power and organised their economic strategies³³. Perhaps I could refer to the religious domination over Bronze Age Cypriote copper production and distribution³⁴. In other words, the associated symbolism³⁵ naturalises or makes acceptable the trade monopoly³⁶. The arising questions are: What did the seal Rc represent? Is the relationship between the seal Rb and Rc owners one of equality and do they belong to closed and highly structured groups as it has been suggested for the Minoan Multiple Sealing System³⁷? If the suggestion concerning the interpretation of the seal impressions Ra and Rb is correct, may we proceed assuming that Rc expressed a secular authority of equal rank³⁸? I don’t think that administrative seals (= seals engraved with hieroglyphic signs) on roundel impressions both at Knossos and

31 Their name has been connected by G. Dossin with an old form of the Sumerian noun for bronze *Kabar* (G. DOSSIN, “Les Cabires à Lemnos”, *NouvClio* 5 [1953], 199-202). Cf. MATSAS (*supra* n. 2), 159.

32 M. KOCHAVI, “Some Connections between the Aegean and the Levant in the Second Millennium BC: A View from the East”, *Greece between East and West: 10th-8th Centuries BC. Papers of the Meeting at the Institute of Fine Arts, New York University, March 15-16th, 1990* (1992), 9, and n. 2. Cf. C. RENFREW, “Trade as Action at a Distance”, *Approaches to Social Archaeology* (1984), 120, fig. 10, modes 9 and 10.

33 Cf. J.F. CHERRY, “Generalization and the Archaeology of the State”, *Social Organization and Settlement* (1978), 411-37; ID., “The Emergence of the State in the Prehistoric Aegean”, *PCPhS* 210 (1984), 18-48; and ID., “Politics and Palaces: some Problems in Minoan State Formation”, *Peer Polity Interaction and Socio-political Change* (1986), 19-45, where dealing with the ideology of peak sanctuaries he argues that their sudden proliferation, a phenomenon beginning in the MM I period, constitutes one of the most striking features of the Old Palace period and suggests that they reflect “a deliberate attempt by the political and economic special interest groups of Minoan polities to consolidate their power by the communal performance of ritual activities revolving around unverifiable sacred propositions” (429-31, 34-5 and 29-32 respectively). The distribution of these ritual areas on or near the summits of mountain and hill-tops was not restricted only to Crete but extended well beyond it over the Aegean (cf. J.A. SAKELLARAKIS, “Minoan Religious Influence in the Aegean: the Case of Kythera”, *Crete and the Aegean World in the Bronze Age. Conference in Honour of M.S.F. Hood* [15-17 April 1994], forthcoming).

34 A.B. KNAPP, *Copper Production and Divine Protection: Archaeology, Ideology and Social Complexity on Bronze Age Cyprus* (1986), 57-73.

35 Distribution of symbolic materials is a result of exchange in its broader meaning which implies information flow; cf. RENFREW (*supra* n. 32), 130.

36 I. HODDER, *Symbols in Action* (1982), 204.

37 WEINGARTEN (*supra* n. 22 [1992]), 25-37.

38 Like in the Mycenaean economy (cf. J.T. KILLEN, “The Linear B Tablets and the Mycenaean Economy”, *BCILL* 26. *Linear B: a 1984 Survey. Proceedings of the Mycenaean colloquium of the VIIIth Congress of the International Federation of the Societies of Classical Studies. Dublin, 27 August - 1st September 1984* [1985]), in the Minoan economy most probably there was not a clear-cut distinction between a “religious” sector and a secular one represented by the palace. However, there must have been contributions or attributions to the Gods, perhaps, like in the Linear B archives, recorded by the palace itself, forming part of its interests. Cf. S. HILLER, “Palast und Tempel im Alten Orient und im minoischen Kreta”, *Function Palaces*, 57-64; and R. BOGAERT, “Synthèse finale”, *State and Temple Economy in the Ancient Near East. Proceedings of the International Conference organized by the Katholieke Universiteit Leuven from the 10th to the 14th of April 1978* (1979), II: 745-62. A class of merchants, often connected to palace or temple, developed in the Near East: WIENER (*supra* n. 1), 333 and n. 9.

Samothrace were substituted for text while the “ordinary” seals (= seals with naturalistic or geometric designs) were of the usual on roundels function, i.e. counting unit numbers, because I do not find any reasonable justification for the same “text” being “impressed” twice on **SA Wc 2**, or four times on **SA Wc 1** where there are no impressions from seals of the “ordinary” type in order to count unit numbers i.e. to mark the number of the units of the commodity being received by the seal-user. On the other hand, the **MA Wc 13** and **14**, which form part of the corpus of the multiply-impressed roundels, support the above argument: each with impressions from two different “ordinary” seals lack either inscriptions or impressions from “administrative” seals. The individual’s/individuals’ participation in the transaction in **SA Wc 2** is, according to this interpretation, two units of the commodity implied, the equivalent number of their seal impressions. The next question is what this transaction concerned and which commodity was involved. Probably a definite answer is not possible. However, it is tempting to see behind the seals the close association of the three basic sectors/functions of the Minoan economy possibly present on the island, namely temple, palace and traders/manufacturers as participants in the long-distance trade. The strong Knossian characteristics of **SA Wc 2** suggest at least towards the end of the Old Palaces an extension of Knossos’ commanding position to the north Aegean as well ³⁹.

SA Wa 1 ⁴⁰ (Pl. XXXVIIb) is a triangular prismatic nodulus ⁴¹: on one side it preserves the complete impression from a cushion which was pierced along its longitudinal axis and threaded onto a string ⁴². On the one of the two other sides a Linear A inscription incised ⁴³ with a stylus from left to right (Pl. XXXVIIc): numeral “10” ⁴⁴ followed by the

39 Cf. WIENER (*supra* n. 1), 334-40.

40 *CMS V Suppl. 1B*, Nr. 327. Clay 10YR 6/3 pale brown. Very clear fingerprints on the surface from the manipulation of the clay lump into a triangular prismatic shape with rounded in the corners sides. Motif: Within a rectangular frame border, which is parallel to the borders of the sealing, hieroglyphics: the first part of the so-called *Libation Formula* consisting of the double axe (042) and the sepia (019) signs-syllabograms (*CHIC* #137). The curving cutting edges of the diagonally hatched double axe are rendered by three arcs on either side (cf. YULE [*supra* n. 21], Pls. 29-30, Motif 54). Between the upper lines of the rectangular frame and the borders of the sealing a band of ladder ornament.

41 Possibly noduli and roundels served a similar purpose. Perhaps Evans’s explanation for roundels that they represented obligations of some sort undertaken by the person or persons whose seals they bore (*PM I*, 621) applies to noduli. It was suggested (J. WEINGARTEN, “Some Unusual Minoan Clay Nodules”, *Kadmos* 25 [1986], 18) that “noduli are, at least during MM times, dockets, i.e. receipts for work done” (same interpretation for the “boules” at Malia), and that they could be exchanged against commodities. The fraction signs could be interpreted as specific information about the stated amount of payment or bonus. In addition to this, the nodulus **SA Wa 1** might well have served to identify the carrier coming from another site, representing an interconnecting network of obligations operative at more than one site. Cf. J. WEINGARTEN, “More Unusual Minoan Clay Nodules: Addendum II”, *Kadmos* 29 (1990), 16-23; EAD., “Late Bronze Age Trade within Crete: the Evidence of Seals and Sealings”, *Bronze Age Trade*, 303-24.

42 The diameter of the string is ca. 0.3 cm.

43 Incision medium, medium deep.

44 In the form of a thick dot, as we know it from Hagia Triada, Knossos, Malia and Phaistos (examples to be found on **HT 13**, **102**, **120** [*GORILA* 1, 26, 168, 204], **KN 1** [*GORILA* 1, 256], **MA 2**, **4** [*GORILA* 1, 272, 274], **PH 2**, **8a** [*GORILA* 1, 288, 296], etc.). On the earlier tablets of Linear A (MM II and MM III), the 10 is represented by a dot as in the Hieroglyphic; on the later tablets (end of LM IB) a horizontal stroke is substituted for the dot. However, at Hagia Triada a certain number of scribes (responsible for about the 20% of the tablets with the numeral “10”) used the dot in LM IB (TREUIL *et al.* [*supra* n. 13], 240-1). Nevertheless, the dot is considered as an “old” form while the horizontal stroke as a “new” one.

fraction ⁴⁵ A 708 ⁴⁶, and the sign AB 04 ⁴⁷. The document consists of three parts: NUMBER (1) / FRACTION (2) / "COUNTERMARK" ^{48?} (3). They are arranged in two groups with the first (number + fraction) being slightly separated from the second ("countermark"?). A Linear A identification of the inscription is suggested by the following reasons: 1) The presence of the roundels SA Wc 1 and SA Wc 2, documents which, when inscribed, are inscribed in Linear A ⁴⁹. Moreover, roundels with the exception of Gournia and Samothrace (so far) have been found associated with Linear A tablets ⁵⁰. 2) Of course, the three documents at Mikro Vouni bear seal impressions with the "hieroglyphic" group 042-019; however this does not exclude the use of the Linear A which is not found on seals. The two scripts coexisted in the same archives ⁵¹. 3) The presence of the lead balance weight (fuller discussion follows), which might be considered as 1/4 unit of the Aegean/Minoan system of weight measurement associated in the Aegean with the use of Linear A ⁵². 4) The identification and the form of the signs. Apart from the number "10" which is always represented in the Cretan Hieroglyphic with the dot, nothing else is in favour of a hieroglyphic identification of the inscription (at least in the present state of our knowledge); among the hieroglyphic fraction signs we know, none has the form "T" (although this might be due to the weakness of our documentation), while the hieroglyphic sign 025 (=AB 04) doesn't occur alone but always in a group of signs. However, J.-P. Olivier ⁵³ writes for this inscription: "trois signes gravés qui semblent être du linéaire A". The inscription shows two archaisms ⁵⁴ which are in agreement with its date ⁵⁵. Again, the seal with the double axe and the sepia as its basic

45 At least six (HT Wa 1019-21, 1023-4 and SA Wa 1) out of the eight inscribed noduli bear fractional signs either isolated upon the seal impressions (four instances) or in connection with the inscriptions. Cf. E. HALLAGER, *The Minoan Roundel* (ProcDIA Monographs 1, forthcoming).

46 For its use, single or in association, see GORILA 5, 321. Concerning its form, the vertical shaft in the greatest number of cases in Linear A is approximately of the same length as the horizontal bar except in PH 1b.2 and in KH 91.3.4 where the former is virtually double the length of the latter. In Linear B which is derived from a Linear A form more archaic than that we have, the fractional measure "T" shares constantly the form A 708 has in PH 1b.2 and KH 91.3.4. As there is an obvious formal relation between A 708 and "T" we may consider A 708 on SA Wa 1, where the vertical shaft is 0.81 cm and the horizontal bar 0.39 cm, an archaism (cf. J.-P. OLIVIER, "L'origine de l'écriture linéaire B", *SMEA* 20 [1979], 47; personal communication). Palaeographically, the vertical shaft was inscribed first.

47 AB 04 is attested at Hagia Triada at least once as logogram followed by the numeral 84 (HT 107.3, GORILA 1, 174; 5, 149 A [4]), 25 times as "countermark" (GORILA 5, 149 A [6] HT Wa 1122-46, GORILA 2, 16-18; for Linear A single signs on the Hagia Triada nodules see J. WEINGARTEN, "Seal-use at LM IB Ayia Triada: A Minoan Elite in Action, Part I", *Kadmos* 26 [1987], 15-6, Tab. D, E, G, and F) and 21 times as "transaction sign" on HT tablets (GORILA 5, 149 A [3]). Also, AB 04 is found on a roundel from Knossos (KN Wc 48, E. HALLAGER & J. WEINGARTEN, "An unpublished inscribed Roundel from Knossos, KN Wc 48; HM 1626", *BSA* 87 [1992], 177-9). Palaeographically, the 5 left oblique strokes were inscribed first, then the vertical stroke, and finally the 4 right oblique ones.

48 For Linear A countermarks on noduli (HT Wa 1019-21, 1852), see WEINGARTEN, (*supra* n. 41 [1986]), 12-4. Possibly, SA Wa 1 could also be understood as expressing the unit 10+A708 AB 04 (= logogram) one time (HALLAGER [*supra* n. 45]).

49 E. HALLAGER, "Roundels among Sealings in Minoan Administration: A Comprehensive Analysis of Function", *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 11-3, 1989. Aegaeum* 5 [1990], 123.

50 HALLAGER [*supra* n. 14], 56.

51 F. CHAPOUTHIER, *Les écritures minoennes au palais de Mallia* [1930], 3-7.

52 K. M. PETRUSO, *Ayia Irini: the Balance Weights: an Analysis of Weight Measurement in prehistoric Crete and the Cycladic Islands* (Keos VIII, 1992), 66.

53 CHIC, 21.

54 See n. 44 and 46.

basic components probably indicated the same authority like the similar seals on the roundels, regardless of individual identity. The unstratified nodulus ⁵⁶ (Pl. XXXIV) of irregular oval shape bears three impressions from the same slightly convex oval sealing surface, very probably from a ring; a seated lion with a tail rolled high above its back in left profile. In front of, under and behind it there are altogether seven dots ⁵⁷. Behind its back a branch motif. The closest parallel for this type of nodulus are the "boules" from Quartier Mu at Malia ⁵⁸.

The only disk-shaped lead balance weight ⁵⁹ (Pl. XXXVIIId-e) discovered surely cannot prove the use of a certain metrological system at the site in this period. However, some comments can be made. After cleaning, its theoretical weight value ⁶⁰ was calculated to *ca.* 15.9 gm. while its present weight is 12.4 gm. ⁶¹ and finds correspondences in the mass of balance weights from other sites of the Aegean, namely Akrotiri, Ayia Irini and Knossos in the range of 11.8-12.7 gm ⁶². If we take it as underweight due to the oxidation of its surfaces, it might have been 1/4 unit of the already proposed Aegean/Minoan system of weight measurement ⁶³. For an elite concerned with the exchange of high value materials weighting was of critical importance. Perhaps its association in Samothrace with Linear A is not a coincidence, a correspondence noticed already at Ayia Irini, Phylakopi, and Akrotiri where both Linear A inscriptions and balance weights of the Minoan system have been excavated. This evidence must be kept in mind when we try to formulate models concerning the character of the Minoan presence abroad. If during LM I community colonies in the islands of the south Aegean with a particularly strong Minoan cultural and political character (that manifest strong Cretan identity) were established by Minoans whose primary interest was trade, the earlier case of Samothrace is rather different. Here, apart from the above mentioned clay documents, a few sherds and the base fragment from the stone bowl, the Minoan presence is undetectable in the archaeological record. In both cases the involvement of the trade process (the balance weights as common means of evaluation are *tools* of trade) ⁶⁴ invokes a peaceful environment. Concerning Linear A, which was employed at the same time with the Cretan Hieroglyphic and is essentially an independent development, its occurrence outside Crete is connected with close trade contacts of the respective sites with Crete, like cuneiform writing introduced by the Assyrian merchants to the cities of eastern and central Anatolia. Linear A was used in the Aegean, definitely for commercial purposes and possibly for

55 It is, if not earlier, at least contemporary with **KE 1**, **KE Wc 2**, and **KE Zb 4** from Ayia Irini, Period V (cf. J.L. DAVIS, *Ayia Irini: Period V* [Keos V, 1986], 99) and earlier than all the other definite Linear A inscriptions outside Crete (F. VANDENABEELE, "La chronologie des documents en linéaire A", *BCH* 109 [1985], 3-20).

56 CMS V Suppl. 1B, Nr. 321. Clay 10YR 6/3 pale brown. Its surface was smoothed with a cloth.

57 Cf. YULE (*supra* n. 21), 127-9, Pl. 6, Motif 7B.

58 B. DETOURNAY, J.-C. POURSAT & F. VANDENABEELE, "Fouilles exécutées à Mallia. Le Quartier Mu II, *EtCrét* XXVI (1980), 193-6, fig. 259-60.

59 EE771κ (excavation inventory number), D. 1.8 cm, Th. 0.55 cm, Mass: 12.4 gm. It seems to me (see Pl. XXXVIIId-e left) that this piece was not cast in a mould. It bears markings on both sides.

60 $m = \frac{\pi}{4} d^2 h \rho$, where m = the mass of the cylinder the lead disc represents, $\pi = 3.1415$, d = the diameter (1.8 cm), h = the height (0.55 cm) and ρ = the density of the lead (11.35 gm./cm³), cf. A. MICHAILIDOU, "The Lead Weights from Akrotiri: The Archaeological Record", *Thera and the Aegean World III, Proceedings of the Third International Congress, Santorini, Greece, 3-9 September 1989* 1. Archaeology (1990), 414.

61 The balance weight was weighed on a KERN 510-41 laboratory balance.

62 Their respective dates are LM IA, LM IB, LM III: PETRUSO (*supra* n. 52), 78.

63 Cf. PETRUSO (*supra* n. 52), 60 and MICHAILIDOU (*supra* n. 60), 415-6.

64 PETRUSO (*supra* n. 52), 65.

administrative reasons as well, and this use may well have led, or at least may have contributed, to its adaptation for the formation of the Linear B⁶⁵. Apart from the question of the languages the Hieroglyphic and Linear A recorded, may we suggest that Linear A was “invented” and used by the Minoan elites which, participating in long-distance exchanges, transformed some of the values and practices of the palaces in order to meet their requirements?

In the same layer part of a one-piece mould of green schist (Pl. XXXVIIIa) was found. The single casting surface bears one matrix of a razor’s leaf-shaped blade⁶⁶. The carved small channels that allow gases to escape during cooling and the pouring channel are preserved. Many fragments of saucer-shaped crucibles without handles (Pl. XXXVIIIb) were recovered in this and subsequent (older) Middle and late Early Bronze Age levels; most of them contain residues of bronze. Although we have so far no analyses of the adhering material, they were probably used in the melting process. A melting hearth or furnace was not excavated either because it is no longer preserved or simply because it lies outside the trench. Perhaps the added value of the *in situ* expert manufacture by traders-itinerant metal workers along with the transmitted knowledge were mobilised for exchange⁶⁷.

The northern Aegean apart from being the logical outlet for metals and the associated knowledge moving from the north, north-west and east, must have been an important supplier as well, although more fieldwork and laboratory analyses are necessary in this area. Central and East Macedonia including the island of Thasos is among the richest metalliferous provinces of Greece, where there have been two periods of intense activity in the exploitation of precious metals, in antiquity and in the Ottoman period⁶⁸. In East Macedonia there are indications of local metalworking at Sitagroi⁶⁹ and Dikili Tash⁷⁰. In antiquity the classical sources refer to *Pangaion* and *Skapte Hyle* as both silver

65 T.G. PALAIMA, “Linear A in the Cyclades: The Trade and Travel of a Script”, *TUAS* 7 (1982), 15-22; cf. OLIVIER (*supra* n. 46), 45.

66 Cf. K. BRANIGAN, *Aegean Metalwork of the Early and Middle Bronze Age* (1974), 33-4, pl. 16.

67 For contemporary Minoan artisans and specialized workers travelling overseas, see W.-D. NIEMEIER, “Minoan Artisans travelling Overseas: The Alalakh Frescoes and the Painted Plaster Floor at Tel Kabri (Western Galilee)”, *Thalassa. L’Egée préhistorique et la mer. Actes de la troisième Rencontre égéenne internationale de l’Université de Liège, Station de recherches sous-marines et océanographiques (StaReSO), Calvi, Corse 23-25 avril 1990, Aegaeum* 7 (1991), 189-200. Cf. W.W. HALLO, “Trade and Traders in the Ancient Near East: some new Perspectives”, *La circulation des biens, des personnes et des idées dans le Proche-Orient ancien. Actes de la XXXVIII^e Rencontre Assyriologique Internationale, Paris, 8-10 juillet 1991* (1992), 351-6 for the association of the trader with itinerant metal-work in Sumerian-Akkadian lexical or literary evidence.

68 E. PHOTOS, C. KOUKOULI-CHRYSANTHAKI, R.F. TYLECOTE & G. GIALOGLOU, “Precious Metals Extraction in Palaia Kavala, N. E. Greece. An Archaeometallurgical Attempt to Locate Skapte Hyle”, *Proceedings of the International Symposium “Old World Archaeometallurgy”, Heidelberg 1987 (Anschchnitt, Beiheft 7, 1989)*, 179-90.

69 In layer 20 of square MM (phase III: ca 4600-3500 BC) a concentration of sherds with adhering traces of solidified copper or copper slag was found; C. RENFREW, “The Excavated Areas”, *Excavations at Sitagroi. A Prehistoric Village in Northeast Greece. Vol. 1* (1986), 215. The analyses (V. MCGEEHAN-LIRITZIS and N.H. GALE, “Chemical and Lead Isotope Analyses of Greek Late Neolithic and Early Bronze Age Metals”, *Archaeometry* 30 [1988], 199-225) report presence of bronze already in Sitagroi IV (ca 3500-3100 BC). So, Sitagroi provides us with the earliest examples of bronze from the Aegean.

70 In layer XIV, the older one reached at the site (Dikili Tash I [Middle Neolithic], C¹⁴ date Gif 2630: 6720±160 B.P. which corresponds to a calibrated date in the order of 5450 or 5350 BC: R. TREUIL, “La chronologie: les datations par le C¹⁴”, *Dikili Tash, village préhistorique de Macédoine orientale I, Fouilles de Jean Deshayes [1961-1975] 1, BCH Suppl. XXIV* [1992], 33-4), of the sounding east of W30 in the area B2, three circular cavities may be interpreted as devices connected with metallurgy (J. BLÉCON, M. SÉFÉRIADÈS & R. TREUIL, “La stratigraphie”, *ibid.*, 21) -smelting- (M. SÉFÉRIADÈS,

and gold producers. The location of Pangaion is known, that of Skapte Hyle, a “village or town opposite Thasos” has been assumed in the region encompassing the southern flank of the Lekani mountain range, an area with abundant evidence of past mining activity⁷¹. According to Herodotus “the Thasians were benefiting considerably from its mineral wealth to a far greater extent than from their own mines”. Concerning Thasos itself, archaeometallurgical evidence proves that in ancient times this geologically “polymetallic” island was a rich source of raw materials such as copper, lead, silver and gold⁷². The present stage of the research dates the beginnings of its metallurgical history in the chalcolithic phase of the Kastri settlement⁷³, although the exploitation of its mineral resources, the winning of red pigments in the iron ore deposits, probably began in the Palaeolithic⁷⁴. Thasian lead ore is known to have been mined and smelted since at least the Iron Age, if not earlier, while the gold⁷⁵ and silver⁷⁶ deposits probably attracted the settlers from the island of Paros in the 7th century BC⁷⁷. Herodotus informs us in two passages⁷⁸ about a short period of Phoenician colonisation before the Parian settlement, although this subject is open to debate and speculation. In the first he says that the temple of Heracles on Thasos was established by the Phoenicians associated with the legendary figure of Kadmos, who sailed off in search of Europa and founded Thasos. In the second passage Herodotus reports that he had seen the gold mines, and that the most remarkable were those discovered by the Phoenicians. In addition to religious cults related to him, Kadmos was credited with the invention or introduction of various arts. Besides writing, he was said to have invented the mining and working of gold in Thrace⁷⁹. Kadmos

“Dikili Tash: introduction à la préhistoire de la Macédoine orientale”, *BCH* 107 [1983], 647), although not very convincingly (R. TREUIL, “La construction et l’habitation”, *ibid.*, 41-2).

71 PHOTOS *et al.* (*supra* n. 68), 181-2.

72 E. PERNICKA & G.A. WAGNER, “Thasos als Rohstoffquelle für Bunt- und Edelmetalle im Altertum”, *Antike Edel- und Buntmetallgewinnung auf Thasos (Anschnitt, Beiheft 6, 1988)*, 224-31.

73 Z. STOS-GALE & N. GALE, “Sources of Copper Used on Thasos in Late Bronze and Early Iron Age”, *Πρωτοϊστορική Θάσος Β* (1992), 782-93; MATSAS (*supra* n. 2), 173.

74 C. KOUKOULI-CHRYSANTHAKI, G. WEISGERBER & G. GIALOGLOU, “Prähistorischer und junger Bergbau auf Eisenpigmente auf Thasos”, *Antike Edel- und Buntmetallgewinnung auf Thasos (Anschnitt, Beiheft 6, 1988)*, 241-4.

75 Cf. M. VAVELIDIS, E. PERNICKA & G.A. WAGNER, “Die Goldvorkommen von Thasos”, *Antike Edel- und Buntmetallgewinnung auf Thasos (Anschnitt, Beiheft 6, 1988)*, 113-24; G. WEISGERBER & G.A. WAGNER, “Die antike und mittelalterliche Goldgewinnung von Paläochori bei Kinyra”, *ibid.*, 131-53; G. WEISGERBER & G. A. WAGNER, “Der antike Goldbergbau auf dem Gimpfel des Klisidi bei Kinyra”, *ibid.*, 154-72; C. KOUKOULI-CHRYSANTHAKI, “Die archäologischen Funde aus den Goldgruben bei Kinyra”, *ibid.*, 173-9; T. KOSELJ & A. MULLER, “La mine d’or de l’acropole de Thasos”, *ibid.*, 180-97. The gold mines of the island were recently rediscovered. They are found in its north-eastern and eastern part under the acropolis and near the village of Kinyra. The oldest archaeological finds date in the end of the 6th or the beginning of the 5th century BC, although the exploitation of the gold mines might well have started much earlier: cf. M. ΒΑΒΕΛΙΔΗΣ, “Ανάλυση χρυσού σφηκωτήρα T18, 160(149)”, *Πρωτοϊστορική Θάσος Β* (1992), 807.

76 G. GIALOGLOU, M. VAVELIDIS & G.A. WAGNER, “Die antiken Blei-Silberbergwerke auf Thasos”, *Antike Edel- und Buntmetallgewinnung auf Thasos (Anschnitt, Beiheft 6, 1988)*, 75-87. The lead/silver deposits lie in the western part of the island. The earliest archaeological dates are from the Hellenistic period.

77 H. MATTHÄUS, “Thasos im Altertum”, *ibid.*, 20.

78 II 44 and VI 47.

79 R.B. EDWARDS, *Kadmos the Phoenician* (1979), 32.

was associated with the mines of Mt. Pangaion⁸⁰ and he had visited Chalkidiki, which is known for its lead, silver and copper ores and appears to be a potential source for Bronze Age lead and silver objects (Chalkidiki is one of the places where some of the largest “ancient” or old metal slag heaps are found)⁸¹. In his visit to Samothrace he was imagined as having been initiated into the mystery cult there and marrying Harmonia⁸². This wedding⁸³, the celebration of which is suggested to be represented on the frieze of the mid 4th century BC “Temenos” of the Sanctuary⁸⁴, was a key element in the Samothracian legend. The Samothracian Gods (Kabeiroi, Megaloi Theoi) are clearly connected with “Phoenician” Kadmos in the literary sources⁸⁵. Indeed, many older scholars believed that the Kabeiroi were Phoenician in origin and that their name was of Semitic derivation⁸⁶. Kadmos himself is often said to have introduced letters⁸⁷ (φοινικῆια = letters which were painted in red colour- or Καδμήια γράμματα)⁸⁸. It is plausible to suggest that some of the Greek traditions of Phoenicians in the Aegean could refer to Bronze Age people from North Syria who travelled along the Levant and the south coast of Asia Minor with extensions from Rhodes both into the south Aegean and up the west coast to the north⁸⁹. Such travels could have been usual already by the mid third millennium BC as the Mesopotamian cylinder seal possibly made in northern Syria from Poliochni “giallo” shows⁹⁰. On the first leg of this maritime route these travellers met the Minoans travelling east toward Cyprus and on to the Levant while its Aegean sections coincided with the major chains of the Minoan trade networks there⁹¹. One probable meeting place for both Minoans and Levantines travelling up to the northern Aegean was the north-western harbour of Samothrace⁹². Apart from the oriental hypothesis for the interpretation of the Kadmos legend, there is a Cretan one of his Minoan origin⁹³. According to this, the term “Phoenicia” originally meant Crete and “Phoenicians” Minoan

80 Cf. M. ROCCHI, *Kadmos e Harmonia. Un matrimonio problematico* (1989), 34: “L’eroe, scopritore delle miniere d’oro del Pangeo e inventore della fonditura di questo metallo, dimostra di essere un ‘metallurgo’; ciò lo avvicinerrebbe al Kadmilos/Kamillos nato da Hephaistos e da Kabeiro e padre di quei Kabeiroi che erano venerati principalmente nelle vicine isole di Lemno ed Imbro, ...”.

81 Z.A. STOS-GALE & C.F. MACDONALD, “Sources of Metals and Trade in the Bronze Age Aegean”, *Bronze Age Trade*, 255.

82 Diodorus 5.48.7-11, N. LEWIS, *The Ancient Literary Sources. Samothrace: Excavations conducted by the Institute of Fine Arts, New York University* 1 (1958), 65.

83 Cf. ROCCHI (*supra* n. 80).

84 P. WILLIAMS LEHMANN & D. SPITTLE, *The Temenos. Samothrace: Excavations conducted by the Institute of Fine Arts, New York University* 5 (1982), 172-262.

85 EDWARDS (*supra* n. 79), 81 n. 75.

86 B. HEMBERG, *Die Kabiren* (1950), 318-21.

87 Cf. EDWARDS (*supra* n. 79), 174-9.

88 Cf. M. ROCCHI, “Kadmos e i phoinikeia grammata”, *Atti del’ II Congresso Internazionale di Studi Fenici e Punici* (1991), 529-33.

89 Cf. R. LAFFINEUR, “Material and Craftsmanship in the Mycenaean Shaft Graves: Imports vs Local Productions”, *Minos* 25-26 (1990-1), 270-1. These people may have stayed long enough to teach various arts (cf. *Odyssey* 17.383-85 where the δημοιοεργοί are artisans, diviners, healers and poets and W. BURKERT, *Die orientalisierende Epoche in der griechischen Religion und Literatur* [1984], where he explores these intellectual migrations) including writing and worship of foreign gods. Cf. S. MORRIS, “Greece and the Levant”, *JMA* 3 (1990), 57-66.

90 C. LAMBROU-PHILIPSON, *Hellenorientalia. The Near Eastern Presence in the Bronze Age Aegean, ca. 3000-1100 B.C.* (1990), 73; 381. L. BERNABÒ-BREA, *Poliochni II* (1976), 298-302. Cf. SHERRATT & SHERRATT (*supra* n. 1), 368.

91 WIENER (*supra* n. 1). Cf. A.B. KNAPP, “Thalassocracies in Bronze Age Eastern Mediterranean Trade: Making and Breaking a Myth”, *World Archaeology* 24 (1993), 332-47.

92 See n. 32.

93 EDWARDS (*supra* n. 79), 87-113.

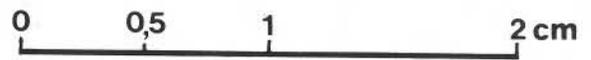
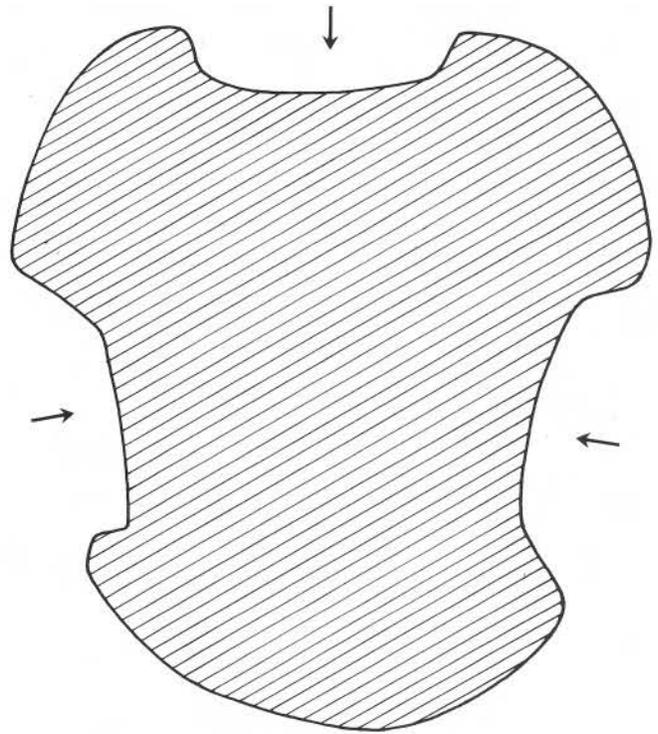
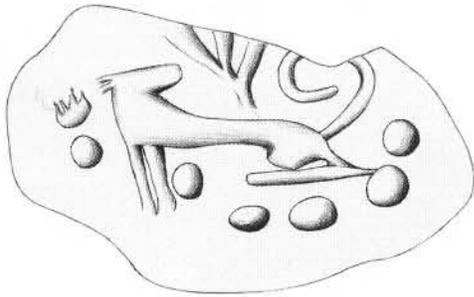
Cretans. It is intriguing to note that there is a correspondence between the Aegean islands with archaeologically documented Minoan presence and those which have associations with Phoenicians: Kythera, Melos, Thera, Rhodes, and now Samothrace. Is it possible that the letters originally associated with Kadmos were the signs of a Bronze Age script and in particular Linear A, which was adapted for the use of Greek and formed Linear B, as the late G.E. Mylonas wrote ⁹⁴?

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94 G.E. MYLONAS, *Mycenae and the Mycenaean Age* (1966), 204. Cf. OLIVIER (*supra* n. 46).

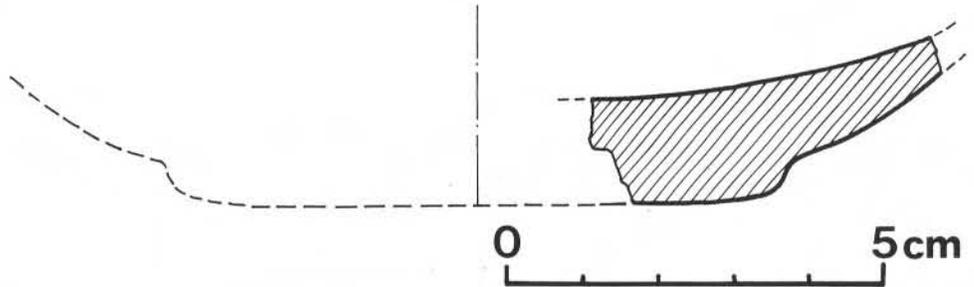
LIST OF ILLUSTRATIONS

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- Pl. XXXVIIe The lead weight. Drawings of both sides.
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- Pl. XXXVIIIb Rim-fragments of crucibles.

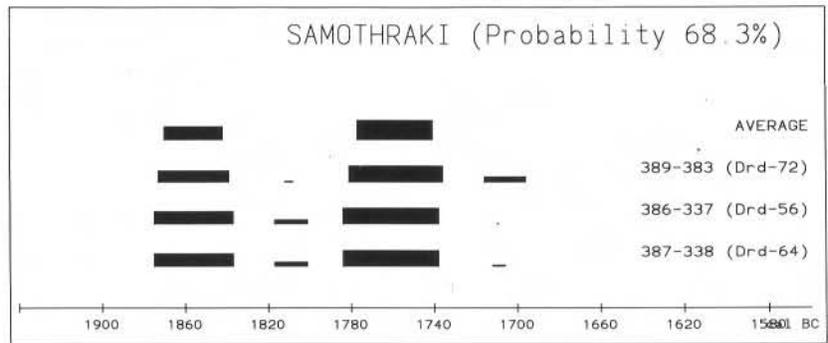




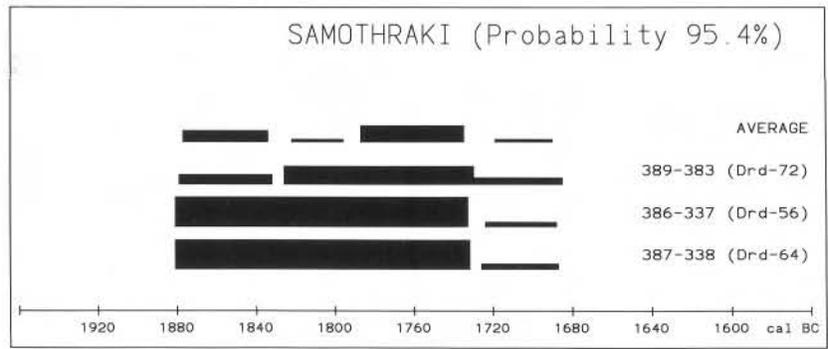
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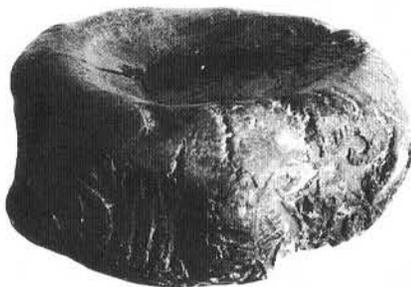
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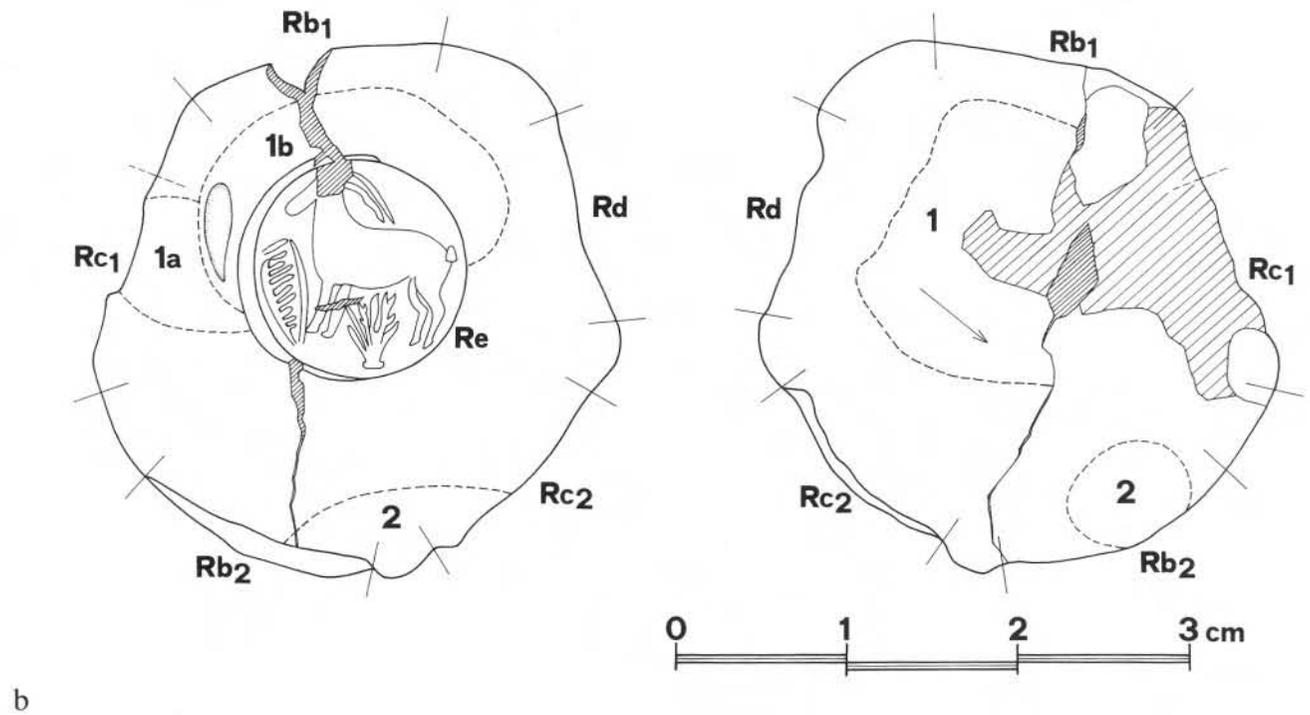
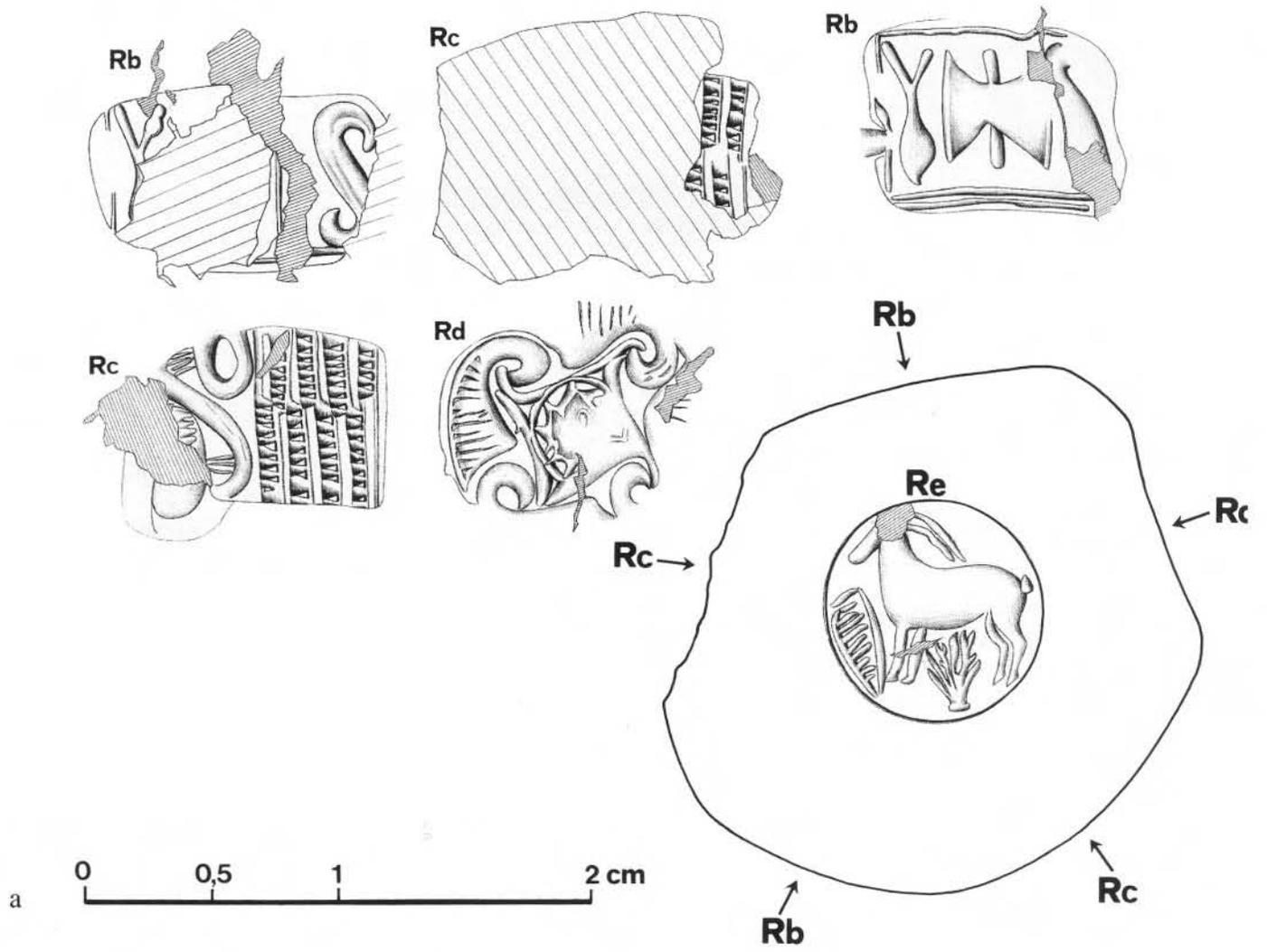
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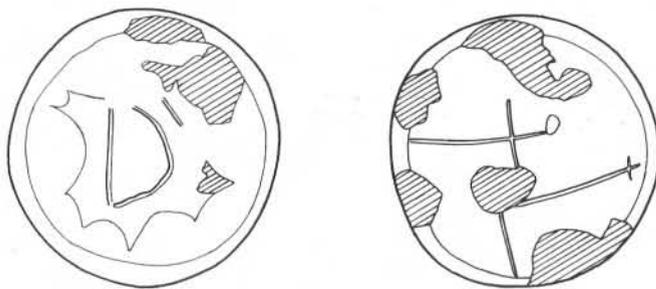
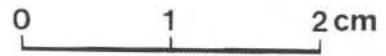
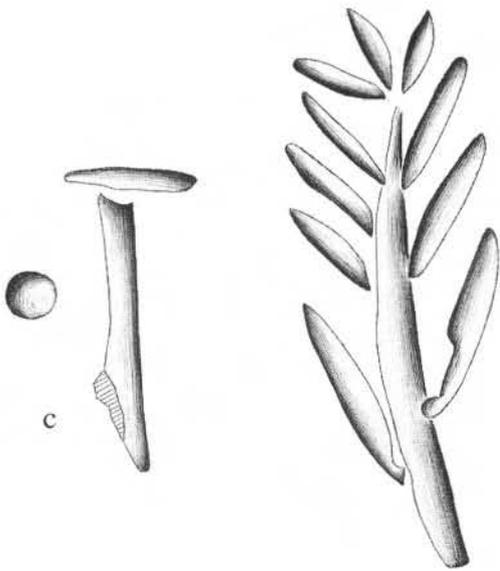
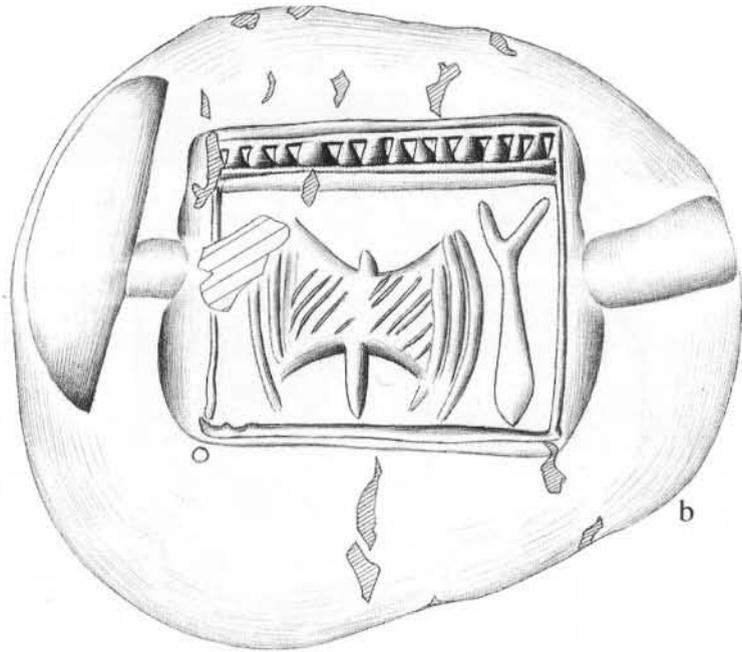
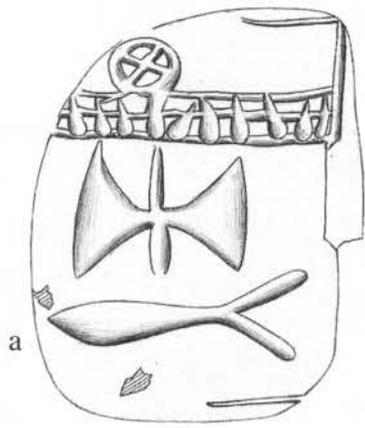


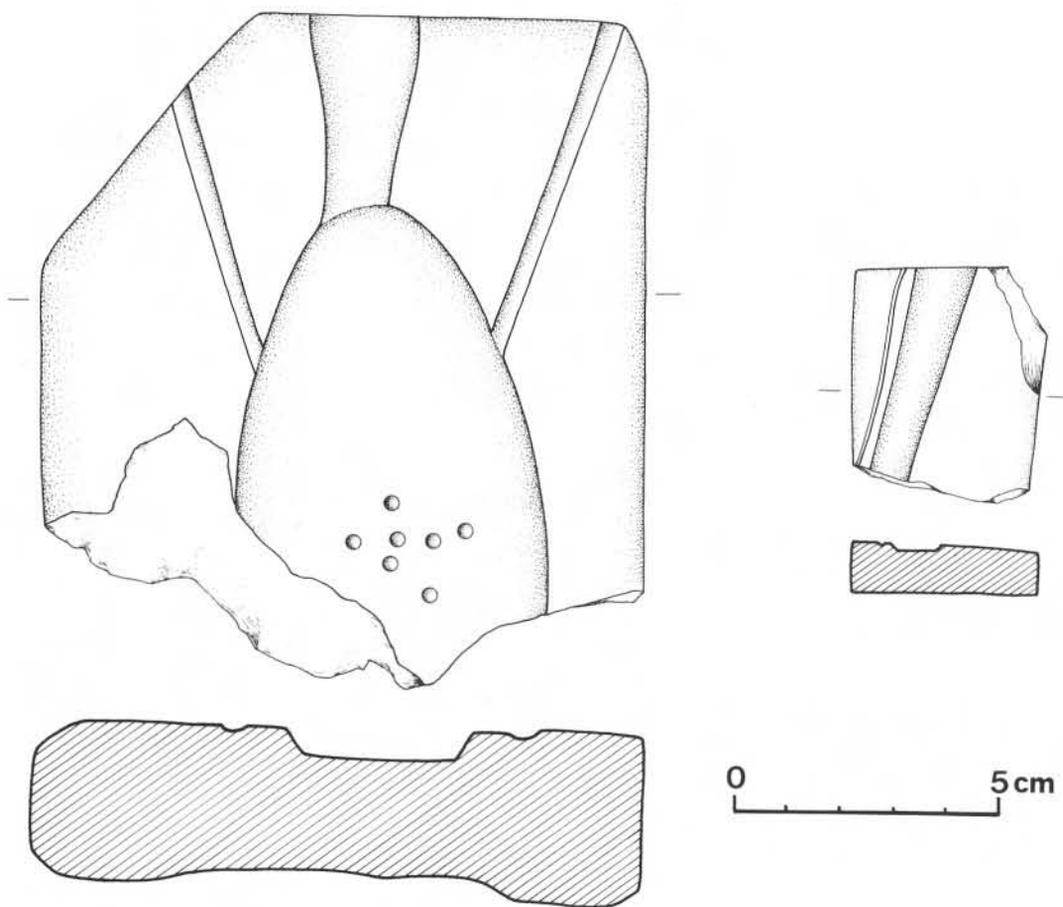
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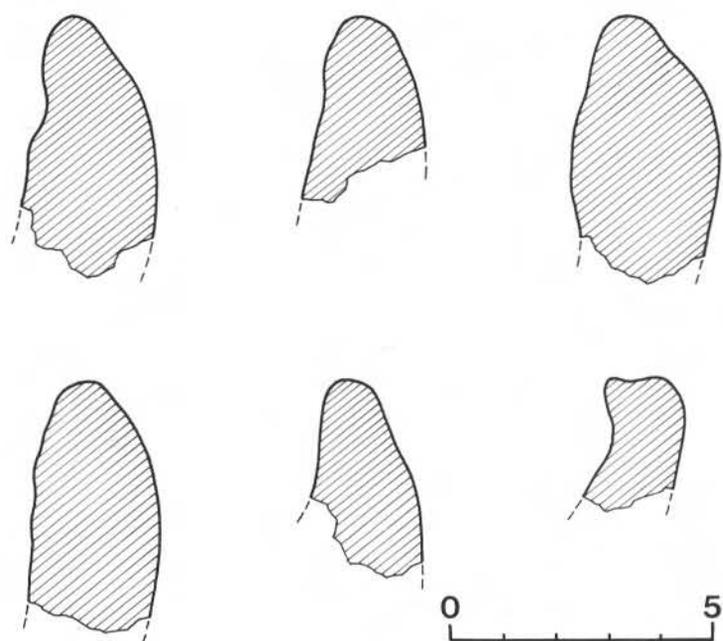
0 1 2cm







a



b